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SPECIAL TRIBUTE

MICHAEL CHOWDRY
1954-2001
Founder and Chief Executive Officer,
Atlas Air, Inc.
Tribute

Michael was born in Pakistan on October 20, 1954 to Akbar and Hameeda Chaudry. At the age of two he lost his father in an accident. As an adolescent suffering from an overactive curiosity, he would jump on his bike and ride to the local border to watch the war between India and Pakistan. Before he left the country at age 14, he experienced three wars — all of which were started for political rather than national security reasons.

He set off to London in his early teens with the dream of seeking opportunities that simply didn't exist in his homeland. Although he had relatives there, he still sought ways to earn money. His jobs ranged from delivering groceries on his bicycle to driving a minicab, wearing a hat pulled low and chewing on a cigar to disguise his youth. Michael also ferried emergency blood supplies back and forth across London.

In the mid-1970's, Michael immigrated to the United States. He decided to attend the University of Minnesota to take courses in commercial aviation. He took jobs the other students passed over to finance his education – such as driving a church bus early on Sunday morning when most students were sleeping off late Saturday nights. As it became increasingly difficult to afford his college education on his own, Michael improvised. Hearing that seats on the Student Council also came with a scholarship, Michael decided to get himself elected. He plastered the campus with his flyers, but had no answer the first time someone asked about his “platform”. That happened only once. Not only did he give satisfactory answers to the questions he was asked, but he won the election and the scholarship!

As a student, he was befriended by a classmate, Becky Stollhammer, whose parents invited him to join them for the holidays and then virtually adopted him into their family. It was with their assistance that he got into aviation when they guaranteed a $2,000 loan for his Certified Flight Instructor license. Michael remained in touch with his adopted American family for the rest of his life, providing financial support to his classmate who went on to become a full-time missionary.
Michael combined his interest in flying with his strong work ethic and began crop dusting, instructing, and performing aerobatics because it paid more than simply instructing. Eventually he became involved in selling small airplanes for Piper, and his ability as an airplane trader began to emerge.

With his roots in a developing country, Michael was mesmerized by the idea that in the U.S., anyone who is willing to work hard can succeed. With this in mind, his drive was boundless and, although he had yet to complete his degree, he was hired to manage a commuter airline in South Dakota. After he was on board, it became clear that the company was in dire financial strait. Yet Michael saw that it had potential in the wake of airline deregulation. When it was about to be closed for non-payment of taxes, he raised the capital to satisfy the debt, finance operations and start a regional commuter airline.

Michael then began buying and selling businesses, worked as a consultant, and traded airplanes, handling successively larger transactions until 1984 when he started Aeronautics Leasing, Inc. (ALI), which became a holding company. This successful leasing company had a client list that read like the "Who's Who" for aviation and included such prestigious names as PanAm and British Airways.

Michael recognized yet another opportunity in an ALI 747-200 that had been conscripted by the army while on lease to PanAm and converted to a freighter configuration. Believing that market demand for cargo carriers would only rise, Michael started Atlas Air in 1992, creating an entirely new industry by focusing on providing outsource capacity for the world’s major international airlines. Using the contacts established during his years in the leasing company, Michael began to market this new concept very aggressively, traveling in excess of 200 days each year.

Currently, Atlas Air controls 80 percent of the world’s ACMI cargo market and is the third-largest cargo carrier in the world for revenue tons carried. On November 11, 1997, fulfilling Michael’s lifelong dream, Atlas Air listed on the New York Stock Exchange and his then-seven-year-old son, Jimmy, rang the bell to open the trading on the world’s most prestigious exchange.

In 1998 Michael became the youngest person to be inducted into the International Air Cargo Hall of Fame. In 1999 he was selected as the National Ernst & Young Service Entrepreneur of the Year, and in February 2000 he was named Aerospace Personality of the Year by Flight International.

Michael believed that much of Atlas Air’s phenomenal success has largely been due to the professionalism and expertise of his work force, and he was committed to both recognizing and rewarding his employees.

Michael is survived by his wife, Linda, who he met when she came to sell him a phone system for his first business. He was sold on more than
just the phones and they were married in 1983. Together they raised Linda’s daughters, Jennifer and Regan, and had a son, Jimmy, in 1989 and a daughter, Olivia, in 1991. Although Atlas Air was his passion, Michael’s family was his foundation.

Michael was able to accomplish great things both personally and professionally by taking risks and seizing opportunities. He lived an extraordinary life. With a warm heart and a welcoming smile, his family grew to include friends and colleagues around the world. He will be remembered fondly.
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INTRODUCTION

Although one would expect that the relationship of the Nation's large railroads and their shippers would resemble that of ordinary service providers and their patrons, the rapport between them is one all too often marked by hostility and distrust. This enmity is due in no small measure to the relatively recent revisions of the regulatory regime applicable to railroads. Whether by enactments of the Congress or decisions of the Interstate Commerce Commission and its successor, the Surface Transportation Board, these changes have contributed to the hostility that frequently divides the carriers and their customers.

RATES

For nearly one hundred years railroad rates were required to be just and reasonable. Section 1 of the Interstate Commerce Regulations Act provided that:

"All charges made for any service rendered or to be rendered in the [railroad] transportation of passengers or property . . . shall be reasonable and
The Supreme Court later declared in *Texas & Pacific R.R. v. Abilene Cotton Oil Co.*, “The act made it the duty of carriers subject to its provisions to charge only just and reasonable rates.” The Interstate Commerce Commission, created by the Act, put it slightly differently in *Corn Belt Meat Producers’ Ass’n v. Chicago, Burlington & Quincy R.R.*, stating that “[e]very shipper is entitled to a reasonable rate.”

It is no longer true that a shipper is entitled to a reasonable rate. Railroads are now free to set their rates wherever they may. The only exceptions to the railroads' rate-setting freedom are their common carrier rates on so-called market dominant or captive traffic, that is, freight for which there are no practicable alternative means of transportation. “The [Board] now has no jurisdiction to review any rate unless it finds that the rail carrier defending the rate can exclude effective competition for the transportation to which the rate applies.”

The Commission and the Board in a handful of proceedings have found the considered coal movements to be market dominant to the participating railroads and the applicable rates to be unreasonable. Neither agency, however, ever has found a non-coal rate—for example, a railroad’s charges for handling shipments of plastics—to involve a market dominant movement or to be unreasonable.

Excluded from even such limited rate review as may be had on captive or market dominant traffic are railroad rates applicable on freight that the agency has elected to exempt. Section 207 of the Railroad Revitalization and Regulatory Reform Act of 1976 empowered the Commission to exempt “a transaction or service” from the statutory and

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3. Id.

4. 204 U.S. 426, 437 (1907); Accord Arizona Grocery Co. v. Atchison, Topeka & Santa Fe R.R., 284 U.S. 370, 384 (1932) (“[The Act] did not abrogate, but expressly affirmed, the common-law duty to charge no more than a reasonable rate . . . .”)

5. 14 I.C.C. 376, 395 (1908); Accord, Nagase & Co. v. Director General, 62 I.C.C. 422, 426 (1921) (“[A] shipper is entitled to a reasonable rate . . . .”); Memphis Grain & Hay Ass’n v. St. Louis & San Francisco R.R., 24 I.C.C. 609, 615 (1912) (“[T]he shipper [is entitled] to a reasonable rate for the service performed.”); Billings Chamber of Commerce v. Chicago, Burlington & Quincy R.R., 19 I.C.C. 71, 75 (1910) (“[E]very shipper is entitled to reasonable rates.”).


regulatory provisions that otherwise would apply.9 Pursuant to that provision, a whole host of commodities, including automobiles and trucks, lumber and furniture, most manufactured products, canned fruits and vegetables, poultry and meats, butter and cheese, and sand and gravel have been declared exempt, and railroad rates on these commodities may be set by the railroads at their unfettered discretion, without even the pretense of rate supervision by the Board.

Also exempt from any form of rate supervision, even on captive or market dominant traffic, as well as on exempt commodities movements, are the railroads' contract rates.10 Approximately ninety percent of all railroad traffic currently moves on contract rates, and shippers are unable complain either to the Board or to a Federal or state court that the railroads' contract rates are unreasonable; such rates have been immunized from administrative or judicial scrutiny as to their reasonableness. In short, the presently effective regulatory scheme in no way safeguards that shippers are afforded reasonable railroad rates.

The 1887 Act, moreover, mandated that railroad rates be nondiscriminatory. Section 2 of the Act provided:

That if any common carrier subject to the provisions of this act shall, directly or indirectly, by any special rate, rebate, drawback or other device, charge, demand, collect, or receive from any person or persons a greater or less compensation for any service rendered, or to be rendered, in the transportation of passengers or property, subject to the provisions of this act, than it charges, demands, collects, or receives from any other person or persons for doing for him or them a like and contemporaneous service in the transportation of a like kind of traffic under substantially similar circumstances and conditions, such common carrier shall be deemed guilty of unjust discrimination, which is hereby prohibited and declared to be unlawful.11

The Supreme Court, in Louisville & Nashville R.R. v. United States, declared, "The legislative history of the Interstate Commerce Act shows clearly that the evil of discrimination was the principal thing aimed at."12 Illustrative of the discrimination that was proscribed by the Act was that found to be unlawful in Wight v. United States:

The one shipper paid fifteen cents a hundred; the other, in fact, but eleven and a half cents. It is true he formally paid fifteen cents, but he received a rebate of three and a half cents, and regard must always be had to the sub-

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stance and not to the form. Indeed, the section itself forbids the carrier ‘directly or indirectly by any special rate, rebate, drawback or other device’ to charge, demand, collect or receive from any person or persons a greater or less compensation, etc. . . . It was the purpose of the section to enforce equality between shippers, and it prohibits any rebate or other device by which two shippers, shipping over same line, the same distance, under the same circumstances of carriage, are compelled to pay different prices therefore.\(^\text{13}\)

Equality between similarly situated shippers no longer is the case. Railroads are free to enter into contracts with their shippers, including secret agreements with preferred shippers providing for allowances or discounts from the rates that competing shippers must pay.\(^\text{14}\) As the court noted in Water Transport Ass'n v. Interstate Commerce Comm'n, “contracts generally are confidential and, absent a specific legislative purpose, there is no reason to treat rail contracts differently.”\(^\text{15}\)

The Act to regulate commerce, furthermore, prohibited undue preferences or prejudices in the setting of railroad rates. Section 3 of the Act in part, provided:

> That it shall be unlawful for any common carrier subject to the provisions of this act to make or give any undue or unreasonable preference or advantage to any particular person, company, firm, corporation, or locality, or any particular description of traffic, in any respect whatsoever, or to subject any particular person, company, firm, corporation, or locality, or any particular description of traffic, to any due or unreasonable prejudice or disadvantage in any respect whatsoever.\(^\text{16}\)

In speaking of this section, the Supreme Court in Texas & Pacific R.R. v. United States said:

> The classical case of discrimination in rates is presented where a single carrier serving two points approximately equidistant from a common origin on the carrier's line, exacts unequal rates for the two hauls. Not only is the prejudice obvious, but equally so the ability of the carrier to abate it by raising the rates to the point enjoying the lower rates, or decreasing those on the

\(^\text{13}\) 167 U.S. 512, 517-18 (1897), accord, Ayrshire Collieries Corp. v. United States, 335 U.S. 573, 584 (1949) (holding that “the purpose of this section is to enforce equality between shippers of like commodities over the same line or haul for the same distance and between the same points.”); Union Pacific R.R. v. United States, 313 U.S. 450, 462 (1941) (recognizing that “favoritism which destroys equality between shippers, however brought about, is not tolerated.”)


\(^\text{15}\) 722 F.2d 1025, 1032 (2d Cir. 1983), affg in part, R. R. Transp. Contracts, 367 I.C.C. 9 (1982); accord, W. Fuels-Illinois, Inc. v. Interstate Commerce Comm’n, 878 F.2d 1025, 1028 (7th Cir. 1989) (“The WTA court wrote that the statute's recognition of a need for confidentiality 'is not surprising since contracts generally are confidential and, absent a specific legislative purpose, there is no reason to treat rail contracts differently.'”).

The Commission in *Castle v. Baltimore & Ohio R.R.* stated:

common carriers are bound by every principle of justice and of law to accord equal rights to all shippers who are entitled to like treatment, both in the receiving of supplies and shipment of their products; and a carrier who under any pretext whatsoever grants to one shipper an advantage which it denies another violates the spirit and thwarts the purpose of the law.18

Section 3 and the protections it provided are no more; the prohibition against undue preferences or prejudices has been repealed,19 and no comparable provision appears in the presently effective statutory scheme of railroad regulation. Thus, the railroads are free to set their rates so as to prefer certain shippers to the disadvantage of others, and the aggrieved shippers, paying the greater charges, are without any remedy before the Board or the courts.

Finally, to aid in its administration and enforcement, the Act to regulate commerce required that the railroads set out their rates in tariffs filed with the Commission and that the tariffs' terms be strictly observed. Section 6, in part, provided:

That every *common carrier* subject to the provisions of this act *shall print* and keep for public inspection *schedules showing the rates and fares and charges for the transportation of passengers and property which any such common carrier has established and which are in force at the time upon its railroad, as defined by the first section of this act.*

And when any such common carrier shall have established and published its rates, fares, and charges in compliance with the provisions of this section, it shall be unlawful for such common carrier to charge, demand, collect, or receive from any person or persons a greater or less compensation for the transportation of passengers or property, or for any services in connection therewith; than is specified in such published schedule of rates, fares, and charges as may at the time be in force.20

These requirements, that the railroads' rates be contained in tariffs

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17. 289 U.S. 627, 648 (1933); *accord* Louisville & Nashville R.R. v. Mottley, 219 U.S. 467, 478 (1911) ("the purpose of Congress was to cut up by the roots every form of discrimination, favoritism and inequality."); New York, New Haven & Hartford R.R. v. Interstate Commerce Comm'n, 200 U.S. 361, 391 (1906) ("It cannot be challenged that the great purpose of the act to regulate commerce, whilst seeking to prevent unjust and unreasonable rates, was to secure equality of rates as to all and to destroy favoritism.").

18. 8 I.C.C. 333, 345 (1899).

19. The addition of subsections (e) and (f) to 49 U.S.C. § 10741 by Section 212 of the Staggers Rail Act of 1980, Pub. L. No. 96-448, 94 Stat. 1912, effectively repealed the prohibition against undue preference and prejudice.

lodged with the Commission and that there be no deviation from the tariffs' terms, gave rise to the so-called filed rate doctrine. The classic statement of the filed rate doctrine appeared in *Louisville & Nashville R.R. v. Maxwell*, in which the Supreme Court said:

Under the Interstate Commerce Act, the rate of the carrier duly filed is the only lawful charge. Deviation from it is not permitted upon any pretext. Shippers and travelers are charged with notice, of it, and they as well as the carrier must abide by it, unless it is found by the Commission to be unreasonable. Ignorance or misquotation of rates is not an excuse for paying or charging either less or more than the rate filed. This rule is undeniably strict, and it obviously may work hardship in some cases, but it embodies the policy which has been adopted by Congress in the regulation of interstate commerce in order to prevent unjust discrimination.21

As it relates to railroad rates, the filed rate doctrine has been repealed.22 Railroads no longer need to publish their rates in tariffs filed with the Board; upon request, the railroads simply must advise the shipper what rates will be assessed on its traffic. The shipper has no means of learning what its competitors are paying to secure identical transportation services; the railroads are under no obligation to advise a shipper of another shipper's rates.

In sum, when it comes to rates, shippers are wholly at the mercy of the railroads. The railroads effectively can assess whatever rates they wish, and the shippers are without any recourse. Their choice is the proverbial one to take it or leave it.

**Service**

From the standpoint of railroad service, the most significant development of the past several years has been the narrowing of routing alternatives and the increasing dependence upon a single railroad that faces many shippers, largely as a result of Commission and Board decisions.

The Act to regulate commerce required the railroads to interchange traffic between themselves and to cooperate in the handling of interlined shipments so as to assure the continuous carriage of freight. Section 3, in part, provided:

> Every common carrier subject to the provisions of this act shall, accord-

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21. 237 U.S. 94, 97 (1915); *See also*, Maislin Indus., U.S., Inc. v. Primary Steel, Inc., 497 U.S. 116, 130 (1990) ("For a century, this Court has held that the Act, as it incorporates the filed rate doctrine, forbids as discriminatory the secret negotiation and collection of rates lower than the filed rate."); *Square D Co. v. Niagara Frontier Tariff Bureau*, 476 U.S. 409, 416 (1986) (quoting *Keogh v. Chicago & Northwestern R.R.*, 260 U.S. 156, 163 (1922), "The legal rights of shipper as against carrier in respect to a rate are measured by the published tariff.").

Railing at Railroads

ing to their respective powers, afford all reasonable proper, and equal facilities for the interchange of traffic between their respective lines, and for the receiving, forwarding, and delivering of passengers and property to and from their several lines and those connecting therewith . . . .

Section 7 provided:

That it shall be unlawful for any common carrier subject to the provisions of this act to enter into any combination, contract, or agreement, expressed or implied, to prevent, by change of time schedule, carriage in different cars, or by any other means or devices, the carriage of freights from being continuous from the place of shipment to the place of destination; and no break, of bulk, stoppage, or interruption made by such common carrier shall prevent the carriage of freights from being and being treated as one continuous carriage from the place of shipment to the place of destination, unless such break, stoppage, or interruption was made in good faith for some necessary purpose, and without any intent to avoid or unnecessarily interrupt such continuous carriage or to evade any of the provisions of this act.

Railroads remain under statutory obligations to provide for the interchange of traffic and the continuous carriage of freight. In practice, however, the railroads, aided by the Commission and the Board, have been able to avoid these requirements.

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<th>Railroad 1</th>
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<tr>
<td>A</td>
<td>Railroad 1</td>
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<td>C</td>
<td>Railroad 3</td>
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Illustration 1

The originating railroad, Railroad 1 in Illustration 1, traditionally entered into through-route, joint-rate agreements with the destination railroads, Railroads 2 and 3, and participated with them in the providing of service without discrimination. The joint rate from origin, A to destination, C, would be the same or equalized, and the shipper, therefore, had a choice of routing its shipments via the one combination of railroads or the other, depending upon the nature and quality of their services, with the knowledge that it would suffer no rate penalty. As the Supreme Court noted, in Southern Pacific Co. v. Interstate Commerce Comm’n:

That act recognizes the right of the carriers to agree upon, and provides for the publication of, joint through tariff rates between continuous roads, on

24. See id. § 7.
26. See id § 10744.
such terms as the roads may chose to make, provided, of course, the rates are reasonable and no discrimination, or other violation of the act is practised. The initial carrier did not, on its line, reach the Eastern markets, but it reached various connecting railroads which did reach those markets. The initial carrier had the right to enter into an agreement for joint through rates with all or any one of these connecting companies, though such companies were competing ones among themselves. And the agreements could be made upon such terms as the various companies might think expedient, provided they were not in violation of any other provisions of the act.27

Nominally, the railroads continue to offer joint rates; practically, however, their joint rates are nothing more than the sum of the rates each of the railroads participating in a through movement has set for itself. The euphemism that the railroads employ is "multiple independent factor through rates," (MIFTR). The term first surfaced in the decision of the Commission in Society of the Plastics Industry, Inc. v. Consolidated Rail Corp.28 in which Conrail sought to justify its unilateral cancellation of joint rates on plastics moving from the southwest, contending that it needed "the freedom to adjust its rates for its portion of through movements of plastics, in the same manner as it is free to adjust its rates for local movements, without the concurrence of connecting carriers."29 The Commission agreed, and, in concluding that multiple independent factor through rates were joint rates, the Commission rationalized:

We conclude that a MIFTR is a joint rate, and that the independent factors thereof are divisions. The difference between a traditional joint rate and a MIFTR is in the mechanism for making adjustments after the rate has been established. A traditional joint rate requires a separate arrangement or agreement to make each adjustment. A MIFTR embodies a general arrangement or agreement to accept any such adjustment that any other carrier participant may propose. Both a traditional joint rate and a MIFTR require agreement among all participants in the rate. The fact that the participants in a MIFTR concur at the outset in the right of any party to take independent action with respect to its portion of the rate, rather than entering into specific rate agreements following that initial agreement, does not change the fact that a MIFTR is a joint rate. It is a unitary rate that is jointly held out over the lines of two or more carriers and is established by arrangement or agreement between the carriers.30

The railroads' reliance upon multiple independent factor through rates has destroyed whatever rate equalization had been achieved by the

27. 200 U.S. 536, 559 (1906).
29. Soc. of Plastics Indus., Inc., I.C.C. No. 40298.
30. Id. (footnotes omitted).
maintenance of traditional joint rates and effectively has denied shippers the free choice of alternative railroad routings which they previously enjoyed. In Illustration 1, if Railroad 2’s MIFTR is lower than Railroad 3’s, of course, the traffic will gravitate to Railroad 2, unless its service is appreciably inferior. A shipper, who otherwise might have preferred using Railroad 3, would be penalized if he were to do so. As a practical matter, the shipper is relegated to the use of only one railroad; he becomes captive to it.

A shipper’s dependence upon a single destination carrier becomes even more evident if one railroad can serve both the origin and the destination.

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<tr>
<th>A - Railroad 1</th>
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**ILLUSTRATION 2**

Heretofore, a railroad, such as Railroad 2 in Illustration 2, was able to offer competing services to the consignees at the destination station, notwithstanding that another railroad, Railroad 1, served both the origin and destination points and, accordingly, was able to provide single-line service between them. Railroad 2 was kept competitive by Railroad 1’s neutrality at the interchange point or gateway and by its participating with Railroad 2 in the maintenance of joint rates from origin to destination equalized with Railroad 1’s own local rates. The Commission, declared:

> If a rate when made by one company as a single rate would in law be unobjectionable, it would be equally so when made by several as a joint rate. The policy of the law and the convenience of business favor the making of joint rates, and the more completely the whole railroad system of the country can be treated as a unit, as if it were all under one management, the greater will be the benefit of its service to the public and the less the liability to unfair exactions.\(^{31}\)

Beginning in 1980, however, the railroads embarked upon the systematic cancellation of joint rates.\(^{32}\) Among the railroads most adversely affected by the cancellation of joint rates was the Pittsburgh and Lake Erie Railroad Company, a regional railroad which competed with Conrail

\(^{31}\) Martin v. Chicago, Burlington & Quincy R.R., 2 I.C.C. 25, 42 (1888).
in the greater Pittsburgh area. As the court noted in *Pittsburgh & Lake Erie R.R. Co. v. Interstate Commerce Commission*,

Conrail provides rail service throughout the industrial northeast and midwest. P&LE runs a smaller, more regional railroad, and its routes are for the most part limited to southwestern Pennsylvania and northeastern Ohio. A substantial percentage of P&LE's traffic moves through interline service. Conrail's lines parallel those of P&LE and extend beyond them. Many of Conrail's single-line routes can therefore compete with the through routes established by Conrail and P&LE.\(^{33}\)

The court went on:

On October 19, 1982, Conrail filed a cancellation tariff withdrawing from several joint rates, some of which applied to through routes on which P&LE participates. . . A division of the Commission voted to suspend the rate and conduct an investigation, but that decision was reversed by the Commission. The determination not to suspend or investigate the cancellation was . . . unreviewable, and the new rates went into effect shortly after the Commission decision.\(^{34}\)

The cancellation of joint rates and the commercial closing of their through routes rendered the P&LE noncompetitive and spelled the beginning of the end of the P&LE. Shippers in the area both railroads served also lost the alternative service which PL&E had provided.

The cancellation of joint rates and the commercial closing of through routes have occurred with greatest regularity as an incident to the merger of railroads.

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\(^{33}\) 796 F.2d 1534, 1537 (D.C. Cir. 1986).

\(^{34}\) Id.
maintain through-route, joint-rate arrangements with Railroads 2 and 3 and participate with them in the interlining of freight without discrimination. The equalization of rates enabled a shipper to route via one combination of railroads or the other and obtain delivery of shipments via either Railroad 2 or Railroad 3.

To safeguard that a shipper would suffer no loss of alternative service as a result of the merger of railroads the Commission for more than three decades attached the so-called DT&I conditions, first imposed in Detroit, T. & I. R.R. Control. In effect, the DT&I conditions required the merged railroad, Railroad 1 in Illustration 3, to preserve the interchange at point B, and "to maintain and keep open all routes and channels of trade via existing junctions and gateways" between it and the connecting carrier, Railroad 3. In other words, notwithstanding the single-line service that the merged railroad, Railroad 1, was able to offer, the imposition of the DT&I conditions kept Railroad 3 competitive and assured shippers a choice of service via the one railroad or the other. As the Commission explained in Traffic Protective Conditions:

The Commission has interpreted the DT&I Conditions, specifically Condition 1, to require rate equalization. A consolidated carrier was generally prohibited from maintaining rates on its new single-line routings resulting from the consolidation below the rates on any competing joint-line routes in which it participated. We feared that if a single-line rate was lowered without securing the concurrence of all connecting carriers in lowering the corresponding joint-line rates, the "commercial closing" of certain routes or gateways would occur and competition would be reduced.

In the Traffic Protective Conditions proceeding, the Commission reversed itself, held that the DT&I conditions themselves were anticompetitive and concluded that future railroad mergers could proceed without the imposition of the DT&I conditions. Thus, all of the recent mergers, BN/SF, UP/SP, and CN/IC, all proceeded without the imposition of the DT&I conditions.

The implications of the agency's policy change are best illustrated by

35. 275 I.C.C. 455 (1950).
36. Id. at 492.
reference to the break-up of Conrail between NS and CSXT.\textsuperscript{41} Shippers on Conrail with freight destined to the south and southeast, to points such as New Orleans, LA, Birmingham, AL, Atlanta, GA, Raleigh, NC, or Jacksonville, FL, served by both NS and CSXT, could route their shipments via the gateways of Cincinnati, OH, Columbus, OH, Hagerstown, MD, or Washington, DC, for delivery via either the NS or CSXT. With the break-up Conrail effected without the imposition of the \textit{DT&I} conditions, however, shippers at stations such as Ypsilanti, MI, Elkhart, IN, or Steubenville, OH, now served by NS, are effectively foreclosed from using CSXT on shipments to the commonly served points in the south and southeast; shippers at stations such as Oswego, NY, or Highland, IL, now served by CSXT, are effectively foreclosed from using NS. The break-up of Conrail has closed the gateways that formerly afforded shippers alternative railroad routings. Affected shippers have lost the benefits that the competition between NS and CSXT achieved, namely, the relatively lower rates and better service that competition between railroads invariably brings about. Their shippers have become increasingly captive to NS and CSXT.

The statute theoretically affords relief to a shipper served solely by a single railroad by providing for competitive access.

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\textbf{ILLUSTRATION 4}

One means of achieving competitive access is by reciprocal switching,\textsuperscript{42} whereby the destination railroad, Railroad 2 in Illustration 4, for a fee, must transport the cars of a competing carrier, Railroad 1, enabling the latter carrier, even though it cannot physically serve the consignee's facility at D, to offer single-line rates to compete with the destination railroad's single-line service.\textsuperscript{43} Another means of achieving competitive access is through terminal trackage rights\textsuperscript{44} whereby the destination railroad, Railroad 2, for a fee, must permit physical access over its line to the trains and crew of a competing railroad, Railroad 1, in Illustration 4.\textsuperscript{45}

The Commission has effectively nullified the competitive access remedies, however. In its \textit{Midtec} decision, the Commission said that the com-

\begin{itemize}
  \item \textsuperscript{41} CSX Corp.—Control and Operating Leases/Agreements—Conrail Inc., STB Finance Docket No. 33388, served July 23, 1998.
  \item \textsuperscript{42} 49 U.S.C. § 11102(c) (1996).
  \item \textsuperscript{43} Review of Rail Access and Competition Issues, STB Ex Parte No. 575, served May 4, 1998.
  \item \textsuperscript{44} 49 U.S.C. § 11102(a) (1996).
  \item \textsuperscript{45} Review of Rail Access and Competition Issues, STB Ex Parte No. 575.
\end{itemize}
petitive access remedies were available only upon a demonstration of the delivering railroad’s anticompetitive conduct:

The key issue in this case is whether CNW has engaged in or is likely to engage in conduct that is contrary to the rail transportation policy or is otherwise anticompetitive. The essential questions here are: (1) whether the railroad has used its market power to extract unreasonable terms on through movements; or (2) whether because of its monopoly position it has shown a disregard for the shipper’s needs by rendering inadequate service. These issues are just as relevant in determining whether the public interest requires reciprocal switching as in determining whether it requires terminal trackage rights. Both remedies are effective means of assuring carrier cooperation—when due to the intransigence of a monopoly carrier that cooperation has broken down—to assure that shippers receive adequate service.46

In the intervening fourteen years since the Midtec decision was rendered, not one shipper has been afforded competitive access; not one shipper has been relieved of the rate and service constraints of being served by only a single destination railroad.

Yet another nail was driven into the coffin of railroad competition by the Board’s decisions in the so-called Bottleneck cases.47 The Board held that the destination railroad, Railroad 2 in Illustration 4, was under no obligation to provide separate local rates for the bottleneck portion of through service, that is, from the junction at point C to the destination at point D. In other words, although the shipper may be able to obtain the commodity it wants from another source, situated at point A in Illustration 4, and another railroad, Railroad 1, is ready, willing and able to haul the freight to the junction at point C, there to be interchanged to the delivering carrier, Railroad 2, the latter can block the competing railroad’s access to the destination by refusing to publish local rates over the bottleneck segment. The shipper, thus, is rendered totally captive to the one railroad and must bear whatever exorbitant rates the carrier elects to collect and suffer whatever inferior service it chooses to render.

**Conclusion**

That some shippers feel a sense of frustration in dealing with the railroads is perfectly understandable. In many instances the shippers are totally at the mercy of the railroads, whether in terms of rates or service. While no one wants to turn back the clock to 1887, the affected shippers

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feel that what little regulation remains is woefully biased in favor of the railroads.

Some semblance of regulatory balance would be achieved if the Board were to reverse its *Midtec* and Bottleneck decisions and thereby allow a consignee served by only a single railroad access to a second carrier. As the Supreme Court noted in *American Trucking Ass'ns. v. Atchison Topeka & Santa Fe Railway Co.*, "the Commission, faced with new developments or in light of reconsideration of the relevant facts and its mandate, may alter its past interpretation and overturn past administrative rulings and practice." And if the Board were to decline to do so, the Congress should. It would not be the first time that the Congress has insinuated itself in the agency's actions, even after court review, and the plight of many shippers calls for such relief.

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The Use of Equitable Tools in Freeway Construction Litigation

INTRODUCTION

Large-scale transportation projects raise thorny environmental, community development, public policy and legal issues. Frequently, these projects become mired in litigation, particularly since the environmental regulation movement of the 1960s and 1970s. This paper is about the effects of judicial intervention in and management of transportation policy litigation.

Transportation policy disputes are not easily remedied through damages. Instead, courts often find it necessary to invoke their inherent equitable powers to manage and/or resolve the litigation. Courts involved in transportation policy disputes have used three types of equitable tools: consent decrees, special masters and injunctions. Increasingly courts have not only become involved in the resolution of particular disputes, but have also played a role in implementing policy changes that result from the litigation. Some observers see this increasingly involved role of the judiciary as an avenue for underrepresented groups to enforce federal and state environmental policies. Others view this increased intervention

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as an unconstitutional intrusion into decision-making by the executive and legislative branches.

This paper contains four sections. The first section is a discussion of the three equitable tools as used in federal courts. The second section outlines background information about four case studies. The third section is a discussion of equitable tools as applied in each of the case studies. The fourth and final section is a discussion of the implications and lessons to be learned from analyzing the interaction of judicial intervention and transportation planning in the case studies. This final section will also have recommendations and will provide examples of how these lessons could be applied to future transportation disputes.

BACKGROUND INFORMATION ON THE EQUITABLE TOOLS USED IN FEDERAL COURTS

CONSENT DECREES

A consent decree is "[a]n agreement formalized by the judiciary to settle a lawsuit according to principles agreed to by the parties."¹ The plaintiff and the defendant in the lawsuit negotiate a compromise and then obtain approval of the compromise by the judge presiding over the litigation. The decree allows the parties to fashion their own remedies rather than having a court impose a remedy upon the parties.

Institutional reform plaintiffs seeking some form of action from a governmental agency often use consent decrees. A prime example of this would be school desegregation consent decrees.² Typically, a group of plaintiffs seeking to desegregate schools sues local educational institutions. With the supervision of a court, the plaintiffs and the local school district may enter a consent decree arrangement. The decree provides a detailed plan of action to desegregate the schools. The court that approves the decree may also enforce its provisions. Consent decrees are frequently used in situations in which either the executive or the legislative branches of our system of state and federal governments have allegedly violated certain constitutional rights. Other examples of consent decrees involve litigation surrounding the practices of mental institutions, prisons, school systems, employers and other institutions.³

A unique characteristic of the consent decree is the need for the ongoing supervision of the court. The result of most litigation is a judicial

³. See id. at 1809.
decision entering a judgment for either the plaintiff or defendant. Once a court has issued a judgment, the parties have very little further interaction with the court or each other. Consent decrees require the supervising courts to monitor and supervise the decree’s implementation over time. This forces the courts to assume the role of an enforcer, planner, arbiter and possibly perhaps a counselor.

The Constitutionality of Consent Decrees

Article III of the U.S. Constitution structures the balance of power among the executive, legislative and judicial branches of the federal government. The goal of this structure was to create an equilibrium of power. The executive was provided with the power of initiative and enforcement; the legislature with the power of the purse; and the judiciary with the power of interpretation. This structure forms the basis for the separation of powers that provides a checks-and-balances system of government.

Consent decrees are controversial because they seemingly blur the lines between the branches, thus raising separation of powers concerns. Consent decrees involve courts in areas of developing policy and expending money (traditionally areas within the purview of the legislative branch), and courts are responsible for enforcing consent decrees (taking on the enforcement role of the executive branch). Examples of developing policy include mandating courses of conduct or programs for defendant institutions. However, there has been a longstanding legal tradition of allowing courts “judicial flexibility in defining remedies to adequately meet a wrong.”

In Brown v. Board of Education, the Supreme Court stated, “equity has been characterized by a practical flexibility in shaping its remedies and by a facility for adjusting and reconciling public and private needs.” Consent decrees are one of many possible tools that a court can use to remedy a dispute.

A consent decree will often involve creating programs and mandating expenditures (but not actually appropriating funds). A decree often requires ongoing court supervision. For example, Congress and the executive branch had already approved and funded the Century Freeway, but the consent decree entered by the court prevented executive agencies of the federal and state governments from distributing these previously appropriated funds. Additionally, the decree created new mitigation programs that neither Congress nor the executive branch had planned.

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4. See id. at 1815.
5. Id. at 1837.
6. Id.
8. See Zamora, supra note 2, at 1840.
Although controversial, consent decrees are an attractive option for institutional-reform plaintiffs. They allow a group of citizens to change the scope and direction of governmental action without having to lobby the legislative and executive branches. Additionally, because so many actions of the federal government are made by administrative agencies that are relatively insulated from public pressures, consent decrees provide a degree of leverage over the actions of such agencies.

**The Advantages of Consent Decrees**

The main advantage of a consent decree is the avoidance of litigation, including the time, expense and risks inherent in a trial. Decrees can provide a detailed and comprehensive plan of action that can lead to a settlement of the issues, which pleases both parties. Because both the parties (ideally) jointly fashion the plan of action, there is more of an investment in the outcome for both sides of the litigation. “Defendants are more likely to comply with the decree that they help formulate.”

Proponents of consent decrees argue that in order to protect the rights of the minority, the courts must be able to have a means of providing a check and balance to the legislative and executive bodies. The legislative and executive branches often fail to protect the rights of disadvantaged communities in policy-making and courts are in the best position to resist the pressures of the majority. If the democratically elected branches of government require a minority to shoulder an unfair burden in violation of the Constitution, then it is the duty of the courts to step in and vindicate the minority’s rights. Similarly, in cases not involving constitutional issues, courts can enable citizens (not just minority groups) to enforce statutory duties upon the government.

**Disadvantages of Consent Decrees**

The main criticism of consent decrees is that they involve judicial intrusion into roles normally assumed by the executive and legislative branches. The argument is that consent decrees represent an unwarranted extension of judicial power into areas reserved for the other branches of government under our Constitution. According to this viewpoint, courts are the least qualified to become involved in implementation and policy-making.

In addition to the constitutional arguments, critics point out that con-

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10. See Zamora, supra note 2, at 1843.
11. See id.
12. See id. at 1816.
sent decrees, rather than saving time, actually contribute to significantly higher costs and lengthy delays in the resolution of disputes. In the case of the Century Freeway, a $500 million project due to be completed in 1983, became a $2.2 billion project completed in 1993.13

Special Masters

Special masters are defined as "people appointed to act as the representative of the court for some particular act or transaction."14 Courts have long had inherent powers at their disposal to assist them in performing their duties, such as special masters, auditors, examiners, and other individuals who may help speed the resolution of litigation.15

Courts are increasingly using special masters to help manage complex and lengthy litigation. While the responsibilities and powers of individual special masters are highly dependent upon the facts in each case, courts appoint and monitor all special masters. Special masters generally serve many roles including fact finder, mediator, and as a consultant to the judge supervising the litigation.

In addition to using special masters, courts sometimes appoint monitors. The main difference between special masters and monitors is that monitors frequently do not have any powers to affect the behavior of the monitored. Instead, monitors typically report observations and/or findings to the supervising judge. In the case of the Century Freeway, the court did not employ a special master. Instead, the judge appointed three different individuals to perform a variety of monitoring tasks.

Special masters may also perform technical evaluation services. Certain types of litigation present complicated and/or technical issues. A court with a busy case docket may not have time to understand all the issues presented in certain cases. A court can however, employ a special master to help it evaluate data and other information. In Sierra Club v. MTC, for instance, the court employed Professor Martin Wachs to help it understand the technical evaluation issues presented in the case.

Examples of the Use of Special Masters

As litigation has become more complex in recent years, the need for special masters to help manage complicated cases has increased. Wayne D. Brazil identified three types of cases that frequently involve special masters: large scale commercial litigation, mass torts and public law cases.

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where the courts create equitable decrees that govern the operation of institutions over a long-term period.\textsuperscript{16} In some particularly complex suits, courts have needed masters not to understand the subject matter of the suit, but rather to help sort through massive amounts of non-technical information.\textsuperscript{17}

For example, in a case involving a consent decree governing New York State's treatment of the mentally retarded the court stated:

The monitoring of a consent judgment that mandates individualized care for thousands of class members and that entails a balancing of the interests of parties with third-party employees, school authorities and community groups is just the sort of "polycentric problem that cannot easily be resolved through a traditional courtroom adjudicative process."\textsuperscript{18}

Masters do not have to be attorneys. They often are individuals who help the court evaluate scientific evidence.\textsuperscript{19} In the Sierra Club v. MTC case, for instance, the court employed Martin Wachs, a transportation planning professor of UCLA (and now at UC Berkeley), as a special master. Wachs helped the court evaluate the defendant's scientific procedures. A later section of this paper addresses this case. Without the use of someone who has specialized knowledge of a highly technical field, a court can become mired in one piece of litigation, trying to sort out the technical issues presented. "Rule 53 is broad enough to allow appointment of expert advisers."\textsuperscript{20}

**Institutional Reform Contexts**

Special masters can be particularly appropriate in institutional reform cases, where the special masters can be "implementation officers."\textsuperscript{21} Traditional sanctions used by courts to secure compliance are often not effective in reforming institutions. Injunctions entered by a court could prevent individual violations of personal rights by an offending institution, but injunctions may fail to address systemic abuses in such institutions. Awarding damages to individual plaintiffs does nothing to ensure that future violations will be prevented.\textsuperscript{22}

\begin{footnotesize}
\begin{enumerate}
\item\textsuperscript{16} See Wayne D. Brazil, \textit{Special Masters in Complex Cases: Extending the Judiciary or Reshaping Adjudication?} 53 U. Chi. L. Rev. 394, 398 (1986).
\item\textsuperscript{17} Margaret G. Farrell, \textit{The Role of Special Masters in Federal Litigation}, C842 ALI-ABA 931, 949 (1993).
\item\textsuperscript{19} See Farrell, \textit{supra} note 15, at 284-85.
\item\textsuperscript{21} Debra Dobray, \textit{The Role of Masters in Court Ordered Institutional Reform}, 34 Baylor L. Rev. 581, 581 (1982).
\item\textsuperscript{22} See \textit{id.} at 583.
\end{enumerate}
\end{footnotesize}
Many institutional suits involving the rights of individuals "[r]equire the protection of an affirmative remedial regime, since they are primarily based on a governmental duty to follow a particular course of action." Long-term judicial supervision of an institution is useful in order to reform the practices and procedures of an institution. Yet most courts are under-equipped in time and resources to be able to manage the behavior of a large and complex institution.

Other Uses of a Special Master/Monitor

Courts also use special masters to help resolve litigation involving large numbers of parties or particularly technical or complex subject matters. Because judges often have a large caseload on their docket, they are unable to acquire special skills and knowledge to fashion effective remedies in some institutional reform or highly technical suits. Additionally, judges do not have the time or the resources to monitor compliance with and implementation of their decrees in most institutional reform cases. The Sierra Club v. MTC litigation involved highly technical analyses of transportation demand modeling. This was a case where all the parties involved desired the use of a special master. The parties viewed the appointment of the special master as very helpful to the court.

Special masters are also useful when a defendant is unwilling or unable to comply with a court-ordered decree or remedy. Judges may select a special master to oversee compliance with orders because a master can assess the defendant's compliance. Because courts often have to retain jurisdiction for many years, special masters, like consent decrees, function as an administrative mechanism to ensure compliance with orders and distribute damages if appropriate.

History of Special Masters

Special masters have their roots in England and have been used in the United States since colonial times. Typically, special masters have served as administrative assistants, performing such tasks as selling property to settle judgments, holding evidentiary hearings, calculating damages and settling accounts. "Historically . . . the master's duties were more ministerial or procedural than substantive." When the Federal

23. Id. at 581.
24. See id.
25. See id.
26. See Farrell, supra note 17, at 953.
27. See Farrell, supra note 15, at 268.
29. Dobray, supra note 21, at 586.
Rules of Civil Procedure were formulated in 1938, Rule 53 codified the use of special masters.

Authority for Special Masters

Federal courts have four sources of legal authority to appoint a master: 1) the consent of the parties; 2) the inherent authority of the court; 3) the Magistrates Act (this paper does not analyze this method because it was not used in any of my case studies); and 4) Federal Rules of Civil Procedure (FRCP) Rule 53.30

Inherent authority

American courts have the inherent power to use various tools and mechanisms to enable special masters to carry out their duties. These powers include the ability to appoint individuals unconnected with the court, with or without the consent of the parties, to amplify and clarify issues, monitor compliance, distribute funds, and to make tentative findings.31 In the cases Brown v. Board of Education and Swann v. Charlotte-Mecklenburg Board of Education,32 the Supreme Court recognized that equitable principles allow courts great flexibility in shaping their remedial decrees. Courts need to tailor their remedies to fit the nature and context of particular cases.

FRCP Rule 53

The provisions of Rule 53 do not address the use of special masters in the remedial context. The provisions address a master's responsibility in discovery and in settling factual issues in cases.33

Implementation Under Rule 53

Rule 53 was adopted in order to codify the existing practice of referring matters to special masters.34 Rule 53(b) states:

[a] reference to a master shall be the exception and not the rule. In actions to be tried by a jury, a reference shall be made only when the issues are complicated; in actions to be tried without a jury, save in matters of account and of difficult computation of damages, a reference shall be made only upon a showing that some exceptional condition requires it.

30. See Farrell, supra note 17, at 936.
31. See Ex parte Peterson, 253 U.S. 300, 312-14 (1920).
33. See DeGraw, supra note 28, at 808.
Rule 53 is meant to provide courts with a "flexible and adaptable method for resolving questions and conflicts which might otherwise impede the process of litigation." The Supreme Court in *Ex parte Petersen* stated that:

[w]here accounts are complex and interconnected, or the documents and other evidence voluminous, or where extensive computations are to be made, it is the better practice to refer the matter to a special master or commissioner than for the judge to undertake to perform the task himself.

Courts are allowed to confer additional powers upon special masters besides receiving evidence and collecting damages. A reference to a special master can include the power to impose sanctions or to adjudicate disputes. A master with a broad reference can engage in administrative, managerial and policy-making functions.

The order of reference is the primary source of guidance to the master's authority in a particular case. Rule 53(c) provides that a court's reference to a master may limit the master's powers and may delegate only certain issues or acts for the master to perform. The order may also prescribe a time and a place for the term of the master's service.

There are compelling reasons to create a reference order that is very specific as to the duties of the master, but there are also good reasons to allow the master some flexibility. Specificity gives the parties notice of the standards they are expected to meet and provides guidance to the master. Flexibility, however, allows the master to adapt his or her role and duties to changing circumstances and allows the monitor to exercise professional discretion.

Under Rule 53, special masters have the ability to receive and evaluate evidence submitted by the parties. The master may require the production of documents, rule on the admissibility of evidence, subpoena witnesses, put them under oath and examine them. Thus, unless the order of reference to the special master prescribes limits otherwise, a special master has broad powers to regulate all proceedings and to take all necessary steps in order to carry out his duties under the order. The list of potential powers listed in Rule 53 (such as referee, auditor, examiner and assessor) is not meant to be exclusive. Judges have in the past given masters unenumerated authorities, such as the ability to hire experts, in-

36. 253 U.S. at 313 (1920).
39. See Reynolds et. al., *supra* note 37, at 332.
40. See Farrell, *supra* note 17, at 945.
vestigate facts, conduct informal and ex parte proceedings, and mediate disputes or settlements.41

Rule 53 provides no guidance or standards to aid in selecting a master. Suggestions for special masters may come from individual parties to the litigation or from the judge.42 The parties to the litigation may agree upon a particular master, but if they do not, the judge has the power to impose the appointment of a particular master. Typically, if the judge has to select a master, he will attempt to get the consent of the parties.43 The appointment of a special master under Rule 53(b) can be appealed through a writ of mandamus filed in an appellate court immediately after the appointment is made by the District Court.

Frequently, masters circulate their findings to the different parties in a draft form before formally presenting them to the court. This allows the parties to comment on the draft. If a party is dissatisfied with the master’s findings, a court may hear the objection and try the issues.

The costs of a special master are typically allocated between the parties to the litigation.44 Unlike judges, special masters are not recognized and compensated by the judicial system as a public good that is needed for dispute resolution.45 Rule 53(a) provides that the payment shall be paid “out of any fund or subject matter of the action which is in the custody and control of the court as the court may direct.”

The Constitutional Limits on the Authority of Special Masters

Article III of the U.S. Constitution grants a litigant in federal court the right to a hearing before a federal judge who has the attributes of lifetime tenure, irreducible salary and presumed political independence. Because federal litigants have a Constitutional right to a trial before an Article III court, there are limits on the ability of courts to delegate certain judicial responsibilities. The court cannot abdicate its role in the federal system.

Appellate courts will vacate non-consensual references where the delegated powers were overbroad.46 Therefore, a court may not (without the consent of both parties) refer a fundamental issue of the case or controversy to an adjudicator who does not possess the fundamental attributes of an Article III court. The Supreme Court has held that the exercise of essential judicial functions by non-Article III personnel vio-

42. See id. at 275.
43. See Farrell, supra note 18, at 955.
44. See Farrell, supra note 16, at 247.
45. See id. at 273.
46. See Braun, supra note 35, at 216.
lates the separation of powers.47

Non-consensual referrals to special masters are supposed to be the exception, not the rule. Under a proper Rule 53 appointment, the judge has control over the appointment, powers, responsibilities, salary and tenure of the master(s).48 A judge, however, must review the findings of a special master.

Anything less than independent review by the court, particularly any determination of liability and apportionment, would surely have been just the sort of abdication of the judicial function guarded against in the formulation of Rule 53 governing the appointment of special masters.49

The use of special masters can also implicate federalism issues. In institutional reform suits involving state institutions like prisons, school districts or housing for the mentally disabled, the use of a special master by a federal court to monitor a decree can involve "de facto federal administration of a state institution" by a person who is not employed by the institution.50

Institutional reform suits often involve reforming extensive practices of these institutions. Some commentators have worried that this is an inappropriate role for courts and special masters. These commentators argue that the actions performed by some special masters should be performed by legislatures because the relief sought is often prospective and affects large numbers of people, similar to regulation or a legislative rule.51 The special master may become so involved in supervising an institution that the master will perform functions of each of the three branches of government: adjudication, rulemaking and enforcement. Additionally, the special master does not have the independence and neutrality of an official with life tenure and irreducible salaries like a federal judge.52 If both parties to litigation waive their rights to have an Article III judge preside over their civil trial, nothing prevents a court from delegating certain responsibilities to another official.53

Exceptional Circumstances

FRCP Rule 53(b) allows a reference to a special master if the court can show "exceptional conditions" requiring the need for additional assis-

50. See Braun, supra note 35, at 220.
52. See id. at 288.
tance or when the issues are very complicated.54

What qualifies as "exceptional" is open to debate. To a court facing an overloaded case docket and/or time pressures, the conditions facing it may seem exceptional. Appellate courts, however, do not find these circumstances exceptional enough to justify a reference to a special master.

The Supreme Court in *La Buy v. Howes Leather Co.*55 set basic standards for what qualifies as an exceptional condition. In *La Buy* a District Court judge referred two antitrust cases to a special master, citing congestion on his calendar and the complexity of the issues posed in the cases.56 The Supreme Court held that the references by this judge were "little less than an abdication of the judicial function depriving the parties of the trial before the court on the basic issues involved in the litigation."57 Therefore, congested trial calendars, complex cases, and potentially lengthy litigation are not the type of "exceptional circumstances" warranting the appointment of a special master. The use of special masters in institutional reform cases has grown from this narrow conception.58

**The Master in the Consent Decree Context**

Courts have often used special masters as agents of the court to monitor compliance with a consent decree. A special master in this context may have the authority to conduct site visits, hire expert consultants, or collect and analyze data. The master, as a monitor, can report to the court and assist the judge in framing the legal issues and in assessing compliance. If the special master finds that a defendant institution has not been in compliance, the court may hold the institution in contempt of court.59

For example, in *Hart v. Community School Board of Brooklyn*, the court appointed a master to investigate for and consult with the court in technical aspects of desegregation so that the court could fashion an effective remedy.60

**The Advantages of Special Masters**

As litigation has become more complex and judges' workloads have become heavier in recent years, special masters have become an attrac-

57. *See La Buy*, 352 U.S. at 256.
58. *See DeGraw*, supra note 28, at 802-03.

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tive litigation management tool. Special masters can resolve preliminary disputes and clear the way for the court to decide the major issues of the case. Additionally, as in the case of Professor Wachs, special masters frequently have specialized technical knowledge that regular courts do not have. While the use of a special master may end up being costly to the parties, a master is likely to help shorten the length of the controversy, thus lowering overall costs to the parties.

A special master may also help facilitate non-adversarial negotiations between opposing parties. If a reference allows the special master to make certain decisions, this can give the master court authority to ensure that the parties cooperate. The special master also can interact with the parties in a more informal and flexible interaction than normally would be allowed by the judge. A master may also help preserve any level of existing relations/communications between the parties, thereby avoiding deterioration into non-communication. By appointing a special master, courts can provide litigants with a judicial figure who has the time and interest to discuss their matters in detail, and to work with both parties to reach a fair resolution.

In the context of an institutional reform consent decree, a special master is often the most effective way to ensure effective implementation of the decree. Attempting to reform the practices of an entire institution poses considerable challenges to a court. Appointing a special master enables the court to exercise flexibility in the remedial stage.

This Disadvantages of Special Masters

The use of a special master can present troubling constitutional questions. Special masters can exercise judicial power without being judges appointed under Article III of the Constitution. The Supreme Court has indicated that the use of such individuals can violate the separation of powers doctrine and perhaps the due process clause. However, the benefits of such a delegation - such as efficiency and expertise- may outweigh the infringement on Article III values of independence and impartial adjudication.

As discussed earlier, appointing a master adds costs to the litigation
for both of the parties. Additionally, the use of a master can actually
delay resolution of the issue by overwhelming the judge with large
amounts of information that the judge must review de novo. The judge,
by using a special master, can become distant from the parties and from
the case.70

Other commentators worry that as special masters are used more fre-
quently, this makes adjudication too informal. Adjudication becomes re-
moved from the public eye and supervision. Judges may come to rely on
masters to the point where they are no longer exercising proper judicial
management functions.71 If a special master is employed to provide ex-
tensive technical expertise, there can be a risk that the judge might abdi-
cate his ultimate responsibility to decide the case at hand.72

Appointing courts frequently accept the findings of a master without
question.73 Parties to the litigation often do not have an opportunity to
challenge the master’s findings,74 and a court may accept the findings of
a master without testing the findings in an adversarial setting.

Additionally, the findings or deliberations of the special master are
often not published. Like a private settlement, the deliberations and de-
cisions of a master “deprive the public of the benefit of understanding
what considerations are significant to the resolution of the claims in-
volved, and what might be the predictable result in similar cases in the
future.”75 A judge may accept the findings made by a master, but these
findings are not made public. While a final decision of a court may be
published, the findings of the special master, which may have shaped the
formal decision, are not published.

In the context of an institutional reform case, a special master is
often given a broad reference to monitor the organization. These refer-
ences may be too broad. A special master may have the authority to
conduct extensive investigations, hold hearings, and may even be able to
control the operations of the defendant institutions. A special master
may also be able to impose sanctions upon the institution, and may sub-
stitute his discretion in the place of the regular heads of the institution.76

**Preliminary Injunctions**

A preliminary injunction is a powerful tool for plaintiffs seeking to
prevent some form of institutional action or practice. For instance, a pre-

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70. See Farrell, supra note 17, at 964.
71. See Brazil, supra note 16, at 394.
72. See id. at 419.
73. See DeGraw, supra note 28, at 848.
74. See Brazil, supra note 16, at 419.
75. See Farrell, supra note 15, at 284.
76. See DeGraw, supra note 28, at 832-33.
Preliminary injunction was issued in 1974 to prevent construction of the Century Freeway before the Freeway consent decree was adopted. In the case of the 710 Freeway, a preliminary injunction issued in 1973 remained until 1998, frustrating the California Department of Transportation’s (CalTrans) plans to build the freeway. Another injunction in 1999 stopped the project again. In the Sierra Club v. MTC litigation, a preliminary injunction entered by the court prevented the MTC from approving freeway-related projects in the Bay Area until the court approved the MTC’s new air quality forecasting methods. This injunction spurred the agency into reforming some of its practices.

In the context of environmental and planning-related suits, preliminary injunctive relief is an important tool for plaintiffs. Plaintiffs in these types of suits often seek to stop government agencies from constructing projects that would have an irreparable effect on the communities surrounding the projects. Without the use of a preliminary injunction, the defendant government institution could have continued to build a project while the case was being litigated. A “bureaucratic steamroller” could have potentially mooted the claims of the plaintiff if the project was finished before the litigation was completed. Preliminary injunctions are powerful because if an enjoined party does not observe the injunction, a court can hold the non-observing party in contempt, which could lead to a fine or a jail sentence. Preliminary injunctions are a recognition by the judicial system that damages are sometimes inadequate to redress a wrong. Damages cannot adequately compensate a person whose home near the path of a freeway is permanently affected by the noise and pollution. Some parties want to stop a project altogether rather than be compensated for any harm they might suffer.

Preliminary injunctions are not to be granted easily. Courts are reluctant to use them except in extreme circumstances. Analyses of the decision whether to grant a preliminary injunction or not are often highly fact specific. Because preliminary injunctions can seriously interfere with the operations of an agency and have serious societal consequences, most commentators and cases caution against eagerness to use them.

Preliminary injunctions are different from permanent injunctions. Permanent injunctions are injunctions issued after a trial, and seek to permanently affect the behavior or actions of the enjoined party. The standards used by courts to evaluate whether to issue a permanent or preliminary injunction are very similar. These include a balancing of the

78. See Sierra Club v. Marsh, 872 F.2d 497, 504 (1st Cir. 1989).
parties’ interests that might be affected by an injunction and whether or not there are would be adequate legal remedy after a trial on the merits.

Preliminary injunctions are forms of pre-trial relief. The purpose of a preliminary injunction is to preserve the status quo and prevent irreparable harm, while the plaintiffs bring their case to court. Preliminary injunctions are most appropriate in situations where there would be no adequate legal remedy for the plaintiff seeking the preliminary injunction if the plaintiff were ultimately to prevail on merits of the case.

**Rules and Procedures for Preliminary Injunctions**

Preliminary injunctions are derived from the inherent equitable powers of a court. Rule 65 of the Federal Rules of Civil Procedure governs the use of injunctive relief in federal courts. According to this rule, a party who seeks a preliminary injunction must demonstrate: 1) The threat of immediate irreparable harm; 2) The likelihood of success on the merits; 3) The comparative hardship to the parties if the injunction were granted; and 4) The determination that the public interest would be better served by issuing than by denying the injunction.

Courts have used numerous approaches in evaluating whether to grant a preliminary injunction. The most important factor to a court is usually whether the plaintiff can avail himself of a traditional legal remedy if he wins on the merits of the case. If the plaintiff is unable to secure an adequate legal remedy, the court may be more willing to enter a preliminary injunction. The court is looking to see whether the plaintiff will suffer irreparable injury if the challenged action is allowed to go ahead, but the plaintiff ultimately wins. Courts are also concerned about the possible effects of granting a preliminary injunction upon the defendant and third parties.

**Security Requirement**

Rule 65(c) require plaintiffs who obtain preliminary injunctive relief to post some form of security in order to compensate the defendant for his losses if the court later determines that the preliminary injunction was

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81. See id. at 368-69.
86. See *Dobbs, supra* note 83, at 166.
wrongly issued.87

However, courts retain the authority to dispense with the security requirement. If the plaintiff is sympathetic and/or short of funds, a court is more likely to waive the requirement. This is particularly true in cases brought by plaintiffs seeking to vindicate the public interest.88

**Irreparable Harm**

The term "irreparable harm" is likely to be the most important factor to a court weighing the decision to issue a preliminary injunction or not. In *New York v. Nuclear Regulatory Commission*, the court stated that allegations of irreparable harm must be actual and eminent, "and not remote or speculative."89 Therefore, courts are likely to require evidence of clear risks or harms likely to result from the project. Mere speculation is not enough.90

Where the questions presented by an application for an interlocutory injunction are grave, and the injury to the moving party will be certain and irreparable, if the application be denied and the final decree be in his favor, while if the injunction be granted the injury to the opposing party, even if the final decree be in his favor, will be inconsiderable . . . the injunction usually will be granted.91

**Analytical Processes**

A decision to issue a preliminary injunction inevitably turns on the facts of individual cases. The judge has to make an objective and subjective evaluation of the harms at stake for both the plaintiff and defendant, and the plaintiff's chance of success on the merits.92 Courts have shown an amazing lack of consistency in applying analytical frameworks to preliminary injunction decisions.

This dizzying diversity of formulations, unaccompanied by any explanation for choosing one instead of another, strongly suggests that the phrases used by the courts have little impact on results in particular cases. [T]he various standards articulated by courts and treatises rest on no coherent theory about the purpose of preliminary relief.93

The lack of consistency between courts has led to forum shopping

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87. *Fed. R. Civ. P. 65(c).*
88. See *Doebb*, *supra* note 83, at 205.
90. See *Riesel*, *supra* note 82, at 910.
92. See *Doebb*, *supra* note 83, at 185.
and to a general level of confusion about what courts expect for preliminary injunction standards. The Ninth Circuit has announced two different standards in recent years. In *Alpine Lakes Protection Society v. Schlapfer*, the court set out three factors to evaluate whether a plaintiff’s motion for a preliminary injunction should be granted: 1) have the movants established a strong likelihood of success on the merits?; 2) does the balance of irreparable harm favor the movants?; and 3) does the public interest favor granting the injunction? The last category is particularly relevant to the use of injunctions in environmental cases. Certain plaintiffs in environmental litigation may represent public interest organizations, and thus may speak on behalf of a community or the public in general.

More recently, the Ninth Circuit has announced another set of standards for granting preliminary injunctive relief: the movant must show: 1) a likelihood of success on the merits and the possibility of irreparable injury or 2) serious questions are raised and the balance of hardships is weighted towards the movant’s side.

If the court discerns that a lawsuit involves public interest factors, rather than purely private interests, it may be more likely to grant a preliminary injunction. This is in part due to the difficulty of calculating intangible damages after a project has been completed and has affected the surrounding communities in numerous ways.

*The Evolution Towards Balancing The Equities*

Courts deliberating preliminary injunction requests often balance the equities to decide whether to issue an injunction. In the context of nuisance suits, a plaintiff is normally able to show that a legal remedy would be inadequate. However, a court may still not issue a preliminary injunction if it determines that the relative hardship placed upon the defendant could outweigh the hardship placed on the plaintiff. This balancing approach was first developed by courts evaluating permanent injunctions.

Until the late 1960s, American courts usually took a fairly strict approach towards protecting property interests in a nuisance context. If a plaintiff was able to establish a nuisance, a court would generally issue a permanent injunction, no matter how small the harm to the plaintiff or how big the harm to the defendant. This “all-or-nothing” approach sometimes led to extreme results. This approach came under increasing

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95. 518 F.2d 1089, 1090 (9th Cir. 1975).
96. See *id*.
97. See *Fund for Animals, Inc. v. Lujan*, 962 F.2d 1391, 1400 (9th Cir. 1992).
98. *Van De Kamp v. Tahoe Reg’l Planning Assoc.*, 766 F.2d 1319, 1324 (9th Cir. 1985).
99. See *Downs, supra* note 83, at 51.
criticism, especially in the context of a good faith encroacher. A good faith encroacher was someone who may have encroached on his neighbor's property, purely by accident. Extreme approaches by courts mandated removal of the encroachment, no matter how slightly it affected the plaintiff's property or how much it cost the defendant to remove the encroachment.\textsuperscript{100}

This strict approach valued property rights above all else. An example of this approach outside the encroachment context was the New York case of \textit{Rick v. West}.\textsuperscript{101} The plaintiffs in \textit{Rick} were seeking to sell 15 acres of a 62-acre subdivision to a hospital, so that the hospital could build upon the 15 acres. However, the subdivision had a restrictive covenant restricting land uses to residential uses only. Everyone in the subdivision, except the defendant, consented to the sale of the land. The defendant owned a ½ acre property and refused to consent to the sale. The court approached the case by noting,

\begin{quote}
[j]t is not a question of balancing equities, or equating the advantages of a hospital on this site with the effect it would have on the defendant's property... The fact that the owner of a ½ acre parcel was the only owner in the tract who refused to release the restrictive covenant did not make his right to enforcement of the covenant less deserving of protection.\textsuperscript{102}
\end{quote}

Thus, the court would not allow the plaintiffs to sell the land.

Courts are now more likely to consider balancing the relative hardships between the plaintiff and defendant when considering a preliminary injunction. This is true even if the plaintiff has established a likelihood of success on the merits and irreparable harm.\textsuperscript{103}

Approaches towards balancing the equities are exemplified in two cases, \textit{Boomer v. Atlantic Cement Co. Inc.},\textsuperscript{104} and \textit{Spur Industries v. Del Webb Development Co.}\textsuperscript{105} In \textit{Boomer}, the court refused to enjoin the operation of a large, polluting cement plant. The court found that the harm (mainly economic harm to the surrounding communities from loss of jobs) that would result from closing the plant exceeded the benefits to the plaintiffs. The court balanced the equities to determine whether the benefits of a permanent injunction would outweigh the costs.\textsuperscript{106}

\begin{thebibliography}{99}
\item \textsuperscript{101} Rick v. West, 228 N.Y.S.2d 195 (N.Y. 1962).
\item \textsuperscript{102} \textit{Id.} at 200.
\item \textsuperscript{104} Boomer v. Atlantic Cement Co. Inc., 26 N.Y.2d 219 (N.Y. 1970).
\item \textsuperscript{106} 26 N.Y.2d 219 (N.Y. 1970)
\end{thebibliography}
In *Spur Industries*, a development was gradually growing closer to a previously existing large feed-lot for livestock. The feed-lot produced significant odors, and the development sought to enjoin the operations of the feed lot. The Arizona court did enjoin the operation, but only on the condition that the developers pay the costs of moving the feed-lot to a more suitable location.  

Courts are also less likely to require that the plaintiff prove that he is likely to succeed on the merits. If the irreparable harm is sufficiently serious, courts are willing to be more lenient when requiring the plaintiff to prove his likelihood of success. The Second Circuit has required 1) irreparable harm and 2) either (a) probable success on the merits or (b) a balance of hardships tipping decidedly in the plaintiff's favor. Preliminary injunctions are likely to be denied if the total benefits from a preliminary injunction are outweighed by the costs or disadvantages of the injunction.  

An unusual mathematical application of this balancing approach was done by the 7th Circuit in *American Hospital Supply Corp. v. Hospital Products Ltd.* In this decision, Judge Posner stated that the court would grant a preliminary injunction if:  

\[ P \times H_p > (1-P) \times H_d, \]

where \( P \) is a probability, \( H \) is irreparable harm for the plaintiff and for the defendant, and the subscripts denote the plaintiff and defendant, respectively. Under this formula, a plaintiff with a less than 50% chance of succeeding on the merits still might be able to get a preliminary injunction if the irreparable harm is sufficiently large, and the defendant's irreparable harm is relatively minor. For example, if the plaintiff's irreparable loss is $300,000, and he has a 40% chance of winning, then under this equation, his claim is worth $120,000. The defendant's irreparable loss is $100,000, and he has a 60% chance of winning. His claim is worth $60,000. Therefore, under this formula, even though the defendant will more likely than not win at trial, the plaintiff still gets an injunction. 

**The Breadth of the Injunction**

A preliminary injunction may be broad or narrow in terms of what activities it prohibits. In the case of freeway construction, a preliminary

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110. 780 F.2d 589 (7th Cir. 1985).
111. *See id.* at 593.
injunction can merely stop construction of the freeway itself, or the preliminary injunction can be broader to include prohibiting the defendant agencies from conducting preparatory activities prior to the actual resolution of the litigation. These preparatory actions can include property condemnation and acquisition, design work, and purchasing of construction supplies. If only the actual construction of the freeway is blocked, the defendant highway agencies can still spend enormous amounts of money and time on design work, property acquisition, entering contracts, and purchasing supplies and equipment to construct the freeway. This allows the agency to build up a momentum towards building the freeway that a court might take into consideration when determining whether the project should eventually be approved or not. If a project already has enough momentum (the "steamroller" concept), a court may find that a lawsuit is moot because so much of freeway work has already been completed. Additionally, preparatory actions by an agency may lead to undesirable results such as vacant land, condemned homes and blight. During the pendency of the Century Freeway and the 710 Freeway injunctions, homes and land owned by CalTrans were often poorly maintained. This led to blight and crime in areas near the proposed path of the freeway.

An example of a broad injunction is the injunction entered in Stop H-3 Ass'n v. Volpe. In Stop H-3, the court enjoined the defendant government from pursuing any design work contracts while the injunction was still pending. The court stated:

"[t]he only purpose for the design work is to advance the highway project itself. Because the contracts would involve the further expenditure of more than two million dollars, completion of these contracts would increase the stake which the federal and state agencies already have in the [highway] segment, as is."

The Use of Environmental Injunctions

Environmental statutes, such as the National Environmental Protection Act (NEPA), often specify that courts have the discretion to enjoin violators of the statute. Environmental preliminary injunctions may be used more frequently because an environmental injury is often irreparable. "Environmental injury, by its nature, can seldom be adequately remedied by money damages and is often of permanent or at least of long duration, i.e., irreparable." Therefore, if a movant is able to show that an environmental harm is "sufficiently likely, the balance of harm will usually favor the issuance of a preliminary injunction to protect the envi-

114. Id. at 1048-49.
Factual Background on the Case Studies

The Century Freeway

The Century Freeway in Los Angeles County is one of the most expensive freeways ever built in the United States. The project was commenced during a time of burgeoning interest in the environmental movement and in the rights of lower-income communities. Additionally, Congress and the state of California had passed rigorous environmental review statutes. After nine years of litigation, the Century Freeway was eventually built under the terms of a consent decree, entered into by the CalTrans and the Center for Law in the Public Interest (CLPI).

The Century Freeway runs 17.3 miles from the city of Norwalk to the city of El Segundo, near Los Angeles International Airport, in southern Los Angeles County. In addition to six lanes for single-occupancy vehicles, it has two high occupancy vehicle (HOV) lanes, and the Green Line subway system runs down the middle of the lanes. "It was far more than a mere road. It also became a community development enterprise, an environmental improvement program, a housing project, and a legal prece-

116. Id.
117. See Riesel, supra note 82, at 928.
118. 998 F.2d 699 (9th Cir. 1993).
119. 998 F.2d 705 (9th Cir. 1993).
121. See Hungerford, supra note 120, at 1396.
The legal history surrounding the freeway project began in 1972, when residents in the construction zone, represented by the CLPI, sued in federal district court to block construction of the freeway. The suit alleged that CalTrans and the Federal Highway Administration (FHWA) had not complied with federal and state environmental policies. The plaintiffs obtained an injunction halting the project pending resolution of the dispute. After nine years of negotiations, the parties entered into a final consent decree. Federal District Court (and later 9th Circuit Judge) Harry Pregerson approved and monitored the consent decree.123

The Century Freeway was unique because it was the first freeway built according to the terms of a consent decree. Judge Pregerson called it "the freeway that has a heart."124

**Century Freeway Consent Decree Specifics**

The actual implementation of the Century Freeway consent decree was a long, expensive and complicated undertaking. Some basis facts and figures are below:

- Century Freeway Project Planning begins - mid 1950s
- Litigation begins - 1972
- Final court settlement - 1981
- Construction begins - 1982
- Housing construction begins - 1983
- Freeway construction ends - 1993
- Housing construction - ongoing
- $2.2 billion for the freeway overall125
- $500 million for right-of-way acquisition126
- $553 million or more for housing units127
- $400 - $450 million for the light-rail line128

The consent decree provided for a replacement housing program, an affirmative action employment and training plan and environmental mitigations. While the court believed that it was "a complex, but innovative settlement that promises to benefit the entire Southern California com-

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123. See Zamora, supra note 2, at 1805-6.
125. See Reinhold, supra note 13.
126. See Trombley, supra note 124, at 1.
128. See Trombley, supra note 124, at 1.
munity for years to come"., others believed that it was a feeble attempt to create a panacea for societies' ills. Each major component of the decree and its implementation is discussed below.

Housing

The consent decree mandated the construction of replacement housing for area residents displaced by the project. This program came about due to the plaintiffs' original complaint in the Century Freeway lawsuit. The lawsuit alleged that the defendant agencies failed to: "provide adequate relocation payments and assistance programs; submit specific relocation assurances to the Federal Highway Administration; and insure the sufficiency of suitable replacement housing prior to acquiring the right-of-way." The terms of the consent decree gave the state Housing and Community Development Department (HCD) the responsibility for the construction of 4,200 housing units. The decree also dictated the eligibility requirements and affordability guidelines for the displaced homeowners seeking replacement housing. In 1981, due to budget restrictions initiated by the U.S. Department of Transportation, the decree was amended and only 3,700 units were required.

Housing Policy

Many CalTrans and FHWA workers believed that the displacees' needs would have been met by the pre-existing state statutes. "The generation of the 4200 unit figure in the decree was generally perceived as an arbitrary goal. . .the purpose of agreeing on this goal was to allow the freeway to proceed." Thus, many of the parties in charge of construction saw the housing program as a low priority. One interviewee from HCD posed an interesting point about the decree: "[The Housing Plan] only has a useful life of about two years. . .because after it was finalized. . .market conditions, environmental conditions, political conditions, changed to a point where you almost need another one [consent decree]." The decree was worded so as to give its implementation flexibility, yet the most complained about aspect of the decree by all the

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129. See Zamora, supra note 2, at 1824.
130. Interview with Joseph Montoya, Former Chief Legal Counsel of CalTrans, in Sacramento, Cal. (Feb. 25, 1999).
131. Interview with Jerry Baxter, Former Head of District Seven, CalTrans, in La Canada, Cal. (Mar. 3, 1999).
132. See Diment and Hestermann, supra note 9, at 313.
134. DiMento, supra note 133, at V-6.
135. Id. at V-13.
Another aspect of the decree created phasing provisions. Due to the plaintiffs' mistrust of CalTrans, the decree provided that the housing would be constructed in phases. CalTrans could not build the freeway, unless housing was also built. As CalTrans built portions of the freeway, set numbers of housing units also had to be built.137

Underestimated Costs & Performance

High costs, shoddy construction, high vacancy rates and fierce community opposition were some of the other problems encountered during the initial implementation of the consent decree. The cost to build the replacement housing was originally estimated at $50,000 - $70,000 per unit,138 but had by 1993 ended up costing roughly $113,000 per unit.139

Some sources stated that HCD's inexperience, bureaucratic bungling, and top-heavy management were the main contributions to the high costs. The problems of the lead housing agency led to vague project specifications, inconsistent inspections and slow payments. The delayed payment schedule reportedly led to several sub-contractor failures.140

Another problem that the decree did not foresee was the strong community opposition to the low and moderate income housing along the southern tier of the city and county of Los Angeles. Most of the area residents saw the housing as "low-income housing" and wanted to protect their own interests. Ironically, some of the strongest advocates and champions of the housing clause in the decree were among the most vehement opponents of construction in their own communities.141 Contrary to the low-income housing belief, by 1993 40% of the units went to "moderate-income" families, 30% "low income" families, 20% to "very low income" families and 9% to "very, very low income" families.142 This decree failed to take into account NIMBYism and class prejudices in communities where the housing was built.


In an effort to revitalize and to provide for the well-being of the area residents, the court included an affirmative action program in the consent decree provisions. What made the Century Freeway decree unique in this

136. See id. at IV-21-25.
137. See DiMento and Hestermann, supra note 9, at 317.
138. See Trombley, supra note 124, at 1.
139. See CALIFORNIA DEPT. OF HOUSING AND CMTY. DEV., supra note 127, at 10.
141. Id.
142. See CALIFORNIA DEPT. OF HOUSING AND CMTY. DEV., supra note 127, at 4.
respect was that the affirmative action program was not a response to any claims against CalTrans for discriminatory employment practices or in awarding contracts.\textsuperscript{143} The CLPI pushed for the affirmative action provisions as part of the consent decree settlement, and CalTrans accepted it.

The decree had "employment and business plans of affirmative action for the benefit of the corridor communities, women and minority group members."\textsuperscript{144} The plan had three parts: 1) employment goals to be met by requiring contractors to hire female and minority employees; 2) a requirement that contractors utilize 'minority and women-owned business enterprises; and 3) the establishment of 'regional business preferences' by requiring that individuals engaged in business in the corridor area be employed.\textsuperscript{145}

Affirmative Action in contracting

The decree set goals in terms of using minority and women owned contracting businesses in the construction process. A Minority Business Enterprise (MBE) is a business that is owned and controlled by at least 51% ethnic and racial minorities. A Women's Business Enterprise (WBE) is a business that is owned and controlled (at least 51%) by women.\textsuperscript{146}

In 1996, CalTrans prepared a final summary report for Judge Pregerson about the consent decree's affirmative action achievements. As of August, 1995, CalTrans published the amount of total payments paid out to contractors, broken down by MBE and WBE categories. By 1995, CalTrans had paid

- 22% of total final contracting payments to MBEs.
- 4% of total final contracting payments to WBEs.
- 3% of total final contracting payments to either MBEs or WBEs (not identified)

This meant a total of 29% of final contracting payments went to either MBEs or WBEs.\textsuperscript{147} This compares favorably to other figures provided by CalTrans. In the period of 1984-1993, CalTrans in all of its projects (including the Century Freeway) paid out only 19% of its contract amounts to MBEs and WBEs.\textsuperscript{148}

Early in the construction process, many false-front arrangements de-

\textsuperscript{143} See DiMento and Hestermann, supra note 9, at 319.
\textsuperscript{144} See Zamora, supra note 2, at 1831.
\textsuperscript{145} See DiMento and Hestermann, supra note 9, at 319.
\textsuperscript{147} Id. at 6.
\textsuperscript{148} Id. at 7.
veloped as a kickback scheme to exploit loopholes in the decree. Some prime contractors hired minority or female subcontractors on the condition that the contractor would retain a substantial percentage of the work. Some of the minority and women firms were willing to make such deals because the guarantee of “60% of something is better than 100% of nothing.” The final CalTrans report did not mention this phenomenon.

Another problem for the affirmative action program was the complicated nature of the construction process. By the late 1980’s, many small MBEs and WBEs went out of business due to red tape, long payment delays, and other problems associated with large-scale federally-financed projects. Failure rates for minority- and woman-owned businesses trying to take advantage of the high affirmative-action goals during the early years of implementation were believed to be at least 80%-90%. Major contributing factors to the high rate of failure were: lack of sufficient capital, lack of coordination between CalTrans and the contractors, slow money disbursements, trying to grow too fast, lack of managerial skills, and lack of concern on the part of CalTrans and other state agencies. “Many small contractors who tried to cope with the bureaucratic demands of the Century Freeway project without accountants, bookkeepers, or lawyers have slipped beneath the waves.” Again, this issue was not mentioned in the final report, and there was no updated information available.

Affirmative Action Employment

By 1995 CalTrans reported that approximately 52.6% of all construction employees were ethnic/racial minorities, and 5.4% were women. This also compares favorably to figures CalTrans provided from 1988. In that year, the minority share of the total CalTrans construction workforce in the state was 38% ethnic racial minority and 3.6% female.

Thus, it appears that the decree did prod CalTrans into involving more minority women businesses and employees than CalTrans would have absent the decree. Given that the route of the freeway ran through many predominantly minority neighborhoods, this was an important goal of the decree.

Transportation Design Specifications

Due to the suit’s environmental claims, the consent decree detailed
design specifications for the freeway. "A significant but often overlooked feature of the consent decree is its emphasis on transportation." \(^{153}\) The decree influenced and changed

- the number of freeway lanes;
- (b) the establishment of Transit/HOV lanes located in the freeway's median and convertible to a full-blown light rail line;
- (c) the installment of ramp meters for the purpose of minimizing congestion;
- (d) the number of freeway interchanges, both local and freeway-to-freeway;
- (e) the implementation of noise attenuation measures described in the FEIS;
- (f) the allocation of local, state, and federal monies to support bus service for the HOV lanes;
- (g) the development of facilities to support bus service in the HOV lanes;
- (h) the participation of the Federal Highway Administration (FHWA) in funding the light rail and the commitment of Federal-Aid Interstate monies to fund transit/HOV support facilities;
- (i) the development of a transit-way, or highway, feeding into the Harbor Freeway interchange, a major freeway-to-freeway intersection;
- (j) the ability to challenge the flow of discretionary federal funds to local transit agencies failing to contribute to the additional costs associated with the construction of transit/HOV stations. \(^{154}\)

The consent decree encompassed a level of detail that covered most of the major design specifications.

**Physical Mitigation of the Century Freeway**

The design of the Century Freeway itself changed several times during the drafting of the EIS. "Early visions of the freeway included ten lanes dotted by over twenty interchanges." \(^{155}\) However, the final downscoped project incorporated in the amended consent decree included six lanes for traffic, two High Occupancy Vehicle lanes, ten interchanges (from the east to west ends of the project), ten transit stations, ramp metering/HOV bypass lanes and landscaping/noise attenuation. \(^{156}\)

One unique aspect of the Century Freeway was the light rail system. Some officials saw that inclusion of the light rail as "revolutionary" and "the most positive part of the project." \(^{157}\) However, the concurrent construction of the light rail system with the freeway was not emphasized or indicated under the terms of the consent decree. In 1977, the State considered the inclusion of rail to the project, and ultimately concluded in an EIS that the inclusion would be plausible if the voters decided to develop a region-wide fixed rail-system. In 1980, the Los Angeles voters approved of the rail system funded by a one-half cent sales tax under Proposition

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\(^{153}\) Zamora, *supra* note 2, at 1825.


\(^{155}\) DiMento, *supra* note 133, at X-12.

\(^{156}\) See *id.* at X-2.

\(^{157}\) Id. at X-13.
Surprisingly, in CalTrans' analysis of the I-105, they believed that the differences in construction and design mandated by the decree were not significantly different from what would have been done absent the decree. Therefore, the impacts on the actual freeway itself specifically attributed to the consent decree were minor.  

Office of the Advocate

The Century Freeway consent decree mandated the creation of six essential participants to work together in a “complex interorganizational network” in order to implement the various aspects of the decree. The entities were: CalTrans, Century Freeway Affirmative Action Committee (CFAAC), the Office of the Advocate, the CLPI, the Federal Highway Administration (FHWA), and HCD. Of these six organizations, only CalTrans and FHWA had worked together previously. Given the unfamiliarity between these groups, it became necessary to develop new procedures to handle coordination, oversight and reporting.

The decree created the Office of the Advocate to assist the residents in the construction process and to defend and advocate for them by monitoring the various agencies. The Advocate’s Office was to:

1. operate a local office;
2. monitor compliance with all applicable state and federal regulations pertaining to the relocation rights of those displaced;
3. collect complaints from displaced homeowners;
4. provide relocation benefit information;
5. assist displaced homeowners with complaints regarding eligibility for benefits, amount of payment, or provision of adequate replacement housing;
6. assist displaced homeowners in resolving disputes with CalTrans; and
7. request CalTrans to correct significant, widespread noncompliance.

The decree allowed the court to specify the amount needed to fund this office. It also provided that the court could remove the Advocate.

*Sierra Club v. MTC*

The *Sierra Club v. MTC* litigation involved the highly technical issues of State Implementation Plans (SIP) and conformity with the Clean Air Act. The plaintiffs, a variety of environmental and public interest organizations, brought suit against the MTC, the California Air Resources Board, the Association of Bay Area Governments, the governor, and the other.
Environmental Protection Agency. For reasons of simplicity, this case study only considers that part of the lawsuit filed against the MTC.

SIPs are documents prepared by the states for the Environmental Protection Agency to demonstrate how the states propose to improve air quality in order to be in conformity with the Clean Air Act. The SIP's purpose was as a plan of action for the states and metropolitan transportation planning agencies. The part of the SIP that applied to the Bay Area was not fully implemented, and the Bay Area had failed to achieve air pollution reductions mandated by the Clean Air Act. The MTC as a regional planning organization had helped develop the part of the SIP that applied to the Bay Area. The lawsuit alleged that in the Bay Area section of the SIP the MTC had committed to carry out a variety of air improvement steps and had failed to do so. The lawsuit sought to force the MTC to carry out the steps outlined in the SIP and to reform some of the agency's forecast modeling practices. 163

The plaintiffs argued that the MTC should be required to implement all of the components in the regional air quality plan. The MTC argued that implementation plans serve as guidelines, not strict commitments, and therefore should be interpreted broadly and flexibly. The federal District Court ultimately held that the plan constituted a set of commitments that the MTC would have to implement. The paper will not review this part of the court's decision. 164

The other portion of this case, which concerns the research in this paper, involved the court's evaluation of the MTC's modeling methods to determine whether highway projects in the MTC's regional transportation plans and programs conformed to the SIP. On this matter, the court again ruled against the MTC and held that its modeling methods were inadequate and outdated. Because of these flaws, the court issued an injunction against the MTC. The injunction prevented the MTC from approving any new highway projects until adequate modeling procedures were developed. Once the MTC submitted new modeling procedures, the court employed a special master to help evaluate the highly technical nature of the modeling projections. 165

710 Freeway

The 710 Freeway controversy is an on-going matter that involves the proposed construction of a freeway segment in Los Angeles County. The proposed segment would connect the 210 Freeway to the ending point of

164. See id. at 54-56.
165. See id. at 70-71.
the existing 710 Freeway, which ends in the city of Alhambra. The route of the segment (which has varied, but not substantially, over the years) is proposed to go through portions of Los Angeles, South Pasadena and Pasadena. CalTrans approved the plans to construct this connector in 1964. During the 1960s, CalTrans acquired many properties (fee simple absolute interests) in the cities of Los Angeles, South Pasadena and Pasadena for the purposes of creating a right-of-way for the freeway.

In 1973, the City of South Pasadena filed a suit seeking to enjoin the construction of the freeway on the basis that CalTrans and federal government had approved the freeway without the preparation of an EIS or an EIR.166 The court issued an injunction under a stipulated judgment, whereby CalTrans acknowledged that no EIS had been prepared, and agreed to create one.167

After the court entered the injunction, CalTrans began to prepare an EIS. During the 1970s and early 1980s, CalTrans proposed two different routings that the Federal Highway Administration (FHWA) ultimately rejected.168 In 1986, CalTrans produced a draft EIS that proposed a modified route. However, the EIS did not include non-freeway alternatives. Thus, in 1990 Pasadena developed its own “low build” alternative and requested that CalTrans evaluate the proposal in a revised or amended draft EIS. CalTrans refused to include this plan in its final EIS, and issued the final EIS in 1992.

In 1998, six years after CalTrans had produced its final EIS, the District Court lifted the injunction on the basis that CalTrans had completed the EIS. The court also held that the plaintiffs would have to file any challenges to the adequacy of the final EIS (among other things) in a new complaint rather than a supplemental complaint to the original 1973 action.169 The city’s current suit challenges the adequacy of the final EIS and requests an injunction.

In 1999, Federal District Court Judge Dean Pregerson, the son of Harry Pregerson, who supervised the Century Freeway litigation, enjoined the project again, based upon various claims of the plaintiffs.170

Side Effects of the Injunction

As part of the original 1973 injunction, the District Court issued a injunction decree prohibiting CalTrans from acquiring any properties in

167. Interview with Benjamin Salvaty, Former CalTrans Counsel, District Seven, in Los Angeles, Cal. (Mar. 4, 1999).
169. See id. at 4.
the right-of-way unless the acquisition was based on a hardship to the property owner from the project or voluntary acquisition. The injunction included a provision prohibiting CalTrans from removing or demolishing any structure previously acquired for the project, with exceptions for public health and safety. Additionally, the consent decree provided that the state should try to maintain all the structures that it already owned and prevent them from becoming nuisances.

However, as documented in a series of Los Angeles Times articles in 1995, CalTrans has not used its best efforts to maintain the structures within the right-of-way. This negligence has been particularly troublesome because of the historical nature of many of the properties in South Pasadena.

According to the Los Angeles Times, CalTrans owns 610 homes in the path of the freeway. Nearly 1/4 of these properties are vacant or uninhabitable, and many of the 69 homes that are listed as historic landmarks are in a serious state of disrepair. Additionally, CalTrans now claims that some of the properties are beyond cost-effective repair and thus should be demolished.

THE CYPRUS FREEWAY

In October of 1989, the Loma Prieta earthquake heavily damaged the Cypress Freeway that ran through Oakland. The most heavily damaged section of the freeway was a double-decker segment that went through the middle of a West Oakland community. After the rubble had been cleared and life began to get back to normal, CalTrans and the West Oakland community began to consider rebuilding the freeway. Initially, CalTrans had planned to rebuild the freeway exactly where it had been before. However, the West Oakland community, politicians and planning professionals all argued that the freeway should be rebuilt so as not to divide West Oakland again.

The destroyed segment of the Cypress Freeway had been constructed in 1957. At that time, the state built the freeway through a

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171. See Brief for Pls., supra note 168, at Ex. 5, 91.
172. Id.
175. Interview with Warren Widener, Former Alameda County Supervisor, in Piedmont, Cal. (Feb. 19, 1999).
176. Interview with Edward Blakeley, Former Professor of City and Regional Planning, UC Berkeley, in Los Angeles, Cal. (Mar. 3, 1999).
predominantly African-American neighborhood that had a vibrant commercial and community life. The freeway physically divided the West Oakland neighborhood, which helped cause the gradual decline of the area. The construction of the Cypress was similar to other CalTrans freeway projects, which negatively affected other low-income, predominantly minority communities. Examples include the Santa Monica and the Sarita Ana freeways in Los Angeles. When the freeway had to be rebuilt, the West Oakland community saw an opportunity to unify the community and vigorously argued against rebuilding in the same location. 177

Local politicians and a local grass-roots organization began to suggest other alternatives. A relatively short process of negotiations between CalTrans, the community and local leaders resulted in a new alignment for the freeway. This new alignment re-routed the freeway segment away from the heart of the West Oakland community towards existing railway lines that skirted the residential sections of West Oakland.

For the West Oakland community, CalTrans' decision to rebuild the Cypress in the alternative location was a major victory. The construction of the freeway itself proved much less controversial than the choice of where to build a freeway. CalTrans took a more active role in working with the surrounding community, including setting up an office to provide information about the freeway. CalTrans also established programs to help local businesses impacted by the reconstruction and to achieve affirmative action goals in hiring for construction workers. 178

EQUITABLE TOOLS AS APPLIED IN THE CASE STUDIES

CONSENT DECREES

The Century Freeway

Background to the creation of the consent decree

Of the four selected case studies, a consent decree was used only in the Century Freeway case. The use of this equitable tool lasted for over ten years. It was the most complicated and involved use of an equitable tool in any of the case studies.

Carlyle Hall, one of the plaintiffs' counsel that filed the original suit in the Century Freeway consent decree case, conceptualized a consent decree as follows:

A consent decree is sort of a constitution for how you are going to deal with this major problem, setting up allocations of responsibility, setting up monitoring mechanisms, setting up accountability mechanisms, setting up mis-

177. See Widener, supra note 175.
178. See id.
The CLPI lawsuit against CalTrans challenged the adequacy of the environmental impact statements for the freeway, and whether or not the newly enacted NEPA applied to projects already partially approved before NEPA’s passage. The ultimate resolution of the lawsuit was an injunction that prevented the construction of the freeway for approximately seven years until the parties drafted a consent decree. During those seven years, CalTrans prepared an EIS. However, even though CalTrans was preparing an EIS, the head of CalTrans at the time, Adriana Gianturco, had wanted to stop the freeway project altogether. She instead wanted to use federal funding for creating carpool lanes and light rail along other existing freeways in the Southern California basin. According to Gianturco, the consent decree was developed by the plaintiffs, the CLPI and CalTrans because the plaintiffs capitulated under the pressures of the long-standing injunction. From the point of view of the head of CalTrans at the time, the consent decree was entirely a proposal from the plaintiffs’ side and not the result of negotiations. Gianturco believed that ultimately CalTrans was the real winner because the freeway was constructed. Gianturco did not view the substantive provisions of the consent decree as really providing anything more than they could have gotten without the lawsuit. She pointed out that CalTrans already built replacement housing and had established some affirmative action hiring programs before the consent decree was written.

John Phillips, who was the lead plaintiffs’ counsel during the consent decree negotiations, defended the decision to create a consent decree. He pointed out in contrast to Gianturco’s desire to stop the freeway, “our lawsuit was not to kill the freeway, to build a lawful freeway.” He noted that there were numerous problems affecting the freeway path, and that the uncertainty over the project was doing no one any good. “I saw no end in sight. We had to have some resolution. If the injunction were ultimately lifted, then CalTrans would go back to its old ways. We wanted a resolution that would be constructive for the community.” Phillips felt that providing some certainty, along with a construction project that provided many side benefits, was the best resolution of the case for the plaintiffs and communities involved.

Gianturco’s view was a unique viewpoint. Joseph Montoya was the
former head of the legal division of Cal'Trans. At the time the parties were developing the consent decree, Montoya was the head of the legal division of CalTrans, District Seven, which encompasses the Los Angeles area. According to Montoya, the impetus for CalTrans to enter the consent decree was "politics." Montoya argued that while Gianturco and the administration of Governor Jerry Brown were opposed to this freeway, the local communities in the right of way of the freeway pressured the state to build the freeway. There was also the impetus of large amounts of federal money already approved for the project. These factors prevented the freeway from actually being cancelled. Montoya stated once the administration realized that the project could not be stopped easily, politics dictated that the administration enter what Montoya viewed as a very favorable consent decree for the plaintiffs.¹⁸⁴

Drafting of the Decree

Once CalTrans and the plaintiffs made the decision to agree to a consent decree, the actual drafting of the consent decree did not take long. Judge Pregerson did not participate in the drafting of the document, but Pregerson did say that "CalTrans and the Center for Law in the Public Interest knew what I wanted."¹⁸⁵ Whether the consent decree was a victory for either CalTrans or the plaintiffs, once the consent decree implementation had begun, many in CalTrans saw it as a loss.¹⁸⁶ Those who saw the decree as a loss thought that the specifics of the consent decree were influenced by the Brown administration and the politics of the environmental movement, which originally prompted the lawsuit. Robert Best was the Deputy Director of CalTrans until 1976 and the Director of CalTrans from 1988 to 1991. He stated, "the litigation no longer was about a transportation facility, but became an issue of what could be loaded on the project by way of community benefits and so forth." The cynical view was that the consent decree became a major source of income for the CLPI. According to Best, the CalTrans staff viewed the consent decree as an insult.¹⁸⁷

The actual specifics of the consent decree transferred most of the responsibility, particularly for building affordable housing, to HCD. Best and Gianturco both thought that giving HCD primary authority was a severe flaw in the design of the consent decree. Helene Smookler, another member of the plaintiffs' counsel, noted that HCD's handling of the

¹⁸⁴. See Montoya, supra note 130.
¹⁸⁵. Telephone Interview with Judge Harry Pregerson, 9th Circuit Court of Appeals (Apr. 11, 1999).
¹⁸⁶. See Best, supra note 120; Baxter, supra note 131, Montoya, supra note 130.
¹⁸⁷. See Best, supra note 120.
program “was a disaster, with a capital ‘D’.” John Phillips admitted that in hindsight, it was a mistake to give housing responsibility to HCD. He claimed that most of the problems were due to political changes, specifically the shift from the Brown to Deukmejian administrations. “If I had known who would be in charge I would have never agreed to it.”

Best and Gianturco both argued that CalTrans could have done many of the consent decree’s provisions itself instead of involving a new layer of bureaucracy.

The structure of the consent decree essentially said to CalTrans, ‘You people can’t do this. We won’t have you people do this.’ So CalTrans had no interest now. Was it in CalTrans interest to reach out and show that the consent decree works by having it being done by somebody else? Give me a break.

Best claimed that if it had been left solely to the decision makers at CalTrans, CalTrans would have never entered the specific decree that eventually resulted. “The consent decree was a political statement in regards to the negative consequences of a major public works project like this in an urban area.” Best claimed that the consent decree would have never been signed by an administration other than the Jerry Brown administration, and that many of the attorneys at the CLPI had strong connections to high levels of the Brown administration.

Because CalTrans staff saw the decree as a political development, an attitude developed within CalTrans that if they could not be trusted to implement such provisions of the consent decree, “we will go back to drawing straight lines between two dots.”

Gianturco argued that CalTrans should have implemented most of the decree because CalTrans had prior experience, especially in building housing. Gianturco pointed out that HCD had never built a unit of housing before the decree. She argued that developing housing programs were “not something you developed over night.” Phillips countered this by arguing that given CalTrans’ record at the time the decree was being drafted, “the last thing we wanted was to have CalTrans do the housing.”

Other parties mentioned that so much of the implementation program was dependent upon an organization [HCD] that had very little ex-

188. Interview with Helene Smookler, General Counsel, Southern California Association of Governments, in Los Angeles, Cal. (Mar. 4, 1999).
189. See Phillips, supra note 182.
190. See Best, supra note 120.
191. Id.
192. Id.
193. See Gianturco, supra note 180.
194. See Phillips, supra note 182.
Advantages and Disadvantages of the Consent Decree

The opinions of my interview subjects on the advantages and disadvantages of the consent decree were highly dependent on whether they were associated with plaintiffs' counsel or with the defendant, CalTrans. All sides acknowledged major implementation problems.

From the point of view of CalTrans, some of the advantages of the consent decree included the fact that it converted a single purpose project into a project with multiple purposes, the jobs training program helped employ and train a large number of disadvantaged people, and although its implementation was a major problem, some of the housing provisions were viewed as positive.

Although they acknowledged some positive effects, the CalTrans officials had a very negative view of the specifics of the consent decree. When Montoya was asked about the disadvantages he stated, "there were a myriad." The main complaint of CalTrans officials included the housing program, the Office of the Advocate, the enormous cost increases produced by the consent decree, the inability of institutions to effectively implement the decree, the open-ended nature of the decree and the personalities involved.

As might be expected, representatives of the CLPI had a very different view of the consent decree. Carlyle Hall and Helene Smookler were primary plaintiffs' counsel at different periods of the decree’s implementation. They both acknowledged that there were serious implementation

195. See Best, supra note 120.
196. See Smookler, supra note 188.
197. Telephone interview with Alan Kingston, Chief Executive Officer, Century Housing Corp. (April 9, 1999).
198. See Montoya, supra note 130.
199. See Baxter, supra note 131.
200. See Montoya, supra note 130.
problems, particularly involving HCD. However, overall they viewed the consent decree as having provided a powerful lesson to both CalTrans and other communities affected by large public works projects. In addition, they were very proud of the large number of housing units constructed and they viewed the hiring program as having provided employment training and opportunities to many inner-city residents.201

Relations Amongst the Parties in the Consent Decree

The consent decree established new layers of bureaucracy and involved additional existing state bureaucracies. Murray Brown, a monitor during part of the implementation period, observed that there were so many parties involved and so many functions were spread out among the various parties that it led to an over-decentralization that made implementation difficult. Brown also sensed resentment on the part of CalTrans because many outside parties were involved in the construction of a freeway.202 George Crawford, another monitor employed by the court in the last years of the implementation of the decree, believed that a central problem was that “you had a variety of competing agencies and institutions competing to gain control in the context of an adversarial process.” According to Crawford, it is imperative when trying to understand the consent decree to understand that “the terms of the decree were much less important than the process.”203

Judge Pregerson observed that it is not easy to work with a large bureaucracy such as CalTrans. According to him, it is difficult to get a variety of different parties from different perspectives, experiences and backgrounds to work together.204 All the parties agreed that it was difficult to ask a large institution, primarily concerned with highway building, to become involved in a large array of social programs and to cooperate with a large group of outside parties. The people inside government are not used to working with outside people and organizations. According to Best, asking an institution such as CalTrans to become involved with outside parties is “generally a prescription for disaster.” Best thought it would have been better to use established institutions to implement the decree instead of creating new ones.205

Plaintiffs’ counsel also recognized the institutional limitations of the consent decree. In terms of the involvement of CalTrans, Smookler
noted, "you are asking a construction company to implement social goals." This led to implementation difficulties, Smookler argued, because CalTrans viewed its role primarily in terms of civil engineering and not in terms of working with communities, developing affirmative action programs, or becoming involved in community development. "Civil engineers and planners don't want to get involved in affirmative action or mediation efforts." Without more training, it is difficult to have civil engineers implement a variety of social goals.206

Some of the participants argued that the decree set up antagonistic relationships between the parties. Jerry Baxter thought that it was particularly difficult to work with the Office of the Advocate. He believed that the Office had to find fault with CalTrans or else they would not receive funding. "The whole problem with the consent decree was that you were paying people to be antagonistic."207 According to Baxter, this was not the way to structure a working relationship.

There were also difficulties due to the interactions of the personalities involved. Judge Pregerson himself noted that personalities were "the nature of the beast." He believed that his biggest responsibility was to get the various parties to realize their common goals. He regarded himself as "the benign head of a family trying to get all the sides to work together." He compared working with all the parties to "herding cats." Pregerson stated that he had to use skills and methods that went beyond the normal duties of a judge, beyond simply sitting at his bench and "calling balls and strikes." According to Pregerson, the hardest part of the consent decree was not building the freeway but trying to get people to cooperate. "I really had a rowdy bunch."208

Flexibility Versus Specificity

The design of the consent decree was open-ended and flexible. While flexibility was needed to respond to different goals and situations, this very flexibility may have allowed CalTrans to become intransigent.

Because the consent decree was so open-ended, it fell upon the judge to encourage the parties to cooperate and negotiate. However, for a variety of reasons, negotiation and cooperation between the plaintiffs and defendants did not proceed smoothly. The looseness of the process allowed the parties to stall and to try to make their own arrangements without a common procedure followed by everyone and approved by the judge.209 The effect of this flexibility "was to slow things down. When-

206. See Smookler, supra note 188.
207. See Baxter, supra note 131.
208. See Pregerson, supra note 184.
209. Id.
ever someone wanted something, they would have to go back to the court, and the court would throw them into a negotiating session.” 210

These negotiating sessions were creations of Judge Pregerson, who preferred to have the parties work out the problems themselves rather than ruling on them. However, most of the parties said that these sessions were unproductive and reflected Pregerson’s idealism rather than an understanding of the antagonistic relationship between CalTrans and the plaintiffs. Montoya mentioned that some of the CalTrans attorneys who participated in these sessions called Pregerson’s approach the “hot tub approach.” It was a process by which everyone was to sit together in a room and try to negotiate a peaceful settlement of the dispute. 211

However, the flexibility of the decree did have its advantages. Murray Brown believed that if the consent decree had been more tightly constructed and specific, the parties might not have agreed to it at all. Leaving the details of the decree to future negotiations and implementations may have led to a variety of difficulties, but it also may have been the only way to get everyone to agree to a form of settlement. 212

Baxter also believed that the CLPI had too much flexibility, and the Office of the Advocate had too much support from the judge and the terms of the decree. According to Baxter, because of the antagonistic relationships and the fact that there was no strong enforcement mechanism, CalTrans and the plaintiffs were frequently in court with Pregerson, and “it was just a zoo.” Baxter also noted that the court gave oversight responsibilities to Helene Smookler, an attorney from the CLPI. “The way it was set up it automatically pitted those people against CalTrans. Those people were there by design, fighting with each other, all of this called for by the structure of the consent decree.” 213

Political Administration Changes

The Century Freeway consent decree was primarily developed during the Jerry Brown administration and the Jimmy Carter presidency. It was mainly implemented during the Deukmejian administration and the Reagan presidency. Everyone interviewed agreed that Republican administrations had a very different perspective on the consent decree than did their predecessor Democratic administrations. As John Phillips put it, “when the administrations changed, that completely changed the landscape.” 214

Carlyle Hall pointed out that the consent decree was developed in a

210. See Montoya, supra note 130.
211. Id.
212. See Brown, supra note 202.
213. Id.
214. See Phillips, supra note 182.
context of administrations that regarded social goals as positive. However, the consent decree was not finalized until the Republican administrations were firmly entrenched.

Joseph Montoya said that these political changes affected the process "tremendously. That's when you really started getting into personality problems." Montoya pointed out that when the Brown administration was in office, the process went fairly smoothly, and the plaintiffs were getting almost anything they wanted. This was because there was a strong working relationship between the plaintiffs, the Brown administration and high levels of the CalTrans administration. When the administrations changed, "it was night and day between the two administrations." Montoya stated that both the Deukmeijian and Reagan administrations recognized that they were obligated to implement the decree, but they really did not want to. Therefore, practical resistance from the administrations began to filter down through CalTrans and affected the implementation of the decree.215 Judge Pregerson stated, "I could have run a smooth operation if I had had the power to decide who was going to run CalTrans."216

When Reagan was elected, the Federal Highway Administration tried to renegotiate the decree. This delayed the eventual implementation of the program. Carlyle Hall said, "the Republicans saw this as a Democratic deal" and thus wanted to reform and revamp the affected provisions.217 However, Montoya noted that there was considerable pressure from local politicians to accept the freeway project and move forward with it. Because the Reagan administration was so reluctant to pay for the freeway, this actually led to a downscaling of the size of the freeway.218

The administrations could not stop the project, "but they certainly didn't lift a finger to help."219 All these changes led Smookler to observe that one of the biggest problems with using a consent decree is that political administrations can change, especially when a consent decree takes a number of years to implement. Smookler was not sure, however, how the political changes of the administration could have been anticipated in the structure of the consent decree.220 Carlyle Hall could also not think of specific ways in which the consent decree could have been changed to account for political changes. They both thought that the real problems

215. See Montoya, supra note 130.
216. See Pregerson, supra note 185.
217. See Hall, supra note 179.
218. See Montoya, supra note 130.
219. See Smookler, supra note 188.
220. Id.
were problems of implementation, not the design of the decree itself.221

CalTrans officials involved on the ground, however, thought that administrative changes were not so important. Jerry Baxter said that he never noticed a change in CalTrans brought about a change in administration in Sacramento.222 Heinz Heckeroth, Jerry Baxter's predecessor as Chief of District Seven, thought that what was more important were shifts in the electorate and in terms of society's willingness to enter into these types of social contracts. These shifts were reflected in electoral changes of administrations. Instead, the administrations were a reflection of the general population's views on these types of issues.223

The Effects of the Consent Decree

When asked about the long-term effects of the decree, the interviewees had widely divergent opinions. Adriana Gianturco stated that the consent decree had very little effect on CalTrans because "it was seen as a total back-down by environmental organizations." She pointed out that CalTrans still got to build its freeway; it just had to do it under a consent decree.224 Jerry Baxter argued that the consent decree process had no lasting effect on CalTrans "other than the fact that everyone I know is committed to never allowing it to happen again."225

Joseph Montoya recognized the negative impacts of the consent decree on CalTrans, but also pointed out some of the positive impacts of the negative experience. While Montoya pointed out that the consent decree "scared the hell out of them [CalTrans]," he stated that "overall it made them much more aware of environmental problems. If nothing else, part of this was the fear that 'we really better take care of these things going in so that we don't get caught in a bind and have to litigate.'" Montoya saw this as "a real benefit."226

Echoing this point was Carlyle Hall. He argued that the consent decree forced CalTrans to be more than just a freeway construction company. "CalTrans now understands that its mission is transportation as a whole."227

Most of the interviewees agreed that CalTrans has changed as an organization in its approach to community development, environmental impacts and community relations. Some of the specific effects that the

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221. See Hall, supra note 182.
222. See Baxter, supra note 131.
223. Interview with Heinz Heckeroth, Former Head of District Seven, CalTrans, in Sacramento, Cal. (Mar. 19, 1999).
224. See Gianturco, supra note 180.
225. See Baxter, supra note 131.
226. See Montoya, supra note 130.
227. See Hall, supra note 179.
plaintiffs pointed to include the fact that concepts such as high-occupancy-vehicle lanes (HOV lanes) and light rail lanes are now embraced by CalTrans. Initially, according to the plaintiffs, CalTrans fought tooth and nail against having to incorporate those elements. Helene Smookler also pointed out that the Century Freeway lawsuit was the first environmental justice lawsuit ever filed. She said that the importance of this could be seen in the fact that when the Department of Transportation adopted and wrote environmental justice regulations for highway construction, they were based on the Century Freeway lawsuit. “If anything important came out of this lawsuit it is this.”

Robert Best also acknowledged many of the effects of the consent decree, but he noted some irony too. Best noted that when he was in CalTrans before 1976, he believed that for the time, CalTrans was a progressive institution. He pointed out that CalTrans had created a replacement-housing program and a scenic highway program and had implemented environmental review processes. All of these programs were developed before the federal government had adopted laws like NEPA and before the state had enacted laws like the California Environmental Quality Act (CEQA). According to Best, when Adriana Gianturco took over CalTrans in 1976, CalTrans had already been established as a fertile ground for many of her ideas. Best believed that Gianturco sought to institutionalize more community-minded and progressive ideas within CalTrans. However, when Best came back in 1988 to head CalTrans, he sensed that CalTrans had actually regressed from its progressive stances of the mid 1970s. He attributes much of this regression to the experience with the Century Freeway consent decree. He argued that the ironic effect of the consent decree was that many of the ideas and principles that Adriana Gianturco worked so hard to institutionalize within CalTrans were thwarted by CalTrans’ experience with the consent decree. CalTrans became a reactionary organization. The staff became very hostile to any idea that was associated with the consent decree. “The worst effect of the consent decree was that it undermined the changes that Adriana Gianturco tried to make to get important value changes introduced into the construction of transportation facilities.”

The last effect to consider is whether CalTrans would ever enter into another consent decree such as this one. Robert Best said that CalTrans would never again enter into a consent decree that was like “that consent decree.” George Crawford believed that there would never be another experience like this decree because Judge Pregerson was a unique judge

228. See Smookler, supra note 188.
229. See Best, supra note 124.
230. Id.
231. Id.
in his willingness to become involved with a very lengthy litigation pro-
cess. Judge Pregerson has asked Joe Montoya to write a book detailing
the Century Freeway experience. According to Montoya, Pregerson
wants to create a series of guidelines to help parties the next time a simi-
lar situation arises. However, Joseph Montoya told the judge, "there isn't
going to be a next time." Indeed, the prospect of another brand new freeway created in the
middle of an urban environment in California is highly unlikely. Jerry
Baxter said that CalTrans' mission has changed. The mission is no longer
creating brand new freeways, but instead is now a mission of tinkering
with the system and closing gaps.

Whether or not the consent decree was a victory or loss for CalTrans,
Heinz Heckeroth pointed out that it was defeat in terms of process be-
cause the construction became mired in extended litigation.

**PRELIMINARY INJUNCTIONS**

Preliminary injunctions were used in three of the four case studies in
this paper. In the Century Freeway case, the court issued a preliminary
injunction in 1973 that prevented the construction of the freeway until
1982. In the case of the 710 Freeway, an injunction was entered in 1973.
That injunction was lifted in 1998 when CalTrans formally approved a
final EIS. The plaintiffs in the case re-filed their lawsuit, and in 1999, a
federal court judge enjoined further construction of the project. Finally,
in the case of Sierra Club *v.* MTC, a preliminary injunction prevented the
MTC from continuing any freeway projects until the court had approved
its conformity methods.

*The Century Freeway*

When the court entered the injunction in 1973, this action surprised
not only CalTrans but also the national government. Because the Cen-
tury Freeway lawsuit was one of the first environmental justice lawsuits in
the country, it received much attention. It was a wake-up call to state
agencies about the importance of new federal and state laws such as
NEPA and CEQA. What was different about the injunction was that it
required CalTrans to prepare an EIS.

According to Montoya, CalTrans had no experience preparing EISs.
Because of CalTrans' inexperience, the creation of the EIS took a signifi-
cantly longer time than it would today. Additionally, while the EIS was

232. See Crawford, supra note 203.
233. See Montoya, supra note 130.
234. See Baxter, supra note 131.
235. See Smookler, supra note 188.
being drafted, a variety of federal regulations and laws were being enacted and amended by Congress, forcing CalTrans to reformulate the EIS.\textsuperscript{236}

Montoya called the period between the initial entry of the injunction and the creation of the consent decree the “seven dead years.” During this seven-year period, a variety of problems occurred in the path of the freeway construction project. Before the entry of the injunction, CalTrans had already acquired a significant number of properties in the proposed path and had begun to demolish some of the structures in them. However, once the court entered the injunction, CalTrans could no longer acquire any more property and could not demolish any properties except under special circumstances. This left CalTrans owning homes that no one inhabited, and thus significant problems associated with blight developed in the corridor region. These problems included a variety of criminal acts, problems with rodents and people using some of the vacant lots as general junkyards.\textsuperscript{237} During this time, Montoya recounted many telephone calls he received from a variety of property owners in the area wanting to know what CalTrans was doing.

Some of my interview respondents believed that the problems associated with blight put pressure on CalTrans to settle the lawsuit, so that the construction of the freeway could begin. Carlyle Hall believed that CalTrans had a fear that Judge Pregerson would continue the injunction. He also thought that at the same time CalTrans was receiving tremendous public pressure from the cities and residents along the freeway path to settle the case.\textsuperscript{238} However, Robert Best did not feel that the blight problems put much pressure on CalTrans to settle, but rather the settlement was a result of political decisions in the hierarchy of CalTrans administration.\textsuperscript{239}

Adriana Gianturco had a different view. She regarded the development of blight as a possible strategy on the part of CalTrans’ lower-level staff. In her view, letting the housing deteriorate and become infested with blight factors put pressure upon neighborhoods that might have originally have opposed the freeway. Communities that might have been opposed to the freeway were instead pressured to consent to the freeway, in order to remove all of the problems associated with the vacant land and homes. In fact, Gianturco believed that the plaintiffs collapsed under the pressure of all the problems associated with the blight. In her view, the plaintiffs consented to the freeway under the terms of the consent decree, instead of trying to stop the freeway altogether, because it was

\textsuperscript{236} See Montoya, supra note 131.
\textsuperscript{237} See Hall, supra note 179; Pregerson, supra note 184.
\textsuperscript{238} See Hall, supra note 179.
\textsuperscript{239} See Best, supra note 124.
better than the corridor of abandonment. 240

John Phillips acknowledged that the injunction did place some pressure on the plaintiffs because the plaintiffs did not want to harm the communities by prolonging the never-ending problems associated with blight. Because the situation was unstable for the foreseeable future, the CLPI saw a consent decree as a way to bring closure to the dispute, while also having a project that spread out many side benefits to the communities. 241

All sides agree that the injunction did have a dramatic effect on CalTrans in terms of shaking it up. As Carlyle Hall said, “there’s nothing like the threat of a sword to get people’s attention.” This threat grabbed the attention of CalTrans and forced them not only to prepare an EIS for the Century Freeway, but to also come up with procedures to prepare EIS documentation for other transportation projects. 242

The 710 Freeway

In 1964, the California Highway Commission adopted the 710 Freeway connector. During the late 1960s, South Pasadena raised a variety of objections to the project because the proposed freeway would bisect the city. In 1973, South Pasadena and CLPI filed a lawsuit challenging the project. This lawsuit is still in the courts, although today the city of South Pasadena and its attorneys manage the litigation.

Benjamin Salvaty was an attorney for CalTrans during the time of the original lawsuit. At the time the lawsuit was filed, CalTrans had prepared few documents examining the effects the 710 Freeway would have on surrounding communities. The injunction forced CalTrans to evaluate the project extensively. The injunction also revealed that at CalTrans “nobody took the initiative to do it [environmental review] in the absence of laws saying you must do it.” 243

Therefore, in 1973 CalTrans agreed to a preliminary injunction that allowed them some flexibility to acquire properties in the right of way while environmental documents were prepared. According to Salvaty, CalTrans stipulated to the injunction because “we felt there wasn’t sufficient environmental investigation done.” 244 CalTrans thought that the injunction, as it was negotiated, was something they could live with and something with which South Pasadena could live. Salvaty argued that the stipulated injunction was the best resolution that could have come out of the situation in 1973 because CalTrans had done so little preparatory en-

240. See Gianturco, supra note 180.
241. See Phillips, supra note 182.
242. See Hall, supra note 179.
243. See Salvaty, supra note 167.
244. Id.
environmental documentation. "We would have lost in 1973." Salvaty also mentioned the fact that CalTrans felt it had a very favorable [to their side] judge in the original 1973 case and therefore they were relatively pleased with the entry of the injunction given the circumstances.

What is remarkable about the 710 Freeway injunction is that it lasted for approximately 25 years, only being rescinded in 1998 (and was enjoined again in 1999). During this very long time, CalTrans drafted different environmental impact statements, but only had a final EIS approved by the court last year. Many are surprised that the 710 Freeway is still on the books as a project to be completed. According to Adriana Gianturco, she had thought that the project had been killed during her administration. "That freeway is like a phoenix. It just keeps rising up from the ashes. I thought it was dead." Most interviewees thought that the primary reason the project had not been killed was the fierce determination of the cities of Alhambra and Pasadena to have the extension built to serve their perceived transportation needs.

Robert Best also argued that CalTrans staff wanted to build the freeway for engineering and transportation planning reasons. However, he believes that without the active support of Pasadena and Alhambra, CalTrans would have probably dropped the project.

During the pendancy of the injunction, there have been serious problems with blight, though nowhere near the amount of problems that were associated with the Century Freeway injunction. This is in part because the area of property affected by the 710 Freeway is much smaller than in the Century Freeway corridor.

The injunction in the 710 Freeway case had a strong impact on CalTrans. According to Salvaty, the 710 Freeway experience was one of many injunctions that CalTrans faced in the 1970s that prodded CalTrans to develop the expertise it needed to do proper environmental evaluations.

At the time we entered into the stipulated injunction, they [CalTrans] really didn't have the knowledge and expertise and certainly not the experience to do the environmental work and analysis that was necessary. I think probably over the years they've gained that.

Best argued that the 710 Freeway experience has had more of an impact upon CalTrans as an institution than the Century Freeway experi-

245. Id.
246. See Salvaty, supra note 167.
247. See Gianturco, supra note 180.
248. See Best, supra note 120.
249. Id.
250. See Jacobs, supra note 174.
251. See Salvaty, supra note 167.
ence. “That’s an injunction that’s had an institutional effect because it showed to CalTrans that no matter how good your case is, if you can’t generate community support for what you are doing, you may not get it done.” According to Best, CalTrans now has a strong desire to avoid the “South Pasadena type of thing, where we had permanent opposition.”

This experience in South Pasadena has carried over to other projects CalTrans has done, including the rebuilding of the Cypress Freeway.

Best also believed that the 710 Freeway injunction was a problem for CalTrans because there was community opposition to the freeway. In contrast, the main opposition to the Century Freeway was from the CLPI and not so much organized opposition from the communities in the path of the freeway. According to Best, the best way to kill a project is the strategy used by South Pasadena. He argued that if a community is able to get a court to issue an injunction because of some possible procedural error, this can effectively kill a project.

I also asked my interviewees about the point raised by Gianturco, that plaintiff groups may feel a pressure from the length of the injunction to settle the case earlier than they would have if they had had more resources and time. Ben Salvaty thought that given CalTrans’ resources and the fact that it is a permanent bureaucracy, it is very difficult for a plaintiff to maintain an appetite for litigation against such an adversary. He claimed that CalTrans has the ability to overwhelm plaintiffs with resources and energy.

Adriana Gianturco also raised the point that injunctions do not necessarily stop an agency from doing any work on a project. During her tenure, she had fought to prevent CalTrans’ engineers from working on projects that were not funded or under an injunction. However, she believed that there was bureaucratic resistance to her efforts to stop work on enjoined projects. She blamed this on what she believed was an attitude among CalTrans engineers during that time. This attitude was that if the engineers kept working on the project that was enjoined, and if the plaintiffs ultimately gave up or lost, there would be freeways plans ready to be implemented as soon as the injunction was removed.

Sierra Club vs. MTC

In the complicated Sierra Club vs. MTC litigation, the District Court judge at one point entered an injunction preventing the MTC from approving any further transportation projects in the Bay Area. The court

252. See Best, supra note 120.
253. Id.
254. See Salvaty, supra note 167.
255. See Gianturco, supra note 180.
would not lift the injunction until air quality conformity could be assessed under a procedure that the judge had approved. This injunction received publicity in both the San Francisco Chronicle\textsuperscript{256} and the Wall Street Journal.\textsuperscript{257}

The injunction also spurred the MTC to act. According to Francis Chin, the general counsel of the MTC, the injunction was helpful because it made the MTC move quickly to get rid of the litigation.\textsuperscript{258} According to David Cooke, outside counsel for the MTC, the injunction sped up processes and procedures that were already underway. Echoing a theme that Adriana Gianturco mentioned, Cooke said that the injunction did not stop the MTC from working on projects that were somewhere along the development pipeline.\textsuperscript{259}

The injunction was unique because it did not apply to a specific project, but rather to all the projects that the MTC was evaluating for approval. Because the injunction was so broad, the MTC did not want the injunction to last and did not want to be engaged in endless debate with the other parties. This is one reason the court hired a special master to help resolve the case.\textsuperscript{260}

The effect of the injunction and the lawsuit on the MTC was profound. According to Chin, the agency is now much more risk-averse in its planning and it tries not to draft any language that would commit it to a course of action. Chin regretted the change, saying, "we should be a planning agency and not so much a risk management agency."\textsuperscript{261} However, Chin pointed out that since the agency adopted the strategy, it has not been sued over its planning methods.\textsuperscript{262}

Alan Waltner, with the plaintiff's counsel, argued that government agencies in general are much more sensitive to government requirements than they had been before. He believed that this was in part due to courts' willingness to enter injunctions.\textsuperscript{263}

Evaluation of Injunctions/Proposals for Reform

Since many of the environmental laws were enacted in the 1960s and 1970s, injunctions have become a frequent tool of plaintiffs wishing to

\textsuperscript{258} Interview with Francis Chin, General Counsel of the Metropolitan Transportation Commission, in Oakland, Cal. (Feb. 23, 1999).
\textsuperscript{259} Interview with David Cooke, Former Outside Counsel for the Metropolitan Transportation Commission, in San Francisco, Cal. (Mar. 11, 1999).
\textsuperscript{260} \textit{See} Chin, supra note 258.
\textsuperscript{261} \textit{Id.}
\textsuperscript{262} \textit{Id.}
\textsuperscript{263} Interview with Alan Waltner, Former Plaintiff's Counsel, Sierra Club, in Oakland, Cal. (Mar. 31, 1999).
stop or alter the course of a project. As David Cooke put it, “injunctions are a part of life.”264 He thought, however, that injunctions do not pose a serious problem to agencies if the agencies are following proper procedures and laws. Francis Chin also thought that injunctions could be a useful tool when utilized properly. He cautioned, however, that parties frequently use injunctions as a political or delay tool and not so much to address a particular controversy.265 When injunctions are used as a political tool, they are intrusive upon the discretion of government agencies. Having said that, Chin recognized that injunctions have forced agencies to realize that they cannot build projects without consensus.266

Both Robert Best and Jerry Baxter believe that in the context of environmental laws, it has become too easy to get an injunction from a federal judge. According to Jerry Baxter, the structure of the environmental laws on the books currently allows anyone to “go find a sympathetic judge that is going to be sympathetic to your cause.”267 Agencies adopt extensive fact-finding and evaluation methods because of the extensive procedural requirements of both NEPA and CEQA. Because there are so many requirements, it is often very easy for a plaintiff's group to convince a judge that the defendant agency has not complied with a particular aspect of the relevant laws. This can hold up an entire project for years until the process has been corrected.268

Jerry Baxter also cited the problem that the timeliness of a court’s approval of the changes made by the defendant agency often leads the plaintiffs to claim that the original EIS is out of date due to changes in transportation policy, the law and demographics. This is precisely what happened in the case of the 710 Freeway.269

Robert Best pointed out that injunctions usually prevent projects that are substantively legal, but procedurally deficient. Injunctions usually do not say that the freeway cannot be built, but rather that the process used to build the freeway needs to be improved.

There's probably nothing that legally stops it [the 710 Freeway] from being built, except for the fact that there are so many laws out there that relate to how you put a highway project together that no matter how well you do it, there's always going to be an opening where someone can claim it wasn't done exactly right.270

In terms of using an injunction as a political tool, Best argued that

264. See Cooke, supra note 259.
265. See Chin, supra note 258.
266. Id.
267. See Baxter, supra note 131.
268. See Best, supra note 120.
269. See Baxter, supra note 131.
270. See Best, supra note 120.
injunctions can be used by plaintiff groups to stop a project “until you can
get the political strength to kill the project, or until you can drive up the
costs.” 271 While the courts do not stop the freeway project from being
built at all, the use of an injunction can give the plaintiffs more time to
find extra-judicial means of stopping the project altogether. Thus, Best
argued that South Pasadena’s strategy of always being able to find a way
to get a court to issue an injunction is probably the most effective way to
kill a project. 272

Best also stated that injunctions pose no cost to plaintiff groups,
which is an incentive to seek an injunction. 273 Plaintiffs are not required
to bear the consequences of an injunction. Traditionally, if a party sought
an equitable remedy, that party had to post a bond to pay for the negative
costs associated with the injunction if the plaintiff ultimately lost. In the
case of public interest, however, plaintiffs are not usually required to post
any bond. If a court ultimately lifts the injunction, there are no costs to
the plaintiff group. “Plaintiffs are not required to bear the consequences
of an injunction. You get equitable relief without any equitable
responsibilities.” 274

Offering a different perspective, Adriana Gianturco argued that en­
joined agencies should not continue working on projects and should not
continue acquiring properties in the right of way of a proposed freeway.
When a government agency keeps acquiring so much property “it makes
the EIS meaningless.” 275 While the EIS may give some face value to
evaluating a variety of alternative paths because the defendant agency
already owns property in a pre-selected path, the actual chosen route is
almost a given in the EIS. 276

The ultimate effect of these injunctions may be to make public works
project building so expensive and so complicated that projects will not be
built. Baxter thought that there may never be another significant public
works project built in the state. He believes that this is because environ­
mental laws allow plaintiffs to march into a courtroom and receive an
injunction relatively easily, if they get a favorable judge. 277 Perhaps the
most interesting comment about the use of injunctions as a strategic polit­
ical tool came from Warren Widener, the former County Supervisor from
Alameda County who was involved in the rebuilding of the Cypress Fre­
way. According to Widener, he realized that CalTrans probably could

271. Id.
272. Id.
273. Id.
274. See Best, supra note 120.
275. See Gianturco, supra note 180.
276. Id.
277. See Baxter, supra note 131.
rebuild the Cypress Freeway right through the heart of Oakland if the rebuilding issue went to court. However, he and other community groups subtly threatened CalTrans: “I know I can’t stop them, but I can sure as hell delay them” with the use of an injunction. It is this kind of threat that CalTrans most fears, and this is perhaps why Best senses that the 710 Freeway injunction has had more of an affect on CalTrans than the consent decree in the Century Freeway.

SPECIAL MASTERS/MONITORS

Special masters or monitors were used in two of the case studies. In the Century Freeway case, the court employed three types of monitors (although never a special master). In the Sierra Club vs. MTC litigation, the court employed a special master, Professor Martin Wachs, to help it evaluate some of the highly technical issues presented in the case.

The Century Freeway

Due to the complexity of the consent decree, Judge Pregerson appointed three different types of monitors to help implement the Century Freeway consent decree. Murray Brown was a professor at California State University at Los Angeles and a childhood friend of Judge Pregerson. His role was to attempt to resolve disputes between the parties. Helene Smooker monitored the housing program. Finally, the court appointed George Crawford as special counsel to help resolve housing implementation issues in the early 1990s.

Interestingly, almost no one involved in the litigation understood the role of the monitors. Joe Montoya thought that the decisions to appoint monitors were ‘spur of the moment decisions.’ He did not understand what any of the monitors were supposed to be doing. As he put it, the position of the monitors was “useless.”

All of the parties agreed that there was a need for someone who had authority over the parties, but the decree did not address this type of position. Because none of the special masters/monitors had any power, they had very little authority over the parties to help resolve serious conflicts. Jerry Baxter said that without any definitive power, the monitors played a minimal role; this defeated the entire purpose of having someone monitor the process.

278. See Widener, supra note 175.
279. Id.
280. See Best, supra note 120.
281. See Montoya, supra note 130.
282. Id.
283. Id.
284. See Baxter, supra note 131.
The fact that the consent decree did not contemplate a position with supervisory powers highlighted that there was "no effective institutional mechanism to implement the [the consent decree]."285 Without a structure for conflict resolution, it was difficult to resolve them without having to go see Judge Pregerson when the inevitable conflicts arose. "The effect of that was to slow things down. Whenever someone wanted something they would have to go back to court, and they would get thrown into one of these negotiating sessions."286

Many of the parties expressed frustration with the Judge Pregerson’s approach to conflict resolution. The court was reluctant to appoint a special master. Instead, the court dictated that when in dispute, the parties should sit together to negotiate a resolution. This type of conflict resolution often led to gridlock. All of the interviewees said there was a need for somebody with central control and for someone who had enforcement powers to move the process along. Instead, the consent decree created a situation where authority and responsibility were separated.287 Judge Pregerson defended his decision not to appoint a special master by noting that he already had a courtroom deputy, who he felt could effectively handle the needs of the parties.288

The need for a special master or monitor with specified powers was particularly important given the fractious nature of the involvement between CalTrans, HCD and the plaintiffs’ attorneys. Most parties thought the decree needed a people person and manipulator to help move the process along and to help remedy personality conflicts between the various parties.289

John Phillips agreed that a special master was needed to help administer a project as large as the Century Freeway, stating "we needed a forceful, smart, pragmatic person. Judge Pregerson just wanted us to talk, talk, talk."290 Helene Smookler argued that the absence of a special master meant that the plaintiffs had a more difficult time getting their claims and goals enforced through the consent decree.291 When asked whether there was a need for a special master, she replied, "absolutely. A special master with an iron hand who understood the issues."292 There was a need for someone who could make honest reports to the judge instead of having the parties come in front of the court sounding like

285. See Best, supra note 120.
286. See Baxter, supra note 131.
287. See Best, supra note 120.
288. See Pregerson, supra note 208.
289. See Best, supra note 120.
290. See Phillips, supra note 182.
291. See Smookler, supra note 188.
292. Id.
complainers.293

Sierra Club vs. MTC

The Sierra Club vs. MTC litigation involved a highly technical analysis of modeling procedures used by the defendant MTC to determine whether certain transportation projects would conform to relevant provisions of the Clean Air Act. Because of the highly technical nature of analyzing conformity modeling methods and the Clean Air Act, a special master was employed to help the court understand the issues presented. Special masters can have a variety of different responsibilities and powers, but the special master used in this case had a very limited focus with no set powers. Professor Martin Wachs served as an advisor to federal District Court Judge Thelton Henderson (who would not consent to an interview) and offered his opinion and evaluation of information and models submitted by the parties to the court.

According to both the plaintiffs' and defendant's attorneys, Judge Henderson asked each side to submit a list of five possible people who could serve as a special master to help evaluate the issues.294 Martin Wachs was one of the few people who both sides had offered as a special master. Wachs also believed that he was selected because he was not from the Bay Area at that time, and his selection minimized allegations of bias from local press reports. In addition, he was one of the few possible masters who lived on the West Coast and was a more cost-effective person to hire, due to lower transportation costs, than someone located on the East Coast.295

Whatever the motivations were, both sides and the judge recognized the need for a special master; the appointment of Martin Wachs was not controversial, but rather, an appointment that both parties desired.296

Reflecting the consensual nature of the choice of Martin Wachs as special master, Francis Chin stated "the court appreciated, and the parties all perceived that there was a need in the court to get some assistance." This need was perceived not only because the issues were very technical, but because both parties in the litigation did not want an excessively long trial. Employing a special master to help the court understand many of the technical issues helped move the process of litigation.297 David Cooke believed that from the defendant's point of view, a special master was absolutely needed because the issues litigated in the case had not

293. Id.
294. See Chin, supra note 258; See Waltner, supra note 263.
295. Interview with Martin Wachs, Professor of City and Regional Planning, U.C. Berkeley, in Berkeley, Cal. (Mar. 17, 1999).
296. See Chin, supra note 258; See Waltner, supra note 263.
297. See Chin, supra note 258.
been litigated in many courts. Additionally, Cooke thought that a federal judge who had a full docket could not realistically evaluate the technical issues presented, "it was very clear that this case was ripe for a special master because of the technicality of the issues." Plaintiff's counsel, Alan Waltner agreed that the issues were so complicated that a special master was needed. Francis Chin noted that, "Martin Wachs was invaluable; we couldn't have gotten through [the litigation] without him." Chin went on to say, "we would have hired three Martin Wachses in terms of resolving the case."

The defendant MTC paid the costs of hiring Martin Wachs. Under provisions of the Clean Air Act, the defendant organization has to bear the costs of employing a special master. While the MTC did not like paying the expenses of a special master, both Cooke and Chin thought that ultimately it was cost effective. Martin Wachs's technical expertise helped speed up the process of the trial and helped resolve all of the issues more quickly.

Wachs's primary purpose was to help the court evaluate the technical questions presented by the case. He pointed out that the court never granted him any authority over the parties or the ultimate resolution of the case, "I was an advisor to the court and the court clerk. I was there to listen, to read, to inform myself, and to respond to their questions." Wachs also self-circumscribed his role because he felt it was not appropriate at anytime to interject his own concerns or opinions unless specifically asked to do so. His primary role was to help both Judge Henderson and his clerk Karen Kramer draft opinions. He spent most of his time commenting on drafts of opinions and helped them re-draft the language where appropriate.

Wachs believed that he helped the judge and his clerk have confidence in the opinions they were writing. This was important because what they were writing would have future implications for planning agencies throughout the country, "I offered a second reading and an assurance." Wachs mentioned that he was actually very surprised at the high level of technical understanding both the judge and clerk already had of the issues. There were very few times when Wachs sensed a need to make any substantial changes to the draft opinions. Instead, he thought that he moved the process of the litigation along by helping the court

298. See Cooke, supra note 259.
299. Id.
300. See Waltner, supra note 263.
301. See Chin, supra note 258.
302. Id.; See also Waltner, supra note 263.
303. See Wachs, supra note 295.
304. Id.
make sure that the issues were analyzed correctly.\textsuperscript{305}

All parties welcomed the addition of Wachs to the trial process. Alan Waltner said that Wachs added background, viewpoints, and his opinion of what would be a good result.\textsuperscript{306} According to Wachs, all the parties treated him with enormous deference. He sensed that all the parties had respect for the process, the judge and the role that he served in the trial. He mentioned that at all times, the various parties seemed patient with him, even when he expressed some confusion or misunderstanding regarding the trial proceedings and had to have the issues explained to him in a non-legal way. He never once heard any complaints about the fees that he charged for being a special master.

Although all the parties, including the judge, treated Wachs with great deference, he did not believe that at any time the judge abdicated his duties.\textsuperscript{307} A judge may be so overwhelmed with work and so impressed with the qualities and abilities of the special master that the judge may abdicate his central role in the trial process and defer to the special master’s suggestions. David Cooke pointed out that:

[a] special master is in a unique position to have private, off the record, technical discussions with the judge. [T]he risk inherent in the special master is that a busy judge with no time to delve into the issues leads to situations where the special master, while seemingly presenting an apparently neutral position, can actually advance his own interests and views.\textsuperscript{308}

Alan Waltner noted that there is always a risk that the biases of the special master are going to prejudice your case in some way.\textsuperscript{309} He also pointed out that there is not an easy way to rebut the opinions of a special master in front of the judge.\textsuperscript{310}

Martin Wachs said that judicial abdication was not a problem in \textit{Sierra Club vs. MTC}. His role was to assist the judge in making a better decision, but,

Judge Henderson did not imply that I was responsible for making such judgments in any way, shape, or form, other than to help him clarify issues . . . . Judge Henderson was in charge. There's no question about it. My role was to interpret for him, advise him, answer his questions, but at no point did he imply that I had any authority over his decision.\textsuperscript{311}

Martin Wachs felt a tremendous burden on his shoulders.\textsuperscript{312} While

\textsuperscript{305} Id.
\textsuperscript{306} See Waltner, supra note 263.
\textsuperscript{307} See Wachs, supra note 295.
\textsuperscript{308} See Cooke, supra note 259.
\textsuperscript{309} See Waltner, supra note 263.
\textsuperscript{310} Id.
\textsuperscript{311} See Wachs, supra note 295.
\textsuperscript{312} Id.
he had long been involved in academic and policy disputes over transportation policy, he thought his recommendations and involvement would have an immediate and substantial effect on transportation planning.\footnote{313. Id.} He felt somewhat ill-prepared to make such important and broad recommendations.\footnote{314. Id.}

When asked about his own view of how he was able to help the process, Martin Wachs admitted that when he first became involved, he thought that his own role might be somewhat superfluous.\footnote{315. Id.} However, as the process went along, he believed that he was able to improve both the judge’s and the clerk’s confidence in what they were writing.\footnote{316. Id.} Wachs also thought that he provided them with confidence regarding policy ramifications that would result from the resolution of this case.\footnote{317. Id.} “I thought it made a difference on the small portion of the opinion that I helped advise.”\footnote{318. Id.}

CalTrans and the Cypress Freeway

Given the experience of the Century Freeway consent decree and the 710 Freeway injunction, I wanted to find out what lessons CalTrans learned from prior litigation, not only in terms of approaching the rebuilding of the Cypress Freeway but also in terms of a change in the institutional attitude. Rebuilding the Cypress Freeway in West Oakland presented an opportunity to learn more about CalTrans.

I spoke with people involved in the Cypress Freeway rebuilding including Ed Blakeley, the former professor of City and Regional Planning at UC Berkeley; Warren Widener, the former County Supervisor from Alameda County who represented the West Oakland area; and Paul Cobb, founder and co-leader of Cypress Emergency Response Team (CERT) a group formed to lead the community in negotiating rebuilding the freeway with CalTrans. I also interviewed Robert Best, who was the head of CalTrans during the rebuilding.

Ed Blakeley became involved in the rebuilding because CalTrans asked him to consult during the planning process.\footnote{319. See Blakely, supra note 176.} Before the earthquake, he did consulting and gave presentations to CalTrans’s middle managers about working with inner-city community groups.\footnote{320. Id.} He believed that CalTrans was trying to react more responsive to community
concerns and believed that CalTrans had changed its attitude about working with communities because they invited him to make presentations at CalTrans meetings.321 Shortly after the earthquake, CalTrans approached him to help orchestrate the rebuilding of the freeway and to help choose a new alignment for the freeway.322

According to Blakeley, CalTrans’ main interest was to build the freeway as quickly as possible.323 He believed that CalTrans did not want to delay the project because it was concerned that environmental groups might build up a momentum to stop the rebuilding of the freeway altogether.324 CalTrans thought that if it quickly began planning for the new freeway, the momentum to stop the freeway would not develop.325 Because of the impetus to do the process quickly, Blakeley thought that CalTrans wanted to rebuild the freeway back in the original alignment that bisected the community because it was the quickest and cheapest way to rebuild it.326

Warren Widener echoed a similar observation about how CalTrans initially approached the community and the rebuilding process.327 According to Widener, CalTrans’s initial approach was bureaucratic and somewhat imperial. He said that CalTrans was approaching the West Oakland community as if it were a community without economic or political power. Widener worked with CERT to develop alternative proposals for rebuilding the freeway in its original path. Their suggestion was to reroute the freeway so that it would not divide the heart of the West Oakland community. Instead, the new route would parallel railroad tracks that were on the very edge of the residential community, but also close to the Port of Oakland.328 As Ed Blakeley put it, “a momentum started that a solution was possible.”329

Warren Widener said that once CalTrans realized there was strong community support for realigning the freeway, it quickly gave-in to community demands. He thought that CalTrans underestimated the level of community opposition to rebuilding the freeway in the same location.330

Both Widener and Blakeley stated that it was important that there were pre-established organizations such as CERT, the West Oakland Chamber of Commerce, and community groups formed to help revitalize

321. Id.
322. Id.
323. Id.
324. Id.
325. Id.
326. Id.
327. See Widener, supra note 175.
328. Id.
329. See Blakeley, supra note 176.
330. See Widener, supra note 175.
West Oakland. These groups were able to come up with alternatives and resist the bureaucratic momentum that was building towards simply rebuilding the freeway back in the original path. 331 There were a number of initial steps that CalTrans took that signaled to both Blakeley and Widener that it was taking a new and different approach. 332 Robert Best, the head of CalTrans at the time, came down to the community in West Oakland to look at the site. Best’s visit sent a strong message to West Oakland that CalTrans was actively involved in working with the community. “CalTrans became human in Oakland. They worked with people.” 333 Additionally, CalTrans appointed African-American, Preston Kelley as the Director of District Four, which encompassed the West Oakland site. “When they chose Preston Kelley, that said to me ‘if there is any way that CalTrans can not only avoid litigation but avoid a big public battle, that is our first choice,” said Widener. 334 He said that the choice of Preston Kelley said to the West Oakland community, “we are giving you one of your own.” 335 Best, Widener, Blakeley and Cobb all had strong words of praise for Preston Kelley, especially about his approach to working with the community, his open-mindedness and his determination against re-dividing the community. 336 According to Widener, the need for political organizing by the community decreased significantly once CalTrans appointed Preston Kelley. 337

In an interview, Preston Kelley said that initially CalTrans did just want to put the road back up where it had stood. 338 Once CalTrans realized that it needed to go through environmental processes, Kelley and other leaders within CalTrans saw an opportunity to “do this development right.” 339

Ed Blakeley argued that the leadership of Robert Best also signaled a real change in direction from past practices of CalTrans. 340 Best acknowledged that he wanted to approach the rebuilding of the Cypress Freeway differently than CalTrans had done in other inner-city areas. In fact, his approach was part of an overall strategy. Best wanted to avoid another prolonged battle like the 710 Freeway and believed that, like in

331. See Blakeley, supra note 176; Widener, supra note 175.
332. Id.
333. See Blakeley, supra note 176.
334. See Widener, supra note 175.
335. See Widener, supra note 175.
336. See Blakeley, supra note 176; Widener, supra note 175; Interview with Paul Cobb, Co-Founder of Cypress Emergency Response Team, phone interview (Mar. 12, 1999).
337. See Widener, supra note 175.
338. Telephone interview with Preston Kelley, Former Director of District Four of CalTrans (Apr. 5, 1999).
339. Id.
340. See Blakeley, supra note 176.
South Pasadena, there could always be permanent opposition to a project. The best way to develop support for a project is to "divide and conquer" community groups. He argued that it is important to get a variety of interest groups involved and then the groups who are served by what is proposed counter-balance those groups who are not served. That was Best's strategy in approaching the community to rebuild the Cypress Freeway.341

Best also mentioned another important incentive CalTrans had to build the freeway quickly: after the earthquake Congress allocated special emergency funds to rebuild the freeway, but the money had to be used within a four-year time limit.342 Therefore, according to Best, CalTrans had to get the rebuilding process moving in order to utilize the funds. Best said that the time constraint on the federal money gave the West Oakland community leverage over CalTrans. "I figured that if CalTrans was going to get the project done in time to get those federal funds, they were going to have to go with a project that was acceptable to the community."343

Best and Kelley both mentioned that even within CalTrans they had to battle against engineering groupthink. Many staff members thought the best solution was to follow the cheapest and the quickest route, which was to rebuild the freeway in the original spot.344 One reason Best appointed Preston Kelley as District Four Director was so CalTrans could take a new approach in terms of working with the community.345

The process of negotiating the rebuilding went much more smoothly than all the parties had expected. While it was not a conflict-free process, the parties were surprised at how quickly CalTrans agreed to rebuild the freeway in the new location. While there was some opposition from environmentalists and some artists who lived near the railroad tracks to rebuilding the freeway at all, broad community support and bureaucratic momentum of CalTrans overcame these forms of opposition. Ultimately the community got what it wanted out of the rebuilding, which was not the expected outcome.346

CalTrans's Progressive Motivations

Both Blakeley and Widener mentioned that CalTrans was probably drawing upon prior experience when working with the West Oakland community. "They didn't bring up the Century Freeway, but it was obvi-

341. See Best, supra note 120.
342. Id.
343. Id.
344. See Best, supra note 120; Kelley, supra note 338.
345. See Best, supra note 120.
346. See Blakeley, supra note 176; Widener, supra note 175.
ous that they were anxious about not being able to build a freeway.\textsuperscript{347}

Both Blakeley and Widener were somewhat familiar with the Century Freeway and 710 Freeway controversies. They thought that underlying all the Cypress negotiations was CalTrans' fear that it would get stuck with either a very lengthy injunction or a very complicated consent decree again.\textsuperscript{348} “CalTrans learned a lesson from the Century Freeway that it is better to make a concession and try to work things out than to stand on the letter of the law.”\textsuperscript{349}

Preston Kelley acknowledged that CalTrans wanted to avoid court, “CalTrans doesn’t want to ever have to get in front of a judge. They better work with the community to get the process done.”\textsuperscript{350}

Blakeley also saw a new attitude in CalTrans's leadership, especially the chairmanship of Robert Best. Without the leadership of Robert Best, the mid-level engineers would have pushed for a simple rebuilding of the freeway along the original path. Blakeley said that CalTrans's leadership by Best proved that the situation could turn into a win-win situation. According to Blakeley, “CalTrans needed some victories after the 710 Freeway had been stalled and the Century Freeway consent decree process.”\textsuperscript{351} To get the job done, CalTrans had to accept the politics of the situation. Francis Chin, who had a minor involvement in the rebuilding as general counsel for the MTC, saw the Cypress Freeway from the point of view of CalTrans as “an issue of what they could do politically versus legally.”\textsuperscript{352}

Although there were some minor threats of litigation, ultimately there was no litigation that affected the Cypress Freeway rebuilding process. Warren Widener said that there was never any serious talk of litigation. According to him, “CalTrans really learned from that mess in [the Century Freeway].”\textsuperscript{353}

Since the freeway was opened in 1998, Paul Cobb, reflecting back on the entire experience said, “CalTrans is great in terms of what you can expect. I saw them as a bureaucracy, but they became my biggest ally. They did what we wanted them to.”\textsuperscript{354}

Cobb's highly positive views may have reflected what Joseph Montoya thought happened during the rebuilding of the Cypress Freeway. During that time he was head of the legal division of CalTrans, it did not

\textsuperscript{347} See Blakeley, supra note 176.
\textsuperscript{348} See Blakeley, supra note 176; Widener, supra note 175.
\textsuperscript{349} See Blakeley, supra note 176.
\textsuperscript{350} See Kelley, supra note 338.
\textsuperscript{351} Id.
\textsuperscript{352} See Chin, supra note 258.
\textsuperscript{353} See Widener, supra note 175.
\textsuperscript{354} See Cobb, supra note 336.
become very involved because there was little legal controversy. However, he believed that CalTrans “gave away the store” in terms of working with the West Oakland community. He said that this was due to CalTrans’s experience with the Century Freeway consent decree and their desire to avoid another decree, “they’ll give almost anything to avoid that ugly, ugly mess again.”

Preston Kelly noted that CalTrans’s approach to the rebuilding became “we will do everything we can to get this thing back up, aside from going to court.”

As previously mentioned in the section on injunctions, Warren Widener believed that the possibility of delay motivated CalTrans to work with the community. Given the funding deadlines CalTrans faced and the desire to avoid protracted litigation, delay threats were probably a very powerful incentive for CalTrans.

Lessons for Government Agencies

All the interviewees agreed that CalTrans has become much more sensitive to community demands and the importance of public relations. As Jerry Baxter put it, “I don’t think you can do things now without a lot of agreement.” In addition to working better with communities, CalTrans’ overall mission has shifted. Judge Pregerson stated, “the leadership of CalTrans is more sensitive to the effects that their projects have on the neighborhoods that bear the brunt of their work.” According to Baxter, CalTrans’s primary role in terms of working in urban areas is to tweak the system instead of building freeways from scratch. The 710 Freeway is an example of what CalTrans views as “tweaking the system” or “filling in gaps.” Robert Best believes that CalTrans now works on overall transportation instead of just building freeways. “As far as highways are concerned, we’ve probably seen the last.”

Many of the interviewees said that there is still enormous difficulty in trying to reform a big institution like CalTrans. Adriana Gianturco pointed out that although litigation can have a strong impact on an institution, especially at the higher levels, “there are very strong forces running in the other direction. The organizational culture [of CalTrans] is not attuned to the judicial processes. It can exert a powerful counter force.”

Both Blakeley and Smookler mentioned that the engineers

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355. See Montoya, supra note 130.
356. See Kelley, supra note 338.
357. See Widener, supra note 175.
358. See Baxter, supra note 131.
359. See Pregerson, supra note 185.
360. See Baxter, supra note 131.
361. See Best, supra note 120.
362. See Gianturco, supra note 180.
The Use of Equitable Tools

that form the backbone of CalTrans are not attuned to some of the community relations issues. Blakeley believed that as one moves up the ladder within an organization like CalTrans, one finds that the leadership has a broader view of the world than the engineers who work on the ground. Transferring this broader view of the world to the engineers is a significant challenge that can lead to conflicts within the organization.363

Preston Kelley had been an engineer within the organization since 1958, before he became District Director for CalTrans. He believed that CalTrans has learned to respect and comply with the environmental processes. "The engineers don’t like the process, but they respect it."364

Another point made by some interviewees is that CalTrans is not necessarily supposed to be an organization engaging in social programs. Almost all the interviewees involved in the Century Freeway decree recognized that there were real limitations in asking CalTrans to become involved with implementing social programs. "That is not their business."365 These types of attitudes pose serious challenges to those who seek to institutionalize new values into agencies. This raises the larger question (not addressed in this paper) of what is the proper scope of government agencies’ roles in today’s society.

RECOMMENDATIONS FOR THE USE OF EQUITABLE TOOLS

Public policy and planning pose problems that are not easily amenable through traditional litigation. Public policy disputes often cannot be resolved by simply declaring a winner and a loser. Instead of seeking money in public policy disputes, the plaintiffs often seek to either stop or alter a project, or to alter the practices of an institutional actor. Courts frequently use equitable tools to manage litigation and help resolve the disputes because these types of remedies are unusual.

The use of equitable tools in each case study reveal lessons learned by the parties and offer recommendations for future transportation disputes.

LESSONS FOR THE USE OF CONSENT DECREES

Although consent decrees represent an agreement reached between two parties, a decree does not mean that the parties will avoid all future conflicts. In the case of the Century Freeway, many conflicts arose between CalTrans and other state agencies, between CalTrans and the plaintiffs, and difficulties emerged from the changes in political administrations.

363. See Blakeley, supra note 176; Smookler, supra note 188.
364. See Kelley, supra note 338.
365. See Baxter, supra note 131.
Consent decrees can be most effective when developed by and with the aid of experts who are familiar with the affected bureaucracies and who understand their organizational cultures. 366 "[I]n litigating proposed reforms, defendant agencies often have deep and entrenched organizational cultures, which are not easily rocked by the fiats of the judiciary . . . ." 367

If one of the litigants regards the consent decree agreement as an imposition, this belief will likely hamper effective decree implementation. Without equal participation, the "effort to compel different units, divisions and administrative agencies to operate in obtaining a common goal may encounter significant resistance." 368 The Century Freeway consent decree was especially complicated because it involved numerous state agencies and new administrative bodies.

Special circumstances may exist where a court-determined final resolution is the best way to resolve a dispute. While consent decrees force adversarial parties to cooperate over a significant period of time, the final resolution of a dispute through a court-entered judgment may provide certainty and finality. Consent decrees that involve parties strongly opposed to each other may not work as effectively as a judgment because the parties never reach common ground. Without parties who feel committed to the consent decree process, implementation will be difficult. 369

Specific Recommendations

1) Plaintiff groups need to have a realistic understanding of the organizational culture of the institution they seek to challenge.

Although ideally, a consent decree is a voluntary agreement between the parties, frequently, parties may feel forced into accepting an agreement in order to avoid further litigation. In the case of the Century Freeway consent decree, many CalTrans employees viewed the decree as a political decision imposed from above. The overall bureaucracy was resistant to comply with the terms of the demanding decree because most within CalTrans felt that they really did not have a choice but to enter the decree.

Plaintiff groups should realize that although the leaders of a government agency may have authority to bind the agency, they do not represent the rank and file civil servant. If the various factions within a large government institution such as CalTrans feel they have input in drafting the consent decree, the institution as a whole is more likely to

366. See DiMento and Hestermann, supra note 9, at 330.
367. Id. at 335.
368. Id. at 336.
369. See id. at 337.
comply with the decree. It is important to make sure that all parties involved feel that they received a piece of the pie. Otherwise, an arranged marriage between two adversarial parties will be difficult.

A consent decree should be developed with input from all the parties involved in the litigation. If CalTrans' administrators and engineers had regarded the decree as one with meritorious legal or engineering principles, instead of as a politically motivated decree, the institutional culture might have accepted it more easily.

There are a myriad of ways an institution can resist the dictates of a court-monitored agreement. It is in the interests of the plaintiffs to draft an agreement that may not satisfy all of their demands, but is likely to be fully complied with by the defendant institution. This is a better alternative than having an agreement that the plaintiffs feel vindicates their rights, but is one that the government institution can easily thwart.

An institution will change overnight merely because a court approves and announces enforcement of a consent decree. Implementing the dictates of a decree can take years, especially if one is dealing with a large and diffuse bureaucracy such as CalTrans.

If improvements were implemented in training planners and engineer institutions like CalTrans, the institutions would better understand the principles behind environmental laws, community relations, and proper respect for procedure. The legal community and community development specialists should work with institutions to help them understand their broader mission in today's complex culture. CalTrans attempted to do this when it hired Ed Blakeley for his consultation.

2) Do not try to accomplish too much in the design of a decree.

The more complex a consent decree is, the more ways a defendant government institution can thwart the spirit and purpose of the decree. A decree that creates layers of new bureaucracies may create resentment and competition in and between the preexisting bureaucracies. Additionally, if it can be avoided, a consent decree should not mandate a new body or agency to reinvent the wheel. It is best to work with preexisting institutional knowledge and utilize it in a cooperative manner.

If parties keep the decree simple and focused, fewer opportunities arise for dispute, and any need for the supervising court to get involved is diminished. Both federal and state courts have serious time pressures. When consent decree parties seek the intervention of the court, this delays the decree process. Having clear, specific principles to guide the parties in the implementation of the decree can lead to efforts that are more cooperative, and to joint understandings of terms and priorities.
3) Try to strike a balance between specificity and flexibility.

One of the criticisms of the Century Freeway consent decree was that it left too many terms and issues to be decided by the parties at a later date. When the parties needed to make a decision during implementation, they frequently disagreed over the proper interpretation of the decree and therefore had to seek court involvement. Parties can avoid the mediating efforts of the supervising court if the decree memorializing their agreement is clear.

The flexibility of a complicated decree has its virtues. If it is complex, issues could arise during implementation that the parties could not have anticipated in the original design of the decree. Flexibility in the implementation of the decree allows the process to proceed differently than had been originally planned, which often benefits the plaintiffs and defendants. Additionally, as Murray Brown pointed out, flexibility or vagueness in the terms of the consent decree is sometimes necessary in order to get both parties to agree.

It is preferable to avoid procrastinating on determining difficult issues. If the parties cannot agree on certain elements of the decree while they are drafting it, they will unlikely agree once the issue becomes relevant to the implementation.

4) A consent decree should account for the possibility of political change in the agencies.

Consent decrees often take several years to implement. This makes them vulnerable to changes in political and administrative bodies. Both the Reagan and Deukmejian administrations resented the restrictions the consent decree placed on both the federal and state governments’ ability to execute policy. This conflict reflects one of the weaknesses of the consent decree process. A consent decree may engender hostility in agency officials who inherit a decree negotiated by his or her predecessor. For the original plaintiffs, this rigidity can be an advantage because of its predictability and ability to withstand political pressures.370

Consent decrees should be designed to avoid political fluctuations. One way to avoid political fluctuation is to design a decree with a set goal or sunset clause that guarantees a milestone for operations to return to normal. The implementation of the Century Freeway decree lasted through three presidents and three governors. Every new administration brought its own set of guiding principles and philosophies; a politically motivated consent decree is subject to upheaval each time a changing of the guard occurs in Washington D.C. or Sacramento.

370. See DiMento and Hestermann, supra note 9, at 305-06.
Consent decrees should not be political documents, but instead should be practical, result-oriented guiding documents. The perception among CalTrans staff that the decree was created by outsiders led to a belief that the decree was not an "engineer's decree" but a "political decree."

5) A consent decree should be designed to avoid unnecessary expenses and delays.

The Century Freeway was delayed for over ten years. Its ultimate cost was roughly four times the original estimate due to the delay. Courts that implement decrees may need to appoint a special master to provide the parties a means and forum to settle their intractable disputes. This could help expedite implementation of a decree.

6) Avoid creating/involving new entities.

Competent existing state agencies should implement decrees, unless circumstances indicate that the defendant cannot be trusted. One of the most expensive and problematic aspects of the Century Freeway consent decree was the responsibility of HCD for the housing program. Instead of giving housing responsibility to an inexperienced agency, the decree should have allowed CalTrans or an experienced non-profit housing developer to take charge of the housing program. CalTrans rank-and-file resented the involvement of outside parties. This tension combined with the inexperience of HCD, led to serious housing problems.

If outsiders must be involved, they should be entities that are experienced and preferably have worked with the defendant agency before. The court and the plaintiffs eventually transferred housing responsibility to the non-profit Century Housing Fund, and since then, the housing program has seen dramatic efficiency improvements.

7) Consent decrees need an intermediary force, like a special master or monitor, to monitor and enforce compliance.

I will discuss this recommendation further in the section on special masters and monitors.

Lessons for the Use of Special Masters or Monitors

Forms of a special master or monitor can range from a special master with broad authority and disciplinary power to effectively run a defendant institution, to a person appointed by the court solely to monitor the agency's compliance with a court order or a consent decree. These are the two extremes. In between these two extremes lay a variety of options that courts can employ to expedite dispute resolution. The permutations
are often driven by the particular necessities facing the court. A special master, who has some authority to discipline the parties and to report findings to the judge, can help move the litigation along and save the judge’s energy for truly pressing issues presented by a case.

Judge Pregerson appointed Murray Brown to monitor the parties, but he had no decision-making authority. Because of his powerless position, my interviewees thought his role in the implementation process was superfluous. Additionally, the court did not communicate the meaning and purpose of Brown’s role to the parties, thereby ensuring that the parties would effectively ignore Brown because he had no authority over them.

The role of a technical advisor can be especially useful in the special master context. The role of Martin Wachs seems an ideal example of when a special master can be useful for all the parties involved in a case. The process used by the court to appoint Wachs provides an example of how a court can ensure a consensual choice among the parties to select a particular master.

The dangers in using a special master are that the individual may become a surrogate for the judge. This violates the rights of the parties to have their dispute heard by an official with Article III attributes. Courts should not use special masters to expedite court dockets, unless the matter is sufficiently complicated as to warrant outside aid. Appellate courts need to be responsive to parties who claim their right to a hearing before a federal judge is being violated by the special master’s authority in their dispute.

Specific Recommendations

1) A court should clearly delineate the responsibility, role and powers the special master will have.

When the respective parties do not understand what the role of the special master is, there is little chance that they will see the master as an effective tool of the court.

2) While technical masters can be of significance in resolving litigation, they also can present threat of judicial abdication.

A special master may become such an invaluable source of technical information and advisor to the court that he effectively resolves the central issues of the case. The court may improperly defer critical aspects of the dispute to the master instead of utilizing his knowledge for the advisory position it was intended. This is especially true in complicated and time-consuming cases.

A special master with technical expertise may so impress a judge
with his knowledge that the judge will defer to the master's opinion without exercising judicial deliberation. This denies the litigants the right to have their dispute heard by a judge. The public may be able to read a published opinion, but the real author of the opinion may have been the special master and not the judge whose name is on the opinion.

Judges should not let the special master decide technical issues, but instead judges should evaluate the opinions of the special master, along with other evidence. While a special master can relieve some of the pressures on a court in a technical trial, the judge should still make an effort to educate himself about the core issues presented. The judge will then be able to evaluate the findings and opinions of the special master without handing the trial over to the master.

3) It is best to allow the opposing sides to select a special master by consensus.

If one party feels that the other is forcing a special master upon them, it is likely to resist cooperating. Instead of framing the special master selection process as a win/lose proposition for each of the parties, the court should help the parties agree on a mutual choice. The selection process used to hire Martin Wachs exemplifies this kind of process.

Neither party may want to involve a special master. If the judge still feels a need to appoint a master, he should make every effort to choose a special master with no real or perceived biases against any of the parties.

4) A special master may need disciplinary authority to help the court resolve highly complicated cases and consent decrees.

Both the plaintiffs and defendants involved in the Century Freeway consent decree said that a special master with disciplinary authority would have helped move along the process. Because of so many intractable disagreements, Judge Pregerson frequently had to mediate between the parties. Most of the Century Freeway interviewees believed that if a special master with prescribed authority (instead of a monitor with no authority) was appointed he would have provided finality to on-going controversies and encouraged the parties to cooperate.

A federal judge cannot supervise the parties in a multi-year consent decree with much regularity. A special master who is dually selected by the parties can act as a proxy for the judge. This role could entail making decisions of minor preliminary matters that may not be worthy of the judge's limited attention. The master can have this limited form of authority and still allow the judge to decide the major points of law and evaluate the major differences between the parties.
5) An order of reference for a special master should be narrowly tailored.

If a special master is the de facto administrator of an agency, or the de facto judge judging the case, the parties are likely to view the master with little credibility. This leads to coerced cooperation and perverts the role of federal judges in our system of government.

It is important that the plaintiffs and defendants feel that ultimately a non-elected official, not subject to political pressures, ruled upon their case. If the special master ends up calling most of the shots, the parties may walk away from the litigation feeling frustrated and as if they were not heard by the court.

LESSONS FOR THE USE OF INJUNCTIONS

Injunctions have become increasingly common in federal courts as plaintiffs bring non-traditional legal claims and seek non-traditional legal remedies. The use of injunctions has increased because of environmental laws such as NEPA and CEQA. These laws allow plaintiffs to seek injunctions because of the irreparable harm that many projects can inflict upon the environment.

As Benjamin Salvaty pointed out, the environmental law injunctions of the early 1970s initially caught agencies such as CalTrans off-guard. As agencies have gained more experience, they are more likely to avoid having an injunction issued against them.

The willingness of courts to issue injunctions has caused agencies to be much more cautious in terms of procedure and practice. Government institutions are much less sloppy with environmental work and are more sensitive to the concerns of affected communities.

The increased use of injunctions is also an indication that courts are more willing to recognize harms that are not accurately compensated by traditional monetary damages. One harm, which emanates from the construction of a freeway, is diminished property values. However, there are also intangible harms that cannot be easily converted into a dollar amount.

Injunctions may either kill a project or delay a project for many years. Most of the interviewees were amazed that the original 1973 injunction blocking the 710 Freeway was lifted 1998. This length of time represented to some of them a prime example of the wrong way to use an injunction.

Warren Widener’s comment about an injunction’s use as a delay tactic revealed a political reality. Injunctions can stop a project for so long that it kills the project’s initial support. Killing a project may or may not be an intended consequence of obtaining an injunction. As Robert Best
pointed out, most injunctions are granted not because the project is substantively wrong, but because of procedural error. Injunctions frequently lead to a project's demise because of the government agency's inability to improve upon procedure or because opponents are able to generate some form of political opposition to the project while the proponent is under the injunction.

Specific Recommendations

1) Injunctions should be granted with predictability by the federal judiciary.

Jerry Baxter and Robert Best both argued that whether or not a court issues an injunction frequently depends on the predilections of the judge rather than the merits of the case. Injunctions should be granted with some form of predictability, rather than be dependent on the particular federal judge who is assigned to the case.

Courts should require plaintiffs to prove likely irreparable harm and the inability of a court to return the aggrieved parties to their pre-project state through traditional legal remedies. Additionally, courts should draw upon prior precedent to analogize facts and issues presented in a case to past injunction decisions with similar fact patterns.

The inconsistencies accompanying the decision of whether or not to issue an injunction is part of the nature of our discretionary judicial system, much like sentencing under criminal law. Almost all courts act consistently in deciding whether to grant an injunction. The minority of cases present problems for courts and create seemingly inconsistent results for litigants.

2) An injunction should try to accommodate the needs of all parties.

If a court enters an injunction for the plaintiffs, the injunction does not have to result in a total loss for the defendant. The court should try to design an injunction that accommodates the wishes and needs of the plaintiffs, while also trying to serve the needs of the defendant agency. For example, Benjamin Salvaty mentioned that when CalTrans was enjoined in 1973, the court designed an injunction that allowed CalTrans to purchase and/or demolish some properties in the pathway of the freeway. While the injunction stopped the construction of the freeway, it did not stop CalTrans from doing preparatory work.
3) An injunction that allows the defendant agency to continue preparatory work may lead to increased bureaucratic momentum in favor of the project.

Government agencies have the advantage of being permanent institutions that withstand the pressures of an injunction. The 710 Freeway injunction allowed CalTrans's staff to continue planning the freeway, which gave CalTrans the hope that eventually they would be able to build the freeway. If CalTrans were enjoined from working on the freeway until the merits of the lawsuit were resolved, it might have given the institution an opportunity to re-evaluate the merits of the project.

4) Courts should not issue an injunction whose primary purpose is to delay a project.

Plaintiffs should not be allowed to rely on a manufactured defect to obtain an injunction. Courts should beware of plaintiffs whose true purpose is to stop a project through political means. It is in no one's interest to have a project be up in the air for a period of many years. The uncertainty affects the lives of people within the area, people within the agencies and the attorneys associated with the case. By using an injunction as a delay tactic, some attorneys may only prolong the inevitable or end up causing the project to be canceled.

Plaintiffs may seek an injunction for legitimate and delay reasons. If an injunction that is granted on a merit-based claim also delays the project for a long period, this is a side benefit to the plaintiffs. The defendant agencies need to realize this possibility. The distinct possibility of a prolonged delay has motivated many government agencies to be much more careful in the way in which they go about building large public works projects.

5) There needs to be a way for courts and parties to ensure that injunctions do not exceed the legitimacy of a project's original environmental assessment.

It is exasperating for all parties involved in an environmental lawsuit to have all the procedural deficiencies remedied by the final action, only to find that the original environmental assessment is out of date. Courts should consider placing reasonable time limits on defendant agencies to remedy the situation. If the defendant agency is unable to meet this deadline, the court could cancel a project. (Of course, the ability of a court to do this would probably require statutory authorization in environmental statutes.) This will encourage the agency to address the situation as soon as possible. It would help resolve the issues sooner and remove uncertainty for the parties involved.
Rarely does anyone like uncertainty. A court-mandated deadline gives both the plaintiffs and the defendants a benchmark when the issues will be resolved.

CONCLUSION

Courts have long used equitable tools to decide disputes. Although equitable tools have their roots in the courts of equity, generalist judges now use them frequently to help manage both busy calendars and complex factual and legal patterns.

The environmental regulation movements of the late 1960s and early 1970s resulted in a variety of new environmental laws. These new laws recognized injuries that did not fit within the traditional mold of common-law jurisprudence. Perhaps the strongest weapon of these environmental laws is the possibility of an injunction to stop a government institution from constructing a potentially harmful project. The use of injunctions in the environmental setting recognizes the irreparable and non-compensatory nature of some government actions. Because these environmental laws pose new types of injuries and require new types of analyses, courts have found the use of equitable tools helpful in trying to resolve environmental cases.

Consent decrees have become a powerful tool for both plaintiffs and judges seeking to reform government agencies. A court can supervise the practices of a government agency over a long period by implementing a consent decree. This extended period of judicial supervision helps to institutionalize values that both the court and the plaintiffs see as positive in a defendant institution. Without consent decrees, courts can only resolve a case or controversy immediately presented to them. While plaintiffs might win a particular case against a government agency based on specific injuries, without consent decrees there is little guarantee that further injuries will not occur. Many plaintiffs seek not only specific redress for their individual injuries, but also demand a defendant agency to change its practices and policies in the future.

As society has become more complex and technical, many of the issues now presented in lawsuits require considerable expertise on the part of the judge and the parties involved. This increased complexity of subject matters and lawsuits has arisen at the same time our federal courts have become crowded. It is difficult for a federal judge with a very busy docket to fully analyze the issues presented in environmental cases. Environmental cases present ideal opportunities for special masters to advise the court on technical issues. In the context of consent decrees, special masters can help the court monitor an institution. Special masters, with appropriately circumscribed duties, can monitor the defendant
institution and report to the court their findings. In this way special masters can operate as chaperones, keeping an eye on the institution, while the parent court can rest assured that it will only have to decide broad matters of policy and legal issues. It is not efficient for a court to monitor the day-to-day operations of an institution.

Some of the most significant court battles surrounding transportation projects took place, or at least started in the 1970s. This was a time when government agencies had to cope with a variety of new environmental regulations and increased pressures from communities. While transportation agencies had to cope with these changing factors, there has been an overall decrease in the number of transportation projects built in the country. In part this is due to the lessened need for large public works projects and to the concern over increasingly high costs. These high costs are attributable to the challenges presented in compliance with environmental laws, litigation and efforts to work with communities.

The foregoing analyses demonstrate how courts have responded to many of the unique injuries and legal issues posed by large transportation projects. By using equitable tools such as consent decrees, special masters and injunctions, courts have been able to respond creatively to these novel issues. These analyses provide recommendations for plaintiffs, defendants and courts to help them create better judicial remedies. The use of these tools presents a variety of potential problems but also has advantages.

The future of large public works projects remains doubtful, especially in a heavily urbanized state like California. However, government agencies trying to plan for the future should recognize the standards placed upon them by environmental laws and should work with communities to avoid litigation. The approach of CalTrans in rebuilding the Cypress Freeway is an encouraging sign for both government agencies and communities.
High Technology in the Transportation Industry: Is the New Data We Gather Worth All the Costs?

Jeremy Kahn*

INTRODUCTION

High technology, as the term is applied to motor carrier transportation, embraces a multitude of sins and unleashes a torrent of opinions, fears, and predictions. Those who fall somewhere between the category of e-commerce evangelist and card carrying Luddite may be among the best positioned to view the technological changes confronting transportation and identify some of the legal issues which technology intensifies, if not necessarily creates.¹

For those engaged in transportation—particularly for those providing legal counsel—few concepts focus the attention quite so fixedly as a government edict, violation of which, or perhaps even compliance with which, might cost thousands of dollars in fines, millions of dollars in judgements, and possible jail time.

¹ Kahn and Kahn Attorneys, Washington D.C., This paper, in a slightly altered form, was first delivered to the Annual Conference of the Canadian Transport Lawyers Association, Whistler B.C., December 1, 2000.

1. This paper focuses exclusively on the U.S. motor carrier laws and rules. Whatever the safety rules which apply to intra-Canadian operations, once a Canadian (or Mexican) carrier crosses the border into the United States, it becomes subject to the same safety rules as U.S. carriers. Thus, for Canadian carriers engaged in international operations who subject themselves to lawsuit in the U.S. by designating agents for service of process, 49 U.S.C. § 13303(a) (Supp. IV 1994), the legal issues raised by new uses of technology are essentially the same as those for U.S. carriers.
Technology is already here; more is on the way. The government edict is not yet a reality, but after May 2, 2000, it is as much a certainty as presidential voting procedure reform. On that day, the Federal Motor Carrier Safety Administration ("FMCSA") issued its proposed Hours of Service ("HOS") Rulemaking,2 which included for the first time in the safety rules a requirement for some commercial motor carriers to install "Electric On Board Recorders" ("EOBR's") in their vehicles.3

This paper leaves to techies those issues surrounding the growing list of possible uses of technology in trucking,4 and instead focuses on the more prosaic—and at least to lawyers more immediate—issues of law and public policy surrounding the use of technology in the collection of operating data through EOBR's, and beyond.

The legal concepts are not novel, but their application to the new technology may be. The carrier industry and its lawyers will be important—but not the only—players in determining how technology and law meld in tomorrow's transportation industry.

**How Did We Get Where We Are?**

Despite the end for all practical purposes of any economic regulation of trucking in recent years,5 safety regulation is alive and well and possibly even flourishing in the United States. The Motor Carrier Safety Improvement Act of 1999 ("MCSIA")6 was both a pragmatic and symbolic statement of safety's importance. One of its stated purposes was "to improve the administration of the Federal motor carrier safety program."7 The new FMCSA created by MCSIA is to have "safety as [its] highest priority."8

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3. This paper uses the "EOBR" acronym favored by FMCSA. In the proposed new HOS regulations, FMCSA refers to use of an "automated time record system," which is defined in proposed 49 C.F.R. § 394.107 as "an electric, electronic, electromechanical, or mechanical system, including a device capable of recording driver's duty status information accurately and automatically" as the proposed rules require.

4. As a recent example of the far reaches of technology's use in trucking, a special section of the *Wall Street Journal* devoted to the growth of e-commerce included a full page of long-haul trucking's use of technology. Daniel Machalaba, *Rig and Roll: The Internet is Transforming the Business of Long-haul Trucking*, WALL ST. J., Oct. 23, 2000, at R51.


8. "In carrying out its duties, the [FMCSA] shall consider the assignment and maintenance of safety as the highest priority, recognizing the clear intent, encouragement, and dedication of
However one may view the efficacy of much that has actually been done by FMCSA, there is no denying that DOT’s Secretary Slater was prolific in issuing hundreds of press releases, including a variation on the statement “Safety is President Clinton’s and Vice President Gore’s highest transportation priority.” Self-proclaimed “public interest” highway safety groups have been successful in raising the public consciousness about commercial vehicle highway safety. Technology’s perceived role in enhancing safety must be viewed in this context.

Technology’s possible role in enhancing safety, at least in theory, has long been recognized. For quite some time, the safety community, and particularly the National Transportation Safety Board (“NTSB”) and its Chairman Jim Hall have been championing the idea that all modes of transportation should be equipped with a device equivalent to the airplane’s cockpit data and voice recorders, under the theory that having such devices, and being able to analyze the data they record, will identify causes of accidents and will result in fewer future accidents and the accompanying costs imposed on society (including the carriers themselves) by such accidents.9

In May 1999, NTSB hosted its “International Symposium on Transportation Recorders,” to discuss then available technology and how it could achieve safety goals by expanding the use of technology. Almost a year earlier, NTSB had issued a “Safety Recommendation Letter” to various trucking industry groups, urging the groups to have their members “equip their commercial vehicle fleets with automated and tamper proof on-board recording devices, such as tachographs or computerized recorders, to identify information concerning both driver and vehicle operating characteristics.”10 According to NTSB, of the three recipients, only ATA responded, and its response was to strongly decline to act on the recommendation.11 The other two have not responded at all.

A year later, in April 2000, NTSB held a second symposium entitled “Transportation Safety and the Law,” which dealt with a likely explanation of a major reason for industry inaction. In his opening remarks, Chairman Hall laid out the promises and problems of new technology

Congress to the furtherance of the highest degree of safety in motor carrier transportation.” Motor Carrier Safety Improvement Act § 101 (enacting new 49 U.S.C. § 113(b) (1994)).

9. As this paper is being completed, Chairman Hall has announced his resignation. With his personal investment in this issue one of its driving forces, one can speculate if NTSB might be less of a champion of this cause under a new chairman.


from the regulatory and private perspective. He began with background:

About a year ago, the Safety Board held a [International Symposium on Transportation Recorders], . . . to explore the varied uses of recorded data to increase both safety and economic efficiency. The participants generally agreed that the intelligent use of recorded data can improve equipment reliability and help a company's bottom line, and that more importantly, it can greatly enhance operational safety. But there was also a profound sense of anxiety about who -outside a company - might use that company's recorded data and for what purposes.

He addressed that "profound sense of anxiety" further, observing:

Many companies appeared poised to develop aggressive programs to assess their own [safety] performance, but were concerned about what would happen to the data they developed in doing so. Would regulators use material derived from voluntary self-assessments as a basis for enforcement? Would the information be made available to the public or for use in litigation? It appears that legal issues are at the heart of the regulators' and transport companies' reluctance to proceed [with a new, non-punitive reporting program]. The same uncertainty often surrounds critical self-evaluation of any kind. No one doubts the importance of self-appraisal - safety audits are important tools and most of us would encourage their use. But, many wonder what becomes of those reports and audits when an incident occurs and the accident investigator wants to look at them, or the regulator has a change of heart, or the media presses for their release.

Chairman Hall was not alone in voicing such concerns. Pat Quinn, President of U.S. Xpress, a major truckload carrier, voiced similar concerns about the way electronic data is used—and misused—in civil litigation. He suggested that some carriers are warned by their attorneys not to gather certain data from advanced technology recorders for fear of how such data might be used in litigation, a fear which outweighs the perceived safety benefits of the data and any company analysis of it.

Beyond traditional liability concerns about such data, Chairman Hall also voiced concerns about information gathering when there is a threat -real or perceived - of criminal prosecutions. He observed that NTSB

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13. Mr. Quinn’s remarks are included in the “Summary” of the April, 2000 NTSB Symposium, distributed with Symposium papers and on the NTSB website. Available at http://www.ntsb.gov/events/2000/symp_legal/LAWSUMM.htm.

14. This fear is not just theoretical, nor is it limited to laws previously on the books. A lethargic Congress quickly became a frenzy of activity to confer on NHTSA criminal penalties to use in accident reporting (or non-reporting) as a result of the Firestone tire fiasco. See Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act, Pub. L. No.
had "for decades, . . . relied on individuals to tell [NTSB] what happened in the accident," which information helped NTSB formulate policies to avoid future accidents. Now, if an accident spawns an immediate criminal investigation, everyone involved will often refuse to talk. To address this growing concern, Chairman Hall offered some further questions for consideration:

What crimes are accidents, and when do accidents become criminal? What is the relationship between pre-incident regulatory compliance and the likelihood of criminal inquiry? How should companies respond to the possibility of parallel criminal and accident investigations? What rules of process and evidence apply when parallel accident and criminal inquiries go forward?

These questions help to frame the issues to be resolved. They are given urgency by FMCSA’s HOS mandate of the use by long distance truckers of EOBR’s.

While it is true that Congress has prohibited FMCSA from issuing a final rule for the time being, it is reasonable to expect that the confluence of NTSB’s longstanding support of such EOBR’s, FMCSA’s buying into the concept that such EOBR’s are worthwhile in the promotion of commercial vehicle safety, and the increasingly strident and heard positions of the public interest highway safety groups supporting new technology, will result in some sort of government requirement for such EOBR’s in the foreseeable future. Further, when defined broadly, EOBR’s appeal to many forward thinking, well financed carriers, for the feedback they provide about operations, with perceived benefits in more efficient operations. The current widespread use of satellite tracking systems is but one example. Thus, it is reasonable to assume that their use will become increasingly widespread, even without a government mandate, and even in the face of strong opposition from some segments within the trucking industry.

106-414, 114 Stat. 1800 (2000) (providing for criminal penalties for failure to report, was signed into law by the President on November 1, 2000, scant months after the problem first made the headlines).

15. Department of Transportation and Related Agencies—Appropriations, Pub. L. No. 106-346, § 335, 114 Stat. 1356, 1356A-71 (2000) (prohibits FMCSA from adopting any proposed rule for a year, but explicitly permits FMCSA to “issuing and proceeding, through all stage of rulemaking other than adoption of a final rule” on a supplement to the original rulemaking, which would “take into appropriate account” the information received in comments on the original rule).

16. John D. Schulz, OOIDA Preparing to Sue Government if On-Board Recorders are Mandated, TRAFFIC WORLD, Dec. 11, 2000, at 33.
FMCSA’s Hours of Service Proposal

The catalyst bringing this issue to the forefront is FMCSA’s HOS rulemaking. The proposal mandates onboard recorders for Type 1 (long haul) and Type 2 (regional) operations, because use of these recorders “should ensure credible verification of drivers’ adherence to, and improve motor carriers’ ability to manage driver compliance with” the new HOS rules. An added benefit is that such recorders will “enable safety investigators and enforcement officials to better verify the drivers’ compliance” with the rules.

The nature of EOBR’s now on the market and likely to appear on the market is beyond this paper’s scope, but the information FMCSA expects EOBR’s to capture is not. The proposed HOS rules define acceptable EOBR’s (called here “automated time record systems,” (see note 3, supra) as those which will satisfy certain “design and performance standards” as follows:

(a) must generate records which can be read directly or remotely at the driver’s home terminal
(b) must record the date, whether the engine is on or off, vehicle speed, distance driven per day, and a continuous time scale
(c) must be capable of maintenance and calibration
(d) must be “to the maximum extent practicable” tamper proof and must prohibit drivers from editing data
(e) must warn the driver visibly and audibly that the system has ceased to function
(f) must identify sensor failures and data edited by anyone when produced in written form
(g) must allow duty status to be updated only when the vehicle is stopped, except for registering time crossing a state line.
(h) must meet specified information collection standards, which prescribe in detail information which must be collected and how it must be available upon request to law enforcement personnel, at a roadside inspection or at a carrier’s place of business.

While this describes FMCSA’s requirements for EOBR’s, it is by no means clear just what requirements FMCSA will ultimately adopt. It is even less clear just how far carriers will go on their own in the use of new technology, which, while not necessarily satisfying FMCSA, satisfies the carrier’s own need for additional data.

Perhaps the easiest example is the current widespread use of satellite

17. Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations, 65 Fed. Reg. 25,540, 25,604 (proposed May 2, 2000) (to be codified at 9 C.F.R. § 394.201(a)).
tracking technology, almost all of which is not now geared to provide all the information FMCSA might want, but which does now provide information in sufficient detail to satisfy a carrier's managerial and safety needs, and, as technology advances, may be modified to record even more data. Indeed, an October 27, 2000, press release by Qualcomm, one of the leading satellite tracking vendors, described an agreement with XATA, a supplier of onboard computer systems for transportation companies, which will make available a new product to extend the capability of satellite tracking to include FMCSA mandated data.

**Issues Raised by Technology**

The mandated use of EOBR's raises a number of legal issues, some of which (but by no means all) are discussed in the following sections. As an opening thought, one might consider how each of the issues is affected if (1) EOBR's are mandatory by reason of government rule, (2) EOBR's are a part of an entirely voluntary, government sanctioned and regulated safety program, or (3) EOBR use is altogether voluntary, without any government standards or involvement. Applying each of these three scenarios to each issue serves to show the broad scope of questions that are now raised and can be raised. Definitive answers seem far off.

*Carrier Civil Liability Arising From EOBR Data.*

When NTSB Chairman Hall spoke of carriers' "profound sense of anxiety" from the increased use of EOBR's, he was talking directly to the lawyers' and trucking industry's concern that data collected could be used, and likely misused in personal injury lawsuits, especially since any accident involving a commercial motor vehicle is, by definition in the public's eye, an accident involving a "killer truck" or a "killer bus." Further, electronic records are generally perceived as the most accurate records, not susceptible to after-the-fact modification. The slightest safety violation, judged strictly by the numbers (such as the instance in which a driver exceeded the posted speed limit by a few miles per hour or exceeded permissible HOS rules by a few minutes, for whatever

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20. How much information is "enough" may all be in the eyes of the beholder. See *GPS Data Clears Trucker of Murder*, TRANSPORT TOPICS, Sept. 25, 2000, at 6 (describes how a truck driver murder suspect was cleared of murder charges when global positioning system records showed he was nowhere near the scene of the crime. The article also mentions another instance in which a trucker confessed to a murder, "after police confronted him with GPS records that proved his truck stopped 600 yards from where [the body] was found.").

21. QUALCOMM Wireless Business Solutions' Satellite Communication Modem to be Offered by XATA Corporation (October 27, 2000), available at http://www.qualcomm.com/cda/pr/view/0,1800,421,00.htm. According to Qualcomm, the new system "will offer customers the ability to lower administrative costs while adhering to current and anticipated federal safety and operational mandates, including reporting driver hours of service . . . ."
reason), would be recorded electronically and made available for any plaintiff to see.22

In the overall scheme of things, use of such data in civil litigation arising out of accidents is only one element of this anxiety. Nearly three years ago, the U.S. General Accounting Office undertook a study of the Federal Aviation Administration’s voluntary “Flight Operational Quality Assurance Programs.”23 In such a program, participating airlines would use flight data to detect technical flaws, unsafe practices, or conditions outside of desired operating procedures early enough to allow timely intervention to avert future accidents or incidents.24 GAO was generally laudatory of such programs, but at the same time, it identified as the “primary factor impeding” the use of such programs the “resolution of data protection issues.” GAO identified these concerns as including not only the disclosure of such data in civil litigation (actually this was the third concern), but more importantly, the use of such data for enforcement/disciplinary purposes against carrier employees and disclosure to the media and the public under the Freedom of Information Act.25

However great the concern for the records associated with the driver of the vehicle involved in an accident, the concern may be even greater for any composite data and carrier internal analyses of that data and the possibly inaccurate picture such data could paint of a carrier’s safety program and compliance. Imagine, for example, a carrier that used EOBR’s to analyze HOS compliance; it would have available in black and white a statement of all its violations over any specified time period.

An ancillary issue is FMCSA’s use of this data for its own enforcement purposes. This is an especially difficult issue, because so many conflicting concerns are at stake. The expressed raison d’être for EOBR’s is improved compliance with the HOS rules. On the carrier side, this is to be reflected in “ensur[ing] credible verification of drivers’ adherence to” HOS requirements, and improvement “of carriers’ ability to manage driver compliance with” HOS rules. On FMCSA’s side, EOBR’s are to

22. See Donald C. Maddey, Proposed On-Board Recorders for Motor Carriers: Fostering Safer Highways or Unfairly Tilting the Litigation Playing Field?, 24 S. I.L.L. U. L.J. 453 (2000). There appears to be little legal literature on the subject, but this is a thorough, excellent treatment of this entire subject. Mr. Massey argues that in a personal injury litigation context, it is inherently unfair that commercial carriers might be required to use (and be subject to liability by reason of the data appearing on) EOBR’s while private vehicles are not burdened with a similar requirement. He concedes that such data as is collected is almost certainly discoverable during litigation, and, as an antidote, urges creation of an evidentiary privilege, to protect against disclosure of such data during the course of litigation.


24. Id. at 1.

25. Id. at 2.
“enable safety investigators and enforcement officials to better verify drivers’ compliance.”

One unresolved question is how enforcement personnel may use the carrier management generated data in the enforcement process. It is one thing for a driver, stopped at a roadside inspection, to be subject to enforcement for HOS violations by reason of the data on his EOBR. It is altogether something else for a motor carrier, which uses this data for its own management compliance purposes, to have its internal analysis of the data used by enforcement personnel as the basis of enforcement action, with the carrier’s internal analysis providing the “proof” of the violation. In the past, FMCSA has seldom appreciated such subtleties. There is little reason to expect this agency to better understand in the future.

To the extent an open and candid discussion of the safety implications of actual EOBR data within a carrier’s own organization may enhance safety, there is a growing recognition of the chilling effect of the uncertainty surrounding the disclosure issue. The appropriate response may perhaps best be described as a work in progress. As an outgrowth of the concern with the Flight Quality program issues described by GAO, supra, Congress enacted 49 U.S.C. § 40123, which gave the FAA statutory power to withhold certain data from the public. As a result, the FAA has undertaken rulemaking to establish guidelines to implement the law, but the rulemaking, first announced in July 1999, is still dragging along. Further, by its very focus on legislation regarding only information submitted voluntarily, this new rule could provide rationale for the argument that Congress intended to exclude from such protection information the government requires to be developed.

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27. 49 U.S.C. § 40123 (1994) (provides, in part, “[n]otwithstanding any other provision of law, neither the . . . [FAA] nor any agency receiving information form the [FAA] shall disclose voluntarily-provided safety or security related information, if the Administrator finds that (1) the disclosure of the information would inhibit the voluntary provision of that type of information and that the receipt of that type of information aids in fulfilling the Administrator’s safety and security responsibilities; and (2) withholding such information from disclosure would be consistent with the Administrator’s safety and security responsibilities.”)


29. Another nuance to this issue is the disclosure process itself. For example, a recent safety-related news story began with a lead which reflected the tension: “After intensive lobbying by the airline industry, the Federal Aviation Administration released an audit that finds wide variations in how carriers document their maintenance and safety procedures, but stops short of faulting companies by name for specific problems.” Stephen Power and Melanie Trotman, Airline Audit Shows Varying Safety Management, WALL ST. J., December 11, 2000, at A6 (emphasis added).
A second pending FAA rulemaking seeks to codify rules for the Flight Operational Quality Assurance Program, along with a proposed provision to keep the data developed from being disclosed. However, even in making its proposal, FAA, while acknowledging the carriers' "significant concerns about increased tort liability as a potential result" of accumulating and reporting data, points out that such concerns are "not within the purview of the FAA to resolve."

Looking at the issue in a different way, FMCSA expects motor carriers to use EOBR data to improve their management of HOS compliance, or, in other words, do more self-policing. Yet, the agency provides little guidance.

Another agency, the Environmental Protection Agency, looking at the desirability of regulated entities undertaking their own self-policing, has developed its own, sophisticated policy which governs the agency's treatment of companies voluntarily identifying their own violations. EPA's stated incentives, for companies which qualify for its self-audit procedures, include "elimination or substantial reduction of the gravity component of civil penalties and a determination not to recommend . . . prosecution." At the same time, EPA makes clear it will ordinarily place copies of any settlements and compliance agreements in its public docket, where they would presumably be available for anyone's review and use. Further, EPA made explicitly clear its opposition to any immunity or privilege which would keep such audits confidential, reasoning that such a privilege would be contrary to the idea of openness in government. Thus, short of a formal, EPA-like program and the harsh penalties frequently imposed by that agency (at least harsh (measured by dollars) as opposed to the penalties ordinarily imposed by FMCSA), there appears to be no FMCSA policy against using in its enforcement actions such potentially self-incriminating data from EOBR's or any other source.

In torts, there seems to be a slowly evolving limited privilege regarding the discovery of some company-generated safety enforcement data provided to the government. A leading case is In re Air Crash Near Cali, Columbia, on December 20, 1995, 959 F. Supp. 1529 (S.D. Fla. 1997). There, personal injury plaintiffs sought safety related material American

33. Id.
34. Id. at 19,624.
35. Id. at 19,623.
The case before the court arose from an NTSB investigation of a FedEx cargo plane crash. The Plaintiffs, who it appears tendered freight which may have been on the downed flight, voluntarily participated in the voluntary safety program as promoting improved air safety, and "there is a . . . compelling public interest in improving the safety of commercial air travel." The Court also agreed with American that even though the Court could find no other recognition of the precise privilege being claimed, it was appropriate to rely on federal policy, as reflected in statutes and regulations (including the FAA policies discussed above) to make the finding that other forums have recognized the need to maintain this safety data as confidential, even if not the claimed privilege itself.

Finally, the Court took pains to hold that "the privilege recognized here is qualified rather than absolute," and that the public interest of confidentiality "does not wholly erase the competing interests of the Plaintiffs, the Court and the public at large in accessing materials that may contain information highly relevant to the claim." The shifting legal sands upon which these sorts of issues are debated are highlighted in Chiron Corp. v. NTSB, 198 F.3d 935 (D.C. Cir 1999). The case before the court arose from an NTSB investigation of a FedEx cargo plane crash. The Plaintiffs, who it appears tendered freight which may have been on the downed flight, voluntarily participated in the


37. Id. at 1534. In the motor carrier field, MCSIA spells out the same strong public interest in improving motor carrier safety. Whether a court would be similarly swayed by such a statement of public policy remains to be seen.

38. Id. at 1535.

39. Id.

40. Id. at 1536.
NTSB investigation. In the court's words, "[c]oncerned that they might be found responsible for the accident and eventually face claims of liability in a civil suit," they requested NTSB to release certain data. 41 NTSB's refusal to release it resulted in the lawsuit. Underlying the case was Plaintiffs' concern that the NTSB report ultimately to be issued on the accident might be inaccurate, and, if used against them in a civil trial, could be harmful. The court went on at great length to describe the firewall Congress had imposed between NTSB investigations and litigation, saying, in part,

"The simple truth here is that NTSB investigatory procedures are not designed to facilitate litigation, and Congress has made it clear that the Board and its reports should not be used to the advantage or disadvantage of any party in a civil lawsuit. In our view, this congressional mandate could not be clearer." 42

At one level, the case is worth considering as a comprehensive review of NTSB's role in accidents, but even more so as an example of how concerns about tort liability can create all sorts of strange legal maneuvering. This case was resolved by a finding that the Plaintiffs had no standing, since they couldn't show they had been injured by NTSB's investigation, because the results of that investigation can't be used in court.

Concerns regarding the use of data from EOBR's as an element in proof of causation in personal injury actions is intuitive. Less intuitive, and perhaps a better indication of the uncharted seas upon which we sail, is the possible liability for an accident caused by driver distraction while using an EOBR. As but one example, the FMCSA's performance standards allow the driver, while driving, to register the time a vehicle crosses a state line—a potentially distracting activity. 43 While FMCSA is making its proposals and NTSB is holding symposia, National Highway Traffic Safety Administration ("NHTSA") held its own public meeting on July 18, 2000, and instituted an internet forum on the "Safety Implications of Driver Distraction When Using In-Vehicle Technologies." 44 NHTSA's Deputy Administrator Rosalyn Millman, in her opening remarks at the meeting, did not say, "Houston, we have a problem," but her remarks could well be interpreted that way. 45 The public perception of the

42. Id. at 940.
43. Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations, 65 Fed. Reg. 25,540, 25,606 (proposed May 2, 2000) (to be codified at 49 C.F.R. § 394.301(g)).
45. She did say, "[t]he driver's responsibility is to operate the vehicle safely. Distraction degrades driver performance. Multiple distractions and more complex distractions degrade driv-
NHTSA's proceeding is at least, in part, that the government has said distractions are unsafe. The liability implications of performing the already dangerous task of driving while concurrently dealing with electronic equipment which the government has found to be even more dangerous are apparent. One can easily imagine the arguments to be made on all sides after the first multimillion dollar judgment based on a finding that a trucker was liable for an accident caused by his performing a task on his EOBR, rather than paying attention to traffic.

Carrier and Employee Criminal Liability Arising From EOBR Data

It is the criminal liability issue which perhaps best highlights the conflicting concerns at play in the use of electronically assembled data. While FMCSA speaks of EOBR's as helping to promote safety by improving monitoring capabilities for HOS compliance, FMCSA's credibility is compromised by its assuming two roles: namely advocate for improving safety, and prosecutor, judge, and jury of those who violate the safety laws. This is in contrast to the NTSB, whose only role is to investigate accidents (and other safety related situations) and make recommendations to improve future safety, but does not assign blame for liability purposes nor punish those who may have engaged in wrongdoing.

This becomes important in light of increasing criminalization of accidents, including, but not limited, to use by federal regulatory agencies of 18 U.S.C. § 1001, the "false statement statute" for purpose of criminal

46. Not only NHTSA has expressed this view. There is a more than nascent movement underfoot to outlaw cellular phones while driving, due to safety concerns. See Christine Haughney, Taking Phones Out of Drivers' Hands; New York County Joins a Growing Effort to Restrict Cellular Use in Vehicles, Washington Post, November 5, 2000, at A8.

47. According to a Wall Street Journal story after the NHTSA meeting, "[a] number of big employers are considering prohibiting their employees from using cell phones while driving because of safety and liability concerns." Jeffrey Ball, Federal Agency to Advise Drivers to Hang Up Phones, Wall St. J., July 19, 2000, at B8.

48. It is more accurate to say that with respect to civil actions, FMCSA acts as prosecutor, judge, and jury. When FMCSA feels criminal prosecution may also be warranted, it calls in the local United States Attorney. For example, a recent press release describes sentencing of a trucking drug testing consortium official whose company did not perform DOT required drug tests, as advertised. According to the release, after FMCSA agents began to suspect a problem, FMCSA worked with the FBI and the local U.S. Attorney "to bring this case to a conclusion." Trucking Consortium Official Sentenced in Drug-Fraud Case, FMCSA 16-00, Sept. 20, 2000, available at http://www.dot.gov/briefing.htm.

49. 18 U.S.C. § 1001 (Supp. IV 1994). This statute provides, in pertinent part, "whoever, in any matter within the jurisdiction of the . . . Government of the United States knowingly and wilfully . . . (2) makes any materially false, fictitious, or fraudulent statement or representation, or (3) makes or uses any false writing or document knowing the same to contain any materially
prosecution of those who, when asked if they were in compliance with federally mandated safety rules, replied, "No," when such answer was not accurate.50 A recent Supreme Court decision, Brogan v. U.S., seems to have interpreted this statute in a very restrictive way, so even answering a simple but inaccurate "no" to a Federal investigator's question may be a violation of §1001. 51 According to Brogan, the one being interviewed has only two choices. He can tell the truth, or he can invoke the self-incrimination protections of the Fifth Amendment. If he makes any other statement, which turns out to be untrue, he has violated §1001.

Keep in mind that however truthful the driver may think he is being, electronically generated data is as black and white as it gets, leaving no room for subjective interpretation or explanation, unless the prosecutor is willing to entertain it. If the EOBR says the driver exceeded permissible hours—for whatever reason and for however great the amount—that by itself may well be enough to prosecute a driver who says he was in compliance with the rules for having made a false statement.

It goes without saying that since, under federal safety rules, the carrier is responsible for compliance by its employees, the corporation (and its principals), not just drivers, may be called upon to answer criminally.52

In his opening comments to the April, 2000 Symposium, NTSB Chairman Hall spoke specifically of his agency's concerns that NTSB's traditional access to those involved in an accident "to tell us what happened in the accident" would be thwarted by a criminal investigation leading to the immediate legal advice to all those involved to invoke their Fifth Amendment rights. Without access to those persons actually involved, who knew exactly what happened, Chairman Hall sees "serious safety issues and serious questions about prevention, remain[ing] unanswered."

While every responsible carrier shares concerns, NTSB's concerns that we should be able to learn from any accident lessons which will help to avoid similar accidents in the future, those concerns are not such that carriers would urge their employees to subject themselves to criminal prosecution and possible imprisonment in the vague chance that their


51. See Brogan v. U.S., 522 U.S. 398 (1998). The general denial, which until Brogan was permissible, was often described as the "exculpatory no."

conviction may promote the public good. So long as there seems to be a readiness by government to use criminal prosecution as a high profile response to some accidents, carriers have little realistic option but to cooperate as little as possible in safety investigations. It would appear public safety is the loser.

Driver Privacy Issues From Use of EOBR Data

In both the United States and Canada, individual rights are often weighed against the public good when formulating government policy. An individual's right to privacy is a concern anytime there is electronic tracking of his activities. The more "intrusive" the electronic device, the more the concern about invasion of privacy. The issue is not an easy one to resolve. On the one hand, an article describes the drivers' point of view as follows:

There may be more intrusive forms of government regulation on the nation's 3 million long-haul truck drivers. But except for the government's decade-old mandatory random drug testing program, no proposal affecting truck drivers is causing more venom than this idea.

On the other, in his statement at the April, 2000 Symposium, NTSB's Chairman Hall phrased the issue in a slightly different way:

The bottom line is the government's responsibility and the Board's primary mission is to ensure public safety. . . . While every individual's right to privacy must be respected and protected as much as possible - should that be the determining factor when we make decisions on public safety issues?

FMCSA expressed a far more myopic view. In its explanation of its HOS proposal, it said,

The FMCSA recognizes that drivers may consider this proposal an invasion of their privacy. This is not our intention. We view the EOBR requirement as a more effective form of the self-monitoring and -reporting drivers have been required to do for many decades in the form of paper records of duty status (logbooks). The EOBR requirement does not include, and should not be interpreted as authorizing, the use of audio or video recording of drivers' activities in, on, or near the vehicle.

While this may state FMCSA's view, NTSB, the other proponent of recorders, hastened to assuage privacy (and litigation) concerns by extending current statutory protection of the privacy of aircraft voice re-

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53. An interesting issue, but one beyond the scope of this paper, is how this concern for individual privacy may differ in the United States and Canada, by reasons of the differences in the U.S. and Canadian views of the inalienable rights of the individual vis-a-vis the government.

54. Schulz, supra note 16.

corders to motor vehicles as well. However, its legislative proposal is limited explicitly to voice or video recordings, both of which FMCSA says are not embraced in its HOS proposal and neither of which is in common use in trucking. While an airplane pilot is in constant voice communication with air traffic controllers and radio communications may be an important part of ship safety, a truck driver will have infrequent voice communications with his company. This would render the NTSB legislation of little value to trucking interests.

Although voice data recorders are not (yet) embraced in the type of EOBR’s contemplated by the FMCSA’s HOS proposal, once voice data is recorded, another element of privacy comes into play, namely the release of the actual voice recording, as opposed to the transcript of what was said. A leading case is New York Times v. NASA, 920 F.2d 1002 (D.C. Cir., 1990), in which the D.C. Circuit, sitting en banc, held in a six to five decision that the last voice recordings of the astronauts of the Space Shuttle Challenger fell within the personal exemption to the Freedom of Information Act.

In the trucking field, Veilleux v. NBC, 206 F.3d 92 (1st Cir. 2000), a case arising from the unflattering NBC “Dateline” show on trucking, dealt with the privacy issue for truck drivers in the drug testing setting, and found that NBC’s broadcast of a driver’s drug testing experience was warranted and not an unlawful invasion of privacy, since “Individuals’ drug use, particularly where related to public safety, may be a legitimate matter of public concern. So, too, may be the regulation of public health

(d) Surface Vehicle Recordings and Transcripts
(1) Confidentiality of Recordings. The Board may not disclose publicly any part of a surface vehicle voice or video recorder recording or transcript of oral communications by or among drivers, train employees, or other operating employees responsible for the movement and direction of the vehicle or vessel, or between such operating employees and company communications centers, related to an accident investigated by the Board. However, the Board shall make public any part of a transcript or any written depiction of visual information that the Board decides is relevant to the accident (A) if the Board holds a public hearing on the accident, at the time of the hearing, or (B) if the Board does not hold a public hearing, at the time a majority of the other factual reports on the accident are placed in the public docket.

57. See Don Phillips, Pilot Fought to Control Jet to Moment of Crash, WASHINGTON POST, December 14, 2000, at A6 (As part of its hearings into the Alaska Airlines crash of January, 2000, NTSB released the transcripts of the voice recording, which dealt not only with the safety aspects of the pilots’ actions, but also interaction with the airlines’ own dispatcher.).

58. 5 U.S.C. § 552(b)(6) (1994) (provides that the FOIA disclosure requirements do not apply to “personnel and medical files and similar files the disclosure of which would constitute a clearly unwarranted invasion of personal privacy”). The Court decision held the voice recordings were a “similar file” and remanded the case for determination as to whether the release of the tapes would be “a clearly unwarranted invasion of personal privacy.”
or safety.”59 This is one example of the public’s concern with safety outweighing an individual’s right to privacy, as Chairman Hall suggested.60

As to driver privacy in general when weighed against safety requirements, the courts have generally held public safety concerns outweigh individual privacy concerns. The best example is mandatory drug testing, which is an intrusive, highly personal “search” of an individual, and which to many, constitutes an “unreasonable search and seizure” in violation of the Constitution’s Fourth Amendment. Nevertheless, privacy concerns arising from this intrusive practice are outweighed by public safety considerations.61 It would seem reasonable to predict that less “intrusive” monitoring of driver activities by EOBR’s in the name of safety would withstand privacy challenges.

The privacy issue differs from civil and criminal liability issues in that the former is generally an individual issue and the latter more directly affects the company. If the law requires the company to monitor the driver’s activities by means of an EOBR, then the company should be insulated from any driver claim of invasion of privacy. The issues surrounding disclosure of the driver’s EOBR recorded safety performance in the media have been raised above. Another privacy issue could arise in the disclosure by the company of a former driver’s EOBR recorded performance to a second company, contemplating hiring him. Presumably, any company liability in such circumstances would be limited by the TEA-21 provision limiting liability for those carriers which make safety records available to another carrier, so long as the first carrier meets all of the conditions of that law.62 One realistic fear is the widespread use of EOBR’s will make readily available—and therefore more frequently requested—far more detailed driver safety information than was ever available in the past. The more detailed the information, the greater the privacy concerns.

59. Veilleux v. NBC, 206 F.3d 92, 101 (1st Cir. 2000).

60. It should be kept in mind the individual’s right to privacy was not considered in a vacuum, but rather weighed against the chilling effect on the First Amendment Freedom of the Press rights of the media which could result from a finding that such safety information was private. If the defendant in an invasion of privacy action was not the media, bolstered by First Amendment concerns, it is at least arguable that the individual’s right to privacy may have been accorded greater weight.


62. 49 U.S.C. § 508 (1994) (enacted by Sec. 4014 of TEA-21, limits the liability for various claims, including specifically “invasion of privacy,” for one motor carrier which furnishes “safety performance records” to a second carrier, but the limitation is quite narrowly drawn, with a number of conditions precedent to the limitation’s effectiveness. Also, more than 30 months after enactment, there are still no regulations to implement the law.).
WHERE ARE WE GOING FROM HERE?

So much written about the future—especially the future of technology—must be based on sheer speculation. The future use of EOBR's is no different. Though one can hardly imagine exactly the form EOBR's will ultimately take, one can realistically imagine instances in which the liability and privacy issues described above will arise. The precise configuration of tomorrow's EOBR is speculation of one sort; the identity of the first trucking company to be hit with a multimillion dollar personal injury judgment solely by information discovered from one of its EOBR's is speculation of an entirely different kind. The first can be viewed with positive anticipation about what new benefit technology will provide; the second can be viewed with anxiety and trepidation.

Yet, without denying that liability concerns are foremost in the minds of carriers, in the broader scheme of things it is most likely that technology will in this area - as in so many others - sweep away before it all prosaic concerns of the industry most affected to the end of increasing our knowledge and our ability to analyze that knowledge.

Trucking safety regulation has never been "cutting edge." FMCSA began its rulemaking with an admission that the current HOS rules have been in effect in their current form since 1962, and with the many significant changes in our transportation system, "It has become increasingly clear, . . . , that a complete reevaluation of the HOS rules is needed." In a world of daily changing technology, a process that requires 40 years to change a government rule will simply be left along the roadside of the information superhighway.

While the issues described here will continue to be of concern to the motor carrier community, it is most likely that the increased sophistication of EOBR's and the valuable-to-management information they can generate and analyze will outweigh such "mundane" issues as liability and privacy. These mundane issues will be left for battle in the few cases in which they arise. Technology will likely consign these issues, like so many others, to the role of historical roadside markers on the highway to the future.

63. As Alfred E. Neuman said in a memorable MAD MAGAZINE issue, "Puppy love is real to the puppy."

Comments

Federalism in Flight:
Preemption Doctrine and Air Crash Litigation

Sean S. Kelly*

I. INTRODUCTION

Somewhere over Pennsylvania, U.S. Air Flight 427 malfunctions.¹ One of thousands of parts known collectively as a Boeing 737 stops working.² A catastrophic chain of events follows. All 132 people aboard are suddenly thrown sideways as the aircraft surges to the left. Another instant, and they are upside-down. The plane pitches earthward. Seconds later, the ground is a spinning blur. With debris hurtling throughout the cabin, few passengers notice. Then it ends. U.S. Air Flight 427 scatters itself over the soil outside of Pittsburgh. There are no survivors.³

Compare the U.S. Air disaster with the following. In the skies above Orlando, a Learjet 35 strains against the decreasing outside pressure.

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2. Hearings conducted by the National Transportation Safety Board have concluded that a faulty valve located in the aircraft’s rudder was primarily responsible for the crash, see Chris Fusco, Four USAir Suits Settled, CHICAGO DAILY HERALD, Nov. 4, 1999, at 15.

3. The facts of USAir Flight 427 are condensed from Morrison, supra note 1, at 1A.
Tens of thousands of feet over Gainesville, something ruptures. Within seconds, all of the air within the skin of the aircraft vents into the surrounding skies. The passengers suddenly find themselves exposed to conditions more severe than those on Mount Everest. Death takes seconds. The depressurized plane, however, flies like a phantom clipper, crossing nearly half the nation before running out of gas and pointing downward toward the center of the earth. All aboard – including pro-golfer Payne Stewart – are lost.⁴

The victims of each accident experienced similar desperation and trauma in their final moments. However, the first air disaster brought the largest single-victim airline settlement of all time: 25 million dollars was awarded to one victim’s spouse.⁵ Any lawsuit brought as a result of the second tragedy might not survive a motion to dismiss.⁶ The reason is a complex interplay between federal and state aviation law known as federal preemption.

This Note presents federal preemption in the context of domestic air accident litigation.⁷ It discusses the reasons Congress did not, and should not, remove flight from supplementary regulation by the states. The first part will give an aerial view of preemption doctrine.⁸ The second part will explain why a finding of preemption is against the weight of Supreme Court precedent, the intent of Congress, and the goals of federal aviation policy. It will also include a preflight checklist to identify the reasons federal law should not preempt an aviation claim. The Note will conclude by

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⁵ See Morrison, supra note 1, at 1A.


⁷ This article deals with preemption as it applies to domestic air accident litigation. Preemption, however, plays a predominant role in litigation involving accidents beyond the boundaries of the United States. For example, the Supreme Court recently held that the Warsaw Convention preempts all claims involving incidents aboard flights to landing in a signatory country. See Tseng v. El Al Airlines, 525 U.S. 155 (1999). Additionally, air accidents occurring more than a marine league from shore are governed by the Death on the High Seas Act. See Charles J. McMullin, Obstacles and Guidance in Trying Aviation Wrongful Death Cases, 1997 J. M. B. 109, 111. Accidents beyond the boundaries of the United States are beyond the scope of this Note.

⁸ Federal preemption is the central debate of a century of aviation law. Courts do not have an answer to the question, but the discussion has been lively. Judges seem to defend their positions with all the bravado of test pilots. One Judge, recently certifying the issue, boldly proclaimed: "Reasonable minds might differ with my view, although they would be wrong." United Airlines, Inc. v. Mesa Airlines, Inc., 1999 U.S. Dist. LEXIS 16256, *4 (N.D. Ill. 1999).
explaining why the Supreme Court should grant certiorari on the issue of preemption at the next possible opportunity. The 1990s witnessed key battles on the issue of preemption. The next opportunity could be soon.

II. AN AERIAL VIEW OF PREEMPTION

In 1903, the Wright Brothers assembled loose bike parts and invented the aerospace industry. The invention of aerospace law was not far behind. With the simple flip of a coin, Wilbur and Orville decided who would be the first to take a powered flight into history. After nearly a century, however, barristers are still arguing over who should occupy the left seat\(^9\) of aviation law.\(^{10}\) Some jurisdictions believe that Congress should hold the controls.\(^{11}\) Others maintain that the controls are in the hands of the states.\(^{12}\) A consensus is not likely. Preemption was not borne of aviation law, however, and any discussion of the issue begins long before the Wrights dreamt of powered flight, and before the dawn of the aviation century.

A. BASIC TENETS OF FEDERAL PREEMPTION

Much as pilots must distribute the weight of an aircraft for the plane to fly with stability,\(^{13}\) legislators must balance national power between the federal and state governments to keep the nation on a steady course. This delicate balance between federal and state power is called federalism.\(^{14}\) The Founding Fathers established the doctrine of federalism in the Constitution and the Bill of Rights.\(^{15}\) Preemption developed as a tool—a device which legislators use to shift the balance of power in favor of the national government.

Under the Constitution, Congress has plenary authority to remove certain activities from state control.\(^{16}\) This authority derives from several textual provisions, including the Supremacy Clause,\(^{17}\) the Necessary and Proper Clause,\(^{18}\) and the powers enumerated under Article I.\(^{19}\) When

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10. See discussion infra at Part III.
12. See discussion infra at Part III.B.2.
13. MACHADO, supra note 9, at P1.
16. Id. at 337.
17. U.S. CONST. art. VI, cl. 2.
Congress determines that a certain activity (nuclear safety, for example\textsuperscript{20}) would function better under a uniform system of federal laws, Congress may remove the activity from state regulation.\textsuperscript{21} In these cases, Congressional legislation preempts state law.\textsuperscript{22}

There are several types of federal preemption.\textsuperscript{23} When Congress addresses the issue in a statutory provision, express preemption exists.\textsuperscript{24} Courts may also infer that Congress intended to preempt state law. This is called implied preemption, and it has two types.\textsuperscript{25} When Congress enacts such broad legislation that states have little conceivable room to regulate an activity, Courts may infer that Congress intends to remove the entire activity from state control.\textsuperscript{26} This is known as field preemption.\textsuperscript{27} In situations where state law actually conflicts with the terms\textsuperscript{28} or goals\textsuperscript{29} of a federal statute, federal law supersedes state law by the virtue of the Supremacy Clause. This is known as conflict preemption.\textsuperscript{30}

Whether it is express or implied, preemption is a murky topic.\textsuperscript{31} The presence of an express provision does not necessarily make the issue any clearer. Courts still face the task of defining the scope of a preemption provision.\textsuperscript{32} Absent preemptive language, Courts must decide whether state law conflicts with federal law, or whether Congress intended to establish an exclusive web of federal regulatory control. In either case,
courts may not remove an activity from state control unless it is the clear and manifest purpose of Congress to do so.  

Federalism does provide a certain amount of state sovereignty. States’ rights are reserved by the Tenth Amendment. State power can operate either independently, or concurrent with federal power. For example, when Congress has the authority to regulate an activity but chooses not to, states obtain the power to regulate the activity by default. On these occasions, state and federal authority are concurrent, but federal power lies dormant. States may then regulate freely. On other occasions, an activity may traditionally belong within the exclusive realm of state, rather than federal, control. Activities such as public safety, morals, and general welfare traditionally lie within these “police powers” of the states.

Preemption doctrine is currently redefining itself. The principle received its last major tenet with the Supreme Court’s ruling in Cipollone v. Liggett Group, Inc, which ratified the doctrine expressio unius est exclusio alterius. Literally translated, the maxim means “to express one is to exclude the other.” In practice, it means the enactment of a provision defining the preemptive reach of a statute leaves matters outside the statute open to state control.

Taken at face value, the Supreme Court’s ruling in Cipollone preserves the balance of state and federal power established in both the Constitution and the Bill of Rights. Under the Supremacy Clause and the Necessary and Proper Clause, Congress has broad power to draft legislation preempting state law. Areas outside federal control are subject to

34. Congressional intent has been called the “ultimate touchstone” of preemption analysis.
35. U.S. CONST. amend. X.
36. May & Ides, supra note 14, at 287.
37. Id.
38. Id. Even when Congressional power is dormant, however, states power is not unlimited. State law must be rationally related to a legitimate state purpose, and must not unduly burden or discriminate against other states. Id. at 288.
39. Id. at 177.
40. Id. at 289.
42. Cipollone addressed whether the Public Health Cigarette Smoking Act of 1969, 15 U.S.C. § 1331-1340, preempted common-law death claims against cigarette manufacturers. See Cipollone 505 U.S. at 509. The Supreme Court’s ruling, however, has been applied beyond the cigarette industry. Whether Cipollone applies to aviation is the subject of dispute. See discussion infra Part III.
44. Cipollone, 505 U.S. at 517 (1992).
state authority under the Tenth Amendment.\textsuperscript{46} \textit{Cipollone} applies this principle to express preemption. When Congress drafts a preemption provision, areas outside the provision, by default, are open to regulation by the states.\textsuperscript{47}

The \textit{Cipollone} standard presents a difficult standard for lower courts to implement,\textsuperscript{48} and courts subject preemptive provisions to varying levels of scrutiny. Some courts, for example, have held that \textit{Cipollone} prohibits courts from engaging in any implied preemption analysis whenever a statute contains an express preemption clause. An implied preemption analysis may proceed only when a statute lacks any preemptive language.\textsuperscript{49} Other courts have held that the mere presence of an express preemption provision does not necessarily prohibit a finding of implied preemption. An express preemption provision must provide a "reliable indicium of congressional intent" with respect to state authority.\textsuperscript{50} When a preemption provision is "facially ambiguous as to Congress's intent," these jurisdictions hold that courts may resort to an implied preemption analysis despite the preemptive language.\textsuperscript{51} A preemption provision limits, but does not preclude, a finding of implied preemption.\textsuperscript{52}

Courts also disagree over how to apply a state regulation which lies outside the scope of an express preemption clause (and thus should not be preempted), but actually conflicts with federal statutes (and thus should be preempted.).\textsuperscript{53} Traditional theory holds that state laws that are not expressly prohibited, but actually conflict with federal law, are void under the Supremacy Clause.\textsuperscript{54} Some courts instead hold that, despite the conflict, any state law outside the scope of the express provisions remains in force.\textsuperscript{55} The doctrine is full of dispute and inconsistency.

Preemption doctrine is particularly difficult to apply to the law of flight.\textsuperscript{56} Federal law encompasses every facet of aeronautics. Federal Aviation statutes are detailed, often quite specific, and number in the

\textsuperscript{46} May \& Ides, \textit{supra} note 14, at 169.
\textsuperscript{47} \textit{Cipollone}, 505 U.S. at 516-17.
\textsuperscript{49} \textit{American Agric. Movement v. Bd. of Trade}, 977 F.2d 1147, 1154 (7th Cir. 1992).
\textsuperscript{50} \textit{Cipollone}, 505 U.S. at 517.
\textsuperscript{51} \textit{See Gills}, 829 F. Supp. at 898 (discussing jurisdictions which have found implied preemption despite preemptive language contained in a statute).
\textsuperscript{52} This ruling seems to preserve the spirit of \textit{Cipollone}, which held that Congress's enactment of a provision defining the preemptive reach of a statute implies that matters beyond that reach are open to state control. \textit{Cipollone}, 505 U.S. at 517.
\textsuperscript{53} \textit{See Gills}, 829 F. Supp. at 898; \textit{See also} Public Health Trust of Dade County, Fla. v. Lake Aircraft, Inc., 992 F.2d at 295.
\textsuperscript{54} \textit{Cleveland v. Piper Aircraft Corp.}, 985 F.2d 1438, 1447 (10th Cir. 1993).
\textsuperscript{55} \textit{Id.}
\textsuperscript{56} \textit{See} discussion \textit{infra} Part III.
thousands. They give the appearance of implied preemption. However, Congress has also enacted express preemption provisions removing certain narrow aspects of aeronautics from state control. State common-law rules furthermore apply like gospel in air crash cases. Aviation law, in short, does not fit neatly into the mold of preemption doctrine. It is a disorienting legal fog, traversed by litigators piloting their cases with few instruments to guide them.

B. Aviation Law: Tilting the Scales

Unlike other fields of law, aviation rests on slanted scales of justice. In air crash cases, state law favors the plaintiff. Federal preemption, in most cases, would tip the scales to the other side, in favor of pilots, airlines, and manufacturers. In order to understand the phenomenon, it is first necessary to understand the interplay of federal and state aeronautical law.


In the early days of flight, aviation was largely unregulated. Congress first established its presence with an austere code of twenty-five regulations, including such aeronautical wisdom as "Don't take the machine into the air unless you are satisfied it will fly." Congressional control grew as the century progressed. Federal aviation statutes now include thousands of regulations pertaining to pilots, airports, airlines, manufacturers, and aircraft noise. Congress has established such broad authority, that Justice Jackson, in a famous concurrence, described its scope as follows:

Federal control is extensive and exclusive. Planes do not wander about the skies unless you are satisfied they will fly. For a discussion of strict liability, see Theresa Ludwig Kruk, Annotation, Res Ipsa Loquitur in Aviation Accidents, 25 A.L.R. 4th 1237 (1999). For a discussion of strict liability, see Shea, supra note 59, at 756-58.

57. See discussion infra Part II.B.
58. Id.
64. Acts of Congress affecting aviation are codified at Title 49, Transportation, Subtitle VII - Aviation Programs. Regulations enacted by the Federal Aviation Administration are codified at Title 14 of the Code of Federal Regulations.
sky like vagrant clouds. They move only by federal permission, subject to federal inspection, in the hands of federally certified personnel and under an intricate system of federal commands. The moment a ship taxis onto a runway it is caught up in an elaborate and detailed system of controls.\textsuperscript{65}

In short, no aircraft or pilot can ever outfly the reach of Washington. Congress regulates flight through a comprehensive statute known as The Federal Aviation Act of 1958.\textsuperscript{66} The Act sets forth the goals of federal aeronautics policy.\textsuperscript{67} It also creates the Federal Aviation Administration,\textsuperscript{68} and gives the Administration broad authority to adopt regulations when the Administration perceives a need.\textsuperscript{69}

The Federal Aviation Act, as originally drafted, contained no express terms discussing preemption.\textsuperscript{70} It did, however, contain two clauses which seemed to balance federal and state authority. The first is the Sovereignty Clause, found at § 40103, which declares, "the Government of the United States shall have exclusive jurisdiction over the airspace of the United States."\textsuperscript{71} The second clause is a savings clause. It proclaims that the Act does not supersede any remedies existing at statutory or common law.\textsuperscript{72} How these clauses interact has been the subject of strong controversy among the federal courts.

Early decisions interpreted the sovereignty clause as conveying to Congress the exclusive right to regulate the skies, while states reserved the right to regulate the land. Once an aircraft touched down, it entered state jurisdiction.\textsuperscript{73} Few courts uphold this interpretation today.\textsuperscript{74} In-

\begin{itemize}
  \item \textsuperscript{65} Northwest Airlines v. Minnesota, 322 U.S. 292, 303 (1944).
  \item \textsuperscript{67} 49 U.S.C. § 40101 (2000).
  \item \textsuperscript{68} Tarnay, \textit{supra} note 63, at 599.
  \item \textsuperscript{69} 49 U.S.C. § 44701 (1999).
  \item \textsuperscript{70} \textit{See} Shea, \textit{supra} note 59, at 762.
  \item \textsuperscript{71} 49 U.S.C. § 40103 (1999).
  \item \textsuperscript{72} 49 U.S.C. § 40120(c) (1999).
  \item \textsuperscript{74} The Sixth Circuit is one of the few adherents. Gustafson v. City of Lake Angelus, 76 F.3d 778, 786 (6th Cir. 1996) "The FAA has, thus, made clear that although FAA regulations preempt local law in regard to aircraft safety, the navigable airspace, and noise control, the FAA does not believe Congress expressly or impliedly meant to preempt regulation of local land or water use in regard to the location of airports or plane landing sites."
stead, courts have developed a split of authority. The majority of Circuits holds that, due to the savings clause, aviation has not been preempted.75 Other circuits hold that the savings clause preserves state damages or injunctive relief, as remedies, but only for a breach of federal regulations. This is tantamount to a finding of complete preemption, and it is controlling precedent in at least two jurisdictions.76

The Federal Aviation Act later received two significant modifications, each critical to the issue of preemption. Both amendments add express preemption provisions. The first is known as the Airline Deregulation Act of 1978 (ADA).77 In an attempt to strengthen the airline industry by opening it to direct market competition, Congress removed airline “prices, routes, or services” from state regulatory control.78 The second is known as the General Aviation Revitalization Act of 1994 (GARA),79 and it represents an attempt by Congress to bolster America’s light aircraft industry by protecting it from products liability lawsuits.80 GARA, a federal statute of repose, cuts off the tail of liability of manufacturers for aircraft or component parts that have been in service more than eighteen years.81 Both statutes only preempt narrow areas of state air law, leaving courts to argue about areas of aviation not preempted by ADA and GARA.

Regulations enacted by the Federal Aviation Administration constitute a second major source of federal statutory control. Known among pilots as Federal Aviation Regulations, or FARs, they are codified at Title 14 of the Code of Federal Regulations.82 These detailed regulations prescribe standards for every aspect of the aerospace industry to follow.83 Everything from the time a pilot must wait after consuming alcohol before acting as pilot-in-command,84 to the recommended ground loading on ski-equipped bushplanes,85 can be found in the FARs. Compliance is mandatory, and a breach can bring both administrative and civil penal-

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75. See discussion infra Part III.B.1.
76. See discussion infra Part III.B.2.
81. Id. at 310-11.
82. Machado, supra note 9, at Fl.
83. Shea, supra note 59, at 754.
84. 14 C.F.R. § 91.17 (2000) (also known as the “eight-hour, bottle-to-throttle” rule).
ties.\textsuperscript{86} The regulations are so extensive, in fact, that proponents of preemption believe they indicate Congress's intent to establish a uniform system of federal control.\textsuperscript{87}

FARs have various functions. For example, they have been used to define certain terms, such as “crew member,” for aviation insurance purposes.\textsuperscript{88} Their most important function, however, is in defining the standards of care for participants in the aviation industry. Many states have incorporated the FARs into state law.\textsuperscript{89} The weight given to FARs however, varies from jurisdiction to jurisdiction. Some jurisdictions apply the FARs as a general standard of conduct. Violation of an FAR may constitute “some evidence of negligence”\textsuperscript{90} under state law. Conversely, if the circumstances require additional precautions, pilots must take them. FARs supply minimum standards, and compliance may not excuse a pilot, airline, manufacturer, or other entity from liability.\textsuperscript{91} Other jurisdictions hold that a breach of FARs conveys a presumption of negligence, which may be refuted by a showing of reasonable care.\textsuperscript{92} The application of FARs is far from uniform.

Many jurisdictions hold that a violation of FARs, as regulatory or safety statutes, conclusively establishes negligence per se.\textsuperscript{93} Courts disagree, however as to whether all FARs provide sufficiently clear standards of conduct to warrant this imposition of strict liability. Some jurisdictions divide the FARs into the general and the specific. Provisions such as the duty to avoid operating an aircraft in a careless or reckless manner are general standards of conduct. General standards are too vague to warrant the imposition of negligence per se.\textsuperscript{94} Other provisions, such as the duty to avoid known icing conditions,\textsuperscript{95} create a specific duty. Breach of a spe-

\begin{thebibliography}{99}
\bibitem{worldairways} World Airways, Inc. v. International Bhd. of Teamsters, 578 F.2d 800 (9th Cir. 1978).
\bibitem{abullah} Abdullah v. American Airlines, Inc., 181 F.3d 363, 364 (3d Cir. 1999) “Our finding on preemption is based on our determination that the FAA and relevant federal regulations establish complete and thorough safety standards for interstate and international air transportation and that these standards are not subject to supplementation by, or variation among, jurisdictions.”
\bibitem{inre} \textit{In re Air Crash Disaster}, 635 F.2d 67, 76 (2d Cir. 1980).
\bibitem{beck} Beck v. Thompson, 818 F.2d 1204, 1209 (1987).
\bibitem{steering} Steering Committee v. United States, 6 F.3d 572, 577 (9th Cir. 1993).
\bibitem{seeinre} See \textit{In re N-500L Cases}, 691 F.2d 15 (1st Cir. 1982); Bibler v. United States, 492 F.2d 1351 (6th Cir. 1974); Bowen v. United States, 570 F.2d 1311 (7th Cir. 1978); Northwest Capital Management & Trust Co. v. United States, 828 F.2d 1330 (8th Cir. 1987).
\bibitem{ridge} Ridge v. Cessna Aircraft Co., 117 F.3d 126, 131 (4th Cir. 1997).
\bibitem{bowen} Bowen, 570 F.2d at 1320.
\end{thebibliography}
cific duty is negligence per se, resulting in strict liability. Not all jurisdic-
tions, however, have separated the FARs into the general and the
specific. In these jurisdictions, any breach of any regulation—no matter
how general, vague, and open to interpretation—would support a finding
of negligence per se.

Aside from the Federal Aviation Act and accompanying FARs, a
body of federal common law is developing around aviation cases. The
most potentially significant is the federal law of contribution and indem-
nity among multiple tortfeasors. In the few jurisdictions upholding con-
tributory negligence as a complete defense, any pilot error would bar a
pilot's claim against a manufacturer—even if the aircraft contained a le-
gitimate design defect which directly contributed to the crash. The Fed-
eral law of contribution and indemnity would overcome this harsh
outcome by determining the degree of fault on a percentage bases, and
allocating damages in proportion to fault.

All the above federal rules—the Federal Aviation Act, the FARs,
and federal common law—would supplant state laws if a jurisdiction finds
federal preemption. Compliance with statutes and regulations would be-
come a complete defense. This defense would overcome a strong judi-
cial bias against the aviation industry inherent in state tort doctrines.
Victims, however, would have a lot to lose.

2. State Tort Doctrine

State tort law arose in the context of barnstormers and biplanes. Dur-
ing the early era of flight, aviators were gallant and death-defying,
and from a legal standpoint, flying was an ultrahazardous activity. As
most ultrahazardous activities, flying brought strict liability on its partici-
pants. The first Uniform Aeronautics Act held pilots absolutely liable
for any damage caused by the flight of the aircraft, whether a pilot was
negligent or not. This was the start of the anti-flying bias aviation
would face as state law continued to evolve.

Strict liability continues to be a constant presence in aerospace law,
and it threatens both pilots and the industry. Under state law, a pilot may

96. Beck, 818 F.2d at 1204.
97. See In re N-500L, 691 F.2d at 28.
98. Bowen, 570 F.2d at 1319-20.
101. Truitt, supra note 60, at 579.
102. William J. Appel, Annotation, Strict Liability, in Absence of Statute, for Injury or Dam-
age Occurring on the Ground Caused by Ascent, Descent, or Flight of Aircraft, 73 A.L.R. 4th 416
(2000).
103. Id.
104. Id.
be found negligent per se for violating a safety statute, or FAR. The Restatement (Second) of Torts § 520A also holds pilots strictly liable for ground damage caused by the flight of the aircraft. This would, in theory, impose strict liability for a crash. Courts, however, rarely apply the doctrine in the arena of air crash litigation.

Manufacturers face a greater risk from state tort doctrine. When an aircraft crashes, the manufacturer has traditionally been subjected to “automatic inclusion” as a defendant, and faced strict liability for the aircraft or component. In order to establish liability, an injured victim need only prove three factors: 1) she was using the product as the manufacturer intended; 2) the product contained a manufacturing or design defect of which the victim was not aware; and 3) this defect caused the victim’s injury. The culpability of the manufacturer is immaterial. Strict products liability, both for defective design and defective manufacture, was adopted by the Restatement (Second) of Torts § 402A. It has been adopted by an “overwhelming majority” of jurisdictions, achieving nearly “the dignity of a holy writ.”

Even if pilots, airlines, and manufacturers are not held strictly liable, however, they are often presumed negligent under the tort doctrine of res ipsa loquitur. Literally translated as “the thing speaks for itself,” res ipsa is becoming increasingly successful as a means of proving aviation accident cases. In practice, a court presumes that the incident would not ordinarily occur, in the absence of negligence. The presumption can be overcome by a showing of due care on the part of the defendant. It is the civil equivalent of “guilty until proven innocent.” A defendant is

105. See supra note 93.
108. See Appel, supra note 102, at 416.
109. McAllister, supra note 80, at 307.
110. Shea, supra note 59, at 757.
111. Id.
112. RESTATEMENT (SECOND) OF TORTS § 402A (1965) (stating that strict liability applies to aircraft).
113. Shea, supra note 59, at 757.
116. Id.
117. Id.
118. Professional pilot and columnist Len Morgan wrote, “You’ve learned that the American way is to presume an individual innocent until proved guilty. The professional pilot soon learns not to lean heavily on that.” Len Morgan, Going Pro: When You’re Starting Your Piloting Career, Expect Surprises, FLYING, August, 1984, at 18.
liable until proven non-livable.\textsuperscript{119} \textit{Res ipsa} is common in air crash litigation, and has been applied to midair collisions, emergency landings, collisions with mountains or surface structures, and ground damage caused by objects falling from aircraft.\textsuperscript{120}

These specialized state tort-law doctrines are not the only factors placing aviation defendants at a disadvantage in the courtroom. Defendants face a phenomenon labeled "the technical problem."\textsuperscript{121} Aviation litigators, in a relatively short time, must process complex legal and aerodynamic theories and present these theories convincingly to a judge and jury of nonexperts. The jury must interpret complicated theories and concepts, encompassing aerodynamics, engineering, and air-traffic and pilot jargon, and apply complex legal doctrines to reach a decision.\textsuperscript{122} Under such circumstances, it is easy to fall back on gut-level instinct in choosing between the deep pocket and the wounded victim. Thus, juries tend to find in favor of the injured claimant at rates much greater than expected,\textsuperscript{123} and verdicts are often huge, reaching into the hundreds of millions of dollars.\textsuperscript{124}

From a defendant's perspective, preemption would simply level the playing field, but if federal law supplants the state doctrines of strict liability, \textit{res ipsa loquitur}, and ordinary negligence, then legitimate claimants lose the fiercest weapons in their arsenal. Compliance with all applicable federal regulations would be conclusive that the defendant acted with due care, even if a jury could be convinced otherwise. The choice of law can thus be critical in air disaster litigation,\textsuperscript{125} and neither side is likely to give in.

\section*{III. The Aviation Preemption Debate}

\subsection*{A. Both Sides of a Complex Issue}

Preemption does not often arise in the context of air crash litigation. This is surprising, since preemption is perhaps the hottest dispute in other areas of aviation tort law. It shows up in cases involving in-flight injury from turbulence\textsuperscript{126} and overhead baggage,\textsuperscript{127} wrongful exclusion,\textsuperscript{128} and

\begin{thebibliography}{99}
\bibitem{Kruk} Kruk, \textit{supra} note 61, at 1237.
\bibitem{Id} \textit{Id}.
\bibitem{Truitt} Truitt, \textit{supra} note 60, at 580.
\bibitem{Idat579-80} \textit{Id.} at 579-80.
\bibitem{Idat579} \textit{Id.} at 579.
\bibitem{E.g.Gee} \textit{E.g.}, Gee \textit{v.} Southwest Airlines, 1997 U.S. App. LEXIS 12266 (9th Cir. 1997).
\end{thebibliography}
Preemption is primarily a defendant’s doctrine, and defendants involved in air crash litigation have more at stake than parties in any other type of aviation claim. Logically, they should press any issue powerful enough to tip the scales of justice legally in their favor. For some reason, they rarely do. However, as the recent debate illustrates, both proponents and opponents of preemption have sound legal arguments, and the current split of authority supports either side.

Proponents of preemption claim a textual foundation for their side of the debate. They cite the Sovereignty Clause of the Federal Aviation Act as evidence of Congress’s intent to create a uniform system of federal control. They also claim that the hundreds of Federal Aviation Regulations leave no room for state supplementation. The fact that Congress enacted a few very narrow preemption provisions, proponents argue, does not accurately reflect Congress’s intent. The comprehensive nature of federal regulation implies Congressional intent to preempt the field.

Proponents cite the goals of the Federal Aviation Act as further evidence that Congress could not have intended to leave aviation in the hands of the states. The Act has a dual purpose. It promotes air safety, while promoting the health of a vital American industry. Congress must balance these two concerns when enacting any aviation legislation. State legislatures and courts face no such restriction. A jury, for example, may consider many factors in deliberation. The health of the aviation industry is usually not one of them. Therefore, state law contravenes one goal of the Federal Aviation Act.

Proponents also analogize aviation to federal statutes in other fields of transportation. For example, under the National Traffic and Motor Vehicle Safety Act of 1966 (MVSA), Congress has adopted Federal Motor Safety Standards governing the design and manufacture of automobiles. Some courts have declared that these standards preempt any effort by state courts to impose liability under state products liability law. Like the MVSA, the Federal Ports and Waterways Safety Act of

130. World Airways, Inc. v. International Bhd. of Teamsters, 578 F.2d 800 (9th Cir. 1978).
134. Hand, supra note 132, at 785-86.
136. Hand, supra note 132, at 782-84.
1972 bears a striking similarity to the Federal Aviation Act.\textsuperscript{139} It establishes comprehensive minimum standards for the design, construction, alteration, maintenance, and operation of vessels carrying bulk cargoes.\textsuperscript{140} The Supreme Court has ruled that, despite the statutory language labeling these regulations "minimum standards" for safety, any state action imposing more stringent requirements would be void under the Supremacy Clause.\textsuperscript{141} Despite the fact that aviation regulations are, under the Act, also minimum standards, they should, likewise, supersede any state attempts to regulate aviation.\textsuperscript{142}

Proponents claim additional support from public policy. According to proponents, aviation, as an interstate activity, would function much better under centralized control.\textsuperscript{143} Pilots can easily cross the nation on a single tank of gas. They should not expect to be held to differing standards of conduct or certification requirements in each state.\textsuperscript{144} Nor should a manufacturer put a new design through thousands of changes under the federal certification process, only for a jury in a single jurisdiction to find the aircraft defective.\textsuperscript{145} Proponents claim that state tort doctrine is a relic of the era when federal control was minimal. It has no place in the modern reality of flight.\textsuperscript{146}

Opponents cite arguments that are just as numerous, and no less convincing. Opponents claim that the Federal Aviation Act contains a savings clause, explicitly preserving state statutory and common-law control over aviation.\textsuperscript{147} The Act also declares that the Federal Aviation Regulations are "minimum standards."\textsuperscript{148} Taken together with the two very narrow preemption provisions adopted under the Airline Deregulation Act and the General Aviation Revitalization Act, federal statutes clearly express the desire of Congress to leave areas outside the express preemption provisions within the hands of the states.\textsuperscript{149} In fact, opponents argue that the express preemption provisions would not even have been necessary if the entire field of aviation were already under federal control.

Opponents claim the recently-enacted \textit{Cipollone} standard is conclusive on the issue of federal preemption. Under \textit{Cipollone}, once Congress

\begin{footnotes}
\textsuperscript{139} Hand, supra note 132, at 781.
\textsuperscript{141} Id. at 157-59.
\textsuperscript{142} Hand, supra note 132, at 781-83.
\textsuperscript{143} French v. Pan Am Express, Inc., 869 F.2d 1, 6 (1st Cir. 1989).
\textsuperscript{144} Id.
\textsuperscript{145} Hand, supra note 132, at 784-85.
\textsuperscript{146} Id.
\textsuperscript{147} 49 U.S.C. § 40120(c) (1999).
\textsuperscript{149} Cleveland v. Piper Aircraft Corp., 985 F.2d 1438, 1443-44 (10th Cir. 1993).
\end{footnotes}
has spoken on preemption by adopting express preemption provisions, and those provisions reasonably indicate Congress’s intent regarding the field, areas outside the provisions are open to state control.\textsuperscript{150} Congress has adopted express preemption provisions regarding aeronautics.\textsuperscript{151} In doing so, Congress struck down more comprehensive preemptive proposals.\textsuperscript{152} Courts should, therefore, accept these provisions as conclusive.\textsuperscript{153} Areas outside the express language should be fair game for the states.\textsuperscript{154} If Congress desired to preempt the entire field, it could have done so under the Commerce Clause.\textsuperscript{155}

Opponents claim public policy also necessitates a finding against preemption. Tort law, the basic law at issue in aviation cases, has historically been left to the states. State police powers include public safety and general welfare.\textsuperscript{156} Safety of the skies and general welfare of the flying public is no different.\textsuperscript{157} In addition, much of the aviation industry is self-policing. Manufacturers are responsible, in many instances, for self-certifying the safety of their aircraft under the Federal Aviation Administration’s Delegation of Authority provisions.\textsuperscript{158} If compliance with these airworthiness regulations were the sole means used to judge a manufacturer’s conduct, the potential for fraud would be high.\textsuperscript{159} Safety thus depends on state tort law.

In this manner, the debate continues. The majority of jurisdictions have faced the issue either at the trial level or on appeal. Most of these cases concerned torts outside the air crash context. However, the Federal Aviation Act provides no reason to distinguish between different areas of flight. Any ruling that applies to one area, no matter how peripheral, should apply to all other areas of flight with equal force. Different facts do not merit a different application of federal law.\textsuperscript{160}

B. THE PREEMPTION DEBATE: A DOGFIGHT AMONG THE CIRCUITS

Preemption has split the Federal Circuit Courts into two polar majorities.\textsuperscript{161} One side of the debate holds that Federal Aviation statutes are

\begin{itemize}
  \item \textsuperscript{150} Cipollone v. Liggett Group, Inc., 505 U.S. 504, 517 (1992).
  \item \textsuperscript{151} See discussion infra Part II.B.1.
  \item \textsuperscript{152} See discussion infra Part IV.A.
  \item \textsuperscript{153} Cleveland, 985 F.2d at 1447.
  \item \textsuperscript{154} Id.
  \item \textsuperscript{155} Executive Jet Aviation, Inc. v. City of Cleveland, 409 U.S. 249 (1972).
  \item \textsuperscript{156} Jones v. Rath Packing Co., 430 U.S. 519, 525 (1977).
  \item \textsuperscript{157} Abdullah v. American Airlines, Inc., 181 F.3d 363, 375 (3d Cir. 1999).
  \item \textsuperscript{158} Tarnay, supra note 63, at 604.
  \item \textsuperscript{159} Hand, supra note 132, at 788.
  \item \textsuperscript{160} Hand, supra note 132, at 786-87.
  \item \textsuperscript{161} To date, only the Sixth Circuit has failed to adopt one of the two majority viewpoints. See Gustafson v. City of Lake Angelus, 76 F.3d 778 (6th Cir. 1996).
\end{itemize}
minimum standards, open to supplementation by the states. The other side holds that federal aviation regulations totally preempt state aviation law, allowing recovery only for a breach of federal aviation regulations. Injunction, compensatory, even punitive damages are available—but only if the defendant, in effect broke some form of aviation statutory law. The issue has a clear division, and key cases characterize both sides.

1. Circuits Against Preemption

*Cleveland v. Piper Aircraft, Inc.*, is an unusual case. Its facts are controversial. Its holding has spawned several law review articles. It overruled Supreme Court precedent. It applied *Cipollone* for the first time in an air accident setting. It saw the United States file its first historic brief as *amicus curiae*. And it became the definitive case against preemption.

*Cleveland* concerned a products liability claim. The aircraft involved was an updated version of a time-honored design: the Piper Super Cub. Cleveland, the pilot, altered the aircraft in violation of federal regulations. He took out the front seat, and then attempted to fly the plane from the back seat where visibility was greatly reduced. The owner of the airport knew Cleveland’s intentions, knew the aircraft was not legal, and parked a van in the runway to prevent Cleveland’s takeoff. Cleveland attempted takeoff, towing a glider, and unable to see the van. He collided, suffering serious injury. The glider pilot, and the owner


163. See French v. Pan Am Express, Inc., 869 F.2d 1 (1st Cir. 1989); Abdullah v. American Airlines, Inc., 181 F.3d 262 (3d Cir. 1999) (determining the Second Circuit’s position as well); Bieneman v. City of Chicago, 864 F.2d 463 (7th Cir. 1988).

164. See *infra* note 165.


166. Cleveland v. Piper Aircraft Corp., 985 F.2d 1438 (10th Cir. 1993).


169. Cleveland, 985 F.2d at 1444.

170. *Id.* at 1443-44.


175. *Id.*
of the van, were unhurt.176

Cleveland brought suit under state law against Piper, claiming that the aircraft was defectively designed in that it lacked proper forward visibility.177 A jury agreed, awarding the pilot $2.5 million,178 despite the fact that the Super Cub had passed all F.A.A. design certification tests, and had proven itself over years of service.179 Piper appealed, claiming that these design regulations preempted state products liability law.180 The Tenth Circuit Court of Appeals disagreed.

The Tenth Circuit's opinion represents a major turning point in the history of aviation preemption doctrine. For the first time, a Circuit Court of Appeals applied the holding of Cipollone to the field of aeronautics.181 The Court ruled that, under the Federal Aviation Act, as supplemented by the preemption provision of the Airline Deregulation Act, Congress removed a narrow part of aviation law from state control. Any area outside the preemptive language of the statute was open to regulation by the states.182

Cleveland was significant for another reason: the United States, through the Department of Justice, filed an historical first brief as amicus curiae on behalf of the private aircraft manufacturer.183 The United States urged the Court to find that Congress, by virtue of the Sovereignty Clause, had preempted the entire field of aviation safety.184 The Tenth Circuit held otherwise. According to the Circuit Court, the Sovereignty Clause was intended to establish sovereignty over U.S. airspace to the exclusion of other nations; not the exclusion of the states.185

The Tenth Circuit also declined to follow Supreme Court precedent regarding aviation preemption.186 In City of Burbank v. Lockheed Air Terminals, Inc.,187 the Supreme Court found preemption in the field of airport noise. Although seemingly unrelated to aircraft design, both are governed by the Federal Aviation Act of 1958, as amended, and the Federal Aviation Regulations. At the time City of Burbank was decided, however, the Federal Aviation Act had not yet been amended to include

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176. Hand, supra note 132, at 767-68.
177. Cleveland v. Piper Aircraft Corp., 985 F.2d 1438, 1441 (10th Cir. 1993).
178. Id. at 1440.
180. Id.
181. Cleveland, 985 F.2d at 1443-44.
182. Id. The decision was rendered before Congress passed the General Aviation Revitalization Act of 1994, 103 Pub. L. No. 298 (1994). GARA adds another narrow preemption provision, lending support to the Tenth Circuit's holding.
183. Hand, supra note 132, at 773-74.
184. Cleveland, 985 F.2d at 1444.
185. Id.
186. Id. at 1444.
express preemptive language. The Tenth Circuit held that City of Burbank was no longer valid, in light of the new express preemption statutes and the Cipollone standard. The Court found that City of Burbank was a legal relic, inapplicable in the current aviation environment. The Supreme Court denied certiorari.

The Tenth Circuit was careful to emphasize that the Federal Aviation Act applied uniformly, and all areas of flight outside the preemptive language of the Airline Deregulation Act are open to more stringent standards imposed by state statutory and common law. This applied to product design and air safety, as well as airport noise.

City of Burbank represents a triumph for the plaintiffs' aviation bar. Not only did it open air accident litigation to state law. It also gave plaintiffs' attorneys in that jurisdiction the right to try aviation noise cases, which had previously been prohibited by the Supreme Court's holding in City of Burbank. State courts within the Tenth Circuit could once again decide noise claims, and state legislatures could dictate noise standards.

Many other jurisdictions have decided against preemption, both in the area of air crash disasters, and other less-spectacular aviation torts. Ironically, in Cleveland, the Tenth Circuit found that the "principles of [aviation preemption doctrine] are well settled." The opinion went on to become widely criticized, and not universally followed. In fact, in 1999, the Third Circuit reached an opposite conclusion in a slightly different setting. To this day, the issue remains unresolved.

2. Circuits For Preemption

In 1969, a student pilot flying a Piper Cherokee on a solo cross-country flight, collided with an Allegheny Airlines DC-9 in the skies over Indianapolis. Both aircraft were destroyed and all occupants were killed. Wrongful death actions were commenced on both sides, to which the United States was joined as a defendant pursuant to the Federal Tort Claims Act. The lawsuits alleged improper air traffic control instructions. At the trial level, the District Court applied Indiana law. However, the Seventh Circuit found that the federal Government held a "predominant, almost exclusive interest" in regulating the nation's airways, and

188. Id.
189. Id.
191. City of Burbank, 411 U.S. at 640.
192. Cleveland, 985 F.2d at 1441.
195. Id.
196. Id. at 403.
therefore the Federal Aviation Act preempted state aviation law. It remanded the case for further proceedings according to federal, rather than state, law.

A finding of preemption is a rarity in the air accident setting. This notorious lack of caselaw is unusual, since implied preemption has been applied in other areas of aviation tort law. All areas of aviation—accidents notwithstanding—are governed by the same federal statutes. A finding of preemption in one area should apply to all areas of flight.

The Third Circuit followed this reasoning in 1999, when it rendered the key decision supporting preemption, Abdullah v. American Airlines, Inc. Although the case did not specifically deal with air accidents, the Third Circuit used the case to deal a sweeping blow to state regulatory control over aeronautics. The Third Circuit held that federal aviation regulations provide the exclusive standard of care in all air safety cases. However, under the Savings Clause, states were free to impose their own remedies for a breach. This would include injunctive relief, as well as compensatory and punitive damages. The Third Circuit, by its ruling, exited the twentieth century leaving a turbulent wake in aviation law.

Abdullah concerned a passenger who was injured when an airliner encountered turbulence. The Third Court remanded the case after determining that the District Court should not have applied the state law of negligence to the claim. The Third Circuit reasoned that federal aviation regulations establish complete and thorough safety standards for aeronautics, thus preempting the entire field. However, state damage remedies still exist for a violation of federal statutes.

The Court found support in the Savings Clause of the Federal Aviation Act. According to the Act, the states reserved any “remedies” then available by statute or common law. The court drew the distinction between remedies and standards of care. A remedy, according to the court, defined the type of relief available for any breach of a federally applied in other areas of aviation law.

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197. Id. at 404.
198. Field & Davis, supra note 73, 366-80.
199. See id. at 354 ("So long as courts and legislatures make rules about each individual aviation matter on the facts of each single and specific case, fragmentation, inconsistency, and uncertainty will permeate the aviation industry."). See also Abdullah v. American Airlines, Inc., 181 F.3d 363, 369-70 (3d Cir. 1999).
201. Id. at 364-65.
202. Id.
203. Id. at 376.
204. Id. at 364-65.
205. Id. at 376.
206. Id. at 364-65.
207. Id.
208. Id. at 374.
imposed standard of care. Remedy did not mean the standard of care itself. Therefore, Congress had not intended to preserve state tort doctrines when it enacted the Federal Aviation Act.

Despite the fact that an award of damages functions as a state regulation, the court did not find the practice inconsistent with federal preemption. An award of damages can act as a signal to a party to stop any activity that resulted in the award. If damages are awarded for a breach of a federal guideline, the sanction would encourage the party to adhere to federal regulations. Therefore, state damages awards provide a way for the states to strengthen the federal regulatory system.

The Circuit looked to the Supreme Court's holding in City of Burbank as further support that the federal government had preempted the entire field of aviation law. City of Burbank held that the area of aircraft noise had been preempted by the Federal Aviation Act. Since the Act preempted airport noise, it must preempt all other areas within its broad scope as well. The Act governs all areas of flight with equal authority. The Third Circuit expressly declined to follow the reasoning of Cleveland.

Finally, the Third Circuit found support for its argument in the structure of the FARs themselves. According to the Court, the federal regulations provide the standard of care airlines and pilots must observe when operating an aircraft. Title 14, Part 91 of the Federal Aviation Regulations states: "No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another." The Court found that this regulation provides the standard of care for the aviation industry. Pilots, aircraft owners, and airlines operating an aircraft carelessly or recklessly would be in breach. This standard of care renders state laws of negligence unnecessary. Any breach of this federal standard

209. Id. at 375-76.
210. In reaching its conclusion, the Third Circuit relied on Silkwood v. Kerr-McGee, 464 U.S. 238 (1984). In Silkwood, the Supreme Court held that the federal government may preempt state regulation over an industry. However, states may determine the relief awarded for a breach of federal regulations. Traditional remedies of injunction, as well as compensatory and punitive damages, could be awarded according to state law. Abdullah v. American Airlines, Inc., 181 F.3d 363, 375-76 (3d Cir. 1999).
211. Abdullah, 181 F.3d at 364-65.
212. Id. at 374-76.
213. Id.
214. Id. at 363.
217. Id. at 364-65.
218. Id.
219. Id.
220. Id. at 370-71.
would result in an award of damages under to state law.\textsuperscript{221}

The Third Circuit's approach was not entirely new. In fact, portions of its ruling had been applied previously in various other jurisdictions.\textsuperscript{222} The Court's holding, however, went against the majority of the Circuits, and like a sonic boom in preemptive jurisdictions, its repercussions could potentially send a shockwave through every aspect of flight affected by the Federal Aviation Act.

IV. Why Federal Aviation Standards Do Not Preempt State Law

Eject—that is what the Second Circuit did in 1996 when asked to consider the out-of-control issue of air safety preemption.\textsuperscript{223} The Court declined to rule. It saw the issue, climbed out on the wing, and jumped. Most Circuits, however, have struggled with the issue like test pilots wrestling hurtling aircraft out of a spin. Each Circuit solved the problem in its own way, and the doctrine did not evolve with uniformity. However, many factors show that the Circuits finding against preemption were correct. If aviation safety had a pilot's operating handbook, the checklist against preemption would read as follows:

A. Preemption Is Not The Intent of the Modern Congress

Congress historically sends mixed signals regarding aviation preemption. House and Senate reports support either side, depending on which Session debated the issue. Viewed in its entirety, however, legislative history indicates a clear trend toward states' rights.

Congressional debates underlying the original Federal Aviation Act of 1958 stressed the importance of a single, uniform system of regulation.\textsuperscript{224} Both the House and the Senate reports called for strong federal control. The original House Report declared that the Federal Aviation Agency, precursor to the Federal Aviation Administration, would have "full responsibility and authority for the promulgation and enforcement of safety regulations."\textsuperscript{225} In a letter to the House Committee on Interstate and Foreign Commerce, the Chairman of the Airways Modernization Board stated: "It is essential that one agency, and one agency alone, be responsible for issuing safety regulations if we are to have timely and

\textsuperscript{221} Id at 364-65.
\textsuperscript{222} See discussion infra Part IV.F. (applying FARs as state standards of care).
\textsuperscript{223} In 1996, the Southern District of New York certified the question of federal preemption of aviation safety law for interlocutory appeal to the Second Circuit. The Second Circuit declined to address the issue. Abdullah v. American Airlines, Inc., 181 F.3d 363, 366 (3d Cir. 1999).
\textsuperscript{224} French v. Pan Am Express, Inc., 869 F.2d 1, 5 (1st Cir. 1989).
\textsuperscript{225} Id.
effective guidelines for safety in aviation." Neither state legislators nor state courts could adopt more stringent standards.

Early Senate Reports, likewise, seem to give the Federal Aviation Act preemptive effect. They state, in part:

Aviation is unique among transportation industries in its relation to the federal government — it is the only one whose operations are conducted almost wholly within federal jurisdiction, and are subject to little or no regulation by States or local authorities. Thus, the federal government bears virtually complete responsibility for the promotion and supervision of this industry in the public interest.

A comparison of these early statements, however, with the most recent House preemption debates—carried on in 1994, when Congress adopted the General Aviation Revitalization Act—is conclusive of the issue. Congress today clearly intends to leave aviation open to the states.

General aviation was a booming business in the 1970s. Piper, Beechcraft, and Cessna filled the market with small planes and high hopes for the future, but the market entered a near-fatal spiral that lasted well into the 1990s. Cessna stopped making single-engine aircraft, and, for the most part, so did Beechcraft. Piper, manufacturer of the venerable Cub, filed for bankruptcy. New light aircraft were becoming as rare an airborne sight as California condors, and products liability lawsuits were blamed as the cause of the decline.

Congress faced the problem of saving general aviation from products liability claims. The search for a solution turned to preemption. If federal design regulations were given preemptive effect, products liability claims brought under state law would be barred. Congress could simply enact legislation expressly removing aircraft design from state authority. Congress considered doing just that. Senator Nancy Kassebaum of Kansas, the home state of the Cessna Aircraft Corporation, introduced the

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226. Id.
230. Id.
231. Id.
232. When President Clinton signed GARA into law, he remarked: "an innovative and productive industry has been pushed to the brink of extinction." Quoted in Shea, supra note 59, at 765.
233. Other causes have been cited as contributing to the decline of general aviation. See Panel Discussion, The General Aviation Revitalization Act, 63 J. AIR L. & COM. 169 (1997). However, due to intense lobbying, the debate focused on products liability. Shea, supra note 59, at 764.
234. Shea, supra note 59, at 788.
General Aviation Accident Liability Standards Act (Senate Bill 67), which would, in her words, "replace the current patchwork of unpredictable and inconsistent state general liability laws with uniform, fair, and reasonable federal standards of liability."  

Congress, however, rejected Senate Bill 67 in favor of the General Aviation Revitalization Act of 1994, a limited statute of repose cutting off liability completely for aircraft or component parts in service more than eighteen years. The House Hearings contain statements that Congress was voting out "a very limited preemption of state law." According to the Hearings, GARA "preserves all civil actions against all other elements of the General Aviation industry .... Victims would be free to bring suits against pilots, mechanics, base operators, etc., where there is negligence." In contrast to Congressional policy at the time the Federal Aviation Act was drafted, these statements indicate the present intent of Congress to preserve a victim's right to bring suit under state law in air crash cases.

Congress has taken upon itself the dual responsibility of promoting air safety while protecting the interests of the aviation industry. Congress is free, under the Supremacy Clause, the Commerce Clause, and the Necessary and Proper Clause, to remove aeronautics entirely from state law. Congress twice debated the issue and chose not to. Although early Congressional intent may have indicated a desire to establish uniform control of the skies, the trend has since changed. Subsequent amendments to the original Federal Aviation Act of 1958 remove narrow portions of the aviation industry from state control. Both in legislative history and through the structure of these statutes, Congress evinced a clear desire to leave the rest of aviation law firmly within the reach of the states.

B. The Supreme Court Does Not Support Preemption

Inconsistency is, unfortunately, the only consistent feature of preemption doctrine. No source of authority is always in favor of, or against,

236. Anton, supra note 228, at 768-70.
238. Id. at 7.
239. See McAllister, supra note 80, at 312 ("GARA affirmatively preserves a role for state law. State law governs the adjudication of aviation products liability cases ... "). Compare with Harvey, supra note 168, at 497 (writing pre-GARA, the author maintains: "Congress would have to ... add a preemption provision of its own in order to change the preemptive reach of the substantive provisions of the 1958 Act.").
241. McAllister, supra note 80, at 315.
242. Id.
the preemption of air safety. The Supreme Court is no different. Supreme Court opinions swing with each new piece of aerospace legislation. However, as key rulings during the 1990s indicate, the trend within the modern court is solidly against implied preemption.

In Executive Jet Aviation, Inc. v. City of Cleveland,243 decided in 1972, the Supreme Court found that Congress is free to preempt aviation accident law if it chooses, by virtue of the Commerce Clause. Justice Stewart, writing for the majority, stated that air commerce is interstate in nature and thus open to Congressional control. If federal uniformity is Congress's goal, the Court reasoned, Congress can implement it through legislation. So far, Congress has not accepted this invitation.244

The Supreme Court found in favor of preemption, however, in City of Burbank,245 the Court's most controversial ruling to date on the issue. The year was 1973. Congress had just enacted the Noise Control Act.246 This Act gave the Federal Aviation Administration joint authority with the Environmental Protection Agency to establish noise control standards for airports.247 The Court held that the Federal Aviation Act, in conjunction with the Noise Control Act, implicitly preempted the field of airport noise. Neither municipalities nor state courts could regulate the issue in any manner.248

The Court failed to articulate the affect of its ruling in City of Burbank on other areas of flight, such as safety and design. Lower courts, therefore, reached conflicting rulings when presented with the issue. Some courts reasoned that, if the Federal Aviation Act implicitly preempted noise claims, it must implicitly preempt the more regulated areas of flight, such as safety and design.249 The Third Circuit, as aforesaid, relied on City of Burbank in finding that Federal law supplants state standards of care for air safety.250 The Tenth Circuit, in Cleveland, found otherwise.251

The facts of City of Burbank do provide grounds for distinction between noise and other areas of flight. City of Burbank holds that the Federal Aviation Act must work in conjunction with the Noise Control act to preempt airport noise regulation.252 The Noise Control Act has no rele-

244. Id.
248. There was one exception. Any city acting as the proprietor of an airport could adopt its own noise abatement procedures. Id. at 636.
250. Id.
252. City of Burbank, 411 U.S. at 638.
vance to issues of crashworthiness and safety. Therefore, no preemption exists. The Federal Aviation Act by itself does not preempt state law. The Tenth Circuit, however, did not use this rationale in reaching its decision. The Tenth Circuit noted that the Supreme Court decided City of Burbank before the Federal Aviation Act contained any express preemption provisions. Subsequent Supreme Court rulings, issued after the Act had been amended, tend to follow the Cipollone standard. Viewed in proper historical perspective then, City of Burbank is no longer binding precedent.

_Cipollone v. Liggett Group, Inc._ provides the Supreme Court's current bright-line test for determining federal preemption. The _Cipollone_ standard is as follows:

when Congress has considered the issue of preemption and has included in the enacted legislation a provision expressly addressing that issue, and when that provision provides a reliable indicium of congressional intent with respect to state authority, there is no need to infer congressional intent to preempt state laws from the substantive provisions of the legislation. Such reasoning is a variant of the familiar principle of _expressio unius est exclusio alterius_: Congress' enactment of a provision defining the pre-emptive reach of a statute implies that matters beyond that reach are not pre-empted.

Under the _Cipollone_ standard, express preemption provisions foreclose any discussion of implied preemption when these express provisions provide a reliable indication of Congressional intent. The governing aviation statute has been amended by two preemption provisions—the Airline Deregulation Act and the General Aviation Revitalization Act. Legislative history and Congressional policy, as discussed above, support a finding that these provisions reliably indicate Congressional intent regarding state tort law. According to _Cipollone_, Courts should therefore refrain from any discussion of implied preemption. All areas of flight outside the express preemption provisions are open to additional regulation by state courts and legislatures.

The Supreme Court ruled twice on aviation preemption after the en-
actment of the Airline Deregulation Act. Both cases indicate a shifting attitude away from *City of Burbank*.

In *Morales v. Trans-World Airlines*,262 decided during the same term as *Cipollone*, the Court held that the express language of the Airline Deregulation Act conveys upon the courts broad authority to determine what constitutes airline "prices, routes, and services." These areas are exempt from regulation by the states.263 However, the Court held that areas of flight too remote or peripheral to have a direct effect on airline prices, routes, or services are open to state control.264 Therefore, the Federal Aviation Act did not entirely preempt state law.

The 1995 case of *Wolens v. United Air Lines, Inc.*,265 signaled an even stronger surge in favor of the states. Although the holding of *Wolens* was quite narrow, the Court found that breach-of-contract claims were open to resolution under state contract law, even if these actions concerned ticket pricing.266 Preemption of prices and services does not give airlines the right to break contractual obligations. Airlines, according to the Court, are free to negotiate their own contractual terms, and must expect to be bound by them.267 In a footnote that became more famous than the opinion itself, however, the Court refused to limit its holding to contract claims. The Court specifically found that the Federal Aviation Act, as amended by the Airline Deregulation Act, would not preempt safety-related personal injury claims relating to airline operations.268 The Court quoted a brief from the United States as *amicus curiae*, urging that a negligence claim arising out of a plane crash would not be preempted by federal law.269 Both the Supreme Court and the United States as *amicus curiae* found against preemption.270 This provides compelling, nearly conclusive evidence that the modern trend is against federal control.

Interestingly, the Third Circuit, in *Abdullah v. American Airlines*, did not even attempt to explain or distinguish *Cipollone* in its finding of preemption. This lack of attention was clearly judicial error. The Supreme Court has ruled that inferior federal courts must follow the rulings of any higher court that has the power to revise or reverse the lower court’s

263. *Id.*
264. *Id* at 390.
266. *Id.* at 228-29.
267. *Id.*
268. *Id.* at 231.
269. This brief ran counter to the brief the United States filed in *Cleveland v. Piper*, which urged implied preemption of aircraft design, an aspect of aviation safety. *See Cleveland*, 985 F.2d at 1444.
holding. The Supreme Court has chastised a Circuit Court of Appeals for failing to follow a Supreme Court opinion. The Third Circuit found that *expressio unius*, the core rationale of the *Cipollone* standard, should be "taken with a grain of salt" in the context of aviation law. The Third Circuit should instead take *expressio unius* as binding precedent, as recent Supreme Court authority indicates a continuing shift toward state control over aviation claims.

C. THE TREND IS AGAINST PREEMPTION

The First Circuit, in a widely-quoted preemption decision of 1989, proclaimed that "all flight plans lead to Washington." The court found that the regulation of interstate flight and flyers must, of necessity, be "monolithic." The Court feared a "crazyquilt" of state law. Now, however, it appears that the First Circuit is primed to rule against federal preemption. This would reflect the current trend in aviation jurisprudence: federal preemption has been steadily losing ground in the district courts.

In *French v. Pan Am Express, Inc.*, the First Circuit spoke out originally in favor of preemption. The Court found that the Federal Aviation Administration had been entrusted with plenary authority over aerospace safety concerns. The pervasiveness of federal regulation had preempted the field. The Court then ruled that no area is more important to air safety than the qualifications of pilots. Therefore, pilot certification was off limits to state courts.

The First Circuit cited *International Brotherhood of Teamsters*, a

272. *Hutto*, 454 U.S. at 374-75 (1982) (stressing that "unless [the Courts] wish anarchy to prevail within the federal judicial system, a precedent of this Court must be followed by the lower federal courts, no matter how misguided the judges of those courts may think it to be.").
275. *Cipollone*, 505 U.S. at 517.
277. *Id.* at 6.
278. *Id.*
280. To date, of the five federal Circuits finding preemption of aviation safety regulation, only the Third Circuit seems consistently dedicated to federal preemption. Within the Second Circuit, for example, trial courts have found against preemption of aviation tort claims. See, e.g., Trinidad v. American Airlines, Inc., 932 F. Supp. 521 (S.D.N.Y. 1996). The same is true of the Sixth Circuit. See, e.g., *Margolis v. United Airlines, Inc.*, 811 F. Supp. 318 (D. Mich. 1993).
282. *Id.*, at 6.
283. *Id.* at 5.
284. World Airways, Inc. v. International Bhd. of Teamsters, 578 F.2d 800 (9th Cir. 1978).
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Ninth Circuit opinion, as compelling authority. Later, however, the Ninth Circuit reversed itself and found preemption to be limited by to the express provisions of the Airline Deregulation Act. A case pending in the First Circuit, Somes v. United Airlines, Inc., suggests that the First Circuit may not be far behind.

Somes involves a wrongful death claim involving a passenger who suffered a heart attack en route. His life may have been saved had the airliner been equipped with a defibrillator—equipment which is currently carried aboard a number of airlines, but which is not required by the FARs. United moved to dismiss, claiming that federal aviation regulations preempt the field of aircraft safety. The District Court disagreed. In reaching its decision, the District Court held that the regulations in question were "minimum requirements," and that, "notwithstanding Congress's indication that air safety was of paramount importance . . . neither the Federal Aviation Act nor the regulations promulgated thereunder suggest that it was Congress's 'clear and manifest purpose' to preempt the type of claim Somes asserts." The First Circuit is now poised to rule against preemption.

Similarly, a District Court within the Seventh Circuit recently certified the question whether aviation tort claims have been disposed of through preemption. The court referred to the issue as a "vexed question." From all appearances, Circuit precedent—which supports preemption—will soon be overturned.

In Bieneman v. City of Chicago, currently controlling precedent within the Seventh Circuit, the Court held that states could award damages, but only if the defendant breached a federal regulation. The standard of care for the aviation industry was thus entirely determined by

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285. French, 869 F.2d at 5-6.
286. Gee v. Southwest Airlines, 1997 U.S. App. LEXIS 12266, at *3 (9th Cir. Oct. 10, 1997) (deciding simultaneously four separate cases, each involving preemption under the ADA). The Court found that tort claims involving injury during landing and takeoff were allowed to proceed according to state law.
288. Id. at 80.
289. Id.
290. Id. at 87.
291. Id.
292. Rodriguez v. American Airlines, Inc., 886 F. Supp. 967 (D.P.R. 1995). In Rodriguez, it is interesting to note that a District Court within the First Circuit specifically held that state law governs air crash cases. Neither the ADA or the Federal Aviation Act preempts these types of claims. Perhaps the First Circuit will rely on Rodriguez as authority.
294. Id. at *4.
federal aviation statutes, and no state could award damages against those who abided by them. The Court found that the Federal Aviation Administration had considered mandating, but ultimately rejected. The Court held that the Savings Clause of the Federal Aviation Act allows state courts to award damages, but only for a violation of federal rules. Although the Seventh Circuit rendered its opinion in the context of airport noise, the Court held "state courts award damages every day in air crash cases, notwithstanding that federal law preempts the regulation of safety in air travel." Despite the Seventh Circuit's precedent, trial courts within the Circuit display a different trend. For example, in O'Hern v. Delta Airlines, Inc., the Northern District of Illinois cited both Cleveland v. Piper and Cipollone as proof that federal laws do not preclude state-law tort claims. Likewise, in Retzler v. Pratt & Whitney Co., the Illinois Court of Appeals for the First District found that state personal injury claims are not preempted by federal statute. If the trend is any indication, the Seventh Circuit will be the first jurisdiction in the new century to join the movement against preemption.

Of all the Circuits, however, the Fifth Circuit endured the most painful metamorphosis from a preemptive to a non-preemptive regime. The Court issued one of the most controversial rulings in favor of preemption, O'Carroll v. United Air Lines, Inc., in which the Court held that Congress had intended to preempt all state common law tort claims related to the airline safety. Pursuant to the precedent set by O'Carroll, the Fifth Circuit later found a personal injury claim for injury from falling overhead baggage to be preempted in Baugh v. American Airlines.

Five years later, the Fifth Circuit reversed itself in Hodges v. United Air Lines, Inc., and expressly overruled both O'Carroll and Baugh. The Court found that the Airline Deregulation Act, as an economic deregulation statute, could not have been intended it to bar all claims brought under state tort law. Therefore, state negligence law was not preempted.

296. Id. at 472.
297. Id.
298. Id.
299. Id. at 471.
301. Id. at 1266-67.
306. Id. at 335.
Although aviation cases involve diverse facts, the underlying law is the same. Whether the court is deciding crashes, falling baggage, airport noise, pilot certification, or contract claims, in most jurisdictions states may supplement federal aviation law. The federal government has chosen to preempt two small areas of flight, but where the Act is silent, the states may regulate freely.

D. Analogies to Other Transportation Fields Do Not Apply to Flight

Proponents of federal preemption attempt to analogize aviation law to similar laws governing other forms of transportation. Most notably, courts have implied a certain degree of preemption in both maritime law and automobile design. Although the laws governing each are deceptively similar to aviation, the statutory provisions governing ships and automobiles leave clear grounds of distinction from the aerospace industry.

The National Traffic and Motor Vehicle Safety Act of 1966 possesses a statutory structure resembling the Federal Aviation Act of 1958. This Act gives the federal government authority to adopt Federal Motor Vehicle Safety Standards. The Act also contains a provision stating the pre-emptive scope of the regulations. It reads as follows:

"No state or political subdivision of a State shall have any authority either to establish, or to continue in effect, with respect to any motor vehicle or item of motor vehicle equipment any safety standard ... which is not identical to the Federal standard."312

This Act, like the Federal Aviation Act, contains a savings clause, which provides: "compliance with any Federal motor vehicle safety standard issued under this subchapter does not exempt any person from any liability under common law."313 The courts have held that the Savings Clause preserving common-law liability does not prevent a finding of implied preemption. Courts have limited this finding, however, to state regulations whose terms directly conflict with federal regulations. Thus, although implied preemption has been found in the area of auto-

307. See, e.g., Hand, supra note 132 (analogizing federal aviation and maritime statutes). See also Shea, supra note 59 (analogizing federal aviation and highway safety statutes).
313. Id. at 896.
314. See id. at 898.
315. Id.
mobile design, it is conflict preemption.\textsuperscript{316} The aviation dispute involves implied preemption of the entire field.\textsuperscript{317} Even in the Motor Vehicle Safety Act context, Courts have held that federal regulations are minimum standards. State common law may require safety measures in addition to those mandated by federal regulations, as long as those regulations do not conflict with the terms of federal law.\textsuperscript{318} Drawing an analogy to aviation, FARs are, in the words of Congress, also "minimum standards."\textsuperscript{319} States may impose safety standards in addition to the FARs. The states would only be precluded from drafting conflicting regulations.

The field of maritime law also involves a federal regulatory scheme very similar to aviation.\textsuperscript{320} The Federal Ports and Waterways Safety Act of 1972 (PWSA) established "comprehensive minimum standards of design, construction, alteration, repair, maintenance, and operation for vessels carrying certain cargoes in bulk."\textsuperscript{321} In Ray v. Atlantic Richfield, the Supreme Court was not persuaded that statutory language designating these comprehensive regulations as "minimum standards" would allow states to impose additional requirements.\textsuperscript{322} The Court held that Congress had intended to establish "uniform national standards."\textsuperscript{323} Therefore, the Court invalidated all state attempts to regulate areas covered by the PWSA.

Aviation law is distinguishable. It is true that the Federal Aviation Act, much like the PWSA, designates the federal regulations as "minimum standards,"\textsuperscript{324} while creating a comprehensive regulatory scheme. However, the Court's rationale in Ray is inapplicable to aviation law. Ray does not attempt to address situations in which express preemption provisions exist. The Ports and Waterways Safety Act contains no preemptive language.\textsuperscript{325} It leaves the issue to judicial determination. The Federal Aviation Act, in contrast, contains preemption provisions.\textsuperscript{326} Therefore, Cipollone, not Ray, is the applicable precedent. The preemption provisions in the Federal Aviation Act are dispositive. Areas outside the pre-

\begin{flushleft}
\textsuperscript{316} Id.
\textsuperscript{317} See discussion supra Part II.B.2.
\textsuperscript{318} Id. at 898-99.
\textsuperscript{320} See Hand, supra note 132.
\textsuperscript{322} Id. at 168.
\textsuperscript{323} Id. at 163-65.
\textsuperscript{326} See discussion supra Part II.B.2.
\end{flushleft}
emptive language are open to state authority.\textsuperscript{327}

Although highway safety and maritime law are facially similar to aerospace law, aviation also presents firm grounds for distinction. No analogy is compelling enough to warrant a finding of complete preemption.

E. PREEMPTION IS UNWORKABLE AND AGAINST PUBLIC POLICY

Aviation law is a pursuit of extremes. Any time trouble develops in the air, a dramatic story follows. In a successful case, it is a story of luck, heroism, and triumph at the height of adversity. At its worst, it is a tragedy involving the loss of hundreds of lives. Dramatic facts often lead to huge verdicts in the courtroom,\textsuperscript{328} which in turn have repercussions on the industry. Insurance rates and prices take off, while fewer planes leave the ground.\textsuperscript{329} Enough high verdicts, and the industry could suffer irreparable damage.\textsuperscript{330} Despite concerns raised by aerospace advocates, however, the greater weight of reason indicates that public policy is best served by continuing to apply state doctrine, rather than federal law, to aviation claims.\textsuperscript{331}

With such stringent and carefully-crafted federal regulations in place, industry supporters challenge the claim that a jury of non-experts should have the right to impose additional requirements.\textsuperscript{332} Federal regulation ensures that flight is safe. Pilots are re-certified and re-examined as often as every six months. Aircraft are inspected, overhauled, and rebuilt by FAA-licensed mechanics as often as every one-hundred hours of flight time. Manufacturers comply with extensive regulations before any individual aircraft ever receives a coveted airworthiness certificate. Before an airplane enters the stream of commerce, it has undergone a rigorous safety certification process.\textsuperscript{333} The jury, according to industry supporters, does not have the requisite knowledge to find that the federal certification process—designed by experts—was, in fact, negligent.\textsuperscript{334}

Proponents’ arguments presume that state tort doctrine exists merely to establish a standard of care. However, state tort law also has other purposes. Among them is placing the burden of loss upon those most deserving to bear it.\textsuperscript{335} That, for example, is the theory behind strict lia-

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\textsuperscript{327} Cleveland, 985 F.2d at 1447.
\textsuperscript{328} Edelman, supra note 124, at 500.
\textsuperscript{329} McAllister, supra note 80, at 306-08.
\textsuperscript{330} Id.
\textsuperscript{331} Id.
\textsuperscript{332} Van Wormer, supra note 135, at 678-79.
\textsuperscript{333} Hand, supra note 132, at 754-57.
\textsuperscript{335} Escola v. Coca-Cola Bottling Co. of Fresno, 150 P.2d 436, 440-41 (1944).
bility for design and manufacturing defects. When a product malfunctions, both the victim and the manufacturer may have exercised all due care. Between equally blameless parties, equity favors placing the loss upon the party who placed the product into the stream of commerce.\footnote{336} This is true for many reasons. The party placing a product into the stream of commerce is in the better position to inspect the product before it enters the market.\footnote{337} The party placing the product into the stream of commerce may also be better situated to bear the loss, since it would likely carry liability insurance.\footnote{338} These reasons and others justify placing strict products liability on the manufacturer, even though the manufacturer may have exercised all possible care in the manufacturing process. State products liability, therefore, does not overlap with the function of the Federal Aviation Regulations. The FARs provide a minimum standard of care.\footnote{339} State products liability law places responsibility when both parties have acted without culpability.

Res ipsa loquitur, much like products liability law, serves to protect the victims. It shifts the burden of proof in cases where critical evidence may be accessible only to the defendant by requiring the defendant to produce evidence in order to overcome a presumption of fault.\footnote{340} Nowhere is evidence more solidly under the defendant’s control than in aviation. Under the FAA’s Delegation of Authority provision, manufacturers self-certify their own compliance with design standards.\footnote{341} If a plane crashes, the National Transportation Safety Board also requests the help of the manufacturer in determining what went wrong.\footnote{342} In order to secure a manufacturer’s full cooperation, conclusions drawn by the NTSB’s investigation are inadmissible in a court of law.\footnote{343} Victims and their representatives are specifically excluded from the investigation.\footnote{344} All of these official procedures remove critical evidence from the victim’s reach, making it difficult to build a case.\footnote{345} Res ipsa loquitur prevents this lack of proof from defeating a meritorious claim.\footnote{346}

\footnote{336. \textit{id}.}  
\footnote{337. \textit{id}.}  
\footnote{338. \textit{id}.}  
\footnote{339. 49 U.S.C. § 44701(a)(1) (1999).}  
\footnote{341. Tarnay, \textit{supra} note 63, at 604.}  
\footnote{342. Truitt, \textit{supra} note 60, at 602.}  
\footnote{343. 49 U.S.C. § 1154 (1999).}  
\footnote{344. Truitt, \textit{supra} note 60, at 602.}  
\footnote{345. \textit{id}. at 602.}  
\footnote{346. Aviation plaintiffs’ attorney Arthur Alan Wolk makes the following observation: “After the accident happens, and the pilot is ashes and the airplane is a pile of junk, and the only people who are invited to attend and participate in the investigation are the manufacturers of the product, how do you expect anybody (except the manufacturer) to know what happened?” Arthur Alan Wolk, \textit{Product Liability: A Plaintiff’s Lawyer Responds}, AOPA PILOT, 1993.}
Pilots, like victims, will suffer under a preemptive regime. First, pilots themselves are also victims when a design defect brings an aircraft down. Second, pilots suffer an added hardship under FAA enforcement procedure. The FAA, like other administrative law agencies, is not bound to follow American notions of procedural due process. It may, by trickery or whim, suspend or revoke a license to fly. To a commercial pilot, this can be devastating. Thus, the system creates an incentive for pilots to plea bargain for a brief suspension rather than face FAA proceedings. This attempt to save a license, however, could open the pilot to civil liability. In a preemptive jurisdiction, breach of an FAR or other federal statute is dispositive of civil liability. A pilot who admits to a breach in an administrative action—even if only to save his license—may be collaterally estopped from denying this breach in a subsequent civil action. Consequently, his liability would be established before he enters the courtroom, even if a jury might otherwise find that he acted reasonably.

Applying federal Regulations in place of state law can also saddle pilots with liability in other ways. For example, FAR 91.7 makes pilots solely responsible for determining whether the aircraft is in a condition for safe flight. Any crash due to a system failure would indicate that the aircraft was not in a safe condition. The pilot might therefore face

347. THE KINDER GENTLER FAA - THE MYTH, OR HOW TO PROTECT YOUR PILOT'S LICENSE (Alchemy Video Productions, 1993). See also RAMP CHECK (Alchemy Video Productions, 1994).
348. Id.
351. Bowen v. United States, 570 F.2d 1311, 1314 (7th Cir. 1978). Collateral estoppel, unlike res judicata, does not require that the parties in both suits be the same. Collateral estoppel is a form of issue preclusion, preventing parties from relitigating an issue that has been adjudicated in a prior action. Unlike res judicata, collateral estoppel can be mutual (the parties in both lawsuits are identical), or nonmutual (between parties who were not present in the prior action). Joseph W. Glannon, CIVIL PROCEDURE: EXAMPLES AND EXPLANATIONS 477-93 (3d ed. 1997). Nonmutual collateral estoppel may be invoked offensively by a plaintiff, to preclude a defendant from asserting a defense. Id. at 481. It may also be invoked defensively, precluding a plaintiff from raising an issue. Id. at 480. The key question is whether the party against whom collateral estoppel is invoked fully litigated, or had the opportunity to fully litigate, an issue in the prior action. Whether administrative law proceedings constitute full adjudication of a pilot's liability is a subject of controversy. See, e.g., David A. Brown, Note, Collateral Estoppel Effects of Administrative Agency Determinations: Where Should Federal Courts Draw the Line?, 73 CORNELL L. REV. 817 (1988). In Bowen, a pilot who had lost a FAA enforcement proceeding attempted to bring a civil suit against the United States for negligent air traffic control procedures. The United States asserted the pilot's contributory negligence as a complete defense. Since violation of a FAR was negligence per se, and the pilot was found to have violated a FAR in the enforcement proceeding, the pilot was collaterally estopped from denying his negligence in his civil action. Interestingly, mutuality was found to exist in this case, since the United States was the prosecuting party in the enforcement action. In a growing number of jurisdictions, however, mutuality is not necessary. GLANNON at 478.
352. 14 C.F.R. § 91.7 (1999).
liability for breaching FAR 91.7—even if a jury might find that the defect was not apparent during the pilot's preflight inspection. Likewise, FAR 91.3 states that "The pilot-in-command is directly responsible for, and is the final authority as to, the operation of that aircraft." Under this FAR, some jurisdictions have imposed an absolute duty on the pilot, like a the captain of a ship, for the safety of an aircraft and its crew. Other courts have found this FAR too general for the imposition of liability. Nonetheless, if preemption applied, the vague standards contained in aviation statutes would be the only tools available to Courts for determining the reasonableness of a pilot's conduct.

Ironically, federal regulations can also suffer from insufficiency, despite their scope. A finding of preemption rests on the belief that federal regulations are comprehensive, yet, sometimes, the very failure to regulate might in itself be a significant contributing factor in an accident. In these situations, state law is necessary for determining the reasonableness of a defendant's conduct.

The design of the Beech Baron demonstrates the type of situation where a reasonable jury might find federal regulations grossly inadequate. Most aircraft have dual sets of controls. The Baron, however, is equipped with a "throw-over" yoke; a single control wheel for both pilot seats. Only by releasing a hinge pin and pivoting the control arm can the pilot in the opposite seat gain access to the controls. If that one yoke should malfunction, the pilots would have a serious problem. Additionally, in an emergency, it would be impossible for a copilot to assume the controls with any degree of swiftness. In light of the industry standard of equipping aircraft with dual controls, a reasonable jury might find that the "throw-over" yoke is a negligent design—despite the fact that it was approved under FAA regulations.

Backup radios are another example where a jury might find federal regulations are themselves insufficient. Handheld flight radios are readily available, but not yet required equipment under the FARs. If an aircraft's radio fails, a pilot without a backup radio would have to fly without radio communication. This places his life, and the lives of others, at risk. In

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354. One jurisdiction has held: "[T]he pilot-in-command, like a ship's captain, has the ultimate responsibility for the safety of his plane and passengers and must comply with the extensive body of regulations published by the FAA." Cappello v. Duncan Aircraft Sales of Florida, Inc., 79 F.3d 1465, 1469 (6th Cir. 1996). Another jurisdiction has also held the pilot charged with direct responsibility, reasoning that, since the pilot's life is at stake, the duty to assure safety is also his. See Brooks v. United States, 695 F.2d 984, 990 (5th Cir. 1983).
356. Melvin M. Belli, MODERN TRIALS 220 (2d ed. 1982).
357. Id.
358. Eichenberger, supra note 349, at 113.
the same way Judge Learned Hand found the entire boating industry negligent for not carrying radios, a reasonable jury might decide that all pilots should be required to carry handheld radios. In the words of Judge Hand, "[c]ourts must in the end say what is required; there are precautions so imperative that even their universal disregard will not excuse their omission." 

Despite the complexity of preemption doctrine, the problem is no different from any other legal issue. The solution that is the most just, the most practical, and the best balance among all the interests involved is the right answer. A carefully crafted solution should therefore alloy legal theory with common sense. And a consideration of the mechanics of flight and law can lead to only one conclusion: aviation should not be elevated beyond state control.

F. The Federal Aviation Act Preserves the Balance of Federalism

The Federal Aviation Act of 1958 functions much like the Constitution and preserves the carefully-crafted balance of federal and state power. The Act contains provisions delegating authority to the federal government. The Act also has provisions reserving power to the states. In form and function, the Act is federalism set aloft.

The Supremacy Clause of the Constitution conveys power. It renders federal laws "the Supreme Law of the Land, any state laws to the contrary notwithstanding." Much as the Supremacy Clause conveys power, the Tenth Amendment reserves power. Any power not exercised by the federal government lies dormant. When Congressional power lies dormant, state power fills the void. This is the basis of federalism, and the fundamental theory of the preemption debate.

The Federal Aviation Act of 1958 may be viewed from a federalist perspective. The Act contains a broad Sovereignty Clause, which, much like the Supremacy Clause, gives the federal government sweeping, but not yet utilized, power to regulate aviation. It is up to the federal government, however, to exercise this power. When federal power over aviation lies dormant, the Savings Clause reserves state authority over the field.

Federal regulations create an illusion of preemption. The federal

359. The T.J. Hooper, 60 F.2d 737 (2d Cir. 1932).
360. Id.
361. Cleveland, 985 F.2d at 1444, 1447.
364. U.S. CONST. art. VI, cl. 2.
365. May & Ides, supra note 14, at 169.
366. Id.
government has enacted thousands of regulations regulating nearly every conceivable feature of air safety. When Congress perceives a need, it enacts more. Congress has, however, expressly declared these regulations – despite their quantity and scope – to be minimum standards.\textsuperscript{367} By choice, Congress has circumscribed its own power. States, under the Savings Clause, are free to adopt more stringent standards, either through legislative or common law measures.\textsuperscript{368}

There are, in contrast, two occasions when Congress has chosen to exercise its plenary authority over aviation. On both occasions, Congress drafted clear statutory language preempting state power. These occasions produced two separate Acts of Congress: the Airline Deregulation Act of 1978\textsuperscript{369} and the General Aviation Revitalization Act of 1994.\textsuperscript{370} State law can not contravene the language of these statutes.\textsuperscript{371} On the other hand, the Savings Clause reserves the rights of the states to regulate areas outside the scope of these Acts.

The Federal Aviation Act of 1958 reflects federalism onto the microcosmos of aviation law. The basic functioning is the same. The difference is scale. The Federal Aviation Act of 1958 regulates an industry. The Constitution controls a nation.

V. What It All Means

America has chosen \textit{stare decisis} over civil law. The reason is simple: \textit{stare decisis} is more precise. Codified law serves its function well: it provides a baseline of regulation assuring a minimum degree of safety, but it cannot—no matter how comprehensive—foresee every potential hazard. There are some situations where the biggest failure might be a failure to regulate. Common law then provides the tool for carving fact-specific standards of care. Put simply then, common law is common sense. When something goes wrong, a jury should place the burden upon the party deserving the blame. Preemption would still this valuable mechanism of justice.

Payne Stewart's last flight graphically illustrates preemption's harsh ability to remove potentially valid claims from state courts. Because of GARA, an express preemption statute, Stewart's family may be barred from bringing suit against the Learjet parent corporation—even if the air-

\begin{itemize}
\item \textsuperscript{367} 49 U.S.C. § 44701 (1999).
\item \textsuperscript{368} Cleveland, 985 F.2d at 1447.
\item \textsuperscript{369} 49 U.S.C. § 41713 (2000).
\item \textsuperscript{370} General Aviation Revitalization Act of 1994, 103 Pub. L. No. 298 (1994).
\item \textsuperscript{371} Shaw v. Delta Air Lines, 463 U.S. 85, 95 (1983) (areas of law expressly preempted are forbidden from state regulation).
\end{itemize}
craft contained a design defect waiting like a time bomb to go off. Im-
agine if more than one hundred families—for instance, the families of the
victims of USAir Flight 427—were barred from bringing suit merely
because they could not piece together enough chips of a crashed airplane
to prove by summary judgment standards that a manufacturer breached a
Federal design regulation. Imagine the same scenario in plane wreck after
plane wreck, when family after family goes uncompensated. Or imagine a
pilot, pleading to a breach of violations in order to save his license from
patently unfair administrative law proceedings, later estopped from deny-
ing civil liability for an injury he may not have caused. These scenes
could become common in a preemptive regime.

State law may be harsh. State doctrine may contain inequities. How-
ever, it is the province of the Courts to change courtroom procedure.
Aviation is no longer an ultrahazardous activity. In fact, due to the scope
of federal regulation, aviation is one of the safest modes of transporta-
tion. If negligence per se and res ipsa loquitur—state doctrines forged in
the barnstorming age—are no longer fair, it is up to state courts to de-
cline to apply them. It is unwise to replace them completely with federal
law.

Elevating the skill of the aviation bar provides a potential solution to
the perceived inequities of the Courtroom. The “technical problem” of
allowing juries to find against aviation’s corporations might result more
from faulty lawyering than from any fault of state law. It is the job of
the aviation trial lawyer to make the jury understand both the breadth
and limits of federal regulation and apply it properly to the conduct of the
Defendant. For this reason, the field of aviation law, much like the field
of patent law, demands a certain degree of expertise. Piloting a plane is
not something many people do. Chances are, a typical panel will not
contain jury members with flight experience. It is the duty of an aviation
attorney to make the jury understand the duties and responsibilities in-
volved. In order to do so, aviation lawyers must be intimately familiar
with aeronautics. In short, aviation lawyers should be pilots.

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372. Staff Reports, Law May Prohibit Stewart Family From Filing Lawsuit, THE OR-
373. See Morrison, supra note 1, at 1A.
374. See discussion supra note 354.
375. See Truitt, supra note 60, at 579.
376. Id. at 587.
377. Private Pilots comprise only about 0.003 percent of the United States population. See
Appel, supra note 103, at 416.
378. Daniel Cathcart, a proponent of the “expert” advocate in aviation cases, proposes the
following qualifications for an aviation litigator: 1) he should be a seasoned trial lawyer; 2) he
should be an experienced pilot whose certificates and ratings have at least qualified him for flight
under instrument flight rules and procedures. Piloting experience will provide the lawyer with
Expert trial attorneys alone will not end the debate, however. Plaintiffs have a powerful lobby in the American Trial Lawyer's Association. Defendants have the General Aviation Manufacturing Association, the airline industry, and other interest groups. A host of areas, such as aircraft safety, pilot design, and airport noise, depend on the outcome of the debate.

The Supreme Court must grant certiorari if the issue is to resolve. Until the Supreme Court rules, preemption itself will remain a patchwork of state authority. The preemption issue will not fly away on its own, and only Supreme Court action can bring the Circuit Courts back into formation.

the necessary vocabulary, jargon, and buzz words involved in aviation. He will be familiar with current procedures and techniques and will have a practical knowledge of the Federal Aviation Regulations and their application. Quoted in Truitt, supra note 60, at 587.


The Transportation Equity Act for the 21st Century: The Failure of Metropolitan Planning Organizations to Reform Federal Transportation Policy in Metropolitan Areas

Benjamin K. Olson*

ABSTRACT

Transportation planning decisions in metropolitan areas involving the use of federal funds are made by metropolitan planning organizations (MPOs) in cooperation with state governments and pursuant to federal requirements. This planning system is the result of two federal statutes – the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) – that sought to reform the pre-existing transportation planning process, which was dominated by state governments and strongly favored automotive transportation, by granting MPOs planning authority over metropolitan areas and by requiring that they consider alternative modes of transportation as well as the impact of their decisions on communities and the environment. This paper argues that these reforms have been unsuccessful because they failed to provide MPOs with sufficient independence from state governments and failed to impose strong planning requirements and

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federal oversight, which could have counteracted the dependence of MPOs on state governments. Finally, this paper will conclude that changes in the current regime that strengthen MPOs and federal planning requirements as well as active federal oversight are necessary if the transportation planning reforms envisioned by ISTEA and TEA-21 are to become a reality.

**INTRODUCTION**

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) attempted to reform federal transportation policy by shifting its focus away from unplanned road-building towards an integrated and planned approach that considers alternative modes of transportation as well as the environmental and social impact of transportation decisions. However, this paper argues that these statutes have failed to achieve their purpose because planning authority was delegated to metropolitan planning organizations (MPOs) without granting those organizations sufficient independence from state governments, furnishing strong planning requirements, or providing adequate federal oversight. Because ISTEA and TEA-21 vest final decision-making and funding authority in state governments, which have traditionally favored road-building projects, federal transportation funds have continued to be used for road-building rather than alternative transportation systems that would better meet the environmental and social goals of the statutes as well as the needs of metropolitan areas. This paper will argue that the current metropolitan transportation planning regime under TEA-21 is insufficient to meet the goals of that statute and that the federal government must take a more active role in administering federal transportation funds in order to ensure that the purposes of TEA-21 are implemented.

Transportation planning in metropolitan areas is integral to the continued vitality of America’s cities. Transportation policies are intricately intertwined with other policy issues that are central to metropolitan planning: economic development, land use, employment, housing, and pollution. The available modes of transportation in a particular metropolitan area influence to a great degree where people will live, what jobs they will take, and where businesses will locate. The allocation of transpor-

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1. See infra notes 29-34.
2. For a discussion of the interrelationship between transportation and housing development, see infra footnotes 28-30.
transportation funds within a metropolitan area can influence which areas will develop and prosper and which will not.\textsuperscript{5} Transportation planning is also one of the only metropolitan issues that must be addressed at a regional level because most transportation projects cross political boundaries and affect multiple communities.\textsuperscript{6}

Congress affirmed the importance of regional transportation planning to the future of metropolitan areas in the landmark ISTEA legislation and the TEA-21 reauthorization when it vested metropolitan planning authority in MPOs.\textsuperscript{7} ISTEA and TEA-21 were intended to reform an inefficient and inequitable transportation system that over-emphasized vehicular transportation and imposed substantial social and environmental costs.\textsuperscript{8} However, this paper will argue that, because both statutes failed to free MPOs from their subordinate relationship to state governments or to provide planning requirements or federal oversight sufficient to mandate changes in a system that has historically preferred road-building, efforts at reform have thus far proven unsuccessful.

Part I of this paper will trace the evolution of federal transportation policy that culminated in ISTEA and TEA-21, focusing on the historical preference for road-building projects over other forms of transportation. This part will also discuss the development of MPOs prior to ISTEA as planning bodies subordinate to state governments, and the extent to which ISTEA and TEA-21 altered the role of MPOs. Part II will discuss the statutory powers and limitations of MPOs vis-à-vis state governments under ISTEA and TEA-21. Part III will argue that the existing regime has failed to reform transportation planning in metropolitan areas because ISTEA and TEA-21 failed to provide MPOs with sufficient independence from state governments. This part will further argue that this

\textsuperscript{8} See infra notes 38-41 and 47 and accompanying text (describing the intent of ISTEA and TEA-21).
failure was compounded by the lack of strong planning requirements or federal oversight, which could have counteracted the dependence of MPOs on state governments. Finally, this part will conclude that changes in the current TEA-21 regime strengthening MPOs and federal planning requirements as well as active federal oversight of MPOs are necessary if the transportation planning reforms envisioned by ISTEA and TEA-21 are to become a reality.

I. BACKGROUND

A. THE EVOLUTION OF FEDERAL TRANSPORTATION POLICY

Prior to 1991, federal transportation policy was defined by two qualities: first, transportation projects funded with federal dollars have been planned by the states, rather than by the federal government; and second, federal transportation spending has consistently funded highway construction rather than other forms of transportation. From 1916, federal transportation policy amounted to little more than simply responding to increases in vehicular demand by giving money to the states to build roads.9 The states, in turn, built highway systems without considering the broad impact that those systems would have on communities and the environment.10

The federal government began to provide substantial transportation funds to states with the Highway Act of 1916.11 The first Highway Act was Congress’ response to pressure from rural agricultural districts for improved postal service and access to markets for their crops.12 The Highway Act of 1916 essentially subsidized state highway building by providing small amounts of federal funding to projects that had already been planned by the states.13 Subsequent federal legislation followed the same pattern of small-scale, mobility-focused road-building, although the amount of federal funds authorized steadily increased.14

The federal government first began to consider a planned interstate


10. See DANIEL CARLSON, At Road's End: Transportation and Land Use Choices for Communities 8-13 (1995) (describing the focus of pre-ISTEA transportation planning on automobile capacity and mobility).


12. The Highway Act of 1916 was the result of political pressure from agricultural districts for postal routes. See id. Until 1939, the Federal Bureau of Public Roads was a small agency within the Department of Agriculture designed to help “get the farmer out of the mud.” MOYNIHAN, supra note 9, at 13 (quoting unknown source).

13. MOYNIHAN, supra note 9, at 13 (describing federal highway allocations as supplements to state transportation budgets).

14. See id. Even the early national routes that crossed several state boundaries were not the
highway system during World War I, but the idea did not take hold until President Franklin Roosevelt proposed a 26,700-mile intercity highway system to Congress in 1939.15 In 1944, after further study, Congress authorized the National Interstate Highway System, which called for the construction of 40,000 miles of highway.16 However, this project and subsequent attempts to build a national highway system failed because states refused to contribute their own funds to the venture.17 Construction of the national highway system did not begin in earnest until 1956, when the federal government assumed responsibility for ninety percent of the cost.18 However, even when the federal government took the lead in funding a national highway system, planning decisions continued to be left in the hands of the states.19

1. The Birth of Federal Transportation Policy

By the mid-1950s, the demand for an interstate highway system among interest groups and the automobile-owning public had galvanized the federal will.20 In 1956, Congress approved a proposal by President Eisenhower which authorized the same national highway system advocated by President Roosevelt fifteen years earlier, but provided federal funds to pay ninety percent of the cost.21 Although the provision of more than $27.5 billion in federal funds ensured that the national highway system would be built, the Highway Act of 1956 did not result of centralized planning; instead, these routes simply paved and widened trails that had been established during the United States' frontier history. See id.

15. See id. (describing how President Roosevelt's proposal gained popular support after the unveiling of General Motor's Futurama exhibit at the New York World's Fair).

16. See id. This established a tradition: transportation bills have always grown in Congress because they are natural pork carriers. See, e.g., Robert Novak, GOP Neophytes Get Lesson in Pork, CHICAGO SUN-TIMES, Apr. 16, 1998, at 31 (describing private letters from fiscally conservative congressional Republicans to Congressman Bud Shuster (R-Pa.), chairman of the House Committee on Transportation and Infrastructure and sponsor of the bill that would eventually become TEA-21, requesting funds for "pork" highway projects in their districts); Jonathan Riskind, Generous Dole Assures Highway Pork, COLUMBUS DISPATCH, Apr. 6, 1998, at 7A (describing how Congressman Shuster defeated efforts to block passage of his bill by "buying" the support of other congressmen by adding projects in their districts).

17. MOYNIHAN, supra note 9, at 14. The 1944 legislation split the cost fifty-fifty by matching state expenditures dollar for dollar. By 1952, Congress had increased the Federal share to sixty percent but less than one percent of the system had been built.

18. See id.

19. See infra note 23 and accompanying text.

20. MOYNIHAN, supra note 9, at 14. The explosion in automobile ownership after World War II overburdened the existing system and created a public demand for new roads. See CARLSON, supra note 10, at 5-13 (describing the increased reliance on automobiles among Americans during the 1950s).

establish any plan for the construction of that system. Rather, in keeping with President Eisenhower's desire that the Highway Act not impose the federal will on the states, decisions on how federal transportation dollars would be expended were left to the state governments. This tremendous allocation of funds without significant federal oversight led to a massive and unplanned period of road-building across the United States as states attempted to spend federal highway funds as quickly as they were made available. In sum, the Highway Act of 1956 provided large amounts of federal funds for highway construction while leaving planning decisions almost entirely in the hands of the states, thereby establishing a federal transportation policy that would remain essentially unchanged until the passage of ISTEA in 1991.

While highway-building before 1991 lacked centralized planning, it was remarkably consistent in the way it affected metropolitan areas. In concert with other federal, state, and local policies, highway-building facilitated the suburbanization of metropolitan areas in the post-World War II period by making the regions surrounding cities more accessible. States viewed transportation decisions as mobility questions—i.e., how to move individuals from point A to point B—rather than as policy issues that would affect the future development of the metropolitan area. However, in many cities, the construction of links between downtowns and interstate highways determined which areas would grow and which would not. In addition to encouraging suburbanization and sprawled development patterns by allowing middle- and high-income residents to live further from their jobs, the construction of these links also under-

22. MOYNIHAN, supra note 9, at 15-16.
23. See id. (describing the administration’s desire “for Big Government achievements without Big Government”).
24. See id. at 17. Although the Bureau of Public Roads was responsible for approving all contracts, it was under significant pressure from Congress and the administration to keep the program moving and never exercised significant oversight.
25. See id.
26. CARLSON, supra note 10, at 8-17 (describing transportation planning pre-ISTEA).
27. MOYNIHAN, supra note 9, at 19.
28. See Donald H. Camph, Transportation, the ISTEA, and American Cities (last visited Mar. 20, 2000) <http://www.transact.org/mono/city.htm> (describing how pre-ISTEA transportation decisions were made).
29. See id. For a general discussion of the relationship between federal policy and suburbanization, see Jerry Frug, The Geography of Community, 48 STAN. L. REV. 1047, 1068-72 (1996) (describing the factors and policies that led to suburbanization, including federally-insured mortgage policies and federally-funded highway construction).
30. Transportation policy has always played an integral role in the development of suburbs. Along with federally insured mortgages, state and federal spending on highways and beltways spurred suburbanization by creating incentives for the middle-class to leave the central cities. For a discussion of the role of federal policy in the suburbanization of metropolitan areas, HALL, supra note 21, at 291-94 (identifying the foundations of the suburban boom as new roads, restric-
mined interest in metropolitan public transportation, displaced entire urban neighborhoods, isolated communities from new job markets.

The combination of federally insured mortgages and restrictive zoning ordinances that only allowed detached single-family homes created the inefficient land use patterns in suburbs commonly referred to as “sprawl.” See Hall at 293-95; Jackson at 203-09; See, e.g., Arthur C. Nelson & Jeffrey H. Milgroom, Regional Growth Management and Central-City Vitality in Urban Revitalization, Policies and Programs 31-35 (1995) (comparing the unmanaged “sprawl” development of Atlanta, Ga. to the carefully planned centralized development of Portland, Or.). Although “sprawl” development is limited in the older metropolitan areas of the northeastern United States, it is the norm in the rapidly developing metropolitan areas of the South and West. See Buzbee at 59-61 (describing the development of sprawl); Robert Fishman, America’s New City: Megalopolis Unbound, Wilson Q., Winter 1990, at 24 (discussing the increase in sprawl development in relation to older metropolitan areas).

The inefficient and decentralized building patterns of “sprawl” development place disproportionately high infrastructure demands on metropolitan areas. See, e.g., Office of Technology Assessment, U.S. Congress, The Technological Reshaping of Metropolitan America 206-08 (1995) [hereinafter “OTA REPORT”] (finding that “sprawl” development requires dramatically larger infrastructure investments than other types of development); Robert W. Burchell et al., The Costs of Sprawl—Revisited 46-50 (Transit Cooperative Research Program 1998) (same). Sprawling development requires extensive road construction to enable new suburban residents to reach highway links to employment and commercial centers. See id. at 71-74; see also Craig N. Oren, Getting Commuters Out of Their Cars: What Went Wrong?, 17 Stan. Envtl. L.J. 141, 168-69 (1998) (describing the effects of changes in workforce demographics on transportation policy); see, e.g., Lawrence D. Frank, Land Use Impacts on Household Travel Choice and Vehicle Emissions in the Atlanta Region 18-19 (City Plan. Program, C. of Architecture, Ga. Instit. of Tech. 1999) (describing the effects of sprawl development on traffic patterns in Atlanta). Therefore, although the availability of roads contributed to “sprawl,” increases in the number of sprawled communities now demands more roads to feed growth.

31. “Sprawl” development is not conducive to mass transit systems because such systems are not efficient or convenient for dispersed populations. Buzbee, supra note 30, at 74 (describing how mass transit systems are unattractive in sprawled areas); Fishman, supra note 30, at 33-35 (same); Mohl, supra note 11, at 100 (same); Oren, supra note 30, at 169-70 (same); see, e.g., Todd S. Purdum, A Subway Extends to Hollywood: But in Car-Crazed Los Angeles, Underground Travel Has Its Critics, N.Y. Times, June 12, 1999, at A9 (describing the underusage of subways in Los Angeles).

32. The communities displaced by the construction of highway links in metropolitan areas were almost always those of minority groups. See Mohl, supra note 11, at 100-04, 134-42 (describing how highway links were almost uniformly built in neighborhoods housing African-Americans or other minority groups).

33. Peterson & Vroman, supra note 3, at 15-16 (describing the physical removal of new jobs from inner-cities to the suburbs and the resulting impact on metropolitan labor markets); Hughes, supra note 3, at 33-52 (describing “spacial mismatch” in several metropolitan areas as well as a variety of transportation efforts to alleviate that mismatch). In response to the difficulties faced by many employers in attracting carless, inner-city employees in areas lacking mass
and caused dramatic increases in environmental pollution and congestion.\textsuperscript{34} Increasing concern over these problems set the stage for federal transportation reform under ISTEA.\textsuperscript{35}

2. \textit{The Intermodal Surface Transportation Efficiency Act of 1991}

In terms of the shift it represented in federal transportation policy, the Intermodal Surface Transportation Efficiency Act of 1991\textsuperscript{36} (ISTEA) was revolutionary.\textsuperscript{37} Even though the requirements of ISTEA were far from comprehensive or mandatory, the federal government established for the first time a policy regarding how its transportation dollars would be used.\textsuperscript{38} ISTEA attempted to break away from the traditional strategy of simply accommodating increases in vehicular demand by requiring a coordinated, long-term transportation planning process that adhered to environmental standards and considered issues such as energy conservation, congestion, land use and development, and the social and economic effects of transportation decisions.\textsuperscript{39} ISTEA also sought to reduce the preference for highways at the state and local level\textsuperscript{40} as well as promote other modes of transportation.\textsuperscript{41} However, despite these innovations, this paper argues that ISTEA allowed the preexisting preference for

\textsuperscript{34} Because "sprawl" development is by definition inefficient, each new housing development places disproportionate demands on the transportation system and increases congestion and pollution. Buzbee, supra note 30, at 71-72.

\textsuperscript{35} See infra notes 39-41 and accompanying text.


\textsuperscript{37} See, e.g., BRUCE D. MCDOWELL, IMPROVING REGIONAL TRANSPORTATION: MPOS AND CERTIFICATION 12 (1999) (describing the dramatic shift ISTEA represented in federal transportation policy).

\textsuperscript{38} See id.


\textsuperscript{40} ISTEA sought to accomplish this goal in a variety of ways. See Robert E. Paaswell, ISTEA: Infrastructure Investment and Land Use, in TRANSPORT AND URBAN DEVELOPMENT 38-44 (David Banister ed., 1995) (discussing the various methods of the ISTEA).

\textsuperscript{41} ISTEA funded all transportation projects from a single fund at a single level. Prior to ISTEA, federal funds for highways and mass transit were made available through separate sources and, as discussed above, the federal government matched state highway expenditures at a higher rate than mass transit expenditures. See Paaswell, supra note 40, at 38-39 (describing ISTEA’s consolidation of federal transportation funding sources); See also Pub. L. No. 102-240, 105 Stat. 1914 (1991) (requiring that ten percent of all federal funds allocated for highway projects be spent on defined transportation "enhancements," including parks, historic preservation, beautification, and bicycle and foot paths).
road-building to continue by leaving decisions regarding the use of federal transportation funds largely in the hands of state governments.\(^{42}\)

ISTEA attempted to address the distinct needs of metropolitan areas by requiring a transportation planning process separate from that of the state government.\(^{43}\) Congress intended that MPOs serve as the expert regional planning bodies which would identify the particular transportation needs of metropolitan areas.\(^{44}\) As envisioned by ISTEA, MPOs were to be comprised of local elected officials and metropolitan planning experts who would cooperatively develop long-term regional transportation plans in cooperation with community groups and state planners.\(^{45}\) Thus, MPOs would not only implement the policies and programs of ISTEA on a metropolitan level, but would also tailor those policies and programs to local transportation concerns and build consensus by including a wide range of community groups in the planning process.

3. The Transportation Equity Act for the 21st Century

ISTEA expired at the end of fiscal year 1997.\(^{46}\) However, because ISTEA proved to be a political success, Congress reauthorized the transportation planning policies established in ISTEA through the fiscal year 2003 with few substantial changes in the Transportation Equity Act for the 21st Century (TEA-21).\(^{47}\) Like ISTEA, TEA-21 is incredibly long

\(^{42}\) See infra Part II.A (discussing delegation of federal transportation spending authority in metropolitan areas to state governments rather than MPOs); see, e.g., McDowell, supra note 37, at 12 ("However, ISTEA allows, accommodates, and encourages most of [the transportation reforms], rather than requires them.").


\(^{45}\) See id. at 27, reprinted in 1991 U.S.C.C.A.N. 1553 (describing Congress' intent to strengthen the role of MPOs in the metropolitan transportation planning process vis-à-vis state governments). ISTEA was the result of a concerted attempt by Congress to broaden the range of participants in the planning process beyond the traditional groups, i.e., state departments of transportation and motor vehicle and gasoline lobbyists. See Paaswell, supra note 40, at 36.

\(^{46}\) See Dennis C. Gardner, Transportation Reauthorization: A Summary of the Transportation Equity Act for the Twenty-First Century, 30 URB. LAW. 1097, 1097 (1998).


[TEA-21 continues] the proven and effective program structure established for highways and transit under the landmark ISTEA legislation. Flexibility of funds, emphasis on measures to improve the environment, focus on a strong planning process as the foundation of good transportation decisions -- all ISTEA hallmarks -- are continued and enhanced by TEA-21.

and complex and authorizes a massive amount of federal dollars – in this case, $217 billion – for transportation spending – in fact, TEA-21 has been accurately described as the largest public works measure ever passed by Congress.

TEA-21 did, however, work some important changes in the policies of ISTEA. In the area of transportation planning, TEA-21 enhanced the autonomy of state and local planning agencies by reducing the number of factors that those agencies must address when making transportation planning decisions. In addition, TEA-21 provided that the failure of a state or MPO to consider one of the planning factors would not be judicially reviewable. This paper will argue that these two changes significantly weakened the strength of the ISTEA planning requirements by granting state governments and MPOs more discretion and eliminating the threat of judicial review. However, TEA-21 also significantly enhanced the public participation requirements of ISTEA, which provides MPOs with some degree of accountability.

See note 47, at 1 (describing TEA-21 as comprising over 800 pages and taking over 3 years to write). In fact, TEA-21 was so complex that Congress was compelled to adopt a technical corrections bill within a month of passing TEA-21. See TEA-21 Restoration Act, Pub. L. No. 105-206, 112 Stat. 839 (1998).

This amount marks a significant increase over the roughly $150 billion for seven years authorized by ISTEA. See Liam A. McCann, Note, TEA-21: Paving Over Efforts to Stem Urban Sprawl and Reduce America's Dependence on the Automobile, 23 WM. & MARY ENVTL. L. & POL'Y REV. 857, 858 (describing the unprecedented size of TEA-21); More than a Free Refill, supra note 47, at 1 (describing the amount of funds authorized by TEA-21); Clifford Winston & Chad Shirley, Alternate Route: Toward Efficient Urban Transportation 9-10 (1998) (comparing expenditures under ISTEA and TEA-21).

Perhaps most importantly, highway and transit programs are now guaranteed a minimum amount of funding for the first time. See TEA-21 Summary at Overview, Funding Level, supra note 47; More than a Free Refill, supra note 47, at 5, 7. This is significant because ISTEA was never funded to its full extent. See More than a Free Refill at 5, 7. Under ISTEA and previous legislation, highway funds were taken from the Highway Trust Fund (HTF), which collected receipts from gasoline taxes. However, prior to TEA-21, transportation spending was not tied to HTF receipts so many projects, including much of ISTEA, were underfunded. See id.

B. Metropolitan Planning Organizations

MPOs are the lynchpin of ISTEA and TEA-21’s attempts to reform federal transportation policy in metropolitan areas in that both statutes charge MPOs with carrying out federal policy directives in metropolitan transportation planning. In its report on MPO capacity, the United States Advisory Commission on Intergovernmental Relations stated that the “new philosophies [of ISTEA] imply that MPOs will be transformed from weak advisory bodies into strong decisionmaking partners working closely and on equal footing with state departments of transportation, the governors, air quality and land use regulators, and other major stakeholders.” The vision of MPOs under ISTEA and TEA-21 is of one planning body with jurisdiction over an entire metropolitan area comprised of representatives of all affected groups and transportation service providers within that area. Because of its inclusive planning process and the broader range of issues that must be considered, MPOs are expected to create transportation plans that are diverse both in the use of multiple modes of transportation and in the types of societal needs addressed. By designating MPOs as the agents of reform, ISTEA and TEA-21 fundamentally altered their historic role and thrust enormous new responsibilities upon them.

MPOs were originally created in the 1950s by state departments of transportation (SDOTs). Because SDOTs were unfamiliar with the expanding area of metropolitan planning, the original MPOs were designed to specialize in transportation issues particular to metropolitan areas and to advise state governments on the proper course of action. The original MPOs relied on SDOTs for funds, research data, and policy guidance. Federal legislation in 1962 required MPOs for all “urbanized areas” with a population over 50,000. As the number of “urbanized areas” in the United States grew, the number of MPOs increased from 218 in 1972 to 300 in 1990. However, although MPOs grew and changed over time along with the metropolitan areas they monitored,
their subordinate relationship to SDOTs remained essentially unaltered until the passage of ISTEA in 1991.  

Although the make-up and responsibilities of MPOs varies greatly from region to region, MPOs generally consist of four basic components: (1) a policy board of elected local government officials and representatives of affected groups; (2) a technical committee of federal, state, and local transportation staff, as well as staff from other agencies involved in the planning process; (3) MPO support staff; and (4) members of the public participating in the decisionmaking process.

II. MPOs Under ISTEA & TEA-21

Under current federal law, each “urbanized area” with a population of more than 50,000 must have a MPO. TEA-21 gives MPOs responsibility for almost all aspects of the metropolitan transportation planning process and requires that MPOs follow certain procedures in that process, but does not grant them the final say in what projects will actually be funded.

63. See MPO Capacity, supra note 55, at 13.
64. Over time, power over the appointment of MPO staff has shifted from SDOTs to local governments. See id. at 34.
65. TEA-21 defines “urbanized area” or UZA as “an area with a population of 50,000 or more designated by the Bureau of the Census, within boundaries to be fixed by responsible State and local officials in cooperation with each other, subject to approval by the Secretary [of Transportation]. Such boundaries shall, at a minimum, encompass the entire urbanized area within a State as designated by the Bureau of the Census.” Pub. L. No. 105-178, § 1201, 112 Stat. 168 (1998) (to be codified at 23 U.S.C. § 101(37)).
66. See Pub. L. No. 105-178, § 1203(b)(1)-(3), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(b)(1), (4)-(5)). Because most metropolitan areas had pre-existing MPOs, ISTEA created a formal designation process by which MPOs were brought into line with federal statutory requirements. See Pub. L. No. 102-240, Title I, § 1024, 105 Stat. 1955 (1991). Under TEA-21, the MPO must be established either by agreement between the state governor and local governments representing at least 75 percent of the population within the MPO’s proposed jurisdiction, or “in accordance with procedures established by applicable State or local law.” Pub. L. No. 105-178, § 1203(b)(1), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(c)).
68. See infra notes 73-79 and accompanying text.
A. MPO AUTHORITY

As discussed above, MPOs have historically been subordinate to state governments. Although ISTEA reenvisioned MPOs as semi-autonomous local policy boards, neither it nor TEA-21 expressly defines the authority of MPOs and state governments vis-à-vis one another. However, TEA-21 does contain some provisions that regulate relations between MPOs and state governments.

The most important such provision gives states the final say in select-

69. See supra Part I.B.

70. See supra notes 56-57. The introductory language of TEA-21’s metropolitan planning provisions indicates that MPOs were to have broad planning authority:

[M]etropolitan planning organizations . . . in cooperation with the State and public transit operators, shall develop transportation plans and programs for urbanized areas of the State. . . . The plans and programs for each metropolitan area shall provide for the development and integrated management and operation of transportation systems and facilities . . . that will function as an intermodal transportation system for the metropolitan area and as an integral part of an intermodal transportation system for the State and the United States.


71. In addition to the provisions discussed in the text, TEA-21 regulates relations between states and MPOs as follows: First, TEA-21 provides that state agencies shall be free to develop proposed metropolitan transportation plans for adoption by the MPO. See Pub. L. No. 105-178 § 1203(b), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(b)(3)). The Federal Highway Administration (FHWA) defines “coordination” as meaning that “the comparison of the transportation plans, programs, and schedules of one agency with related plans, programs, and schedules of other agencies or entities with legal standing, and adjustment of plans, programs and schedules to achieve general consistency.” 23 C.F.R. § 450.104. Because state transportation agencies are required to submit “plans and programs” to MPOs for adoption under TEA-21, the statutory language implies that state agencies may not dictate to MPOs regarding matters within MPO authority during the planning process. However, as will be demonstrated below, states retain plenary authority to reject MPO projects. See infra notes 73-79 and accompanying text.

Second, TEA-21 provides that, in situations where a metropolitan area crosses state boundaries, the Secretary of Transportation shall establish “such requirements as the Secretary considers appropriate” to encourage state governors and MPOs to “provide coordinated transportation planning for the entire metropolitan area.” Pub. L. No. 105-178 § 1203(d), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(d)).

Third, TEA-21 expressly provides that “[n]othing in this section shall be construed to confer on a metropolitan planning organization the authority to impose legal requirements on any transportation facility, provider, or project not eligible under this title or chapter 53 of title 49.” Pub. L. No. 105-178, § 1203, 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(m)). In other words, a MPO’s authority is restricted to entities that are eligible to receive federal transportation funds under the statutes.

Finally, the regulations promulgated by the FHWA under Title 23 require that MPOs create “agreements” or “memoranda of understanding” between themselves and any entity in their boundaries with which they share authority, specifically the state, public transit operators, another MPO, or the state agency charged with responsibility for a nonattainment area under the Clean Air Act. See 23 C.F.R. § 450.310. The applicable provisions of the Clean Air Act can be found at 42 U.S.C. § 7504 (1994). FHWA regulations require also that, “[t]o the extent possible, the MPO designated should be established under specific State legislation” giving it “authority to carry out metropolitan transportation planning.” See 23 C.F.R. § 450.306(c). By requiring (or, at least, encouraging) state legislatures to pass enabling legislation, the regulations not only
ing which projects will be funded and implemented. Once an MPO has finalized its metropolitan transportation improvement program (TIP), 72 ISTEA requires that the selection of transportation projects involving federal participation must be “in conformance with” the metropolitan TIP for that area, but shall be carried out “by the State in cooperation with” the MPO. 73 This provision, which vests in the state the authority to actually select which federally-supported transportation projects will be implemented, is particularly significant because it runs contrary to ISTEA’s stated preference for MPO autonomy. 74 Although the state is constrained by the requirement that it select “in conformance with” the metropolitan TIP developed by the MPO, the decision on what projects will ultimately be implemented nevertheless rests with the state. Thus, the state could veto any or all of the projects in the metropolitan TIP. 75

TEA-21 not only reaffirmed this hierarchy, but also further diminished the power of MPOs. TEA-21 added a provision allowing the state or “designated transit funding recipient” to disregard the project “priority list” developed by the MPO in selecting which projects shall be implemented. 76 This provision allows states to ignore the MPO’s determina-

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72. TIPs are the short-term projects that comprise the larger LRPs. TEA-21 requires that MPOs, in cooperation with the state and “affected transit operators,” must develop or update TIPs “at least once every 2 years.” Pub. L. No. 105-178, § 1203(h), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(h)(1)). TIPs are ultimately incorporated into the state transportation improvement program (STIP) for submission to the FHWA and FTA for joint approval. Pub. L. No. 105-178, § 1203(h), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(h)(1)); see also 23 C.F.R. §§ 450.206-10, 450.214-16, 450.328.

TIPs must contain: (1) a “priority list of proposed federally supported projects and strategies”; (2) a “financial plan” that demonstrates “how the [TIP] can be implemented,” “indicates resources from public and private sources that are reasonably expected to be available to carry out the program,” “identifies innovative financing techniques to finance projects, programs, and strategies,” and “may include, for illustrative purposes, additional projects that would be included in the approved transportation improvement program if reasonable additional resources beyond those identified in the financial plan were available.” Pub. L. No. 105-178, § 1203(h), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(h)(2)).


74. See supra notes 56-57 and 70 and accompanying text.

75. However, an actual confrontation resulting in a “veto” between a state government and a MPO is unlikely to occur. See infra note 163 (arguing that MPOs and SDOTs are unlikely to reach the point of confrontation because MPOs will rationally avoid such an occurrence under the existing planning regime).

76. See Pub. L. No. 105-178, § 1203(h), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(h)(5)(B)). The text of the added provision is as follows:

(B) Notwithstanding any other provision of law, action by the Secretary [of Transportation] shall not be required to advance a project included in the approved transportation improvement program in place of another project in the program.

In other words, states need no longer seek the permission of the Secretary of Transportation to disregard the MPO priority list.
tion of which projects within its jurisdiction should take priority over others. However, TEA-21 also provides that all projects taking place within a transportation management area (TMA) that receive TEA-21 funds must be selected by the TMA’s MPO, in consultation with the state, and in conformance with the metropolitan TIP for that area.

Thus, MPOs have broad authority to make and implement plans for the metropolitan area, but states retain the ability to disregard MPO plans and determine which projects will actually be funded and implemented. As will be shown below, this balance of power effectively precludes MPOs from pursuing transportation projects not favored by the state government.

B. MPO Planning Requirements

As discussed earlier, ISTEA and TEA-21 intended to create a planning process that was inclusive and considered alternative modes of transportation as well as the environmental and social impact of transportation decisions. ISTEA and TEA-21 impose their policy goals on the metropolitan planning process by placing a variety of planning requirements on MPOs.

I. Planning Factors

ISTEA set forth 16 factors which MPOs were required, “at a minimum,” to consider in developing transportation plans and programs. This list of factors is illustrative of the general policies Congress sought to implement via MPOs:

In developing transportation plans and programs pursuant to this section, each metropolitan planning organization shall, at a minimum, consider the following:

1. Preservation of existing transportation facilities and, where practi-

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TEA-21 also added a provision that, if the project was a mass transit project, the “designated transit funding recipients,” rather than the state, would make the selection “in cooperation” with the MPO. Pub. L. No. 105-178, § 1203(h), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(h)(5)). Mass transit projects in metropolitan areas are governed by Pub. L. No. 105-178, §3004, 3029(b), 112 Stat. 341, 372 (1998) (to be codified as amended at 49 U.S.C. § 5301 et seq.).

77. For a discussion of transportation management areas, see infra notes 112-17 and accompanying text.


79. See infra Part III.B.1.


cal, ways to meet transportation needs by using existing transportation facilities more efficiently.

2. The consistency of transportation planning with applicable Federal, State, and local energy conservation programs, goals, and objectives.

3. The need to relieve congestion and prevent congestion from occurring where it does not yet occur.

4. The likely effect of transportation policy decisions on land use and development and the consistency of transportation plans and programs with the provisions of all applicable short- and long-term land use and development plans.

5. The programming of expenditures on transportation enhancement activities as required in section 133.

6. The effects of all transportation projects to be undertaken within the metropolitan area, without regard to whether such projects are publicly funded.

7. International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation areas, monuments and historic sites, and military installations.

8. The need for connectivity of roads within the metropolitan area with roads outside the metropolitan area.

9. The transportation needs identified through use of the management systems required by section 303 of this title.

10. Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors and identification of those corridors for which action is most needed to prevent destruction or loss.

11. Methods to enhance the efficient movement of freight.

12. The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavement.

13. The overall social, economic, energy, and environmental effects of transportation decisions.

14. Methods to expand and enhance transit services and to increase the use of such services.

15. Capital investments that would result in increased security in transit systems.

16. Recreation[,] travel[,] and tourism.82

This list reflects Congress' desire to broaden the scope of metropolitan transportation planning beyond narrow questions of vehicular demand and road capacity.83 ISTEA's planning factors emphasize eight general policies for metropolitan transportation planning: creating a more

83. See supra notes 39-41.
holistic or integrated transportation system, establishing a forward-looking planning process, maintaining and improving existing transportation systems, increasing commerce, improving safety, protecting the environment, reducing congestion, and promoting sound regional development. However, because these planning factors are vaguely worded and are not mandatory – i.e., MPOs need only consider them – they arguably provide little restraint on MPOs in the planning process. 

Although it retained the vague wording of ISTEA, TEA-21 completely rewrote the planning factors, reducing their number to seven.

The metropolitan transportation planning process for a metropolitan area under this section shall provide for consideration of projects and strategies that will:

1. support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. increase the safety and security of the transportation system for motorized and nonmotorized users;
3. increase the accessibility and mobility options available to people and for freight;
4. protect and enhance the environment, promote energy conservation, and improve quality of life;
5. enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
6. promote efficient system management and operation; and
7. emphasize the preservation of the existing transportation system.

Essentially, TEA-21's planning factors maintain five of the eight general policies of ISTEA: creating a more holistic or integrated transportation system, maintaining and improving existing transportation systems, increasing commerce, improving safety, and protecting the environment. TEA-21 eliminated ISTEA's emphasis on establishing a

84. Factors (6) and (8).
85. Factors (4) and (10).
86. Factors (1) and (14).
87. Factors (7), (8), (11), (13), and (16).
88. Factor (15).
89. Factors (2) and (13).
90. Factor (3).
91. Factors (4) and (6).
92. See infra Part III.B.2 (arguing that the planning factors do not force MPOs to pursue the policies of ISTEA and TEA-21).
94. Factors (C), (E), and (F).
95. Factor (G).
96. Factors (A) and (C).
97. Factor (B).
98. Factor (D).
forward-looking planning process, reducing congestion, and promoting sound regional development.\textsuperscript{99} This reduction was part of a larger attempt to create uniform requirements for SDOTs and MPOs so that their performances could be better evaluated in relation to one another.\textsuperscript{100}

Because the transportation programs established by MPOs must be included in the state-wide transportation program submitted to the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) for approval, the drafters of TEA-21 determined that state and local planning bodies should be judged by the same criteria, even though the subject matter of their programs differs greatly.\textsuperscript{101}

In addition, TEA-21 added a provision that the failure of a MPO to consider any of the listed factors is not subject to judicial review.\textsuperscript{102} When combined with vague and non-mandatory nature of the planning factors, TEA-21’s reduction of the number of planning factors and removal of the MPO decision-making process from judicial review indicate a step back from ISTEA’s modest attempts at establishing a centralized federal transportation policy because, under this new regime, MPOs have more discretion and are less accountable for their decisions.\textsuperscript{103}

2. Public Participation in the Planning Process

TEA-21 requires that MPOs incorporate their consideration of the planning factors into transportation improvement programs (TIPs)\textsuperscript{104} and long-range transportation plans (LRPs),\textsuperscript{105} which must be submitted to

\textsuperscript{99} Arguably, the “promot[ing] efficient system management and operation” language of factor (C) could be interpreted to address concerns about congestion. Pub. L. No. 105-178, § 1203(f), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(f)).

\textsuperscript{100} See McDowell, supra note 37, at 10 (describing the changes made to the required planning factors for both SDOTs and MPOs).

\textsuperscript{101} See id.; infra note 104 for a discussion of the relationship between state and MPO transportation programs.

\textsuperscript{102} See id.; see also Southwest Williamson County Community Ass’n v. Slater, 976 F. Supp. 1119 (M.D. Tenn. 1997) (providing no private right of action under ISTEA but ISTEA does not preclude judicial review all together), aff’d in part, vacated in part, 173 F.3d 1033 (6th Cir.). For an argument that TEA-21 would be more effective if it allowed citizen suits, see Buzbee, supra note 30, at 115-16.

\textsuperscript{103} See infra Part III.B.2.

\textsuperscript{104} See supra note 72.

\textsuperscript{105} See Pub. L. No. 105-178, § 1203(g), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(g)). The FHWA, the agency to whom the Secretary of Transportation delegated responsibility for promulgating regulations, requires that LRPs be reviewed and updated every 5 years in most areas. See 23 C.F.R. § 450.322.

LRPs must “at a minimum” (1) identify “transportation facilities . . . that should function as an integrated metropolitan transportation system . . . ”; (2) explain the MPO’s consideration of the planning factors; (3) preserve and “make the most efficient use” of the existing transportation system; (4) “indicate as appropriate proposed transportation enhancement activities”; (5) include a “financial plan that demonstrates how the [LRP] can be implemented, indicates resources from public and private sources that are reasonably expected to be made available to
the FHWA and FTA for joint approval.106 The TIPs and LRPs are another central component of the reforms sought by ISTEA and TEA-21 because they require that MPOs create and follow comprehensive, forward-looking plans instead of simply responding piecemeal to demands for new roads.107

In order to encourage an inclusive planning process and to make MPOs more accountable to the citizens of metropolitan areas, TEA-21 imposes substantial public participation requirements on both the TIP and LRP formulation processes.108 TEA-21 requires that TIPs and LRPs be “published or otherwise made available for public review” and that, before an MPO approves a TIP or LRP, it must provide the following parties with “a reasonable opportunity to comment” on the plan: “citizens, affected public agencies, representatives of transportation agency employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transit, and other interested parties.”109 Finally, TEA-21 strengthened the public participation requirements of ISTEA by adding a requirement that MPOs “publish or otherwise make readily available” for public review an annual listing of projects “for which Federal funds have been obligated in the preceding year.”110 However, as discussed below, although these provisions have been the most successful of the attempts at planning reform because they provide interested parties with the information necessary to participate in the planning process, the preclusion of judicial review severely hampers the ability of citizens’ groups to truly assert themselves in the planning process.111
CMPO Certification

Under TEA-21, a two-tiered system exists in which MPOs are subject to more federal requirements if they have authority over areas designated by the Secretary of Transportation as “transportation management areas” (TMAs). Because TEA-21 requires that all urbanized areas with populations greater than 200,000 be so designated, most major metropolitan areas are TMAs. While non-TMA urbanized areas are only subject to the requirements of TEA-21 that are discussed above, MPOs responsible for TMAs are subject to additional requirements, including provisions regarding membership, coordination with state officials, and congestion management.

The most significant of these additional requirements is that of certification. TEA-21 requires that the Secretary of Transportation certify every three years that all MPOs are carrying out their “responsibilities under applicable provisions of Federal law.” The Secretary of Transportation has delegated joint certification authority to the FHWA and FTA, both of whom must approve the planning process in order for it to be designated, it must “clearly identify the policy body . . . that will be taking the required approval actions as the MPO.” The FHWA’s regulations state that the term “officials of agencies which administer or operate major modes of transportation in the metropolitan area” includes, but is not limited to, transit operators, rail operators, and operators of maritime ports and major local airports. The regulations also state that MPOs should continue to add to the membership of their policy boards to reflect the areas they manage and that such additions to membership do not require redesignation. See id. at § 450.306(k).

TEA-21 provides that all projects taking place within a TMA must be selected by the TMA’s MPO, in consultation with the state, and in conformance with the metropolitan TIP for that area. FHWA regulations require that MPOs in TMAs develop additional plans in cooperation with the State and public transit operators that specifically address air quality, congestion, and other issues affecting the area. This plan must meet the requirements for a “unified planning work program” or “UPWP.” See id. Those requirements are set forth at 23 C.F.R. § 420, subpart A(2000).

113. See id.
114. For a complete listing of those areas currently designated as TMAs, see 57 Fed. Reg. 21,160 (1992).
115. TEA-21 requires that the membership of TMA MPO “policy boards” include “local elected officials, officials of public agencies that administer or operate major modes of transportation in the metropolitan area . . . and appropriate State officials.” Pub. L. No. 105-178, § 1203(b)(1), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(b)(2)). TEA-21 does not define the term “policy board.” However, the FHWA regulations require that, for the MPO to be designated, it must “clearly identify the policy body . . . that will be taking the required approval actions as the MPO.” The FHWA’s regulations state that the term “officials of agencies which administer or operate major modes of transportation in the metropolitan area” includes, but is not limited to, transit operators, rail operators, and operators of maritime ports and major local airports. See 23 C.F.R. § 450.306(i)(2000). The regulations also state that MPOs should continue to add to the membership of their policy boards to reflect the areas they manage and that such additions to membership do not require redesignation. See id. at § 450.306(k).
116. TEA-21 provides that all projects taking place within a TMA must be selected by the TMA’s MPO, in consultation with the state, and in conformance with the metropolitan TIP for that area. See Pub. L. No. 105-178, § 1203(i), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(i)(4)).
117. See Pub. L. No. 105-178, § 1203(b), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(b)). FHWA regulations require that MPOs in TMAs develop additional plans in cooperation with the State and public transit operators that specifically address air quality, congestion, and other issues affecting the area. See 23 C.F.R. § 450.314(2000). This plan must meet the requirements for a “unified planning work program” or “UPWP.” See id. Those requirements are set forth at 23 C.F.R. § 420, subpart A(2000).
be certified.\textsuperscript{119} Under TEA-21, the FHWA and FTA may make such certification only if: 
“(1) a [MPO] is complying with the requirements of this section and other applicable requirements of Federal law, and (2) there is a [TIP] for the area that has been approved by the [MPO] and the Governor.”\textsuperscript{120}

ISTEA provided for mandatory sanctions for failures to meet the certification requirements, including the mandatory withholding of federal funds in certain circumstances.\textsuperscript{121} However, TEA-21 significantly weakened these sanctions in two ways: first, by making any withholding of funds discretionary rather than mandatory; and second, by allowing the Secretary to withhold amounts less than 20 percent.\textsuperscript{122} Finally, TEA-21 requires that FHWA and FTA allow participation in the certification process by parties from the metropolitan areas under review.\textsuperscript{123} As with the public participation requirements discussed above, this provision also allows interested parties to obtain the information necessary to participate in the planning process; however, unlike the public participation

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\textsuperscript{119} McDowell, \textit{supra} note 37, at 5, 8-11 (describing the basic certification process for metropolitan planning processes). In addition to the coercive power of withholding funds for non-compliance, the FHWA and FTA also have the ability to target certain aspects or programs in a planning process for improvement through “conditional certification” or “limited certification.” “Conditional certification” or “certification subject to specified corrective actions being taken” is essentially a temporary certification, which allows all projects to proceed while specific corrective actions are taken by the MPO. “Limited certification” allows some projects to proceed while others must wait until full certification is granted. See \textit{id}. at 6.

It should be noted that the FHWA’s regulations place some annual certification requirements on all metropolitan transportation planning processes, regardless of whether they are in TMAs or not. These regulations simply require that each MPO state that its planning process is in compliance with the applicable statutory requirements of TEA-21, the Federal Transit Act, the Clean Air Act, the Civil Rights Act of 1964, and the Americans with Disabilities Act of 1990. See 23 C.F.R. § 450.334 (2000); see also McDowell at 5-6 (describing the self-certification process). However, because this process is essentially self-certification, it does not provide the same degree of oversight as does the statutory certification process.

\textsuperscript{120} Pub. L. No. 105-178, § 1203(i), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(i)(5)).

\textsuperscript{121} See Pub. L. No. 102-240, Title I, § 1024, 105 Stat. 1955 (1991). If a MPO failed to become certified within two years of passage of ISTECA (September 30, 1993), the Secretary could withhold some or all of the funds apportioned to that MPO. Further, if a MPO remained uncer­

\textsuperscript{122} See Pub. L. No. 105-178, § 1203(i), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. § 134(i)(5)(D)). The amended text reads as follows: “If a metropolitan planning process is not certified, the Secretary may withhold up to 20 percent of the apportioned funds attributable to the transportation management area under this title and chapter 53 of title 49.” One commentator has suggested that this amendment was made because the complete cut-off of federal funds was too politically difficult an issue. See McDowell, \textit{supra} note 37, at 23 (arguing that cut-offs are not politically viable and were not imposed even when allowed under ISTECA).

process for TIP and LRP formulation, there is no statutory preclusion of judicial review so citizens' groups may be able to assert themselves more in the certification process than in the TIP or LRP processes.\textsuperscript{124}

Certification is the primary means of federal oversight of MPOs and could be an effective tool to counteract the influence of state governments on the metropolitan planning process; however, as discussed below, the FHWA and FTA have not aggressively exercised their oversight authority.\textsuperscript{125}

III. ANALYSIS

As one commentator has observed, the burden placed on MPOs by ISTEA and TEA-21 has stretched them “almost to the breaking point. Most MPOs now have responsibilities that far exceed their authority.”\textsuperscript{126} This paper argues that, because ISTEA and TEA-21 charge MPOs with working radical change in a system of established interests and patterns without granting them the power or independence to effect meaningful reform, metropolitan transportation decisions continue to be made at the state level and transportation funds for metropolitan areas continue to be spent disproportionately on road-building for outer-ring suburban communities.\textsuperscript{127} Although ISTEA and TEA-21 have created a more comprehensive, planned process for making transportation decisions in metropolitan areas, this paper argues that they have failed to alter the fundamental aspects of the decision-making and funding processes, thereby ensuring that substantive outcomes will remain the same.

Pre-ISTEA, the combination of sprawled development requiring high levels of road-building and a federal transportation policy that focused on responding to increases in vehicular demand created a preference for road-building in metropolitan transportation planning.\textsuperscript{128} ISTEA sought to reform this system by placing planning in the hands of MPOs and requiring that they create long-term plans that consider the social and environmental impact of proposed transportation systems.\textsuperscript{129} However, MPOs have been unsuccessful in reforming transportation planning and federal funds continue to be used on new road-building

\textsuperscript{124} Although there have not yet been any legal challenges under the certification requirements of TEA-21, citizens' groups in many metropolitan areas have become involved in the certification process when they felt the composition of the MPO's policy board or its public participation procedures were inadequate. See McDowell, \textit{supra} note 37, at 26 (describing the successful efforts of one citizens' group to obtain remedial action against their MPO).

\textsuperscript{125} See infra Part III.B.3.

\textsuperscript{126} McDowell, \textit{supra} note 37, at 14.

\textsuperscript{127} See infra Part III.A.

\textsuperscript{128} See supra note 30 and accompanying text (describing how “sprawl” development creates continuing demand for more road-building).

\textsuperscript{129} See supra Part II.B (describing ISTEA's planning requirements).
projects to satisfy the demands of outer-ring suburban communities.\textsuperscript{130} This paper will argue that this failure has occurred because MPOs lack institutional independence to resist state and local preferences for road-building, because the planning requirements under TEA-21 are insufficient to counterbalance the weakness of MPOs, and because the federal agencies responsible for overseeing MPOs have been lax in enforcing these planning requirements when MPOs are not in compliance.

This paper proposes that, in order to truly implement transportation planning reform in metropolitan areas, the federal government will have to play a more active role in the planning process. Because efforts to increase the independence of MPOs \textit{vis-à-vis} state governments will not ensure reform if federal planning requirements and oversight are not strengthened, TEA-21 must be amended to make application – rather than mere consideration – of the planning requirements mandatory, and the FHWA and FTA must take a more aggressive role in ensuring that federal transportation planning mandates are observed by MPOs.

\section*{A. \textbf{The Existing System Has Failed to Reform Federal Transportation Policy in Metropolitan Areas}}

Precise determinations of where federal transportation funds are going are difficult to make for a number of reasons: the complexity of ISTEA and TEA-21,\textsuperscript{131} the number of projects funded under those acts,\textsuperscript{132} the variance between the funds authorized by the acts and those actually appropriated by Congress and then obligated to specific projects at the state level,\textsuperscript{133} and, most importantly, the general refusal of federal and state transportation agencies to make relevant information available.\textsuperscript{134}

\textsuperscript{130} See \textit{infra} Part III.A (describing how federal funds continue to be used predominantly on roads to the exclusion of alternative modes of transportation).

\textsuperscript{131} See \textit{Surface Transportation Policy Project, Getting a Fair Share: An Analysis of Federal Transportation Spending} 1-5 (1996) [hereinafter “\textit{Getting a Fair Share}”] (describing the difficulties involved in analyzing transportation expenditures); supra note 48 and accompanying text (describing the size and complexity of TEA-21).

\textsuperscript{132} Because of the discretionary nature of much of the ISTEA and TEA-21 funding and the emphasis placed on multimodal transportation systems under those acts, it has proven extremely difficult to determine how many projects are being funded under ISTEA and TEA-21. See \textit{Getting a Fair Share}, supra note 131, at 1-5 (describing the variety of projects funded under ISTEA and TEA-21).

\textsuperscript{133} See id. (describing the process of tracking federal funds through each step of the funding process).

\textsuperscript{134} See id. (describing the difficulties involved in analyzing transportation expenditures, particularly in light of the FHWA’s refusal to make relevant information available to the public); \textit{Surface Transportation Policy Project, ISTEA Year Four} (last visited Mar. 19, 2000) at http://www.transact.org/yt/money.htm [hereinafter “\textit{ISTEA Year Four}”] (describing the provision of incorrect information and the necessity of filing a Freedom of Information Act request to obtain the relevant information from the US Dept. of Transportation).
Consequently, there is some disagreement over the success of ISTEA and TEA-21 in reducing automobile dependency and road-building. However, even assuming that ISTEA and TEA-21 funds have found their way to a significant number of alternative transportation programs, studies have nevertheless determined that states continue to subvert the intent of federal transportation policy reform by directing federal transportation dollars towards road-building projects that encourage "sprawl" development in relatively unpopulated spaces within the metropolitan area and increase automobile traffic and environmental pollution.

MPOs and state governments have continued to frustrate the intent of ISTEA and TEA-21 in three ways. First, a substantially smaller percentage of federal transportation funds continues to be spent on urbanized areas than the percentage of the population those areas represent. By directing transportation funds towards the least populated portions of the metropolitan area, MPOs and state governments encourage development of those areas rather than addressing the transportation needs of urbanized areas than the percentage of the population those areas represent.

135. Compare Getting a Fair Share, supra note 131, at 6-7 (1996) (finding that, 5 years after ISTEA, most federal transportation dollars continued to be spent on road-building projects far from the core of metropolitan areas), and ISTEA Year Four, supra note 134 (finding that, in fiscal year 1994, states have continued to obligate between 76 and 86% of available federal funds to road-building and road-maintenance projects while only obligating between 26 and 64% to alternative transportation projects), with Surface Transportation Policy Project, Five Years of Progress: 110 Communities Where ISTEA Is Making a Difference (last visited Mar. 19, 2000) at http://www.transact.org/5yrs/ch5.htm [hereinafter "Five Years of Progress"] (citing improvements in transit systems in 16 metropolitan areas under ISTEA), and Cynthia J. McNabb, Viability of a Sustainable and Feasible National Transportation System, 26 Transp. L.J. 133, 134-35 (1998) (citing examples of non-vehicular transportation systems funded by ISTEA).

136. See Getting a Fair Share, supra note 131, at 2 (finding that, 5 years after ISTEA, state officials continued to control which metropolitan transportation projects were implemented and continued to favor building "large roadways at the fringes of metropolitan areas"); ISTEA Year Four, supra note 134 (finding that, in fiscal year 1994, states have continued to spend federal funds on highways at a much higher level than on alternative modes of transportation); see, e.g., Marla Donato, Bias in Transit Spending: Assailed U.S. Official Meets Inner-City Leaders, Chi. Trib., Aug. 13, 1998, at 5 (describing complaints by inner-city communities about the failure of MPOs to include them in the planning process and to fund projects benefiting their areas); Jane Holtz Kay, Paving America First, The Nation, July 27, 1998, at 7 (arguing that TEA-21 continues the prevailing trend of primarily funding new highway building); Preston Schiller, Transportation Equity Promised But Hasn't Arrived at the Station, Seattle Post-Intelligencer, June 24, 1998, at A11 (same); Jonathan Walters, The Highway Revolution That Wasn't, Governing, May 1995, at 30 (same); cf. Kevin L. Siegel, Discrimination in the Funding of Mass Transit Systems, 4 Hastings J. Envtl. L. & Pol'y 107, 107 (1997) (arguing that even successful mass transit systems favor white suburban areas over minority inner cities). But see Five Years of Progress (citing improvements in transit systems in 16 metropolitan areas under ISTEA), and McNabb, supra note 135, at 134-35 (citing examples of non-vehicular transportation systems funded by ISTEA).

137. See Getting a Fair Share, supra note 131, at 6-7 (finding that urbanized areas represented 64% of the nation's population in 1995, but received only 46% of fiscal year 1995 federal roadway dollars).
the more densely populated inner-cities and the developed suburban areas.\(^{138}\) This practice goes against ISTEA and TEA-21’s purpose of making transportation decisions that addressed the needs of existing communities rather than encouraging development of new areas.\(^{139}\)

Second, MPOs and state governments have continued to favor the funding of large road-building projects on the fringes of metropolitan areas.\(^{140}\) By building roads in relatively undeveloped portions of the metropolitan areas, MPOs and state governments are using federal funds to encourage “sprawled” development patterns.\(^{141}\) Because “sprawl” development requires automobile-based transportation systems to accommodate its inefficient use of land, the construction of new roads in undeveloped areas facilitates inefficient land use patterns in metropolitan areas,\(^{142}\) a practice which ISTEA and TEA-21 sought to discourage.\(^{143}\)

Third, states have continued to withhold funds from programs targeted to urbanized areas. Under ISTEA and TEA-21, the Surface Transportation Program (STP) was specifically designed to provide federal funds for metropolitan areas.\(^{144}\) However, state governments have severely underspent the funds provided under STP in relation to spending rates of other funds.\(^{145}\) While state governments have been spending an average of 96 percent of the funds provided under other federal transportation programs, many states are spending STP funds at rates less than 70 percent.\(^{146}\) The impact of state underspending of STP funds on non-

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138. See id. (finding that federal transportation funds are not being directed to the needs of inner-cities and already developed suburban areas).

139. See Pub. L. No. 105-178, § 1203(g), 112 Stat. 170 (1998) (to be codified at 23 U.S.C. §134(g)). (requiring under § 1203(g) of TEA-21, that MPOs preserve existing infrastructure).

140. \textit{Getting A Fair Share}, supra note 131, at 6-7.

141. See supra note 30 and accompanying text (describing the relationship between road-building and “sprawl” development).

142. See id. (describing the land use patterns of “sprawl” development).

143. See supra notes 39-41 and 47 and accompanying text (describing ISTEA and TEA-21’s intent to promote efficient land use in transportation planning).

144. \textit{Getting A Fair Share}, supra note 131, at 8-11. The Surface Transportation Program (STP) is a funding program created by ISTEA for metropolitan areas. In keeping with ISTEA’s desire to promote multimodal transportation systems, STP funds can – at the discretion of state governments – be used for transit system construction and rehabilitation, bicycle and pedestrian facilities, and scenic and historical transportation facilities, as well as roadway construction and rehabilitation. See \textit{MARGARET FRANCO, ED., ISTEA PLANNER’S WORKBOOK} 168 (1994) (defining STP); cf. McCann, supra note 49, at 860-69 (arguing that, because the use of STP funds is discretionary, states are simply directing STP funds to road-building). In contrast to STP, the National Highway System (NHS) – the largest funding program under ISTEA – is devoted primarily to highway construction and rehabilitation, although some funds are provided for bicycle facilities and park-and-ride lots. See \textit{Franco} at 163 (defining NHS).


146. The states with the 15 lowest STP obligation rates are, in descending order, California, Virginia, South Carolina, Missouri, Texas, Michigan, Alabama, Tennessee, Kentucky, Nevada, Minnesota, New Hampshire, Massachusetts, Iowa, and Mississippi. See id. at 9 (comparing the
vehicular forms of transportation in metropolitan areas is exacerbated by dramatic cuts in direct federal transit assistance since 1994. 147 Because metropolitan areas relied heavily on these funds, the result has been an overall reduction in federal funding of mass transit systems. 148 Thus, state governments have undermined ISTEA and TEA-21’s purpose of promoting mass transit as an alternative to vehicular transportation by refusing to spend the funds appropriated by Congress for that purpose.

B. FLAWS IN THE TEA-21 REGIME PREVENT FEDERAL TRANSPORTATION PLANNING REFORM FROM BEING IMPLEMENTED

Both ISTEA and TEA-21 established MPOs as the focal point for transportation planning reform in metropolitan areas by vesting them with planning authority over the entire metropolitan area and imposing planning requirements that demand that MPOs diversify the planning process by considering the impact of their decisions on communities and the environment and by including a wider variety of participants. 149 However, because this transportation planning regime fails to adequately ensure that MPOs can and will fulfill their duties, ISTEA and TEA-21 have been unsuccessful in implementing federal transportation planning reform.

1. MPOs Lack Institutional Independence

MPOs have been unable to fulfill their statutory role under ISTEA and TEA-21 in part because they are dominated by state governments, which generally prefer highway projects. 150 Under ISTEA, Congress en-

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147. Although Congress intended that these cuts would be compensated by the provision of funding under STP, state governments have undermined this intent as described above. See id. at 8 (stating that the Houston and Dallas-Ft. Worth metropolitan areas received less than 60% of the federal funds authorized to them under ISTEA).
148. See id. (describing the 50% or $400 million cut in federal mass transit funding since 1994).
149. See supra Part II.B (describing the planning requirements under ISTEA and TEA-21).
150. See Robert Jay Dilger, TEA-21: Transportation Policy, Pork Barrel Politics, and American Federalism, 28 PUBLIUS 49, 51 (1998); McCann, supra note 49, at 869 (stating that SDOTs have been historically known to favor highway-building projects); see, e.g., Schiller, supra note 136, at A11 (stating that Washington’s SDOT has traditionally favored highways to the exclusion of all other modes of transportation).

It is unclear precisely why state governments prefer road-building projects to other forms of transportation. However, this preference is likely the result of a convergence of factors: First, road-building has been the established norm for transportation projects since the 1950s, so SDOTs have greater familiarity and expertise with roads than with other modes of transportation. See Carlson, supra note 10, at 5-9, 48 (describing the emergence and eventual dominance of automotive transportation modes; citing the narrow expertise of the Georgia Dept. of Trans-
visioned MPOs as independent planning organizations with sufficient power to develop transportation plans in cooperation with state governments.\textsuperscript{151} Although MPOs continue to be actual state agencies in a few areas,\textsuperscript{152} in most regions they are at least technically legally independent entities.\textsuperscript{153} However, a variety of factors combine to prevent MPOs from acting as independent entities and render them susceptible to domination by state governments.

First, MPOs have traditionally been dominated by state governments.\textsuperscript{154} As described earlier, most MPOs began as creations of SDOTs and have never lost their subordinate relationship to state transportation agencies.\textsuperscript{155} Also, because transportation planning has traditionally been synonymous with highway-building and highway projects have been considered state level issues, state governments have always taken the lead

\begin{footnotesize}

\footnote{\textsuperscript{152} See McDowell, supra note 37, at 15 (listing New York, Boston, and Chicago as metropolitan areas where MPOs continue to be state agencies).}

\footnote{\textsuperscript{153} See id.}

\footnote{\textsuperscript{154} See supra note 58-63 and accompanying text.}

\footnote{\textsuperscript{155} See id.}
on transportation issues. For these reasons, many MPOs continue to act as subordinate agencies within SDOTs rather than as equal or arms'-length partners in the metropolitan planning process.

Second, most MPOs continue to rely on the state to provide the information needed to make planning decisions. Because ready access to accurate information regarding the transportation needs of areas is essential to the planning process, the inability of MPOs to obtain their own information severely undercuts their independence. Indeed, the failure of a state to make information regarding future funding available can severely limit the ability of a MPO to plan effectively.

Third, and most importantly, although the language of both ISTEA and TEA-21 describes MPOs as independent entities, ultimate funding and decision-making authority is left to the states, thus relegating MPOs to a largely advisory capacity. Under TEA-21, once an MPO has finalized its TIP, the state has the power to choose which of the projects listed in the TIP will be implemented and is free to disregard the MPO's decision to give priority to any particular project. By allowing states to retain the power to disburse federal transportation funds, TEA-21 leaves the state in almost complete control over which projects will be imple-

156. See Paul Kantor, The Dependent City Revisited 127 (1995) (describing the traditional domination of local governments by the state in transportation planning).

157. See MPO Capacity, supra note 55, at 7-14 (finding that, if MPOs are to fulfill their statutory role under ISTEA as independent planning organizations, then they must cease to view themselves as subordinate organs of SDOTs). This report has found that, while some MPOs have significant independence, some are still largely dependent on SDOTs. See id. (arguing that MPOs cannot fulfill their statutory responsibilities in their current form and that capacity-building efforts are necessary to perform their planning functions).

158. See id. at 45.

159. See id. (describing the difficulty for MPOs in making planning decisions in the face of SDOT refusal to provide relevant information).

160. McDowell, supra note 37, at 15-16 (describing MPO reliance on states for information on future funding estimates and the status of current transportation projects); MPO Capacity, supra note 55, at 45 (same).

161. See supra Part II.A; see, e.g., McDowell, supra note 37, at 15-16 (describing the SDOT and state governor as holding “veto authority” over MPO decisions); MPO Capacity, supra note 55, at 17 (stating that the passage of all federal funds through SDOTs creates the belief among MPOs that they are not independent organizations).

Although MPOs within transportation management areas (TMAs) do have the statutory authority to effectively veto state transportation programs within their jurisdiction by not placing them in the metropolitan TIP, this power is largely ineffectual in light of the fact that the state receives and disperses federal funds and, in many states, the legislature is free to determine transportation priorities without regard to MPO plans. See Highways 23 U.S.C. § 134(j)(4) (1998) (stating that, in TMAs, only transportation projects contained in the metropolitan TIP may receive federal funds); see also McDowell at 15-16; MPO Capacity at 17. Thus, a TMA MPO would be unlikely to exercise its ability to force the hand of the state by, for example, only placing mass transit projects on its TIP, because the state could simply refuse to disperse federal funds to that metropolitan area.

162. See supra Part II.A (describing the power of the state in the project selecting process).
The planning factors of TEA-21 embody many of the policy goals that statute sought to achieve. However, as discussed above, the planning factors of TEA-21 are not mandatory. Thus, MPOs need only consider the requirements to be in compliance with TEA-21. In addition, the planning requirements are so broadly worded that consideration is not a particularly difficult task. Finally, TEA-21’s express provision that the failure of a MPO to consider any of the planning factors shall not be subject to judicial review further weakens the planning requirements.
by assuring the MPO that its consideration of the factors – or lack thereof – will not be overturned by a court.169

The result is that the statutory planning requirements do not force MPOs to make politically difficult decisions. In light of the fact that MPOs are already dependent on SDOTs, TEA-21’s requirement that MPOs merely consider the broad planning factors is insufficient to force MPOs to take the difficult step of challenging SDOTs when the preferences of the state government conflict with the needs of the metropolitan area. Without the threat of judicial review, MPOs are more likely to disregard the planning factors than to confront the SDOT.170

3. Federal Oversight of MPOs Is Insufficient

The primary statutory means of federal oversight under TEA-21 is the certification process.171 TEA-21 requires that the Secretary of Transportation certify every three years that each MPO is carrying out its responsibilities under federal law.172 The Secretary has delegated this responsibility jointly to the FHWA and FTA.173 If exercised properly, the certification process could alleviate some of the problems of MPO dependence by ensuring that MPOs utilize independent judgment and adhere to the planning requirements. However, this has not occurred because the FHWA and FTA have failed to sufficiently exercise this authority.

The amount of available data regarding federal oversight of MPOs is limited; however, several community and planning organizations have argued that oversight is lax.174 In addition, one study of the initial round of certifications under ISTEA indicates that, while the certification process has been successful in the gathering and sharing of information among MPOs, the FHWA and FTA have been reluctant to withhold full certification for noncompliance.175 This study found that, in 1996, 127 of 129 MPOs examined received full certification and no MPO was actually denied certification.176 In addition, the General Accounting Office’s review of 55 of the MPOs granted certification determined that three MPOs had

169. See supra note 102 and accompanying text.
170. See supra note 163 (arguing that MPOs are very unlikely to disagree with state governments under the existing planning regime).
171. See supra Part II.C (describing the statutory elements of the certification process under TEA-21).
172. See supra note 118 and accompanying text.
173. See supra note 119 and accompanying text.
174. See McDowell, supra note 37, at 24 (stating that many citizen groups and organizations believe that the FHWA and FTA have been overly lax in the certification process and pushing for stricter enforcement).
175. See id. at 9-11.
176. See id. at 9 (analyzing the first round of MPO certifications under ISTEA).
“serious deficiencies,” and that the certification criteria were not set forth “clearly and uniformly” by the FHWA and FTA.177

Thus, by providing lax oversight and enforcement of federal requirements, the FHWA and FTA have not forced MPOs to act independently.178 This failure is the result of both the “new federalist” objective of minimal federal interference with state activities and the concerted efforts of SDOTs to prevent extensive federal involvement in state transportation policy.179 Even were the FHWA and FTA required to move more aggressively to enforce federal requirements, TEA-21 significantly weakened the sanction provisions of ISTEA by making the withholding of funds discretionary and allowing FHWA and FTA to withhold amounts less than 20 percent.180

However, one provision added by TEA-21 does create the possibility that the certification process may become an effective oversight tool. TEA-21 requires that FHWA and FTA must allow the participation of parties from the metropolitan areas under review in the certification process.181 This addition appears to have had significant initial results in that citizen groups in many metropolitan areas have become involved in the certification process when they felt the composition of the MPO’s policy board or its public participation procedures were inadequate.182

Nevertheless, because MPOs are dependent on SDOTs and federal statutory requirements and oversight are insufficient to counterbalance the influence of SDOTs, MPOs will likely continue to favor those transportation projects favored by SDOTs and will not fulfill their statutory role as independent transportation planners.183

C. The Federal Government Must Become More Involved in Metropolitan Transportation Planning

The failure of ISTEA and TEA-21 to create transportation planning

177. See id. (citing U.S. General Accounting Office, Urban Transportation: Metropolitan Planning Organizations’ Efforts to Meet Federal Planning Requirements 3-4 (1996)).

178. See MPO Capacity, supra note 37, at 23 (describing the lack of federal involvement as part of the larger movement away from invasive regulation of state activities). Another factor weighing against federal enforcement is the reorganization of the FHWA at the request of Congress, during which the FHWA’s multi-state regional field offices were disbanded. See id. at 27.

179. See supra note 179(describing the efforts of the American Association of State Highway and Transportation Officials to dissuade the U.S. Dept. of Transportation from becoming more involved).

180. See supra notes 122-23 and accompanying text.


182. See McDowell, supra note 37, at 26 (describing the successful efforts of one citizens’ group to obtain remedial action against their MPO).

183. See supra note 163 (arguing that MPOs have not challenged SDOTs because the existing planning regime makes such challenges irrational).
processes in metropolitan areas that adequately consider the needs of the metropolitan area, alternative modes of transportation, and the impact of its decisions on communities and the environment is the result of a lack of involvement by the federal government in the planning process. If the goals of TEA-21 are to be implemented, MPO dependence on SDOTs must be reduced, federal planning requirements must be strengthened, and the FHWA and FTA must take a more active role in overseeing MPOs.

However, as a preliminary matter, any reform of federal transportation policy will be impossible unless federal and state transportation agencies make transportation funding information available to the public. Past refusals have hindered the evaluation of the effectiveness of ISTEA and TEA-21 in reforming state and local transportation policy.\footnote{See, e.g., Getting A Fair Share, supra note 131, at 1-5 (describing the importance of public access to government transportation data and the burdens of attempting to evaluate transportation policy when access is denied).} Without such information, meaningful evaluation of the results of reform efforts will be extremely difficult, if not impossible.

1. MPO Dependence On SDOTs Must Be Reduced

The dependence of MPOs on state transportation agencies undermines their ability to serve as independent transportation planners. If MPOs are to fulfill their statutory duties and develop metropolitan transportation plans in cooperation with SDOTs rather than in subordination to them, TEA-21 must be amended as follows to grant MPOs greater institutional independence.

First, federal law must require state transportation agencies to share information with MPOs so that MPOs may make accurate predictions about transportation needs and funding availability in its TIPs and LRPs. Without this requirement, MPOs will be unable to meet even the bare minimum of TEA-21’s planning requirements because their plans will not be based on adequate information.

Second, MPOs must be given the final say on project selection within their jurisdiction so that they can best meet the transportation needs of their community. Although this requirement could create problems in that MPOs would now have the authority to ignore state transportation initiatives, thereby undermining TEA-21’s goal of an integrated transportation system, it will provide MPOs with sufficient independence and power to negotiate compromises with SDOTs that will best serve both state and local interests. In addition, the fact that MPO policy boards contain a number of elected officials makes MPOs more accountable to
the electorate than state transportation agencies;\textsuperscript{185} therefore, the balance of power should be struck in favor of MPOs.

Third, federal funds should be appropriated directly to MPOs rather than through the state governments so that the threat of a state "vetoing" MPO projects by refusing to obligate federal funds will not dissuade MPOs from formulating plans that incorporate alternative modes of transportation. Although channeling all funding through the state governments promotes the integrated planning goals of TEA-21 and serves basic principles of federalism, the practice also undermines TEA-21's emphasis on regional transportation planning in metropolitan areas. Again, a more independent and powerful MPO will be in a better position to negotiate an acceptable compromise with the state government.

However, although making MPOs more institutionally independent will reduce their dependence on SDOTs, such changes would not ensure that the environmental and social goals of TEA-21 will be implemented because MPOs would remain free to pursue the status quo.\textsuperscript{186} The argument could be made that MPOs are simply representative institutions implementing the will of the local populace so that increasing their institutional independence is sufficient to allow them to carry out their purpose and any additional restraints defeats that purpose. However, if MPOs are institutions charged with implementing federal transportation policy as embodied in the planning factors of TEA-21 -- as the text of ISTEA and TEA-21 indicates they are\textsuperscript{187} -- then stronger federal controls must be imposed in order to make MPOs responsive to federal policies instead of state policies. Therefore, additional federal controls are necessary to ensure that the goals of TEA-21 are implemented.

2. The Statutory Planning Requirements Must Be Strengthened

TEA-21's planning factors are insufficient to achieve MPO compli-
ance with the statute’s policy goals because of their broad language and non-mandatory nature as well as the lack of judicial review. TEA-21 should be amended to impose strong and clear federal requirements that allow less discretion to MPOs in order to foster greater independence from SDOTs and prevent MPOs from simply paying lip service to TEA-21’s policy goals.

To those ends, TEA-21’s prohibition of judicial review must be repealed and Congress should make an express grant of a private right of action to sue when a MPO fails to consider any of the required planning factors. If the planning factors are to have any meaning in the planning process, then there must be some form of judicial review to ensure that the MPOs are actually giving each factor serious consideration. Allowing such suits will also promote TEA-21’s goal of increased public participation in the planning process by making MPOs more accountable and responsive to the concerns of the public. Finally, allowing judicial review would maintain the flexibility allowed MPOs under the non-mandatory planning requirements while ensuring that MPOs do not abuse this discretion.

3. FHWA and FTA Must Take More Active Roles in Overseeing Transportation Planning

The current level of federal oversight of the metropolitan transportation planning process provided FHWA and FTA is inadequate to ensure that MPOs are in compliance with the statutory requirements. While judicial review can resolve specific disputes over the adequacy of MPO procedures, strong federal oversight is necessary to ensure that the entire metropolitan transportation planning process complies with federal law. Therefore, the FHWA and FTA should not only take a more aggressive approach in the certification process in order to determine which MPOs are not in compliance, but should also assist those MPOs towards compliance through information sharing with the FHWA and FTA as well as between MPOs.

188. See, e.g., Buzbee, supra note 30, at 115-16 (arguing that MPOs and SDOTs would be more accountable and responsive to public concerns if citizen suits were permitted).

189. Although the argument could be made that allowing such suits would open the “floodgates” of litigation and clog the courts, this paper argues, first, that such an occurrence is unlikely because courts should be able to determine relatively easily whether a MPO has given “consideration” to the planning factors, and, second, the risks of such an occurrence are outweighed by harm of rendering the planning requirements useless by denying judicial review.

190. Buzbee, supra note 30, at 115-16.

191. See, e.g., McDowell, supra note 37, at 30-33 (advocating using the certification process to promote information sharing through the development of “good practices” research to fill the gaps in MPO procedures).
CONCLUSION

To the extent that they impose substantial procedural requirements that demand that states and MPOs actually create long-range transportation plans for metropolitan areas, ISTEA and TEA-21 have been successful in reforming the pre-existing federal transportation policy of unplanned, federally-funded road-building. However, to the extent that they substantively change what kinds of transportation projects are funded and who makes the decision to fund them, ISTEA and TEA-21 have largely failed because metropolitan transportation planning continues to focus on road-building in response to increased vehicular demand and metropolitan transportation policy decisions continue to be made by the state governments, just as they were before ISTEA. In order to give effect to TEA-21, the federal government must take an active role in metropolitan transportation policy in order to ensure that federal funds are used on multimodal transportation systems and that TEA-21 is not rendered an empty promise.
### Metropolitan Highways & Roads

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* This chart cites to the current state of the law as amended by TEA-21 and the TEA-21 Restoration Act.
Unclogging Virginia's Roads:
Aligning Commuter Incentives in Northern Virginia

Lathrop B. Nelson*

I. INTRODUCTION

Northern Virginians face some of the country’s worst traffic congestion. Traffic congestion has been defined as a “a function of the imbalance between the capacity of roadway facilities and the demand for those facilities created by increasing automobile reliance and new growth development.”¹ As a practical matter, traffic congestion occurs when a region dependent on the automobile grows beyond its infrastructure. There is perhaps no greater example of traffic congestion than weekday mornings and evenings along Northern Virginia’s highways and secondary roads. Traffic delays occur along I-66, the east-west thoroughfare extending from Washington to Front Royal; I-495, the 65 mile ring around the city known as the Beltway; and I-95, the principal north-south corridor between Miami and Maine. These highways become virtual parking lots on a daily basis.

Part II of this Note analyzes the current state of traffic in Northern

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Virginia. The population of the region is growing, adding more drivers to the roads and thus placing a greater strain on the region's road network. Part III of this Note examines several factors that have led to this traffic entanglement, including the rising number of women in the workforce and the suburbanization of the region's housing and employment centers. Despite a healthy transit system, Northern Virginia's residents are increasingly driving alone.

Part IV analyzes the costs incurred as a result of the region's clogged roads. Although the region continues to grow, traffic congestion threatens continued economic prosperity and even civility. Commuters internalize some of the costs associated with traffic congestion, such as time lost and wasted fuel, but these commuters do not carry the full effects of their driving.

What, then, is the solution to this problem? As discussed in Part V, the General Assembly has recently passed a six-year, $2.9 billion transportation package. However, the funding in this legislation dwarfs in comparison to that recommended by a regional transportation commission. Virginia Governor James S. Gilmore, III has insisted on no new taxes, and the General Assembly does not have the political resolve to implement any major traffic proposal without the Governor's support. Neither the General Assembly's final package, nor the Governor's proposed transportation initiative, properly addresses the failure of commuters to internalize all of the costs associated with traffic congestion.

This Note is not limited by political influences. This Note seeks to "recreate" the transportation system in a rapidly growing region by providing a new perspective on reducing traffic congestion. Part VI addresses one possible solution to this predicament, congestion pricing, and suggests several other initiatives that, when combined, could significantly reduce the traffic problem in Northern Virginia. It is important to note that there is no one answer. Neither roads nor rails nor telecommuting initiatives alone will solve the problem. There must be a comprehensive approach, and one that is targeted at the heart of the transportation issue: individuals must bear the full costs of their transportation decisions.

II. Traffic in Northern Virginia

Metropolitan Washington, D.C., is growing. From 1970 to 1990, the population of the Metropolitan Statistical Area (MSA) increased 29 percent, to 3.9 million residents. City planners expect the region's population to increase at an even faster rate over the next twenty years. By 2020, the number of households in the Washington area will rise 40 per-

cent, to approximately 2.7 million. Over the same period, employment is expected to grow by 39 percent, to 4.3 million jobs.\textsuperscript{3}

In the face of this expansion, Washington area residents are both literally and figuratively stuck in traffic. According to the Texas Transportation Institute, traffic in the Washington area is the second worst in the nation, as measured by miles traveled and total miles of road.\textsuperscript{4} Even though traffic congestion in general has steadied in recent years, one of their analysts opined that traffic in fact might be worsening in portions of the Washington region.\textsuperscript{5} Each year the report evaluates a larger area as the region grows geographically, so that uncongested outer suburbs may defray the congestion of the more crowded inner suburbs.\textsuperscript{6}

The Texas Transportation Institute provides a numerical evaluation of the toll of traffic congestion.\textsuperscript{7} The total annual hours of delay in the Washington Area region equals 216,110,000 person-hours, an escalation of 68% from 1990 to 1997.\textsuperscript{8} While Washington area drivers spent an average of 76 hours in traffic in 1997,\textsuperscript{9} the average for the 68 urban areas studied by the Texas Transportation Institute was only 34 hours.\textsuperscript{10} In addition, Washington drivers consumed an extra 327 million gallons of gasoline as a result of sitting in traffic, with each driver averaging 116 extra gallons of gasoline per year.\textsuperscript{11} The result of these delays generated a $3.5 billion economic drain on the region, with a per-driver cost of $1,260.\textsuperscript{12} Since 1990, the congestion costs per driver have increased 63%.\textsuperscript{13}

It is important to note that these per driver costs are averages of all Washington area residents, with some commuters incurring a much greater tolls for sitting in traffic.\textsuperscript{14} The Texas Transportation Institute’s study provides a glimpse of the traffic congestion in the area, but it does not evaluate the vast differences in the congestion that individual commuters encounter on different routes and different days. For those who travel along more highly congested routes, such as the Dulles Toll Road, the Woodrow Wilson Bridge or the Beltway, the costs and delays can be

\begin{itemize}
  \item \textsuperscript{3} 2020 PLAN, supra note 2, at § 2.1.1.
  \item \textsuperscript{4} Alan Sipress, No Headway in Traffic Woes, WASH. POST., Nov. 17, 1999, at B1.
  \item \textsuperscript{5} Id.
  \item \textsuperscript{6} Id.
  \item \textsuperscript{7} See infra Part III; See generally David Schrank & Tim Lomax, THE 1999 ANNUAL MOBILITY REPORT: INFORMATION FOR URBAN AMERICA (Texas Trans. Inst. 1999) (providing transportation data for 68 American urban areas).
  \item \textsuperscript{9} Id.
  \item \textsuperscript{10} Sipress, supra note 4, at B1.
  \item \textsuperscript{11} Schrank & Lomax, supra note 7.
  \item \textsuperscript{12} Id.
  \item \textsuperscript{13} Id.
  \item \textsuperscript{14} See infra notes 133-135 and accompanying text.
\end{itemize}
significantly more.\textsuperscript{15}

While the population has increased throughout the Washington area, these increases are particularly pronounced in Northern Virginia.\textsuperscript{16} Between 1970 and 1990, the population of the Washington MSA increased by over 29 percent, from 3.0 to 3.9 million individuals. During this same period, the population of Northern Virginia increased by twice that amount, by 59 percent, from .92 million to 1.47 million.\textsuperscript{17}

Northern Virginia's population increases will likely outpace that of the region over the next 20 years. Between 1990 and 2020, the projected growth of Fairfax County is expected to rise from 818,000 residents to 1.18 million. While Fairfax County is expected to gain the largest number of residents over this period, Loudoun County's growth rate is more severe. Loudoun County will swell from 86,000 residents to 371,000, a 331 percent increase. Not only will population in Northern Virginia rise at a rate outpacing the entire metropolitan region, the area's employment is anticipated to expand from 853,000 to 1.48 million jobs. This equates to a 73 percent rise in employment, which will significantly outpace the anticipated employment increase of only 45 percent for the entire MSA.\textsuperscript{18}

An upswing in population will result in an attendant increase in traffic congestion. The number of licensed drivers has increased from 1.11 million in 1990 to 1.33 million in 1999, a 19.8 percent increase.\textsuperscript{19} The number of vehicles (including automobiles, trucks and buses) in the Commonwealth of Virginia has grown by 16 percent, from 4.9 million to 5.7 between 1990 and 1997.\textsuperscript{20} Nevertheless, lane miles have increased by only 6 percent between 1994 and 1999.\textsuperscript{21} The area has thus grown significantly, but has not constructed the highway infrastructure to keep pace with this growth.\textsuperscript{22}

With more vehicles on the road, and comparatively fewer lane miles, the region's highway system has clogged. The Commonwealth's Secretary of Transportation has announced, "residents in Northern Virginia . . . face[e] the longest daily commutes and the most severe congestion in Vir-

\begin{itemize}
  \item For the purposes of this Note, Northern Virginia consists of the following jurisdictions: the counties of Arlington, Fairfax, Loudoun and Prince William, the independent cities of Alexandria, Fairfax, Falls Church, Manassas and Manassas Park and the towns of Dumfries, Herndon, Leesburg and Vienna. The land area of the region totals approximately 1,280 square miles. See 2020 \textit{PLAN}, supra note 2, at § 1.1.1.1.
  \item Id. at § 1.1.1.2.
  \item See id.
  \item Sipress, supra note 19, at A1.
\end{itemize}
They spend too much time in traffic and away from their families. Former Virginia Governor Gerald L. Baliles states that Northern Virginia is "choking on congestion," and argues that the "inadequacy of Northern Virginia's transportation infrastructure is the single greatest threat to its quality of life, its prosperity, and to state government's own source of revenue."24

According to the American Highway User's Alliance, of the nation's top 18 bottlenecks, four are located in the Washington area and two are located in Virginia: the Mixing Bowl in Springfield and the intersection of I-66 and the Beltway.25 The Mixing Bowl is the informal name for the intersection of the Beltway, I-95 and I-395, which connects the Beltway with Washington, D.C. Each day nearly 370,000 vehicles pass through this interchange, which requires drivers to cross several lanes of highway in a short period to enter or exit. During a recent two-year study, there were 179 accidents in the Mixing Bowl, making it the most dangerous section on the entire 65-mile Beltway. The Virginia Department of Transportation is in the midst of an eight-year, $350 million improvement project at the Mixing Bowl, which will consist of building more than 50 bridges and fly-overs, as well as widening I-95 to 24 lanes in one section.26

As a result of the congestion on the Beltway and the Mixing Bowl, the New York Times has labeled Northern Virginia's morning and evening traffic patterns one of "the nation's worst commutes."27 On February 4, 2000, the Washington Post published an in-depth report of the area's traffic situation, entitled "Traffic's Toll; A Day On the Roads; Incredible Journeys; One Day's Commute Has Many Stories: Crashes, Impatience, Guilt and Even Gunfire," which profiled the frustrating commutes of area residents that either brave the traffic, ride transit or even opt to live in the District with a "dead end job" rather than participate in the daily commute.28 Northern Virginian's themselves have voiced their concern with the condition of the area's roads. The American Automobile Association's (AAA) Mid-Atlantic region's Transportation Poll 2000 found that 43 percent of the Virginia residents polled described traffic conditions as "more bad than good" or "very bad."29

one traffic reporter, flying high above clogged I-95, remarked, “When you see people sitting in traffic from Woodbridge to Washington, I don’t know what’s left of their lives after working an eight-hour day and spending two or three hours a day on the road. It’s a sad commentary on the way we live.”

In such a car-dependent metropolitan region, the area is susceptible to massive back-ups that cripple the region’s transportation network. At 4:00 AM on June 2, 1999, a truck carrying 34,000 pounds of explosive powder crashed in the Mixing Bowl, closing I-95 North and a portion of the Beltway throughout the morning and then again through later parts of the day. The accident caused massive back-ups throughout Northern Virginia, both during the morning and evening commutes. In another incident six months earlier, an Alexandria man stood poised to jump off the Woodrow Wilson Bridge for more than five hours, during which time officials closed the bridge. The incident caused traffic that paralyzed the region’s evening commute, causing delays of up to 20 miles on the Beltway and gridlock throughout the region. While these incidents are “extraordinary,” these events nonetheless caused “Northern Virginia’s arterial system [to have] a coronary . . . . The region stopped moving.”

III. How DID We GET HERE?

The surge in population has affected the rise of traffic congestion in Northern Virginia. More people in the same area results – whether directly or indirectly – in a greater number of people on the roads. A seemingly obvious explanation nonetheless, one commentator has stated that “the explosion in vehicle travel stems largely from increasing number of cars and drivers.” But, specifically, what has led to the unfortunate parking-lot status of major roadways during the morning and evening rush hours, and even during non-traditional rush-hour periods? The broad answer to this question is relatively simple: prosperity. As one


33. Bailey, supra note 24, at 1.


35. See Alan Sipress, Saturday Saturation: Traffic Volume on “Off” Day Now Outpaces Weekday Rush Hours in Region, WASH. POST, Feb. 19, 2000, at A1 (stating that on some roads, Saturday rush is “the greatest crescendo of traffic all week”).

36. See Va. Exec. Order No. 43 (1999) (citing the “continuous and unprecedented growth” in Virginia in the Preamble of the Executive Order creating the Governor’s Commission on
prominent traffic scholar has explained, "People can afford cars and [as a result, they] use them."37

A. INCREASING NUMBER OF DRIVERS

Women are joining the work force in increasing numbers.38 In the Washington area at the turn of the 21st Century, the "typical woman" now works outside the home and thus contributes, in some way, to the increase in traffic congestion.39 Both nationally and within Virginia, approximately 60 percent of women participated in the labor force in 1997.40 By contrast, only 43.3 percent of women participated in the workplace in 1970.41 Not only are more women joining the workforce, they are also driving more. From 1983 to 1990, while the annual miles per driver for men increased 28 percent, the annual miles per driver for women increased 50 percent.42

With the increase of women joining the workplace, the number of multiple-vehicle households has grown dramatically, creating something of a "democratization of mobility"43 or even a "liberation."44 An increasing number of low-income households can now afford an automobile.45 Nationally, the number of households with no vehicles has decreased approximately 33 percent since 1969. While the number of households with one vehicle has increased by only one percent, the number of households with more than one vehicle has risen substantially. The number of two-vehicle households has increased by 117 percent since 1969, and the number of three or more vehicle households has ballooned by 535 percent over the same period. There are more than twice as many households with three or more vehicles than there are with no vehicles.46 In fact, one-fifth of the households without vehicles are located in the New York

37. Pisarski, supra note 36 at 1.
41. Id. at Table No. 659.
43. Pisarski, supra note 36, at 1.
45. Pisarski, supra note 36, at 1.
area, while the remaining tend to be small households in central cities. 47 The upswing in women workers and drivers is a "liberation," as women have made their way into the work force, increasing their use of the great mechanism of individualism, the automobile. 48

Not only do mothers and fathers have cars, but their children, also, have their own vehicles. Administrators at one Arlington County school, for example, estimate that nearly half of their 1,500 students drive to and from school. 49 In an area of increasing wealth, parents want to provide their children with the freedom of mobility, while in turn emancipating themselves from serving as a taxi-service for their children. 50

B. DRIVING ALONE

Americans are also increasingly driving alone. 51 Since 1977, average vehicle occupancy has dropped slightly, from 1.9 occupants for every trip in 1977 to 1.6 occupants per trip in 1990. All types of trips have seen a decline in occupancy: from home to work, on shopping trips, on trips relating to family business, and social and recreational trips. 52 Nearly 70 percent of all commuters (including those who drive, participate in car and van pools and take public transit), drive alone. 53 Most Americans prefer traveling in their private vehicles, with more privacy, convenience, comfort and speed than that of public transportation. 54 Driving alone to work has become so engrained in the minds of the public that it has become the norm of commuting. 55

C. HOV AND CARPOOLING IN NORTHERN VIRGINIA

Despite the increase in driving alone, Northern Virginia remains a "national leader" in the use of High Occupancy Vehicle (HOV) lanes. 56

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47. Oren, supra note 34, at 162.
48. GARREAU, supra note 44, at 113.
50. Id.
52. STAT. ABSTRACT, supra note 20, Table No. 1039. (During this period, occupancy on trips from home to work has fallen from 1.3 to 1.1. Occupancy on shopping trips has fallen from 2.1 to 1.7. Occupancy on trips for family or personal business has decreased from 2.0 to 1.8. Finally, occupancy on trips for social or recreational purposes has fallen from 2.4 to 2.1.) See id.
53. DOWNS, supra note 42, at 20.
54. Id. (Downs also suggests that those who drive alone, on average, have faster commuting times than those that take transit or carpool. While statistics are not available for all commuters, however, the Northern Virginia Transportation Commission's 1998 Annual Report suggests that commuting times for those in high occupancy vehicles (HOV) are significantly less than those in low occupancy vehicles (LOV)). See infra note 60 and accompanying text.
55. See supra note 50, at 1275.
HOV are lanes "reserved during peak periods . . . for the exclusive use of buses and high-occupancy vehicles." 57 HOV lanes do not apply to emergency and law enforcement vehicles, motorcycles, transit or commuter buses designed to carry sixteen or more passengers, public utility company vehicles responding to an emergency call, or clean-fuel vehicles. 58 Violators are subject to a $50 fine for their first offense, with a maximum penalty of $500 penalty for four or more offenses. 59

In Northern Virginia, there are three HOV corridors: the I-95/I-395 north-south corridor; the I-66 east-west corridor; and the north-south Route One and George Washington Parkway corridor through Alexandria. 60 HOV lanes on I-66 and I-95/I-395 carry more people per lane, per hour than the conventional lanes. 61 For example, during a Fall 1997 morning survey of I-395, the number of persons per HOV lane per hour totaled 4,733, while the number of persons per Low Occupancy Vehicle (LOV) lane per hour totaled only 2,075. 62 The HOV lanes also provide for faster commuting times. The same survey found travel in the peak morning period along I-95/I-395, a 27.6 mile span, took 26 minutes in an HOV lane, while travel along the same stretch of road in a LOV lane took 65 minutes. 63

Although the national trend toward carpooling has decreased, Virginians remain leaders in carpooling. Nationally, the percentage of people carpooling slipped from 20 percent of workers in 1980 to 13 percent of workers in 1990. In addition, the size of the carpools also decreased. During this period, the number of three-person carpools declined nearly 40 percent, while the number of two-person carpools fell less than 10 percent. Those that carpool tend to be lower-salary workers, with long trips to work, and who live in households with more than one worker. 64 Virginia, however, ranks eighth nationally in the percentage of those people who carpool to get to work. 65 Traffic expert Alan E. Pisarski states that, despite a recent decline in carpooling nationally and locally, the Washington, D.C. MSA is the most car-pooling oriented large city in the country. 66

The development of HOV requirements in Northern Virginia has

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58. Id.
59. Id.
60. N. VA. TRANSP. COMM'N, 14 N. VA. ANN. TRANSP. UPDATE 130 (Oct. 1998).
61. Id. at 130.
62. Id. at 131 (providing data for I-95 and I-66 during the same Fall 1997 survey, which shows that each HOV lane out-performed each LOV lane in terms of people per lane per hour).
63. Id. at 132.
64. Oren, supra note 34, at 164-65.
65. STAT. ABSTRACT, supra note 20, Table No. 1037.
66. Pisarski, supra note 36, at 1.
given rise to a new phenomenon in commuting called slugs. Slugs are commuters who form lines at parking lots and metro stations to catch free rides with drivers, known as "bodysnatchers,"67 who need additional passengers to be able to use the HOV lines.68 Most slug stops are located along bus routes, so that if a slug fails to find a ride, he or she is not stuck without transportation: the slug can take the bus or, if the slug drove to the pick-up spot, drive into work. Slugging evolved in the 1970s along the I-395/I-95 corridor with the development of a HOV-4 reversible lane facility between Springfield and the 14th Street Bridge into Washington. Since then, it has expanded along I-395/I-95, as well along I-66.69

Slugging emerged – indeed, has "thrived" – with no governmental regulation.70 Slugging has fashioned a culture of its own.71 Two web sites, designed by "slugs", have developed to inform potential "slugs" and "bodysnatchers" of locations, etiquette and general information on slugging in Northern Virginia (including a lost and found site for slugs that have left items in their hosts' vehicles).72

During one weekday afternoon peak period, a total of 2,187 slugs were picked up at two Washington, D.C., locations and two Pentagon locations in Virginia. It is estimated that slug usage is higher in the morning hours, with approximately 3,000 peak period slugs using the I-395/I-95 corridor. Based on these figures, transportation planners estimate that approximately 25 percent of the vehicles on the HOV lanes south of the Pentagon during the morning peak period have at least one slug in the automobile.73 Supporters attribute the success of the phenomenon to the strength of the region's public transportation system, which acts as a safety net, the large number of professional and governmental employees, who are low-risk passengers, and free commuter parking along the corridors.74

70. Id.
71. VA. DEPT TRANSP, supra note 67, at 17.
73. VA. DEPT TRANSP, supra note 67, at 18.
D. Public Transportation in Northern Virginia

The Washington area’s 103-mile Metrorail system (Metro) is one of the nation’s premier transit systems. Metro, operated by the Washington Metropolitan Area Transit Authority (WMATA), serves Northern Virginia with three rail lines. The Orange Line enters the Commonwealth from the District at Roslyn and shadows I-66 through Arlington to the Vienna-Fairfax-GMU station. The Blue Line also enters Virginia at Roslyn, turns south through the Pentagon and Crystal City and southeastern Alexandria and terminates at Franconia-Springfield Transportation Center. The Yellow line enters Virginia at the Pentagon, heads south along with the Blue Line and terminates at the Huntington station. In 1999, the total annual weekday Metro ridership at stations in Virginia topped 62 million riders, an increase of 7 percent from 1997. Indeed, 13 of the top 20 Metro ridership days through the system’s 25-year history (based on total ridership on the entire Washington D.C. Metro system) occurred between March 1, 2000 and April 30, 2000. According to Metro General Manager Richard A. White, the Orange line is now running close to capacity.

In 1992, the Commonwealth began operation of the Virginia Railway Express (VRE) Manassas and Fredricksburg lines. The Manassas line runs from Manassas to Alexandria, then up to Union Station, after stops at Crystal City and L’Enfant Plaza. The Fredericksburg line runs north along the I-95 corridor, connecting with Metro at the Franconia/Springfield Transportation Center, before reaching Alexandria, Crystal City, L’Enfant Plaza and Union Station. The VRE is the second fastest growing commuter railroad in the country. Although ridership, which was as high as 8,000 trips per day, dipped after a CSX freight train derailment in 1997 caused delays on the line for weeks, the number of riders has since rebounded. In December 1999, ridership reached an average of 7,624 riders per day, up 11 percent from December 1998. In order to attract riders, VRE places a premium on customer service, expanding free parking, offering café cars, providing an e-mail service to alert riders of any problems and even reimbursing day-care late charges if the trains

75. 2020 PLAN, supra note 2, § 1.5.1.3.
76. N. VA. TRANSP. COMM’N, 15 N. VA. ANN. TRANSP. UPDATE 17 (Oct. 1999).
78. Id.
79. 2020 PLAN, supra note 2, § 1.5.1.3.
82. Bradley, supra note 81, at B4.
are late. VRE will also issue a free ticket to any commuter whose train is more than 30 minutes late. In December 1999, average on-time performance for both the Fredericksburg and Manassas lines reached 95 percent.

In addition to rail transit, a variety of bus lines serve Northern Virginia. Metrobus, operated by WMATA, serves over 15 million weekday riders each year in Northern Virginia. Individual jurisdictions within the region also provide bus service. The total annual passenger trips for all of these transit systems reached approximately 9.3 million riders, including transfers, in 1999. In 1998, the county and city transit services reported 9 million riders.

Despite such healthy transit systems, Northern Virginians remain choked by traffic congestion. Nevertheless, it is important to note that a significant number of commuters in Northern Virginia use transit systems. In fact, after New York City, Washington area residents are the most transit-oriented commuters in the nation. Indeed, the number of people using public transportation is the largest in 40 years. This penchant for transit commuting, however, has not eliminated the area’s traffic congestion. Traffic still exists, and it is getting worse.

E. Suburbanization: Living, Working and Driving in Edge Cities

The United States is in the midst of a suburbanization phenomenon. Specifically, Americans flock not to the urban core, but to suburban office parks and shopping malls in what are known as “Edge Cities.” Instead of separating our largely residential suburbs from our

83. See Layton, supra note 77, at B1.
85. See 1999 N. VA. TRANSP. COMM’N, supra note 76, at 20.
86. These bus services include DASH operated by the City of Alexandria, the ART operated by Arlington County within Crystal City, CUE operated by the City of Fairfax, Fairfax Connector operated by the County of Fairfax, OmniRide and Omnilink operated by the Potomac & Rappahannock Transportation Commission (PRTC) in Prince William County, and Commuter Service by Loudoun County. See id.
88. See Pisarski, supra note 36, at 1.
90. See, e.g., Robert W. Burchell and Naveed A. Shad, The Evolution of the Sprawl Debate in the United States, 5 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 137, 139 (1999) (stating that the suburban population in the United States has increased from 15 percent in 1942 to 60 percent at the turn of the millenium, with the trend likely to continue); Oren, supra note 33, at 166-167 (declaring that “suburbanization is perhaps the most important social phenomenon of twentieth-century America”).
91. See GARREAU, supra note 44.
commercial downtown areas, companies – led by high-tech service indus-
tries[92] – are moving jobs to where most individuals have previously only
lived and shopped.[93] A major result of this suburbanization has been an
increased dependence on the automobile.

In his book, Edge City: Life on the New Frontier, Joel Garreau
describes this phenomenon, stating that these new employment and retail
centers are no longer like the traditional downtown, but instead, are low-
density office parks, with vast parking lots and manicured campuses.[94]
He also provides a functional definition of these new Edge Cities. Each
has five million square feet or more of leasable office space, as well as
600,000 square feet of leasable retail space. The Edge Cities must have
more jobs than bedrooms, so that the population increases each morning,
and they must be perceived by the population as one distinct place. Fi-
nally, this new employment and retail center must not have been any-
thing like “city” as recently as thirty years ago.[95]

Northern Virginia is perhaps the very model of the Edge City phe-

nomenon. Writing in 1988, Garraeu listed eight Edge Cities in Northern
Virginia and four emerging ones.[96] Tysons Corner, Virginia, represents
the quintessential Edge City, with two large shopping malls surrounded
by scores of strip malls and office parks. In contrast to today’s Tysons
Corner, the crossroads in the 1940s consisted of a feed store and a “beer
joint.”[97] By the end of the century, however, Tysons Corner has become
“the largest urban agglomeration between Washington and Atlanta.”[98]
And it is growing: Employment in Tysons Corner is expected to rise from
88,000 workers to 120,000 by the year 2020.[99]

Given their youth, these Edge Cities are in fact, “works in pro-
gress.”[100] They have created low unemployment,[101] generated great

92. See Oren, supra note 34, at 168.
93. See GARREAU, supra note 44, at 4.
94. Id. at 3.
95. Id. at 6-7.
96. See id. at 438. The Edge Cities are Rosslyn-Ballston and Crystal City in Arlington, Old
Town Alexandria, and Tysons Corner, Merrifield (the Beltway and Route 50 West), Fairfax
Center-Fair Oaks Mall area (I-66 and Route 50), the Reston-Herndon-Dulles Access Road area
and the Dulles International Airport-Route 28 area in Fairfax County. The emerging Edge Cit-
ies are the I-395 Corridor and Eisenhower Valley area in Alexandria, the Greater Leesburg-
Route 7 area in Loudoun-Route 7 area and Gainesville in Prince William County. See id.
97. Id. at 349.
98. Id. at 350.
99. See TRANSP. COORDINATING COUNCIL, Travel Corridors & Emp. Centers (January
2000) (map).
100. Garreau, supra note 44, at 8.
101. In 1998, Fairfax County, home to five of Joel Garreau’s Edge Cities, had an unemploy-
ment rate of 1.6 percent, compared with a 2.9 percent unemployment rate for the entire Com-
monwealth and a 4.5 percent unemployment rate for the United States. See Local Area
wealth for local home and landowners, and are the location of great retail bazaars. Generally, the tenants of these office parks enjoy the wide-open campuses and free parking. Nevertheless, aesthetically, Edge Cities, with their low-density office spaces, strip malls and standard housing units, are often criticized for lacking “livability, civilization, community, neighborhood, and even a soul.”

More importantly, however, critics have blasted these Edge Cities for depleting the urban core: As individuals and companies move to the suburbs, they take their money with them and leave a poor underclass in the inner city, with decreasing tax revenues to provide increasingly needed services. Companies that migrate to the suburbs leave their prior inner-city industrial sites empty, often described as “brownfields.” Critics describe these suburban commercial and residential centers not as Edge Cities, a term which invokes the sense that these areas complement the urban core, but as a doughnut: empty on the inside and full on the outer edges.

Both critics and admirers of the suburban phenomenon will agree that this rise in suburban living creates an increased reliance on the automobile. In 1994, over 52 percent of all commuting trips within the Washington region occurred between suburbs, above the average of 33 percent of suburb-to-suburb trips nationally. These new urban centers, in fact, maintain land use densities far below central business districts and contain nearly thirty times as much land per area as downtown office


102. See Michael D. Shear, Evans Farm Vote Goes to Developer, WASH. POST, June 25, 1999, at B6 (reporting that a 24 acre parcel of land located near Tysons Corner was sold to a developer, who intends to construct 144 town houses, condominiums and single-family detached houses, for an estimated $20 million). See also Michael Laris, Growth Limits Anger Loudoun Landowners; Farmers Claim Right to Develop Property, WASH. POST, April 18, 2000, at B5 (reporting opposition to “slow growth” policies by farmers, concerned that such restrictions will reduce their farms’ property values).

103. In addition to two shopping malls, Tysons I and Tysons II, a trip down Route 7 takes one to such luxury stores as Tiffany’s and Hermes.

104. See Downs, supra note 42, at 18.

105. Garreau, supra note 44, at 8.

106. See Kenneth T. Jackson, CRABGRASS FRONTIER: THE SUBURBANIZATION OF THE UNITED STATES 285 (1985) (stating that the negative results of suburbanization “are the stripped automobiles, burned-out buildings, board-up houses, rotting sewers, and glass-littered streets that are common in so many of America’s inner cities”); Buzbee, supra note 37, at 69-72 (citing one of urban sprawl’s harmful effects as the abandonment of the inner urban core).

107. Buzbee, supra note 38, at 70.


110. Oren, supra note 34, at 168.
settings. Filled with plenty of parking, these urban settings “virtually invite workers” to use automobiles.111 With their offices and homes located in suburban settings, commuters are less likely to use transit. For maximum transit efficiency, passenger’s homes and workplaces must be massed in a few large areas.112

The suburbanization of America’s workplaces might appear to decrease the distances between work and home. Surprisingly, there is an increasing distance between where employees live and work. Nationally, the average commute in 1983 was 8.5 miles. In 1990, that number had increased to 10.7. In the Washington area, the average distance between home and work jumped from 9.6 miles in 1989 to 11.2 miles in 1994. From 1990 to 1999 the total number of miles driven per person on a weekday increased 10 percent, from 30 miles to 33 miles.113

Americans cherish the right to travel alone in their own vehicles.114 Unlike mass transit, the automobile places the ability to go where, when, and at what frequency in the hands of the individual, rather than in those of the train engineer.115 The automobile serves a symbol of individualism and freedom: one need only to get behind the wheel to drive anywhere at any time.116 Driving also provides individuals with an opportunity to escape from interactions with others and engage in self-reflection.117 In driving to work, the commuter has the freedom to use the trip as an opportunity to complete other tasks, such as stopping by the bank, the dry cleaner, or the shopping mall.118 This practice of combining both commuting and running errands is known as “chaining.”119 Approximately one-third of all work trips involve this type work/errand coordination.120

Women, increasingly joining the workforce, yet maintaining many of their traditional family responsibilities, are more likely to make additional stops after work. Approximately 61 percent of working, commut-
ing women make at least one stop after work; 28 percent of women make at least two stops. On the other hand, only 46 percent of men make at least one stop and only 18 percent make two or more. The increase in time pressure among working women who juggle family and work responsibilities has led to chaining and thus has made transit and carpooling virtually impossible for these commuters.

Thus, Northern Virginia faces somewhat of a paradox. It has, at the same time, one of the nation's best transit systems but one of the worst commutes. The region is growing significantly and prosperously, yet that prosperity — with the accompanying rise in the number of two-person working households and the ability of more people to afford automobiles — is starting to choke the growth of the region.

IV. THE COSTS OF TRAFFIC CONGESTION

Former Governor Gerald L. Baliles has suggested that traffic congestion has exacted costs of more than $200 billion in lost regional economic product. It is unclear how the former Governor calculates this burden on the Washington metropolitan region, but the figure does provide a starting point for the discussion of the costs of traffic congestion. The region, as a whole, pays a tremendous cost for traffic congestion. Once we determine that traffic congestion does produce costs, it is important to determine whether those costs are actually internalized: are those people who are creating the ill effects of traffic congestion fully incorporating all those costs into their transportation decision-making process?

A. DETERMINING THE COSTS OF CONGESTION

The Texas Transportation Institute suggests that Washington area residents spend approximately 216 million hours each year in traffic delay, with the average commuter delayed 76 hours. In addition, the region consumed an excess of 327 gallons of fuel in 1997 as a result of traffic, with the average commuter consumed an excess of 116 gallons. The

121. Nancy McGuckin and Elaine Mirakami, EXAMINING TRIP-CHAINING BEHAVIOR: A COMPARISON OF TRAVEL BY MEN AND WOMEN 6 (Federal Highway Administration).
122. See 1998 N. VA. TRANSP. COMM'N, supra note 60, at 118; Pisarski, supra note 36, at 1.
123. Baliles, supra note 24, at 1.
124. The Washington, D.C. region is currently not the only area experiencing substantial growth and increased pressure on its transportation infrastructure with economic repercussions. The Atlanta Metropolitan area, for example, is experiencing similar growth pains. See Orlyn O. Lockard, III, Note, Solving the “Tragedy”: Transportation, Pollution and Regionalism in Atlanta, 19 VA. ENVTL. L.J. 161 (2000). See generally Dedicated Issue, Smart Growth, 35 WAKE FOREST L. REV. 509 (2000).
126. Id.
Texas Transportation Institute calculates a total congestion cost of 3.5 billion dollars. The cost of congestion for the average commuter totaled $1,260, the second highest in the nation.

These costs, however, are average commuting costs for fuel and lost time. Commuting may also cause drivers to incur significant indirect costs, including late fees at child care centers and expenses such as take out dinners and housekeeping costs, as a result of being too tired to make dinner or clean their house. In addition, there are personal costs that are difficult to calculate numerically. The time spent sitting in traffic is time that commuters could have spent with their families or using to pursue recreational or educational endeavors.

Indeed, there are other personal costs that must be calculated into the "magic equation" to determine the exact costs of traffic congestion. There are those in Washington who stay in "dead end jobs" while living in the District of Columbia – within bicycle or walking range from work – rather than enjoying a more challenging and financially rewarding position elsewhere. The Washington Post told the story of one such individual, who has turned down technology jobs in Northern Virginia, refusing to tolerate the commute that once ate up four hours of his day. The result was a job with less promise for intellectual and financial development, but also one without the daily grind of a long commute. It is not possible to determine how many individuals have passed up a more economically and mentally stimulating job in return for a peaceful commute. Nevertheless, such anecdotal evidence provides further evidence that commuting exacts larger costs than simply hours stuck in traffic and excess gas consumption. Traffic congestion has an influence on major personal decisions.

A recent AAA poll confirms this assumption. The poll found that of the 67 percent of the respondents who view traffic conditions as bad, 33 percent said that they are considering major life style changes as a result of traffic. In Northern Virginia, the number considering life style changes rises to 77 percent.
changes increased to 40 percent.\textsuperscript{135} Of that percentage group, 42 percent stated that they are considering moving out of the area and 16 percent indicated that they are considering a new job.\textsuperscript{136} In total, 10 percent of all respondents explained that they are considering moving out of the region to escape the traffic.\textsuperscript{137} Robert Grow, government relations director of the Greater Washington Board of Trade, views such responses as imposing a great cost on the region: "We have an economy that is booming. I think we have to ask ourselves how long it will continue when we have a percentage of people who say that want to get out of Dodge because of the traffic."\textsuperscript{138}

Although the Texas Transportation Institute suggests that traffic congestion may eat up 76 hours for the average Washingtonian, such a figure is an average of all the commuting times in the region, including those who drive very short distances to and from work. At the same time, however, this figure downplays those in the region who undertake significantly longer daily commutes. A commute from eastern Loudoun County to Washington, D.C., can take 60 minutes, each way.\textsuperscript{139} From Woodbridge to Washington, D.C., the commute— even when using a slug to gain access to the HOV lanes and thereby reducing the trip by 30 to 45 minutes\textsuperscript{140}— can also take an hour each way.\textsuperscript{141}

A decrease in the reliability of travel is another cost created by the current transportation situation. With an unpredictable transportation system, there is an increased number of wasted minutes and hours, as individual commuters must allow a "cushion of time" whenever they travel in case of unexpected traffic congestion.\textsuperscript{142} Commuters cannot trust the transportation infrastructure to deliver them "just-in-time."\textsuperscript{143} In addition to time costs attributed to the unreliability of the transportation system, there are direct financial costs, including late charges for day care facilities, when traffic congestion does, in fact, cause delays.\textsuperscript{144} It is estimated that the costs, on average, of unanticipated delays are four times as much as those for anticipated traffic congestion, owing to loss of

\begin{itemize}
\item \textsuperscript{136} AAA Mid-Atlantic, supra note 128.
\item \textsuperscript{137} Patrick Lackey, Worsening Traffic the Virginia Way: To Endure, Rather than Spend, VIRGINIAN-PILOT, Feb. 18, 2000, at B11.
\item \textsuperscript{138} Paul Bradley, Policy Makers Ignore AAA Polls Findings Again, RICHMOND TIMES-DISPATCH, Feb. 20, 2000, at C1.
\item \textsuperscript{139} Sipress, supra note 19, at A1.
\item \textsuperscript{140} See supra notes 64-71; See supra text accompanying notes 64-71.
\item \textsuperscript{141} See Sipress, supra note 19, at A1.
\item \textsuperscript{142} Alan Sipress, The Traffic Jams Are No Accident, WASH. POST, March 5, 2000, at C1.
\item \textsuperscript{143} See Pisarski, supra note 36, at 1.
\item \textsuperscript{144} See Sipress, supra note 142, at C1.
\end{itemize}
time, missed meetings, late fees and other charges that may accrue because of late arrivals.\textsuperscript{145}

The costs of goods and services also increases as a result of a clogged transportation system. With a declining 20-minute market radius around one’s home, consumers are left with fewer places to shop, resulting in fewer choices, increased prices and lower productivity.\textsuperscript{146} But this increasing cost of products argument is not limited to retail shopping. Those in service industries, such as technical and maintenance workers, who must make service calls, face increasing costs associated with traffic congestion. As the time it takes to make a service call increases because of traffic congestion, the “nonproductive time” per day for each driver also increases, forcing companies to raise their hourly rates.\textsuperscript{147}

Traffic congestion also causes pollution. The Clean Air Act provides rigorous standards for the control of automobile emissions.\textsuperscript{148} Although federal standards have reduced tailpipe emissions by 96 percent per automobile, automobiles still remain the “single most important source of air pollution in the United States.”\textsuperscript{149} Automobiles are responsible for 75 percent of hydrocaron emissions, 45 percent of nitrogen oxide emissions and 34 percent of the volatile organic compound emissions in this country.\textsuperscript{150} These air pollutants give rise to such health effects as headaches and eye irritation to reduced lung functions, lung damage, respiratory disease, and cancer.\textsuperscript{151}

Beyond the economic and environmental effects, traffic congestion also contributes to a lack of civility in society. In an effort to get to their destinations sooner, drivers who would never commit crimes such as stealing or shoplifting routinely break traffic laws.\textsuperscript{152} Many commuters see traffic laws as not “real law,” because they are seen as “victimless crimes” that involve no intent to harm.\textsuperscript{153} Drivers, with “too much to do and not enough time to do it,” often pay little attention to speed limits and stop signs.\textsuperscript{154}

A general inattention to traffic laws, however, creates yet another

\begin{thebibliography}{9}
\bibitem{145} Id.
\bibitem{146} See Pisarski, supra note 36, at 1.
\bibitem{147} Sipress, supra note 19, at A1 (reporting that one repair company estimates that traffic adds 15 minutes to each service call, which creates two hours of ‘nonproductive time’ per day for each driver. The company passes these costs onto customers through higher hourly rates).
\bibitem{149} Wahrman, supra note 116, at 185.
\bibitem{150} Id.
\bibitem{151} EPA, OPPORTUNITIES TO IMPROVE AIR QUALITY THROUGH TRANSPORTATION PRICING PROGRAMS 4 (Sept. 1997).
\bibitem{152} See Alan Sipress and Josh White, Guilty, But Feeling Guilty Free, WASH. POST, July 16, 2000, at A1.
\bibitem{153} Id.
\bibitem{154} Id.
\end{thebibliography}
breed of drivers: those suffering from "road rage." Road rage is the loss of courtesy on the road that has been defined as intentional aggressive driving by angry and frustrated motorists.155 The source of this frustration is often traffic congestion. As one Virginia State Trooper explained, "You've got plenty of angry motorists who aren't necessarily paying attention. And there are plenty of angry motorists today. They don't care why traffic isn't moving. They just want it to move."156 One recent "road rage" incident in Northern Virginia resulted in a pregnant woman suffering from a miscarriage after an angry motorist hit her car several times and forced her off the road.157 Such incidents, while uncommon, undermine the sense of safety on area roads. The AAA Mid-Atlantic Transportation Poll 2000 found that 53 percent of area residents rated aggressive driving as the number one highway safety concern.158

B. Cost Internalization?

There is some evidence that given the extreme costs of traffic congestion, individuals have internalized the costs of sitting in traffic. That is to say that the commuter, in deciding to use his automobile, has absorbed all the costs associated with that decision: the temporal, financial, environmental, and societal costs of traffic congestion. However, should the commuter's decision to drive not be based on an assessment of all of these factors, then the commuter's decision is not solely personal. The decision to commute has then created effects that are external to the driver, imposing costs on those who have no power to influence the decision making process. The cost of driving, therefore, would not lay entirely on the decision-maker and is deemed to be an externality.159

It is clear that suburban living is popular. According to the AAA poll, 65 percent of those questioned in the Washington metropolitan area stated that they preferred to live in a less densely populated suburb, using a car to get to work, school and shopping, while only 29 percent of those questioned preferred urban living with public transportation.160 Not only is suburban living popular, but the very idea of driving - and driving

155. See Wahrmn, supra note 116, at n4; See also William E. Welsh, Behind the Wheel and Seeing Red, WASH. POST, Jan. 6, 2000, at C4.
156. Sipress, supra note 19, at A1.
160. AAA Mid-Atlantic, supra note 134.
alone – is also preferable. The question that remains, however, is whether those who live in the suburbs and insist on driving personally incorporate all of the costs associated with their decision.

The argument that costs are internalized is based on the realization that in order to live in the suburbs, you have to pay the costs of traffic congestion. As one Maryland commuter, who travels 500 miles a week, spending nearly $600 per month on parking, gas and repairs, explains, "I guess I’ve gotten used to the fresh air and the sunshine and the flowers and the nice neighborhoods . . . You have to give up something to get something." As a rational actor, the commuter assesses the costs of living in the suburbs and of being able to enjoy the convenience and individualism of the automobile and determines that the value of living in the suburbs outweighs the costs. Indeed, the story of the individual who has turned down job offers in Northern Virginia because of the cost of congestion has – like any rational actor – assessed the financial rewards of a higher-paying position and weighed them against the negative commuting aspects, choosing to remain in the District. The key to this decision is that those who have decided to commute have been forced to take into account the costs of their actions while making that decision. Those who move out to Loudoun County do so because, as one suburbanite claims, after assessing all the costs and benefits, "It’s worth it."

This conclusion assumes, however, that in deciding to live in Loudoun, Prince William, or other Northern Virginia counties, and accepting the long commutes, fuel costs, and even time away from their families, commuters have internalized all of the effects of driving. While it is certainly true that in deciding to live in the suburbs, the commuter has incurred significant costs, it is not likely that the commuter has internalized all the costs.

Americans like suburban living, preferring detached dwellings over row houses, rural to city life, and home ownership to renting. The wide open spaces of suburbia do provide a manifestation of such American ideals such as individualism and freedom. This suburbanization phenomenon, however, has not developed without governmental subsidies. The federal tax system, for example, has allowed mortgage and property tax deductions. Additionally, savings are taxed twice, first on the income itself, and then on the interest on that income. With tax incentives to

161. See Downs, supra note 42, at 144.
163. See supra notes 126-27; See supra text accompanying notes 126-27.
164. See Dukeminier and Krier, supra note 159, at 50.
166. Jackson, supra note 106, at 11.
purchase a house and disincentives to save, the government has encouraged home-ownership. Such homes typically are located in the suburbs. Inextricably linked to suburban living is the use of the automobile for transportation. With home-ownership subsidized, suburbanites are not paying the full effects of suburban living, and thus not internalizing all of the costs associated with life in the suburbs.

In addition to creating incentives for home-ownership, which results in a transportation subsidy, governmental policy has provided a direct subsidy of driving. The construction of free beltways and expressways has encouraged suburban development. Almost 85 percent of transportation expenditures are directed toward roads. Although highway users do support these roads through user fees such as gas taxes, gas taxes do not cover the full costs of highway construction and maintenance.

Drivers do not bear the costs of air and noise pollution, nor do they bear the costs of the lack of civility attendant with traffic congestion. These costs are hidden from the driver; the driver does not pay for these effects at the time he decides to use his car. Thus, driving as a resource becomes "over consumed." In this respect, highway transportation is a classic "tragedy of the commons." The driver, a rational actor, determines that his share of the costs of the wastes (i.e. hydrocarbon emissions) is less than the cost of purifying his wastes (i.e. using emission-free vehicles or not driving at all). The result is a system where individuals are "locked into" contributing to the deterioration of the environment, "so long as we behave only as independent, rational, free-enterprisers."

Finally, peak automobile travel is, itself, an externality. Although those that sit in traffic incur costs - namely, the costs of their own time, lost fuel and wear and tear on their vehicles - they do not internalize the

168. See id.
171. Wood, supra note 169.
172. See 1998 N. VA. TRANSP. COMM'N, supra note 57, at 24. See also Oren, supra note 33, at 171.
173. See EPA, supra note 151, at 2.
174. Id.
176. Id. at 135.
177. See Wahrman, supra note 116, at 196.
loss incurred on others.\textsuperscript{178} This loss is that of imposing additional costs on other by adding to their delay.\textsuperscript{179} Automobile traffic should flow consistently at the speed limit, but as traffic increases, the addition of each new vehicle decreases the flow of traffic and increases the travel time of other vehicles.\textsuperscript{180}

V. PROPOSALS TO IMPROVE TRANSPORTATION IN VIRGINIA

Politicians, bureaucrats and policy experts have not remained silent in suggesting ways to confront the traffic dilemma in the Washington area. Indeed, transportation funding ranked among the top issues in Virginia politics during the General Assembly’s 2000 session and in the 2000 Virginia Senate Race between George Allen and Charles S. Robb. Prior to the session, Governor Gilmore announced a six-year, Commonwealth-wide $2.5 billion transportation package.\textsuperscript{181} Yet the Governor’s proposal and the $2.9 billion package that came out of the General Assembly, pales in comparison to the transportation proposal released by the Northern Virginia Transportation Coordinating Council – the Northern Virginia 2020 Transportation Plan (“2020 Plan”)\textsuperscript{182} – which calls for an additional $17 billion in transportation funding over the next 20 years for Northern Virginia alone. Furthermore, while each of the proposal targets improvements in the region’s transportation infrastructure, each fails to align individual commuter incentives. The proposals do not force drivers to internalize all of the costs of their commuting decisions.

A. INNOVATIVE PROGRESS

On August 31, 1999, Governor Gilmore introduced his transportation proposal, Innovative Progress: Improving Transportation in Virginia. The proposal called for a statewide approach to transportation policy that included incentives for teleworking (also called telecommuting) and intelligent transportation systems in addition to road and transit programs.\textsuperscript{183} The hallmark of the proposal was its steadfast refusal to raise or establish any new taxes on Virginia residents.\textsuperscript{184}

The transportation proposal included the use of “Grant Anticipation

\begin{itemize}
\item \textsuperscript{178} See Oren, supra note 34, at 171.
\item \textsuperscript{179} See Downs, supra note 42, at 3; Wahrman, supra note 116, at 196.
\item \textsuperscript{180} See Wahrman, supra note 116, at 196.
\item \textsuperscript{182} 2020 Plan, supra note 2.
\item \textsuperscript{183} See Jim Gilmore, INNOVATIVE PROGRESS: IMPROVING TRANSPORTATION IN VIRGINIA 2 (Aug. 31, 1999) (hereinafter “INNOVATIVE PROGRESS”). Intelligent Transportation Systems are technologies directed at providing commuters with “up-to-the-minute” traffic information and directing and controlling traffic flow. 2020 Plan, supra note 2, at § 2.3.4.1.
\item \textsuperscript{184} INNOVATIVE PROGRESS, supra note 183, at 4.
\end{itemize}
Revenue Vehicles” (GARVEEs) a financing mechanism that allows the Commonwealth to fund current transportation projects with future federal highway funds.\(^{185}\) As a result of 1995 legislation, states may now use future federal funds to reimburse the interest payments, retirement of principal, cost of issuance, cost of insurance and another costs relating to the sale of an eligible debt financing instrument.\(^{186}\) Thus, a state may issue a GARVEE bond and subsequently repay that debt-financing instrument with future federal highway dollars.\(^{187}\) The Governor’s plan called for approximately $590 million to be added to transportation projects through this proposal.\(^{188}\) Of this figure, $137.8 million was directed to advance ten projects in Northern Virginia.\(^{189}\) The Governor’s proposal calls for “naked GARVEEs,” meaning that the creditworthiness of the bonds rests solely on future federal funds, without any state or other entity’s revenues or credits.\(^{190}\) If Congress reduces the amount of federal highway funding to the states, then the capability to repay these bonds is correspondingly reduced.\(^{191}\)

In addition to the use of GARVEEs, the Governor also called for repaying funds into the Commonwealth’s Transportation Trust Fund that had been diverted from the fund in earlier years. In the early 1990s, the Commonwealth diverted approximately $194.6 million from the Transportation Trust Fund to the general fund in order to balance the state’s budget. Governor’s Gilmore’s plan called for $200 million to be transferred from the General Fund back to the Transportation Trust Fund.\(^{192}\)

The Governor also advocated the implementation of electronic fuels tax collection. Currently, motor fuels can be purchased and sold several times before the fuels tax is collected, making the administration of a
funds tax difficult and resulting in a loss of revenue, as some tax is not collected. By implementing an electronic fuels tax, however, the point of taxation falls on the distributor, not on the retailer of gas. The number of entities submitting fuels tax will fall from approximately 1,300 to 200.\textsuperscript{193} The Governor predicts an additional $210 million in revenue over the next six years from the implementation of electronic fuels tax collection.\textsuperscript{194}

The Governor also called for the establishment of a Priority Trust Fund. Unlike traditional transportation funding, which is allocated based on a regional formula, this transportation fund would provide for specialized funding for projects throughout the Commonwealth. The fund would be directed to transportation projects of "critical importance" and distributed by the Commonwealth Transportation Board.\textsuperscript{195} The Governor's plan called for $1.5 billion dollars to be deposited in this fund over the next six years, coming from allocations of $100 million yearly from the General Fund and approximately $813 million from proceeds from the Commonwealth's settlement reached with tobacco companies over tobacco litigation.\textsuperscript{196}

In 1999, the General Assembly adopted legislation to distribute 60 percent of the Tobacco Settlement to tobacco communities and farmers, as well as for anti-smoking measures. Forty percent of the settlement, however, was unallocated. Governor Gilmore's plan called for that unallocated settlement to be distributed to the tobacco settlement through securitization. Securitization of the Tobacco Settlement would provide an "up front" payment of nearly $600 million, with a continuing stream of nearly $713 million over the next 30 years. The securitization would not be tax-supported debt of the Commonwealth, nor would it impact the Commonwealth's debt capacity.\textsuperscript{197}

Governor Gilmore also addressed transportation in Northern Virginia in a document entitled, Innovative Progress: Improving Transportation in Northern Virginia.\textsuperscript{198} In addition to the money directed toward Northern Virginia for specific projects funded by GARVEE bonds, the Governor touted initiatives such as accelerating plans to expand bus and Metro service to Tyson's Corner and along the Dulles corridor, expanding VRE and promoting telecommuting and intelligent transportation system technology.\textsuperscript{199}

\textsuperscript{193} See id. at 9.
\textsuperscript{194} See id. at 6.
\textsuperscript{195} Id. at 11.
\textsuperscript{196} See id. at 6.
\textsuperscript{197} See id. at 13.
\textsuperscript{198} See INNOVATIVE PROGRESS, supra note 183.
\textsuperscript{199} See id. at 2-3.
B. THE GOVERNOR’S COMMISSION ON TRANSPORTATION POLICY

Pursuant to section 2.1-51.35 of the Code of Virginia, Governor Gilmore created the Governor’s Commission on Transportation Policy. In the Preamble of the Order creating the Commission, the Governor points to the “continuous and unprecedented economic growth” within the Commonwealth, and charges the Commission with evaluating the Commonwealth’s transportation system and developing broad principles of transportation management to “move all of Virginia into the next century.”

On December 1, 1999, the Commission released its Interim Report. The Commission endorsed Governor Gilmore’s Innovative Progress proposal as a measure to improve “short term transportation issues.” The Interim Report provided a broad look at transportation issues, articulating a wide range of proposals for Virginia’s transportation system. The Interim Report addressed teleworking, public transportation, transportation technology initiatives, and criteria for the Priority Transportation Fund. Despite the wide-range of proposals mentioned in the Interim Report, the Commission stressed that the report is the first of three to be submitted and is merely “intended to frame the dialogue related to a long-term integrated transportation policy for the Commonwealth and lay out the strategies and opportunities available.”

While the Governor’s plan addressed short-term transportation issues, the Commission looked at several long-term financing proposals that would enable the Commonwealth to “invest in [Virginia’s transportation network] to enable the state to continue moving forward today and into the future.” The Commission, in addition to endorsing the funding proposals in Gilmore’s Innovative Progress, laid out additional mechanisms that would provide new sources of funding, such as toll roads, general obligations bonds, and regional and local taxation. The Commission also suggested several measures that would shift general funds to transportation projects, such as using a larger portion of the Motor Vehicle Licensing Fee for transportation purposes, eliminating the practice of supporting other state agencies with money collected for transportation purposes, and funding the Department of Motor Vehicles out of the General Fund.

201. GOVERNOR’S COMM’N ON TRANSP. POL’Y, INTERIM REP., at 3 (Dec. 1, 1999).
202. Id. at 2.
203. Id. at 7.
204. Id. at 4-25.
C. The General Assembly

After two months of debate, the Virginia General Assembly passed a $2.64 billion transportation package.\(^{205}\) The bill establishes the Priority Trust Fund, as requested by the Governor.\(^{206}\) The General Assembly also established $800 million for GARVEE bonds, to be sold in at least three issues.\(^{207}\) In addition to the GARVEE bonds, the Commonwealth maintains $275 million in debt capacity for transportation purposes that remain from previous years' legislation.\(^{208}\)

The General Assembly, however, did not pass the Governor's proposal to use the Tobacco Settlement.\(^{209}\) Furthermore, while the proposal establishes the Priority Trust Fund, the General Assembly assigned specific dollar amounts to projects; the Governor had wanted the Virginia Department of Transportation to have the flexibility to assign funds to projects.\(^{210}\)

One of the major criticisms of the transportation package was the failure of the General Assembly to provide a permanent source of funding for transportation.\(^{211}\) The Governor responded to those criticisms and – using his constitutional power to recommend specific amendments for consideration by the General Assembly\(^{212}\) – proposed the use of part of the Commonwealth's tax on insurance premiums to help fund the Priority Transportation Fund.\(^{213}\) The Governor's proposal would dedicate one-third of the funds from the insurance premium tax to the fund beginning in 2003, providing an extra $96 million in the first year and $113.3 million by 2006.\(^{214}\) Gilmore earlier opposed a plan to use a portion of the state's corporate income tax as a permanent source of funding but offered the insurance premium because there was a tie between the revenue source – which includes revenue from car insurance premiums – and transportation.\(^{215}\) The General Assembly, meeting in its veto session, approved the Governor's proposal, boosting the entire transportation pack-

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\(^{206}\) Id.

\(^{207}\) Ola Kinnander, Paving Virginia's Future, BOND BUYER, April 6, 2000, at 1.

\(^{208}\) Id.

\(^{209}\) Timber and Sipress, supra note 205.

\(^{210}\) Christina Nuckols, Legislators Meet in the Middle Lane on Road Funding, ROANOKE TIMES, March 11, 2000, at A1.

\(^{211}\) See id. at A1; Timbers and Sipress, supra note 203, at A1.

\(^{212}\) See VA. CONST. art. V, § 6(b)(iii).

\(^{213}\) See Stephan Dinan, Gilmore Plans to Use Insurance Tax for Transportation, WASH. TIMES, April 9, 2000, at C12.

\(^{214}\) See id. at C12.

\(^{215}\) See id. at C12.
age to approximately $3 billion over six years.\textsuperscript{216}

Governor Gilmore also used his veto authority to reject a measure that would have allowed county governments in Northern Virginia to hold a referendum on local income tax increases for transportation projects.\textsuperscript{217} The proposal would have allowed citizens to approve a 1 percent local income tax increase.\textsuperscript{218} The General Assembly chose not to vote to override the veto, and the bill was withdrawn.\textsuperscript{219}

Nevertheless, despite Gilmore’s veto, this issue of local taxation for transportation purposes has resurfaced for the 2001 General Assembly session. Although there is support among Northern Virginian legislators for a referendum proposing a local tax increase for transportation funding, there is not a consensus as to the scope of the increase.\textsuperscript{220} The Fairfax County Board of Supervisors approved a plan for a referendum to increase the 4.5% sales tax by one percent, with half of the revenue dedicated to education initiatives and the other half for transportation.\textsuperscript{221} The General Assembly and Governor Gilmore must approve the plan.\textsuperscript{222} A similar measure has been proposed by Delegate John A. “Jack” Rollinson, III (R-Prince William) to hold a referendum for a half-cent increase, dedicated solely to transportation.\textsuperscript{223} Delegate John H. “Jack” Rust, Jr. (R-Fairfax) favors a full-cent increase, devoted entirely to transportation.\textsuperscript{224} Governor Gilmore has stated that although he has not changed his anti-tax perspective and has reservations about any local tax proposal, he “would like to hear what they have to say.”\textsuperscript{225}

D. BEYOND THE 2000 GENERAL ASSEMBLY SESSION

The 2000 General Assembly’s final transportation package did bring some needed funds to Northern Virginia. In September 2000, Virginia transportation officials released a six-year plan that increased transportation funding in Northern Virginia from $292 million in fiscal year 1999 to $617 million in fiscal year 2000.\textsuperscript{226} Northern Virginia received 28 percent

\begin{thebibliography}{99}
\bibitem{217} R.H. Melton, Gilmore Vetoes Local Taxing Power, \textit{WASH. POST}, April 9, 2000, at C4.
\bibitem{218} See id.
\bibitem{219} Melton and Timberg, supra note 216, at B1.
\bibitem{221} Michael D. Shear, Fairfax Sees 1-Cent Sales Tax Increase, \textit{WASH. POST}, Jan. 9, 2001, at B1.
\bibitem{222} Id.
\bibitem{223} Id.
\bibitem{224} Timberg, supra note 220, at B1.
\bibitem{225} Id.
\end{thebibliography}
of the $2.19 billion allocated to transportation spending in the Commonwealth for fiscal year 2000.\textsuperscript{227} Over the plan’s six year period, Northern Virginia will receive more than $2.3 billion in transportation funding.\textsuperscript{228} The money allocated to Northern Virginia will be used for improvements at the interchange between I-66 and the Beltway, widening of a three mile section of Route 28 in Prince William County, development of bus and rail service along the Dulles Toll Road, studies addressing the proposals to widen I-66 both inside and outside the Beltway and expand the Metro system, and acceleration of widening I-66 between Manassas and Gainesville.\textsuperscript{229} Governor Gilmore called the increase of funds in Northern Virginia a “very good thing,” but refused to call it “sufficient, because everyone has a different opinion of what that means.”\textsuperscript{230} Critics, however, noted that the increased spending doesn’t meet the $11 billion dollar need of Northern Virginia as outlined by the 2020 Plan.\textsuperscript{231}

Of course, passage of the General Assembly’s 2000 transportation package did not end the debate over transportation in Northern Virginia. Governor Gilmore has proposed several initiatives to reduce traffic congestion in Northern Virginia.\textsuperscript{232} These initiatives include providing better information to commuters concerning traffic congestion, so as to allow commuters to seek alternative routes.\textsuperscript{233} The proposals also include increasing the speed limit in certain HOV lanes, opening the HOV ramp from eastbound I-66 to the Beltway, offering a subsidy for state employees that use public transportation or van pools, and unveiling a new website, www.beltwayrail.org, to promote public comment concerning construction of a Metrorail line from Springfield to Tysons Corner and perhaps beyond.\textsuperscript{234} Some critics contend that while these initiatives are welcome, they “seem to be just baby steps, nibbling around the edges of the problem.”\textsuperscript{235} Governor Gilmore has also expanded his Innovative Progress proposal to include the Transportation Reform Initiative, a reorganization of the Virginia Department of Transportation (“VDOT”),

\textsuperscript{227} Id.
\textsuperscript{228} Alan Sipress, Funds Give Jump-Start to N.Va. Road Work, WASH. POST, Oct. 1, 2000, at V1.
\textsuperscript{229} Sipress, supra note 220, at B1.
\textsuperscript{230} Id.
\textsuperscript{231} See id. For a discussion of the 2020 PLAN, see Part V(E), infra.
\textsuperscript{233} See Governor Gilmore Announces Traffic Safety Plan, supra note 224.
\textsuperscript{235} Id.
which would modernize the department and lead to annual savings of $148 million.236

The transportation debate in Northern Virginia is not simply a state issue. It received nationwide attention in closely watched Senate campaign between George Allen and Charles S. Robb. Senator Robb attempted to make the traffic congestion in Northern Virginia an issue, blaming former Governor Allen for his $40 million VDOT buyout program, which reduced VDOT by as many as 1,300 employees.237 Allen's critics contended that his pro-growth efforts in Northern Virginia failed to include appropriate investment in transportation infrastructure.238 Allen responded by stating that the cuts in VDOT made the department more efficient and that he doubled the road construction budget without raising taxes.239 In the end, it appears that Allen effectively challenged his critics on transportation and other issues, as he defeated the incumbent Robb on November 7, 2000.240 In the process of winning the Senate seat, Allen picked up 47 percent of the votes in counties in Northern Virginia.241 Robb won the traditionally Democratic suburbs of Alexandria, Arlington and Fairfax (Robb's home county), while Allen topped Robb in fast-growing Prince William and Loudoun counties.242 Allen managed to garner 46 percent of the vote Fairfax county, ten percent more than Robb's last opponent, Oliver North, received in 1994.243

E. NORTHERN VIRGINIA TRANSPORTATION COORDINATING COUNCIL

Although it is not unclear how transportation issues actually affected the 2000 Senate race, one thing that is certain is that traffic congestion in Northern Virginia remains a critical issue in the Commonwealth. What is further apparent is that although state and federal officials in the state have proposed and enacted plans to reduce traffic congestion in the region, none provide for as comprehensive a plan as the one proposed by the Transportation Coordinating Council of Northern Virginia ("TCC").

The TCC is an advisory group of 27 locally elected officials that rec-

241. Id.
242. Id.
243. Id.
ommends regional transportation priorities and funding allocations. Pursuant to Senate Joint Resolution 434 of the 1999 General Assembly Session, the TCC developed the 2020 Plan, which the TCC adopted on December 16, 1999. The TCC drafted a three-pronged strategy to (1) identify needed transportation improvements in the short-term, medium and long-term; (2) identify feasible funding sources for those improvements; and (3) provide a vision for future planning, including the update to the Washington Metropolitan region's long-term transportation plan, the Constrained Long Range Plan ("CLRP").

The Technical Report of the 2020 Plan identifies congested arteries within the Northern Virginia transportation structure and provides a detailed list of improvements for the region, based on an analysis of current and future residential and employment data. While the CLRP must include financial information demonstrating how the transportation improvements can be implemented based on financial resources "that are reasonably expected to be made available to carry out the plan," the 2020 Plan faces no such "reasonable" requirement. As such, while Northern Virginia’s portion of the region’s CLRP will require $16 billion in funding over the next 20 years, the 2020 Plan adds an additional $14.3 billion over that same period.

The 2020 Plan provides both highway and transit improvements. The 2020 Plan estimates that the total cost for highway improvements beyond the CLRP over the next 20 years will reach approximately $6.45 billion. Included in this figure are expansions of I-66 to eight lanes and two HOV lanes outside of the Beltway, and I-495 to ten lanes and two HOV lanes from the American Legion Bridge in the north to the Woodrow Wilson Bridge in the south. For transit improvements, the 2020 Plan estimates that the total costs beyond the CLRP over the next 20 years will be $6.56 billion. These costs include the expansion of Metro to Centreville, along the Dulles Corridor, along I-495 and into Prince William County, as well as the development of light rail lines in Arlington and Loudoun counties.

Although extensively detailed on projects to be constructed and ex-

244. See 2020 PLAN, supra note 2, at § 1.2. By law, the Washington D.C. metropolitan area is required to have a regional transportation planning body. See 23 U.S.C. § 134 (Supp. IV 1999). The Washington D.C.'s transportation planning board is the National Capital Region Transportation Planning Board (TPB) and is staffed by the Metropolitan Washington Council of Governments - Department of Transportation Planning. See 2020 PLAN, supra note 2, at § 1.1.2.2. The TPB must develop a long-range transportation plan for the entire region. See 23 U.S.C. § 134(g) (Supp. IV 1999).
246. 2020 PLAN, supra note 2, at § 4.4.
247. Id. at § 4.1.
248. Id. at § 4.2.
panded, the 2020 Plan is conspicuously short on plans to finance the proposal, dedicating merely 3 pages out of the 172-page report to finance issues. The extent of funding proposals consists of a table listing “Potential Revenue Sources” which represents nothing more than a brainstorm of every possible funding mechanism. A second table provides potential revenue for Northern Virginia for various funding sources, including a 5-cent gas tax, tolls, 1 percent increase in the sales tax, and a 1 percent increase in the income tax.

VI. COMPREHENSIVE APPROACH

It is no easy task decreasing traffic congestion. Indeed, one commentator has suggested an approach resting on the “principle of one-hundred small cuts.” Just as a woodsman, using a small axe, must employ many small blows to cut down a large tree, so too must policy makers employ multiple tactics to reduce traffic congestion. This section analyzes the debate between “roads and rails,” then examines one mechanism – congestion pricing – designed to force drivers to internalize the cost of their commuting. Finally, the Note returns to the notion of one-hundred small cuts, suggesting other mechanisms that may be used in conjunction with congestion pricing to alleviate the traffic congestion in Northern Virginia.

A. ROADS OR RAILS?

Northern Virginia's road network is insufficient to meet the current demands of commuter travel. The increase in lane miles has not kept pace with the increases in the number of licensed drivers and vehicles. Nonetheless, there are those transportation planners that wish to see no new road development. The reason for such an approach is based on a “Field of Dreams” philosophy: if you build it they will come. The argument is that when new lanes are built, there is a “triple convergence” onto the new road: (1) those who used alternative routes during the peak hours will switch to the new lanes; (2) those who drove either prior to or

249. See id. at Table 5-1.
250. Id. at Table 5-2.
251. Downs, supra note 42, at 146.
252. Id.
253. See supra notes 18-21 and accompanying text.
254. Timothy Egan, Concrete Choices: Freeways, Their Costs and 2 Cities' Destinies, DENVER POST, July 14, 1999, at A1 (reporting that Milwaukee Mayor John O. Norquist has toured the country arguing that cities should be removing highways instead of building new ones).
255. Oren, supra note 34, at 172 (paraphrasing the line, “If you build it, he will come,” from the movie Field of Dreams (Universal 1989)). See also Mathew Wald, Do Additional Roads Increase Congestion?, N.Y. TIMES, Jan. 28, 2000, at F1 (discussing the “Field of Dreams” phenomenon).
after peak hours will switch to peak hours; and (3) those who used public transportation will switch to automobile travel. In addition to individuals changing transportation behavior, new roadways are a stimulant of development in an area. Thus, building freeways, it is argued, won’t solve the traffic problem. What is needed under this approach is a more efficient transit system.

However, it is important to determine what, exactly, is the goal of a transit system? Is it to help move individuals to and from their destinations, or is it an end unto itself? If it is an end to itself, then it would seem appropriate to let the transportation system decay beyond its current state, which will induce individuals to leave the roads and take mass transit. Indeed, perhaps the answer is to even deconstruct highways, so that individuals are forced off the roads. Thus, while eliminating road capacity and making commuting “miserable enough for 90 percent of travelers,” some of those commuters will switch to rails.

The “Field of Dreams” analysis thus appears self-defeating. It implies that the solution is not to make transportation more efficient, it is to make the situation even worse, all in an effort to move some individuals from their cars into buses or trains. This argument places the means to achieve a goal as the very goal itself. Transit at all costs, without consideration of the effects of such a policy.

Moreover, it is not clear how effective this policy would be in getting people out of their cars. As this debate between roads and transit rages throughout the country, some policy makers feel that they have no choice but to provide their constituents – the consumers of highways – what they want: the ability to drive. For example, in Salt Lake City, Utah, where the state is on the verge of adding a parallel highway to I-15, some surveys suggest that nearly 97 percent of the population will not use transit. Indeed, some communities that have developed light-rail systems have not seen a significant drop in traffic congestion. One reason for such failures is that in some cities, those who now ride light-rail were former bus passengers. Light-rail ridership in many urban areas has failed to meet original expectations, while, at the same time, the costs of

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257. Freilich and White, supra note 1, at 918-19. See also Egan, supra note 220, at A1.
258. See Egan, supra note 254, at A1.
259. Pisarski, supra note 36, at 1.
260. See Egan, supra note 254, at A1 (reporting Milwaukee’s plans to use more than $20 million in federal highway funds to tear-down a half-section of highway).
261. See Pisarski, supra note 36, at 1.
262. See id.
263. See Egan, supra note 254, at A1.
264. See id.
these light rail programs have far exceeded original projections. According to one commentator, "With low ridership and most patrons drawn from bus transit, there is no case where new rail service has been shown to noticeably improve highway congestion or air quality." Apparently, "the public expects their neighbors to use mass transit, but not themselves."268

There is another problem with the "Field of Dreams" analysis. It is very likely that the entire premise of the argument – that additional roads provide no sustainable congestion relief owing to the influx of new cars – fails. According to the Texas Transportation Institute, additional roadways do, in fact, reduce the growth in travel delays.269 When compared to areas that have not added road capacity, adding roadways at rates comparable to the rate of traffic growth results in slower growth in travel time.270 Furthermore, when coupled with market mechanisms to align commuter incentives,271 additional capacity will ease the flow of traffic even more by forcing commuters to bear the full costs of traveling on new roads.

The debate between roads and rail, however, is shortsighted. What is needed is not an all or nothing approach to both transportation initiatives, but a balance. A policy of forcing adults from their cars by making highway transportation worse will not solve the transportation problem in the region.272 Any transportation plan should provide both highway and rail service under the auspices of one unified transportation policy. Without a combination of roads, mass transit and smart planning, "congestion will choke off prosperity."273

B. CONGESTION PRICING

What is needed is a transportation agenda that will address the strangle congestion but will also align transportation incentives. The 2020 Plan provides for a sweeping infrastructure improvement throughout the region which would help to alleviate the region’s traffic problem. Nevertheless, such a plan would also expand the tragedy of the commons. The rationale behind the tragedy of the commons phenomenon contends that

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266. See Daly, supra note 116, at 367.
268. Daly, supra note 116, at 368.
269. Schrank & Lomax, supra note 6, at IV-11.
270. Schrank & Lomax, supra note 6, at IV-11.
271. Infra Part V(B).
272. See Pisarski, supra note 36, at 1.
a grazing field, open for all to use, will eventually be overgrazed, as each who uses the field has an incentive to increase the size of his heard without bearing the full cost of that decision. Applied to the transportation situation in Northern Virginia, any such improvements to the infrastructure would essentially provide an incentive those commuters to use the commons. It would encourage more users to consume the product, making access to the transportation infrastructure even more available, without forcing these consumers of highways to internalize the costs.

In moving toward a transportation system that will ease traffic congestion, public policy makers must address the underlying problem with current highway policy: despite paying significant costs for gas and lost time, motorists view highways as essentially free, no matter how much they consume. Using an analogy to a supermarket, if consumers can walk into a grocery store and fill their carts with steaks, fine wine, and anything else that they might want with no thought to costs, then there would be a run on super-markets. Indeed, the grocery store would be emptied immediately. However, such a phenomenon does not exist because the market value of a product - the price of the product - keeps the market operating smoothly, requiring consumers to purchase only that which they can afford.

Policy makers should apply market forces to the highway through roadway pricing mechanisms. Under a roadway pricing regime, commuters are assessed fees for using the road. These fees can vary based on the demand for the road. During peak hours - i.e. during periods of highest congestion - the charges will be higher than those during non-peak hours. In fact, during low capacity hours use of the roadways may be free. The use of pricing mechanisms encourages individuals to make choices: They either pay for the use of the limited resource, or they can drive during non-peak hours (spreading the flow of traffic more evenly throughout the day), drive on other, less congested roadways, use other modes of transportation, or even telework or live within the urban core (both of which will eliminate their presence on the roads altogether).

274. See Hardin, Tragedy of the Commons, supra note 175, at 174.
277. See id.
278. See Wahlman, supra note 116.
279. The theory behind congestion pricing is similar to that pricing mechanisms of long distance phone companies or seasonal resorts. In times of high use-either during business hours in the case of the long distance industry, or during the peak season for the resort industry-businesses can charge higher rates than during non-peak times. The pricing structure thus shifts some use from the peak times to the off-peak times. See Strahilevitz, supra note 51, at 1244.
280. See EPA, supra note 151, at 27.
281. See id. at 26-27.
There are three types of roadway pricing mechanisms.\(^{282}\) First, there is facility pricing, which assesses fees for travel on a bridge, tunnel or small segment of road. Second, there is road pricing, which charges a toll along a specific roadway. And finally, there is cordon pricing, which charges a fee for travel within a particular area, establishing a series of toll collection areas in a ring around the congested area. Motorists are charged as they enter that area.

Policy makers should apply market forces to the highway through roadway pricing mechanisms such as congestion pricing.\(^{283}\) The use of congestion pricing is a common phenomenon in a fluid marketplace, in which the price of a product varies as the products' supply and demand ebb and flow. Congestion pricing dictates, for instance, the hotel rates at seasonal resorts.\(^{284}\) Seasonal resorts often charge higher prices during the peak season when the demand is high and charge significantly less during non-peak times in an effort to attract "bargain-hunters."\(^{285}\) The long distance phone industry applies a similar pricing mechanism, assessing higher fees for long distance phone calls during the day and less for long distance calls at night, when there is less stress on the capacity of the lines.\(^{286}\) Congestion pricing is the fundamental pricing scheme for television advertising: advertisers are willing to pay a premium to television networks to air their ads during prime time. Even movie theaters engage in congestion pricing, charging less for matinees, when the demand for movies is low, and more during the evening, when the demand for movies is high. In each of these instances, the pricing structure shifts some use from the peak times to the off-peak time.\(^{287}\)

Under a roadway pricing regime, commuters are assessed fees for using the road. These fees vary based on the demand for the road. During peak hours – i.e. during periods of highest congestion – the charges will be higher that those during non-peak hours. In fact, during low volume hours use of the roadways may be free.\(^{288}\) The use of pricing mechanisms encourages individuals to make choices: They either pay for the use of the limited resource, or they can drive during non-peak hours (spreading the flow of traffic more evenly throughout the day), drive on other, less congested roadways, use other modes of transportation, or even telework or live within the urban core (both of which will eliminate their

\(^{282}\) Id. at 27.
\(^{283}\) See Wahrman, supra note 116.
\(^{284}\) See Strahilevitz, supra note 51, at 1244.
\(^{285}\) See id.
\(^{286}\) See id.
\(^{287}\) See id.
\(^{288}\) See EPA, supra note 151, at 27.
Congestion pricing provides significant advantages over governmental regulations in reducing traffic congestion. First, by applying pricing mechanisms to achieve reductions in traffic congestion, individual commuters are provided considerable discretion for freedom of choice. Governmental regulations impose a particular course of action on a commuter, while market forces enable drivers to choose whether or not to “pay for” the benefit of driving. Individuals can make informed decisions, assessing how much they are willing to pay based on a clear cost of commuting. Unlike the indirect connection between car insurance premiums and road construction, as enacted by the 2000 General Assembly, the use of road pricing provides a clear choice for the consumer, allowing him to adjust his priorities accordingly. Furthermore, while the federal Employee Trip Reduction program applied only to work-related commuting, pricing mechanisms can be applied to all commuter trips. Considering that the total volume on many metropolitan Washington roads is greatest on Saturdays (traditionally a non-work day), a pricing mechanism would be able to address this problem in ways that a work-related regulation would not. Finally, transportation pricing provides a steady stream of income that can defray the costs of road and highway construction, as well as other strategies aimed at reducing congestion.

One common criticism of congestion pricing mechanism is the prospect of creating even more traffic along the roadway by constructing tollbooths. However, the development of electronic toll collection is revolutionizing the way in which tolls are collected on highways. Using electronic and radio toll collecting devices, cars can drive through the tollbooth, without stopping, using a vehicle-mounted transponder which deducts the price of the toll automatically from an existing toll account. This system allows toll collection without creating the traditional bottlenecks that arise through manual collection. According to the Port Authority of New York and New Jersey, which operates an electronic toll collection program, a toll booth operator can collect tolls from 350 cars in an hour, while an electronic system can process up to 1,000 cars in an hour.

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289. See id. at 26-27. See also Strahilevitz, supra note 51, at 1245-45, 1263.
290. See EPA, supra note 151, at 10.
291. See Mother of All Traffic Jams, supra note 276, at A16.
292. See EPA, supra note 151, at 11.
294. See EPA, supra note 151, at 11.
295. See Wahrman, supra note 116, at 182.
296. For a discussion of how one electronic payments system operates, see David Kushner, Cruising Through Toll Plazas with the Windows Rolled Up, N.Y. TIMES, Sept. 9, 1999, at G11.
297. Wahrman, supra note 116, at 183.
hour. In addition, since these electronic collection mechanisms deduct money from commuters' advance toll payments, the state earns not only the price per toll, but also can earn interest on the money prepaid into the system, providing additional revenue for operation and construction programs. Electronic toll booths are not a panacea, however. Their use fuels consumer concerns over monitoring of driver's whereabouts, that "big brother" may be able to track individuals' location by using electronic toll booth data.

In addition to the use of tollbooths for collecting tolls, local authorities could open up HOV lanes to paying commuters by means of high-occupancy/toll lanes (HOT) lanes. The state could sell access for non-HOV commuters, which would enable the drivers to use limited-access highways or lanes. Such a pricing system would still provide commuters with a clear understanding of the costs of commuting, but will reduce the need for electronic or manual tollbooths, thus decreasing congestion at those areas. However, while a HOT lane system will provide reduced congestion at tollbooths, it will also require greater police monitoring at additional costs.

Orange County, California, implemented one of the first congestion pricing programs in the country, on State Road (SR) 91. A private sector consortium worked with the state to construct, finance and operate "ExpressLanes," a pricing program adding four new lanes in the median along a 16 kilometer strip of an existing highway. To encourage carpooling, those vehicles with three or more passengers are exempt from tolls, while all others must pay a toll to use the ExpressLanes. The price of the toll varies according to the time of travel, ranging from $.50 to $2.75 per trip, with a special $15.00 monthly pass that grants users a $.50 discount per trip at any time of day. Although the project is in its infancy, there has been a measurable improvement in congestion on the "free" lanes parallel to the ExpressLanes. During 1996 it is estimated that over 5.7 million vehicles used the ExpressLanes. From 1996 to

302. Warhman, supra note 116, at 199.
303. Id. at 200.
304. Id.
305. Id.
306. Id.
307. Id. at 200-01.
1997, SR-91's volume increased from 25,000 vehicles to 30,000 vehicles, with gross revenues at $14 million.308

San Diego has also instituted a congestion pricing program on Interstate 15.309 In the face of increasing traffic congestion and underutilization of the highway's HOV lanes ("Express Lanes"), the mayor proposed a plan to allow single occupancy vehicles to use the HOV lanes for a fee.310 For the first six months, drivers could purchase a decal for $50 that would allow them access to the HOV lane.311 Thereafter, the local government developed a per-use pricing system, in which solo drivers, when approaching an entrance to the Express Lanes, would see an electronic sign specifying the toll for using the Lanes at that time.312 The toll, which would be paid out of a pre-paid account using an electronic transponder, corresponds to the amount of traffic in the Express Lanes: the more cars, the higher the toll.313 In 1998, tolls averaged between $1.95 and $2.26 per trip, and over 13,000 drivers have obtained the electronic transponders.314

Given the magnitude of the traffic congestion in Northern Virginia and the need not only for an increased transportation infrastructure but also for the development of a non-subsidized market for commuting, any viable congestion pricing system must embrace not merely one stretch of road, but the entire highway infrastructure. Such a proposal will be costly, as the 2020 Plan suggests, but using congestion pricing mechanisms will provide income to the state for construction and maintenance of the state's transportation infrastructure. While the 2020 Plan provides extensive technical proposals for where to lay asphalt, it does not provide an adequate recommendation on the financing of such construction projects.

The Commonwealth can finance these projects through bonds pledged solely against the future earnings of the highways' peak pricing mechanism.315 The General Assembly, however, may not pledge those bonds against the general full faith and credit of the Commonwealth without following the strict requirements of the Virginia Constitution.316 Instead of financing these bonds through general revenues, the Commonwealth may finance a highway bond issuance with a special fund com-

309. Strahilevitz, supra note 51.
310. Id. at 1250-51.
311. Id. at 1251.
312. Id.
313. Id.
314. Id. at 1251-52.
prised of revenues earned entirely from highway use. \(^{317}\) The legislature must not be obligated to appropriate funds to pay this debt, nor may the "general faith, credit, and taxing power of the state" secure the debt. \(^{318}\)

Despite these potential gains, such an alternative seems politically "dead on arrival." Congestion pricing, while reducing the driving subsidy and infusing the transportation system with a market-based approach, will likely be considered nothing more than "just another tax." \(^{319}\) According to one transportation observer in the region, "If you suggest [congestion pricing] in Virginia, the governor would drop-kick you across the river." \(^{320}\)

Congestion pricing, though, is as much of a tax on commuters as charging consumers for sending mail. Because there are collection and distribution costs associated with operating the postal system, the post office charges users a fee for each piece of mail. \(^{321}\) Because those costs increase when the piece of mail is sent via overnight or two-day mail, the post office charges a higher fee. Thus, those who wish immediate delivery of a piece of mail or a package pay the higher fee and incur the expense of faster delivery. By charging fees that vary with the immediacy of the delivery, the post office forces consumers to internalize the cost of sending each piece of mail. Users must weigh the value of the piece of mail they wish to send against the cost of getting that item to their desired recipient in the desired time. If individuals could send as many pieces of mail and as fast as they wish, without having to internalize the collection and distribution costs, the system would be flooded. The post office would not be able to process the amount of "free" overnight mail with no revenue to support its infrastructure. Just as the post office would be financially unable to handle the volume of mail if consumers didn't have to internalize the cost of sending an item, highways currently are over-utilized because drivers are not required to internalize the costs of using the roads.

Drivers, though, may already be engaging in activity that suggests

\(^{319}\) 1998 N. VA. TRANSP. COMM'N, supra note 59, at 24. See also Strahilevitz, supra note 50, at 1247.
\(^{320}\) Alan Sipress, Beltway Collision: States' Divergent Views May Doom Efforts to Fix Artery, WASH. POST, Jan. 30, 2000, at Cl.
\(^{321}\) This example uses the post office, a governmental entity, as the owner of the distribution system. The example applies equally to a private mail operator, such as the United Parcel Service ("UPS") or Federal Express ("FedEx"), who also charges a fee to mail an item. If UPS or FedEx shipped packages for free, they would immediately fail as a business. Although virtually all roads in this country are constructed and maintained by a governmental entity, this Note does not assume that all roads must be operated by the state. Private roads, such as the Dulles Greenway, see infra note 326, may also provide an effective resource in reducing congestion by introducing market forces into highway development and management.
that they are willing to pay to drive on less congested roads. In an effort to get to work faster, drivers often disregard HOV restrictions, calculating that the price of a traffic ticket is less than the value of sitting in traffic.\textsuperscript{322} Paying a traffic ticket is often "little more daunting then paying a toll."\textsuperscript{323} With an estimated violation rate of between 35 percent and 41 percent on the HOV lanes,\textsuperscript{324} it appears that many drivers are prepared to take the risk of paying for the convenience of faster commuting times. Thus, despite the Governor's opposition, the proposal remains a viable mechanism to project the costs of traffic congestion on the users, and create an efficient market for a resource: driving.

\section*{C. Other Solutions}

Congestion pricing is not, nor should it be, the only solution for fixing traffic congestion in Northern Virginia. Rather, it is but one arrow in a quiver of options available to the Commonwealth. There are scores of other strategies, including (but certainly not limited to) the encouragement of entrepreneurial measures to reduce traffic congestion, incentives for teleworking, and the use of financing options such as GARVEE bonds and use of the Tobacco Settlement for targeted public transportation programs. In developing any program, however, it is important to avoid creating subsidies for driving.

Left to their own devices and free from governmental regulations, Americans have a crafty way of developing innovative solutions to society's problems. Allowing entrepreneurs the freedom to compete with existing transportation structures, either through the development of private roads, such as the ExpressLanes on SR-91,\textsuperscript{325} or the region's own Dulles Greenway,\textsuperscript{326} or the creation of private carpooling and taxi services, may create a more efficient transportation system.\textsuperscript{327} For example, the very notion of "slugging," the phenomenon of single drivers picking up fellow commuters in an effort to gain access to HOV lanes, developed and remains entirely free from governmental regulation and has resulted in decreased commuting times for a vast number of Northern

\begin{footnotesize}
\begin{footnotes}
\item[322] See Siress and White, supra note 153, at A1.
\item[323] Id.
\item[325] See supra notes 295-302 and accompanying text.
\item[326] The Dulles Greenway is a 15-mile, privately owned and operated extension of the Dulles Toll Road, connecting the Beltway to Dulles International Airport. The road does not employ congestion pricing, but does provide additional lanes to the airport, with a daily ridership of 30,000 to 35,000. See Hakim and Blackstone, supra note 308.
\item[327] See Pisarski, supra note 36, at 1 (arguing to "extend the option to the private sector to provide jitney-like transit services").
\end{footnotes}
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Virginians.328

Another way to improve traffic congestion is to reduce the demand for traffic with teleworking initiatives.329 The Governor embraced telecommuting in his Innovative Progress proposal.330 With Northern Virginia home to such technology-based companies as American Online, Cable & Wireless, AT&T, MCI Worldcom, and PSInet,331 the region’s employer base provides an excellent opportunity for telecommuting. Even local governments have expressed interest in teleworking initiatives: Fairfax Country officials have pledged to have 900 of its 10,000 employees telework for at least one day a week by the year 2005.332 In 1998, an estimated 250,000 people, totaling 12 percent of the region’s work force telecommuted.333 It is estimated that an additional 470,000 workers in the Washington area could telecommute, decreasing hundreds of thousands daily commuting trips.334 In an effort to encourage telecommuting, the Governor offered a $10 million, two-year package with tax incentives for companies that encourage their employees to telecommute, but the proposal was defeated in the General Assembly.335 Nevertheless, such a proposal, while not individually able to solve the traffic problem in the Commonwealth, provides part of a comprehensive solution.336 As the Chairman of the Metropolitan Washington Council of Governments has noted, “[w]hen we look for a solution to congestion in the region, only transit rivals teleworking in its ability to take drivers off the road.337

Finally, although transit may not solve all of the region’s transportation problems, dedicating the Commonwealth’s resources to improved transit services will help reduce traffic congestion in Northern Virginia. The 2020 Plan has recommended additional Metro service to Centerville, development of Metro from Maryland along the Beltway to Tysons Cor-

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328. See supra notes 67-74 and accompanying text.
329. See Downs, supra note 42, at 62-63. Telecommuting "involves an employee working from a site other than his normal job location and communicating with his normal office via telephone or computer link." 2020 Plan, supra note 2, § 1.5.2.1. The employee may work from home or at a telecommuting center, equipped with phones, computers and other office accessories and services. See id.
330. INNOVATIVE PROGRESS, supra note 183, at 1.
335. Alan Sipress, Initiative to Encourage Telecommuting, WASH. POST, April 12, 2000, at A12.
337. Shear, supra note 332, at V1.
ner, and expansion along the Dulles Corridor with eventual service to Leesburg. These are expensive undertakings with uncertain financing available. Nevertheless, proceeds from the GARVEE bonds, approved by the General Assembly, could be used toward financing these projects, as could the undedicated portion of the Tobacco Settlement. These provide additional funds for transportation purposes, without increasing tax burdens on Virginians.

VII. Conclusion

Northern Virginia has grown considerably in past decades, both in terms of population and prosperity, but despite continued growth, Northern Virginia remains stuck in traffic as a result of an increase in drivers, a rise in the number of drivers commuting alone, and a growing desire to live and work in the suburbs. The region is mired in this sea of cars, even though it boasts one of the nation’s premier transit systems and a strong network of HOV lanes. This traffic problem has created considerable economic, social, and environmental costs that threaten the prosperity, civility, and environment of Northern Virginia. The response from Richmond by both the General Assembly and the Governor has not adequately addressed the region’s transportation problems.

Although individual commuters feel the effects of traffic congestion through the loss of their time, increased fuel costs, and even strains on social and familial relationships, commuters do not internalize all of the costs of their driving. Suburban living is subsidized, as are highways. Such subsidies prevent commuters from feeling the full effects of their behavior.

Thus, any proposal to improve the transportation infrastructure in Northern Virginia must allow commuters to incorporate the costs of their driving decisions. One such mechanism, congestion pricing, charges commuters for their use of highways and other roads. Congestion pricing encourages commuters to use alternative means of transportation, shift to driving in non-peak hours, or even abandon daily commuting by embracing telecommuting.

But no transportation initiative alone will solve Northern Virginia’s transportation woes. Congestion pricing must be one portion of a multi-pronged approach. The Commonwealth must embrace other devices, such as encouraging private solutions and telecommuting or investing in

338. 2020 PLAN, supra note 2, § 2.3.1.
339. The proposal to use the Tobacco Settlement for transportation purposes did not pass the General Assembly, thus leaving those funds undedicated. See Timberg and Sipress, supra note 205, at A1. Securitization of the Tobacco Settlement would provide nearly $600 million “up front” and a continuing stream of $713 million over the next 30 years. See supra note 205 and accompanying text.
practical transit strategies. These additional proposals provide merely a
glimpse of the array of options available to public policy decision-makers. 
There is no one answer, but a combination of these approaches and 
others will help unclog Virginia’s roads and enable her to continue to 
prosper.
The U.S. airline industry generally has been enjoying excellent financial results, courtesy of the robust economy and the resultant demand for travel and air cargo service. There is increasing concern, though, that there is not enough infrastructure to support airline growth, and this summer's extraordinary flight delays and cancellations have raised alarms in Washington. Airline competition, too, is a top priority in Congress and the executive branch. Issues raised by the proposed United-US Airways merger, airport slots, the system of international aviation relationships, and ticket distribution through computer reservations systems and the Internet have dominated airline policymakers this year in Washington and will be an immediate concern to the new Congress and Administration.

**DOMESTIC AIRLINE CONCENTRATION**

A major debate over U.S. airline concentration has erupted over the May 24, 2000 announcement that United Air Lines, the largest U.S. airline, seeks to purchase US Airways, the sixth-largest and a major player in the northeastern U.S.\(^1\) The deal, for which United would pay $4.3 bil-

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1. Initial merger documents were included in the May 30, 2000 Form 8-K filing of US
There has been widespread criticism, though, that the DC Air arrangement by the Justice Department, the Department of Transportation ("DOT" or "Department"), and the European Union.

An interesting element of the deal is the proposed creation of a new airline, DC Air, to purchase and operate many of the Washington, DC assets now operated by United and US Airways. Robert Johnson, the founder of Black Entertainment Television, has agreed to pay $141.2 million for 222 airport slots at Washington Reagan Airport and leases of gates and other airport facilities. The proposal is intended to quell concerns that a combination of United, which dominates Washington Dulles International Airport, and US Airways, a key operator at Washington Reagan, would unduly limit airline competition in the Nation's capital. There has been widespread criticism, though, that the DC Air arrangement is too cozy—Johnson is a US Airways director, and his airline initially would rely on aircraft and crews leased from United and US Airways—and would not truly foster competition.

The DC Air proposal was challenged in late September by a competing bid from Continental Airlines. The unsolicited proposal, which United and US Airways have claimed they are precluded by their agreement from considering, would value the Washington, DC assets at 52% more than DC Air has agreed to pay—$215 million. Other airlines have also expressed an interest in various assets they feel might need to be divested if the United/US Airways transaction were to be approved.

The proposed combination of United and US Airways is still in its early stages and faces serious Congressional and regulatory scrutiny. US Airways shareholders, who were offered a substantial premium for their stock, have overwhelmingly approved the deal. United pilots, though, have some reservations, even though they reached a tentative contract with management after the merger was announced. In Washington, the reception also has been cool in some quarters. In Congress, for example, the Senate Judiciary Committee has held hearings on the matter, and the Senate Commerce Committee passed a controversial resolution with an uncertain future before the full Senate. That resolution would have the Senate express concern about the proposed merger "because of its potential to leave consumers with fewer travel options, higher fares, and lowered levels of service" and state its sense that "the potential consumer detriments from the proposed United Airlines-US Airways merger outweigh the potential consumer benefits." Many expressing concerns about the deal see potential anticompetitive effects not only from the

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United/US Airways merger, but from the possibility that the remaining, major U.S. airlines will feel the need to merge as a result.

AIRPORT SLOTS

This year Congress agreed on an approach to increase the number of take-off and landing “slots” available at four of the most congested U.S. airports—New York’s LaGuardia and Kennedy International (“JFK”) airports, Chicago’s O’Hare International, and Washington Reagan Airport. The number of slots available at these airports has been regulated by the Federal Aviation Administration (“FAA”) for decades, but there has been growing criticism of the system in the last decade, particularly as to the effect of slot restrictions on airline competition. While slots initially were assigned to incumbent airlines, and managed by the FAA, a “buy-sell” rule introduced in the mid-1980s allowed the purchase and sale of slots. New entrants to these airports, though, benefitted little from the slot “market,” and slots generally have concentrated in the hands of incumbents. After several years of difficult negotiations, Congress achieved a consensus on reducing and eventually eliminating most slot restrictions. The result is included in the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century or, as it is colloquially known, “AIR-21.” Slot restrictions at Chicago O’Hare are being phased out entirely after July 1, 2002, and slot restrictions at New York’s LaGuardia and JFK airports will be eliminated after January 1, 2007. AIR-21 also has paved the way to add new services at all four airports immediately through slot “exemptions” and, in the case of Washington Reagan, exemptions from a “perimeter” rule that restricts flights to and from that airport to a 1250-mile radius. Slot exemptions were granted en masse during the spring and summer and required the Department to allocate new domestic service opportunities in a comparative proceeding, a rare exercise indeed.

New York’s slot exemptions are perhaps the most controversial. AIR-21 provides for two types of slot exemptions to enhance competition between now and 2007. To implement these exemptions DOT has issued “blanket” exemptions under which any airline certifying compliance with exemption requirements automatically is entitled to operate new flights. One type of exemption allows “new entrants” and “limited incumbents” there (i.e., airlines that, including the holdings of their codesharing partners and any historical holdings, hold or operate less than 20 slots and

3. See 14 C.F.R. Part 93, subparts K & S.
5. In addition to slot exemptions, the slot provisions of AIR-21 also liberalize slots for international service at O’Hare and provide for the preservation of certain O’Hare and New York air services to smaller airports.
slot exemptions at the airport) to receive slot exemptions for up to a maximum of 20 slots. A second type of exemption is granted automatically for service proposals from any airline that will use aircraft with less than 71 seats and operate nonstop service between the airport and a nonhub or small hub market, so long as the proposal is for new service, for additional frequencies on an existing service, or for upgraded service by regional jets rather than turboprop aircraft. There has been significant interest in the LaGuardia “regional jet” exemptions, largely from major airline incumbents and their commuter partners, but the new entrant/limited incumbent offerings also have shown healthy demand.

The Port Authority of New York and New Jersey is alarmed over the noise, capacity, and safety implications of expanded LaGuardia service. Since DOT has concluded that it is bound by AIR-21 to grant slot exemptions to all qualified applicants, the Port Authority has sought to take matters into its own hands. It announced a moratorium, effective October 1, on new flights at LaGuardia during peak travel hours. Airlines are said to be complying voluntarily, though this moratorium treads heavily on the line between Federal preemption of State and local airline regulation, on the one hand, and the limited right of airport operators under 49 U.S.C. § 41713 to exercise their own “proprietary powers.” In the meantime, discussions between the Port Authority, the airlines, and the Federal government have been convened to resolve the issues.

Congress provided for the same two types of slot exemptions at Chicago O’Hare, but allowed only 30 exemptions for new entrants and limited incumbents (no numeric restriction was placed on “regional jet” exemptions). Recognizing the traditional, statutory “public interest” test, DOT explained to potential applicants that if more than 30 exemptions were sought, it might consider “the service benefits that would be attained, the likely effect on competition, whether the proposed service would likely be operationally and financially viable, and, especially, the practical ability of the carrier to initiate service on a timely basis.” Just over one month later, DOT announced its award of 30 exemptions to carriers seeking a total of 51. Eight slots were made available for Las Vegas service by America West (3) and National (5). Six slots were made available for each of three applicants: Spirit (to serve the Southeast U.S.),

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Passengers traveling in the United States last summer experienced an extraordinary level of flight delays and cancellations, and many believe that the problems will get worse in the coming years. Demand for air travel has been increasing dramatically, buoyed by a vibrant economy and lower airfares. The capacity of the U.S. aviation system, though, has not been able to increase at the same rate, limited by airspace considerations, the effects of weather on air traffic, airport congestion, and airline practices. The results have been frustrating and costly for travelers; the National Business Travel Association estimates that flight delays have cost business travelers alone $5 billion and 1.5 million hours in the past year. While the extraordinary problems experienced this summer have catalyzed government and industry to find solutions, effective relief may still be years away — and some proposals, like partial reregulation of the

industry, are unpalatable to many.12

Air traffic control. The FAA manages U.S. airspace, controlling the flow of air traffic to and from airports and through enroute sectors with a vast network of controllers, radars, voice and data communications, and computers essentially tasked with maintaining a safe distance between aircraft. While the air traffic control (“ATC”) system provides excellent safety for the flying public, some criticize the FAA’s ability to manage change and meet the demands placed on ATC by today’s traffic levels. The FAA is developing a “free flight” program that will increase capacity and operating flexibility for airlines, but this will require significant enhancements in technology, such as aircraft-ground data links. To address concerns that FAA is hampered by Federal procurement and employment requirements, Congress has permitted some reform. However, calls for ATC privatization, as has occurred in Canada, continue. Short-term solutions to the ATC capacity problem include closer cooperation between the FAA and airlines in planning air traffic flows; new methods of dealing with “choke points” and weather; and expanding flights into less congested, lower altitudes, despite the increased fuel consumption.

Airports. Some feel that adding new runways to key airports is the most important step that can be taken to increase system capacity. Yet little expansion is in the works at major airports. Even when airports have enough space to add runways, the surrounding community often opposes expansion, and the process may involve years of legal challenges. United’s CEO recently laid the summer’s capacity problems directly at the feet of “NIMBY” (not in my backyard) community interests who have thwarted airport expansion. Others, though, recall airline opposition to airport expansion, on economic grounds, during the 1990s. If economic and political opposition to airport expansion can be overcome, this year’s AIR-21 legislation should enhance the Federal funding available for aviation infrastructure projects. Options for short-term relief from airport congestion, though, are difficult to identify. As suggested above, airports may start to take “self-help” measures to limit operations. Federal Express Chairman and CEO Fred Smith has proposed Federal re-regulation of airport slots and even auctioning those slots.

Airlines and their passengers also are responsible for aspects of today’s capacity crisis. The “hub-and-spoke” system that evolved after deregulation causes airlines to schedule hub traffic in “connecting banks” of flights that arrive and depart at the same time. This approach causes traffic peaks that exceed the capacities of some airports, even when bad weather is not a factor. Moreover, airlines seeking to respond to con-

12. Aviation Week & Space Technology explored these issues in detail in its September 18, 2000 issue.
sumer demand are changing their operating principles, favoring more frequent service over higher-capacity aircraft and substituting regional jets for slower turboprop "commuter" aircraft, adding to congestion at the higher altitudes where larger jets fly. Disputes between pilots and executives over who will fly the regional jets, too, are part of broader labor-management issues that can affect airline operations, as slowdowns associated with United pilot negotiations demonstrated this summer. Solutions to airline-induced aspects of the capacity crisis that will not affect passengers are difficult to identify. American Airlines has announced that it will seek to "spread out" flights at its Dallas/Ft. Worth hub to lower peak traffic levels that cause congestion. Some have proposed that airlines receive antitrust immunity to discuss similar approaches between themselves across the country.

INTERNATIONAL AVIATION

Over the last few years agreements between carriers of different countries have begun to coalesce into global alliances. This year has seen some interesting turns in the development of the four major alliances. The Star Alliance, anchored in North America by United, Air Canada, and Mexicana, has remained intact and strong.\(^1\) The Oneworld alliance anchored by American Airlines, though, is hitting turbulence.\(^1\) After Canadian Airlines International withdrew from the alliance in the wake of its purchase by Air Canada, American was left with no North American partner. Its transatlantic ally, British Airways, even took a strong interest in a merger with KLM Royal Dutch Airlines; while the talks later failed, the move could have removed British Airways from Oneworld and into the arms of Northwest, Continental, KLM, and Alitalia, who share an unbranded alliance.\(^1\) Delta Air Lines and Aeromexico are the North American anchors for the newly-branded "Skyteam" alliance.\(^1\)

Seven years after the Department granted antitrust immunity to the first modern airline alliance, Northwest/KLM, it continues to immunize selected carrier alliances under 49 U.S.C. §§ 41308-09 to coordinate some price and service-related functions. To promote the signing by other countries of "open skies" bilateral agreements with the U.S. that do not restrict operations by either country's airlines, DOT effectively has condi-

\(^{13}\) Current Star Alliance (members are: Air Canada, Air New Zealand, All Nippon Airways, Ansett Australia, British Midland, Lauda Air, Lufthansa, Mexicana, SAS Scandinavian Airlines, Thai Airways International, Tyrolean Airways, United Airlines, and VARIG Airlines.)

\(^{14}\) Current Oneworld (alliance members are: Aer Lingus, American Airlines, British Airways, Cathay Pacific Airways, Finnair, Iberia, LanChile, and Qantas.)


\(^{16}\) Current SkyTeam (alliance members are: Aeromexico, Air France, Delta, Korean Air, and CSA Czech Airlines.)
tioned antitrust immunity for international alliances on the existence of an open skies bilateral with the foreign partner's homeland. Over the last year DOT has immunized several new alliances in open skies markets. Some of these immunized agreements strengthen existing global alliances, but others do not reflect active, intra-alliance partnerships.

International civil aviation rights generally have been traded between countries on a bilateral basis since the Chicago Convention of 1944, but efforts are underway to attempt sweeping reform. In opening debate on a "move beyond the bilateral aviation system towards the utilization of the multilateral forum as a springboard towards plurilateralism," the U.S. evoked the history of the first Chicago Convention by holding a December 1999 conference on these issues in Chicago. Attended by transportation officials of 93 countries, the Conference resulted in a declaration that countries should work "to identify effective mechanisms to exchange opportunities among like-minded partners, including consideration of regional, multilateral and plurilateral systems" and "to create a framework that will allow additional partners to join in such exchanges of opportunities." 19

Today, though, the United States remains confronted by bilateral limitations in many markets. Negotiations between the United States and the United Kingdom have, if anything, seen the parties drift farther apart in the last year. Both the dismissal of a long-pending application to immunize the American-British Airways relationship, and the failure of British Airways' talks with KLM Royal Dutch Airlines, have been linked to the failure to achieve progress on the U.S.-U.K. bilateral. 20 Across the Pacific Ocean, the opportunity for one new U.S. airline to serve the restricted U.S.-China market has generated substantial interest, particularly in light of the recent U.S. grant of permanent normal trading status to China. 21 Some observers have forecast United Parcel Service to win the coveted designation over applicants American Airlines, Delta Airlines, and Polar Air Cargo.

20. See Joint Application of American Airlines, Inc. and British Airways PLC, Order 99-7-22; see n.14.
THE INTERNET AND COMPUTER RESERVATIONS SYSTEMS

The Internet has transformed the sale of airline tickets, often eliminating traditional travel agent services, lowering transaction costs, and allowing airlines to fill otherwise empty seats through low-price Internet deals. However, some travel industry analysts and government regulators fear that online travel services may engage in anticompetitive practices, such as forming exclusive contracts with airlines or otherwise controlling ticket pricing. The Orbitz travel site announced this year by its five major airline owners (accounting for the vast majority of domestic U.S. traffic) has generated the most concern. Orbitz claims that its business model and new technology will benefit consumers more than the industry’s largest travel "portals," Sabre’s Travelocity.com and Microsoft’s Expedia.com. Critics argue, though, that Orbitz will drive Internet competitors from the market.

Congress and the Department of Transportation have been very interested in how the growing Internet market for airline ticket sales affects airline competition. DOT has expanded its periodic review of Computer Reservations Systems ("CRS") rules, which have regulated the computerized information available to ticket agents since the mid-1980s, to consider Internet issues. This summer it requested comments on the "advisability of regulating airline distribution practices involving the Internet" and, more specifically, "whether airlines are able to participate in on-line services on reasonable terms; whether consumers have a reasonable opportunity to obtain non-deceptive information on airline services and to make bookings, and whether the Internet’s use presents questions about the competitiveness of the airline and distribution industries." Commenters offered a wide range of responses and proposals, from full-fledged application of the CRS rules, to Internet-specific rules, to rules specific to Orbitz, to no regulation at all.

The Orbitz business model was a prime topic of comments, particularly in relation to the availability of discount fares on Orbitz and on other Internet travel sites. This issue was raised earlier last summer after reports that Orbitz would be precluding airline participants from making discount fares available on any Internet travel site other than Orbitz. Orbitz explained how its technological and financial approach will benefit airlines and consumers as well as bring competition to an Internet market now dominated by Expedia and Travelocity. It also stated that its agreements with carriers simply require that they provide to Orbitz any fare offering they carry on their own Internet site or in other media; Orbitz

asserted that this gathering of fare information in one place is procompetitive.

Other commenters, including competitors Expedia and Travelocity, criticized Orbitz, arguing that its business model is designed to ensure that airlines control the Internet distribution of their product. They assert that the Orbitz "most-favored-nation" clause is anticompetitive because airlines will have no incentive to make low fares available on sites other than Orbitz, and those sites therefore will not be as attractive to consumers. One solution posited by the DOT Inspector General would require airlines to make fares available not only to Orbitz, but to any site that offered benefits similar to Orbitz.

Looking beyond Orbitz, comments on the concept of regulating Internet travel sites were mixed. Opponents of any Internet regulation cited the dangers in squelching the development of Internet travel markets and thereby limiting potential competition. Some commenters supported a more limited form of regulation than that applicable to traditional CRSs; one proposal would only require disclosure of or prohibit the bias of Internet flight displays in favor of particular airlines. Commenters also differed on what types of sites—airline-owned, travel agency-owned, or independent—should be regulated. A few commenters even proposed full-scale application of the CRS rules to Internet sites related to existing CRSs or purporting to be neutral.

Despite the interest in Internet ticket distribution, travel agents using traditional CRS systems continue to sell most airline tickets today. However, CRS rules were introduced when the major CRSs were owned by airlines. Therefore, the current rules apply only to "air carriers and foreign air carriers that themselves or through an affiliate own, control, operate, or market computerized reservations systems for travel agents in the United States. . . ."24 Moreover, some special obligations are placed only on airlines, denominated "system owners," that own 5% or more of a CRS. This regulatory structure does not reflect current airline relationships with CRSs. Many airlines now have divested or reduced their CRS stockholdings, and some have formed new links by contracting to provide marketing or technical services to CRSs. Given this change in the CRS market, some commenters have proposed to extend the rules to all CRSs, while others have the rules extended to CRSs marketed by airlines, regardless of ownership. A few commenters have asserted that CRS regulations are no longer required because the airline ownership on which they were predicated is disappearing, and with the rise of Internet sites CRSs are no longer an "essential facility" to which all subscribers must have protected access.

24. Id.
Aviation Liability Regimes in the New Millennium: Beyond the Wild Blue Yonder

Air Carrier Liability For International Air Cargo Shipments In The 21st Century

Warren L. Dean, Jr.*

I. INTRODUCTION

The 1929 Warsaw Convention governs liability for the international carriage of cargo, as well as passengers.¹ This international treaty sets uniform rules as to the rights and obligations between air carriers and users of international air transportation and creates uniformity with respect to transportation documentation, e.g., air waybills. In 1999, the United States ratified amendments to that Convention, known as the Montreal Protocol No. 4 or MP-4, which entered into force March 4, 1999.

MP-4 modernizes the cargo liability regime by allowing carriers and shippers to omit irrelevant information from air waybills and to substitute

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an electronic record for the paper air waybill. This elimination of out-of-date requirements will reduce transportation costs significantly and should save our industry and the U.S. economy nearly $1 billion annually.

MP-4 amends and updates the cargo provisions of the Warsaw Convention and incorporates the terms of The Hague Protocol, to which the United States was not previously a party. As a result, four sets of rules governing international carriage emerged:

- Warsaw Convention as amended by MP-4;
- Warsaw Convention as amended by The Hague Protocol;
- Warsaw Convention, unamended; or
- Applicable domestic rules, for those countries not party to any Warsaw instrument.

A new, uniform international system has been proposed to replace this complex system. On September 6, 2000, the President transmitted to the Senate for its advice and consent a new treaty known as the Montreal Convention. The Montreal Convention updates the rules and incorporates the benefits of MP-4. Observers expect it to enter into force in the next few years and enjoy the same widespread international adherence as the Warsaw Convention has since 1929.

Section II explains how to determine which set of rules applies to a specific transaction. The major changes that MP-4 and The Hague Protocol make to the cargo provisions of the Warsaw Convention are described in Section III.

II. WHICH RULES APPLY TO THE CARRIAGE?

Each of the three sets of Warsaw rules described above—original Warsaw, Warsaw as amended by The Hague Protocol and Warsaw as amended by MP-4—has different rules. The choice of law can be critical to enforcing the carrier’s liability limit and must be carefully observed. To determine which set of rules will apply to a particular transaction, it is helpful to think of the Warsaw system as an edifice, where each set of rules builds on the other. In the case of cargo, there are three steps for determining which set of rules governs a particular international carriage:

1) Identify the countries in which the cargo’s places of departure

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3. The following abbreviations will be used hereafter: “Consolidated Warsaw Convention, 1975” refers to the consolidated provisions of the Warsaw Convention as amended by MP-4 (which includes changes made by The Hague Protocol); “Consolidated Warsaw Convention, 1955” refers to the consolidated provisions of the Warsaw Convention as amended by The Hague Protocol; “Original Warsaw” refers to the original, unamended 1929 treaty.
and destination are located. The place where the contract is
made is irrelevant, and it does not matter in which direction the
cargo flows.

2) Identify which treaties each country is party to.

3) Determine the most recent agreement to which both countries
are party by examining the lists of countries party to MP-4, The
Hague Protocol, and original Warsaw, in this order.4

III. CHANGES TO THE CARGO PROVISIONS

This section outlines the major changes The Hague Protocol and
MP-4 make to the cargo provisions of original Warsaw. Each topic in-
cludes a brief discussion of original Warsaw and how each of these trea-
ties changes the original Convention’s text.

CONTENTS OF THE AIR WAYBILL & CARGO RECEIPT5

Original Warsaw

Original Warsaw requires that 17 separate categories of information6
be included on the air waybill. Much of this information has no commer-
cial significance, i.e., listing the agreed stopping place.7 However, the
failure to include this information on an air waybill or to make out an air
waybill may preclude the carrier from enforcing its liability limits for the
cargo.8

4. Both The Hague Protocol and MP-4 contain provisions that state if a country accedes to
either, the country is party to the earlier agreements. See The Hague Protocol, supra note 2,
arts. XXI, XXIII, 478 U.N.T.S. at 387; Montreal Protocol No. 4, Sept. 25, 1975, arts. XVII, XIX,
(S.D.N.Y. 1985). But see Chubb & Son, Inc. v. Asiana Airlines, 214 F.3d 301, 310-13 (2d Cir.
2000) (holding that United States and South Korea were not in a treaty relationship when
United States had ratified only the original Warsaw Convention and South Korea adhered only
to the Convention as amended by The Hague Protocol).

5. Cargo receipts are not required under original Warsaw and The Hague Protocol. They
are only required if electronic air waybills are used. Warsaw Convention (Convention for the
Unification of Certain Rules Relating to International Carriage by Air), Sept. 25, 1975, art. 5(2),
22 I.L.M. 13, 23 [hereinafter Consolidated Warsaw Convention, 1975]; see also, Montreal
Protocol No. 4, supra note 4, art. III, at 147-53.

6. Original Warsaw, supra note 1, art. 8, at 3016-17.

7. Original Warsaw, supra note 1, art. 8(c), at 3016; see Grey v. American Airlines, 227
F.2d 282 (2nd Cir. 1955), cert. denied, 350 U.S. 989 (1956).

8. Original Warsaw, supra note 1, art. 9, at 3017 (stating “if the carrier accepts goods
without an air waybill having been made out, or if the air waybill does not contain all the particu-
lars . . . the carrier shall not be entitled to avail himself of the provisions of this convention which
exclude or limit his liability). But see Exim Industries v. Pan American World Airways, 754 F.2d
106 (2nd Cir. 1985); Distribuidora Dimsa v. Linea Aerea Del Cobre S.A., 976 F.2d 90 (2nd Cir.
1992); Maritime Insurance Co. v. Emery Air Freight, 983 F.2d 437 (2nd Cir. 1993).
The Hague Protocol

The Hague Protocol specifies only three requirements that must appear on the air waybill. These requirements are:

• An indication of the places of departure and destination;
• An indication of an intermediate stopping place in the territory of another state, but this is only necessary if the places of departure and destination are within the territory of the same Warsaw state; and
• A notice to the shipper that if the carriage involves an ultimate destination or stop in a country other than the country of departure, the Warsaw Convention may be applicable and that the Convention governs and in most cases limits the liability of carriers in respect of loss of or damage to cargo.9

Failure to make out a waybill, or if the waybill does not include the notice described above, generally precludes the carrier from enforcing its liability limits.10

Montreal Protocol No. 4

MP-4, like The Hague Protocol, drastically reduces the extensive cargo documentation requirements of Original Warsaw. This regime only has three requirements that must be included on an air waybill and cargo receipt. These requirements are:

• An indication of the places of departure and destination;
• An indication of the cargo's weight; and
• An indication of an intermediate stopping place in the territory of another state, but this is only necessary if the places of departure and destination are within the territory of the same Warsaw country.11

MP-4 deletes the language that precluded a carrier from availing itself of the Convention's liability limits if the air waybill was either not made out or made out incompletely.12 Failing to do these things does not affect the existence or the validity of a contract of carriage under the

9. Consolidated Warsaw Convention, 1955, supra note 3, art. 8; see also The Hague Protocol, supra note 2, art. VI, at 379.
10. Consolidated Warsaw Convention, 1955, supra note 3, art. 9; see also The Hague Protocol, supra note 2, art. VII, at 379.
11. Consolidated Warsaw Convention, 1975, supra note 5, art. 8, at 25; see also Montreal Protocol No. 4, supra note 4, art. III, at 147-53.
12. Consolidated Warsaw Convention, 1975, supra note 5, art. 9, at 26; see also Montreal Protocol No. 4, supra note 4, art. III, at 147-53.
FORM OF THE AIR WAYBILL

Original Warsaw & The Hague Protocol

Under Original Warsaw and The Hague Protocol, the use of an electronic system is not specifically authorized; the shipper must still use a paper air waybill. The air waybill, of which there must be three originals, must be filled out by the shipper and labeled as Original Warsaw requires (i.e., "for the carrier," "for the consignee"). While the signature of the shipper may be printed or stamped, the signature of the carrier may not be printed.

Montreal Protocol No. 4

If the shipper consents, MP-4 allows carriers to substitute computer entries for paper air waybills. The Protocol states, "Any other means which would preserve a record of the carriage to be performed may, with the consent of the consignor [shipper], be substituted for the delivery of an air waybill." This allows "carriers to expand the electronic processing system which they already use for domestic cargo shipments."

To facilitate the use of this electronic format, other changes to Original Warsaw were made. The shipper may request from a carrier using an electronic processing system a cargo receipt identifying the shipment and access to the information contained in the electronic record. A carrier may not refuse a cargo shipment based on the absence of an electronic processing system at a certain airport.

Of course, a paper air waybill may still be used under MP-4. There are no significant changes made to the form of the waybill under this treaty. The requirements continue to specify the waybill must be made out in three original parts and how each part shall be labeled (i.e., "for the carrier" and "for the consignee"). Although signatures are still re-
required on an air waybill, MP-4 allows both the carrier’s and the shipper’s signatures to be printed. 22 “This permits electronic recordation.” 23

**Delivery of the Air Waybill**

*Original Warsaw & The Hague Protocol*

Original Warsaw and The Hague Protocol require the air waybill be handed over with the goods and a copy of the waybill accompany the goods. 24

*Montreal Protocol No. 4*

MP-4 permits cargo shipments to commence prior to the waybill’s completion. 25 The requirements that the air waybill “be handed over with the goods” and it “shall accompany the goods” are deleted. Further, the requirement that documents “necessary to meet the formalities of customs, octroi or police” be attached to the air waybill is also deleted. 26 These changes facilitate the use of an electronic processing system.

**Liability Limits**

*Original Warsaw*

Original Warsaw holds carriers liable for damage sustained in the “event of the destruction or loss of, or of damage to” cargo. 27 It, however, limits carrier liability for cargo to 250 French gold francs per kilogram. 28 The Convention is silent as to when the conversion to the local currency is to be made: as of the date of contract, the date of loss, the date of judgment, or the date of payment. In the United States, the Department of Transportation’s regulations sanction the use of the last official price of gold ($42.22 per ounce) in order to determine carrier’s liability limits at $9.07 per pound. 29 Thus, the U.S. liability limit is approximately $20.00 per kilogram. The shipper may make a special declaration of value and insure the shipment for a higher value. 30

22. Consolidated Warsaw Convention, 1975, supra note 5, art. 6(3), at 25; see also Montreal Protocol No. 4, supra note 4, art. III, at 147-53.
24. Original Warsaw, supra note 1, arts. 6(1)(2), at 3016.
25. Consolidated Warsaw Convention, 1975, supra note 5, arts. 6(1)(2), at 25; see also Montreal Protocol No. 4, supra note 4, art. III, at 147-53.
26. Consolidated Warsaw Convention, 1975, supra note 5, art. 16, at 27; see also Montreal Protocol No. 4, supra note 4, art. III, at 147-53.
27. Original Warsaw, supra note 1, art. 18, at 3019.
28. Original Warsaw, supra note 1, arts. 22(2)(4), at 3019.
30. Original Warsaw, supra note 1, art. 22(2), at 3019.
The Hague Protocol

The Hague Protocol retains Original Warsaw’s liability limits for cargo and allows the shipper to contract with the carrier for insuring the cargo for a higher value. Unlike Original Warsaw, it specifies the conversion to the local currency is to be made on the date of judgement. The Hague Protocol also provides if, during shipment under one waybill, loss, damage, or delay to part of the shipment affects the value of the whole shipment, the weight of the whole shipment is used in calculating the carrier’s liability.

In addition, The Hague Protocol allows for the possibility of an award of court and legal fees in accordance with local law. This provision, however, is generally not applicable if the carrier makes a written offer to settle that exceeds the eventual damages awarded (excluding any award for litigation or court costs).

Montreal Protocol No. 4

In the carriage of cargo, MP-4 limits the carrier’s liability to 17 Special Drawing Rights (SDRs) per kilogram, approximately $23.12/kg. The SDR is defined as the average value of a defined basket of IMF member currencies, including the U.S. Dollar, British Pound, Japanese Yen, and Euro (replacing the German Mark and French Franc as of January 1, 1999). Its value is published on a daily basis in major newspapers, including the Wall Street Journal. The SDR value used to calculate liability should be established as of the date of judgement. Of course, as with Original Warsaw and The Hague Protocol, the shipper may make a special declaration of value and insure the shipment for a higher value.

MP-4 does maintain some changes regarding liability limits The Hague Protocol made to Original Warsaw text. Both agreements provide if, during shipment under one waybill, loss, damage, or delay to part of the shipment affects the value of the whole shipment, the weight of the

31. Consolidated Warsaw Convention, 1955, supra note 3, arts. 22(2), 22(5); see also The Hague Protocol, supra note 2, art. XI, at 381-83.
32. Consolidated Warsaw Convention, 1955, supra note 3, art. 22(5); see also The Hague Protocol, supra note 2, art. XI, at 381-83.
33. Consolidated Warsaw Convention, 1955, supra note 3, arts. 22(2)(b); see also The Hague Protocol, supra note 2, art. XI, at 381-83.
34. Consolidated Warsaw Convention, 1955, supra note 3, art. 22(4); see also The Hague Protocol, supra note 2, art. XI, at 381-83.
35. Id.
36. Consolidated Warsaw Convention, 1975, supra note 5, art. 22(2)(b), at 31; see also Montreal Protocol No. 4, supra note 4, art. VII, at 155. On March 4, the SDR was valued at $1.3599.
37. Consolidated Warsaw Convention, 1975, supra note 5, art. 22(6), at 32; see also Montreal Protocol No. 4, supra note 4, art. VII, at 155-6.
38. Consolidated Warsaw Convention, 1975, supra note 5, art. 22(2)(b), at 31.
whole shipment is used in calculating the carrier’s liability. Both also provide for the possibility of an award of court and legal fees in accordance with local law.

Breaking the Liability Limits

Original Warsaw & The Hague Protocol

The liability limits for cargo set out in Article 22 of Original Warsaw and The Hague Protocol can be broken if the claimant can prove that:

- The carriage of cargo was not international transportation;
- The carrier either accepts cargo without a waybill having been made out or the waybill fails to include certain information;
- The damage occurred during the surface transportation; or
- The carrier acted with willful misconduct or with "intent to cause damage or recklessly and with knowledge that damage would probably result."

Montreal Protocol No. 4

One of the most important changes made by MP-4 is the liability limit for the carriage of cargo is now essentially unbreakable. The liability limits cannot be exceeded, even if a carrier fails to produce a waybill or the waybill is incomplete. In fact, MP-4 narrows the scope of the willful misconduct provision to exclude cargo. This means that even if a carrier acts with willful misconduct in the carriage of cargo, its liability is

39. Consolidated Warsaw Convention, 1975, supra note 5, art. 22(2)(c), at 31; see also Montreal Protocol No. 4, supra note 4, art. VII, at 155.
40. Consolidated Warsaw Convention, 1975, supra note 5, art. 22(4), at 31-2.
41. Original Warsaw, supra note 1, art. 1, at 3014; The Hague Protocol, supra note 2, art. I, at 373-75.
42. Original Warsaw, supra note 1, art. 9, at 3017 (failure to include the information set out in Article 8 (a) to (i), inclusive, and (q) breaks the liability limits); The Hague Protocol, supra note 2, art. VII, at 379 (failure to include notice on the air waybill that the carriage is governed by the Warsaw Convention breaks the liability limits).
43. Original Warsaw, supra note 1, art. 18, at 3019. See, e.g., Victoria Sales Corp. v. Emery Air Freight, 917 F.2d 705, 707-08 (2nd Cir. 1990).
44. Original Warsaw, supra note 1, art. 25, at 3020.
46. "Such limits of liability constitute maximum limits and may not be exceeded whatever the circumstances which gave rise to the liability." Consolidated Warsaw Convention, 1975, supra note 6, art. 24, at 32; see also Montreal Protocol No. 4, supra note 5, art. VIII, at 157.
47. Consolidated Warsaw Convention, 1975, supra note 5, art. 9, at 26; see also Montreal Protocol No. 4, supra note 4, art. III, at 147-53.
48. Consolidated Warsaw Convention, 1975, supra note 5, art. 25, at 33; see also Montreal Protocol No. 4, supra note 4, art. IX, at 157-59.
limited to 17 SDRs per kilogram (unless the parties contract otherwise). It is expected this strict liability regime will lead to reductions in insurance and settlement costs.49

MP-4 does retain very limited circumstances in which a claimant can break the liability limits for cargo:

- If the carriage of cargo was not international transportation;50 or
- If the damage occurred during the surface transportation.51

**Carrier Defenses**

**Original Warsaw**

Under Original Warsaw, the carrier operates under a rebuttable presumption of carrier fault for injury caused by destruction, loss, damage, or delay in the carriage of cargo.52 The carrier has the following defenses to cargo claims under Original Warsaw:

- It took all necessary measures to avoid the damage or it was impossible for it to take such measures.53
- The damage "was occasioned by an error in piloting, in the handling of the aircraft, or in navigation," and that the carrier and his agents otherwise took all necessary measures to avoid the damage.54

Under these so-called "due care" defenses, the carrier has the burden of proving it was not negligent.

The carrier may also have a defense of comparative or contributory negligence in the carriage of cargo. If the carrier shows the claimant contributed to the damage, local law determines whether the carrier should be exonerated from liability.55

**The Hague Protocol**

The Hague Protocol operates in the same manner as Original Warsaw, except it deletes the carrier defense that the damage "was occasioned by an error in piloting, in the handling of the aircraft, or in navigation."56 The Hague Protocol retains the language of Original Warsaw.

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50. Consolidated Warsaw Convention, 1975, supra note 5, art. 1, at 23-4.
52. Original Warsaw, supra note 1, arts. 18(1)(19), (20), at 3019.
53. Original Warsaw, supra note 1, art. 20(1), at 3019.
54. Original Warsaw, supra note 1, art. 20(2), at 3019.
55. Original Warsaw, supra note 1, art. 21, at 3019.
56. Consolidated Warsaw Convention, 1955, supra note 3, arts. 18(1), 19, 20; *see also* The Hague Protocol, supra note 2, art. X, at 379.
saw that the applicability of a comparative or contributory negligence regime is left to the court’s discretion, pursuant to local law.\textsuperscript{57}

\textit{Montreal Protocol No. 4}

Under MP-4, the carrier is strictly liable for the loss of, or damage to, cargo.\textsuperscript{58} The carrier, however, can avoid strict liability if it proves the damage “resulted solely” from:

- An inherent defect, quality, or vice of the cargo;
- Defective packaging performed by one other than the carrier or its agents or servants;
- An act of war;
- Acts of public authority in the entry, exit, or transit of the cargo.\textsuperscript{59}

The “resulted solely” language makes these defenses unavailable to the carrier if the carrier is responsible in part for the damage.

Under MP-4, the carrier is not strictly liable for damage caused by delay.\textsuperscript{60} Instead, MP-4 retains the rebuttable presumption of carrier fault contained in Original Warsaw and The Hague Protocol.\textsuperscript{61} The carrier, however, has the “due care” defense for damage claims caused by cargo delay. If the carrier can prove “that he and his servants and agents have taken all necessary measures to avoid the damage or that it was impossible for them to take such measures,” it avoids liability.\textsuperscript{62}

Finally, MP-4 adds a comparative negligence defense for the carriage of cargo. Thus, if the carrier proves that damage to the cargo was caused in part by the negligence or other wrongful act of a person claiming compensation, the carrier shall be exonerated from his liability to the extent of the claimant’s fault.\textsuperscript{63} Original Warsaw and The Hague Protocol left the applicability of a comparative or contributory negligence regime to the carriage of cargo to the court’s discretion, pursuant to local law.\textsuperscript{64}

\begin{footnotesize}
\textsuperscript{57} Original Warsaw, \textit{supra} note 1, art. 21, at 3019.

\textsuperscript{58} Consolidated Warsaw Convention, 1975, \textit{supra} note 5, art. 18(2), at 28; see also Montreal Protocol No. 4, \textit{supra} note 4, art. IV, at 153.

\textsuperscript{59} Consolidated Warsaw Convention, 1975, \textit{supra} note 5, art. 18(3), at 28; see also Montreal Protocol No. 4, \textit{supra} note 4, art. IV, at 153.

\textsuperscript{60} Consolidated Warsaw Convention, 1975, \textit{supra} note 5, arts. 19, 20, at 29; see also Montreal Protocol No. 4, \textit{supra} note 4, art. V, at 155.

\textsuperscript{61} This provision was retained because imposing strict liability for delay is “inappropriate and indeed harmful” since “a main cause of delay is adherence to safety requirements.” Fitzgerald, \textit{supra} note 49, at 302, n.93.

\textsuperscript{62} Consolidated Warsaw Convention, 1975, \textit{supra} note 5, art. 20, at 29; see also Montreal Protocol No. 4, \textit{supra} note 4, art. V, at 155.

\textsuperscript{63} Consolidated Warsaw Convention, 1975, \textit{supra} note 5, art. 21(2), at 29; see also Montreal Protocol No. 4, \textit{supra} note 4, art. VI, at 155.

\textsuperscript{64} Original Warsaw, \textit{supra} note 1, art. 21, at 3019.
\end{footnotesize}
STATUTE OF LIMITATIONS AND OTHER RELEVANT TIME PERIODS

Under all the treaties, the statute of limitations on the right to damages is two years, which runs from the date of arrival, the date the aircraft ought to have arrived, or the date on which the transportation stopped.65 Each agreement provides that receipt of the goods by the person entitled to delivery constitutes prima facie evidence the goods were delivered in good condition and in accordance with the air waybill.66

Original Warsaw

In the case of damage to cargo, the recipient must complain within seven days of the date of receipt of the damaged cargo.67 For delay, the time period for complaining is within 14 days of the date the goods were finally placed at the recipient’s disposal.68 There is no limit (other than the two years to bring suit) for claims based on non-delivery of cargo.

The Hague Protocol & Montreal Protocol No. 4

Under The Hague Protocol and MP-4, the recipient has 14 days from receipt within which to complain about damage and 21 days from receipt within which to complain about delay.69 There is no limit (other than the two years to bring suit) for claims based on non-delivery of cargo.

IV. CONCLUSION

The conditions under which liability for the international carriage of cargo is administered are subject to a complex system of legal rules. With the Senate’s ratification of The Hague Protocol and MP-4, these legal rules have been modernized; however, any one of four sets of legal rules may be applied in a particular case. Moreover, new legal issues will arise when courts are faced with issues relating to the application of MP-4.

Nonetheless, the changes in the treaty will facilitate the carriage of goods by air. In this unprecedented era of international trade and the increasing role of e-commerce, these changes will undoubtedly play a significant role in the further development of the air cargo industry and the global economy. Therefore, the updated legal regime established by MP-4 must be understood to take advantage of its benefits.

65. Original Warsaw, supra note 1, art. 29(1), at 3021; Consolidated Warsaw Convention, 1975, supra note 5, art. 29(1), at 34.
66. Original Warsaw, supra note 2, art. 26, at 3020; The Hague Protocol, supra note 2, art. XV, at 383-84; Consolidated Warsaw Convention, 1975, supra note 5, art. 26, at 33.
67. Original Warsaw, supra note 1, art. 26(2), at 3020.
68. Id.
69. The Hague Protocol, supra note 3, art. XV, at 383-84; Consolidated Warsaw Convention, 1975, supra note 5, art. 26(2), at 33.
The Economy Class Syndrome and Air Carrier Liability

Ruwantissa Abeyratne*

1. INTRODUCTION

There is a sustained record of medical research that brings to bear a disturbing fact in long distance travel, that particularly air travel may cause venous thromboembolism, or deep vein thrombosis – commonly called the economy class syndrome. Thrombosis, which is the medical term used for the formation of a blood clot in the heart or in a blood vessel,¹ can be triggered, according to medical studies, by long periods of confinement in bed or cramped airline seats, which reduces circulation, causing blood to pool and clot.

Normally, the formed elements of the blood – the red and white blood cells and platelets – move along in the center of the stream in a blood vessel. If there is alteration from normal flow, which may be caused inter alia by inactivity of a person’s limbs for long periods of time, the platelets and blood cells may scrape along the blood vessel lining. Abnormally large numbers of platelets so assembled may cause an increased tendency of the blood to coagulate.² There are of course other symptoms shown as a result of long confinement to small spaces, such as leg swell-

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2. Id.
ing, pulmonary embolism, strokes, and even death.³

In 1856, Scientist Rudolf Virchow conducted detailed autopsies on 76 patients, 11 of whom had died from massive thrombi in the pulmonary arteries. He identified through scientific methodology that 10 of the 11 patients' thrombi in the pulmonary arteries had started in the legs and concluded that arterial thrombosis had emanated from the leg veins. This led to the development of the famous "Virchow’s Triad" of causation of thromboembolism: trauma to the vein wall; decreased velocity of venous blood flow; and increased blood coagulability.⁴ The syndrome was first identified and described in 1940 as a result of a finding that during the War, cramped seating in air raid shelters for prolonged periods during the London "blitz" had frequently resulted in pulmonary embolisms.⁵ Embolisms related to air travel were first described in 1946 after a 54 year old man had developed Thrombophlebitis after sitting for 14 hours during a flight from Boston to Venezuela.⁶ There have been several subsequent cases of Thrombophlebitis reported as a consequence of air travel.⁷ It is reported that at least over 20 of the cases reported in the research have been definitely linked to air travel.⁸

It is an incontrovertible fact that air travel at high altitudes and long durations may involve stagnant recycled air, fluctuations in cabin pressure and jet lag. The passenger may end up at his destination dehydrated and disoriented. Additionally, smaller seat pitch, particularly in economy class, may seriously affect the circulatory process, causing thromboembolism. It is reported that the Aerospace Medical Association Journal in 1988 concluded that the risk of fatal pulmonary embolism was at least 10 times greater after travel than before, linking the risk to long periods of

⁴. Rudolf Virchow, Gessamelte Abhandlungen zur Wissenschaftlichen 324(Frankfurt: Meidinger 1856).
⁵. K. Simpson, Shelter Deaths from Pulmonary Embolism, 2 LANCET, 744 (1940).
sitting and cramped seating.  

A. A CASE STUDY

In 1998, a study was conducted at Tripler Army Medical Center, Honolulu, Hawai, which reviewed hospital records of patients discharged over a 4-year period with a final diagnosis of venous thromboembolism. The term venous thromboembolism was broadly used in the Study to describe a continuum of diseases including deep vein thrombosis, pulmonary embolism or both. Inpatient medical records of 207 patients with a discharge diagnosis of venous thromboembolism were available for analysis and review. Of the patients reviewed, 134 met the case criteria for venous thromboembolism and of those 66 patient records reflected some information evidencing presence or absence of travel. Of these 66, 33 patients had travelled one month prior to the onset of the thromboembolism and 8 patients had travelled within a 6-month period. All 33 patients (none of whom was an aircraft crew member) had travelled at least 4 hours non stop. Their profiles showed that 8 had onset of thromboembolism on the first day of travel, 4 had onset during the journey and 27 had onset symptoms on or before travel day 15. The Study also took into consideration a study which had revealed that, at London’s Heathrow Airport, of the 104 natural deaths reported to the Coroner from 1979 to 1982, 12 had been attributed to pulmonary embolism. An earlier 1992 study, which had reviewed 25 patients with travel associated venous thromboembolism, had noted that in 7 patients (6 of whom travelled by air) the onset of symptoms had occurred during travel or on disembarkation, and the onset of symptoms had occurred within 96 hours in 23 patients. Another 2 patients had experienced onset of symptoms within a 10 to 12 day period after travel. All had travelled non stop for at least 3 hours.

The results of the study concluded that air travel appeared to be a significant risk factor for venous thromboembolism. However, it is important to bear in mind that the study was a retrospective one which had no way of determining the true number of travellers in the various thromboembolism patients. There was also the danger that the patients considered by the Study may have been under diagnosed. Perhaps the most serious

9. Id. at 3.
11. Id. at 155.
Thus, the question arises as to whether it is even justifiable to call symp­
link with air travel

toms of venous thromboembolism consequent to flight “the economy class syndrome.”

The Study by no means is conclusive medical evidence that pro-
longed air travel inevitably causes venous thromboembolism. At best, it
concludes that long periods in the air within confined spaces, without the
movement of limb may be a risk factor towards causing deep vein throm-

bear important legal issues pertaining to the liability of the air carrier
who knows or ought to know of this particular risk factor. Inasmuch as
the carrier is required to take all possible measures to ensure clean air in
the cabin, consistent cabin pressure and the ultimate safety of the flight –
all of which portend risk factors if not attended to, a restricted seat pitch
may be a potential hazard to the health of the passenger, as the foregoing
study reveals. Furthermore, the question also arises as to whether the
carrier’s failure to advise the passenger of the ill effects of being cramped
in a seat without moving would give rise to the carrier’s liability.

This article will address liability issues of the carrier in this regard.

2. Legal Liability of the Carrier

As the discussion below will reflect, the most fundamental postulate
of air carrier liability for death or injury caused to a passenger should
involve an accident if liability were to be decided under applicable treaty
law. As to whether the term “accident” means an unexpected or unus-
usual event or happening, in which case it may be arguable that if injury
were to ensue as a result of the passenger’s own internal reaction to the
usual, normal and expected operation of the aircraft, where, as a matter
of course, the passenger has to be seated in cramped space for long peri-
ods of time, the carrier may not be liable. However, if it can be argued

14. The term “economy class syndrome” was ironically coined by a business class traveller.
that the act of the carrier in providing seats known to be too small or crowded together and not warning the passenger of the hazards of travelling in confined spaces for long periods of time, brings about results to the average passenger who has no knowledge of the risk involved, it would not be surprising to find a court awarding damages against a proven incidence of venous thromboembolism which results after flight.

A somewhat delicate balance is called for in determining whether, in the absence of cogent evidence that a restricted seat pitch in the economy class of an aircraft would inevitably cause venous thromboembolism in passengers; an exigency involving the affliction of a passenger would be considered “unexpected” and therefore an accident, or whether the carrier knows or ought to know of the risk and takes necessary measures to avoid the danger or risk, in which case absence of such measures would impute to the carrier a certain intent, proving his wilful misconduct. An accident is purely an “inappropriate and unexpected happenstance” which does not happen as a matter of course. Sudden turbulence or the sounding of a smoke alarm in the cabin which is unexpected, are typical profiles of an accident. If such were the case, would it be reasonable to consider the infliction of a passenger by venous thromboembolism an accident?

A probable approach that a common law court may adopt is to treat a proven instance linked to air travel as an accident in the same way as in instances of turbulence. Of course, in similar vein, the carrier may be expected to issue prior warning and advice as to how to cope with the risk. In such circumstances the analogy of an accident and possible negligence that would take the issue beyond a mere accident would be a distinctly logical sequence.

The new Montreal Convention of 1999, in Article 17 provides that the carrier is liable for damage sustained in case of death or bodily injury of a passenger upon condition only that the accident which caused the death or injury took place on board the aircraft or in the course of the operations of embarking or disembarking. Liability of the carrier is limited on the basis of strict liability at 100,000 Special Drawing Rights. Furthermore, this limit cannot be exceeded if the carrier proves that he and his servants or agents were not negligent or did not commit a wrongful act or omission in connection to the injury or such damage was solely caused by the negligence of a third party.

The Montreal Convention, which is yet to come into force, seemingly makes provision to recognize carrier negligence both in terms of the pro-

19. Id. Article 21.2 a) and b).
vision of abnormally small seat pitches in his aircraft and in regard to his neglect in warning passengers of potential hazard of prolonged air travel in restricted areas and not advising passengers of ways and means to mitigate possible risk of venous thromboembolism.

The currently operative legal regime in this area is governed by the Warsaw Convention of 1929 which provides that the carrier is liable for damage sustained in the event of death or wounding of a passenger or any other bodily injury suffered by a passenger, if the accident which caused the damage so sustained took place on board the aircraft or in the course of any of the operations of embarking or disembarking.\textsuperscript{20} Of course, on the face of the provision, the words "wounding" and "bodily injury" do not necessarily lend themselves to be associated with infection. \textit{A fortiori}, according to the Warsaw Convention, the wounding or injury must be caused by "accident" which is not typically a synonym for "infection." However, the recent decision in \textit{El Al Isreal Airlines Limited v. Tseng} introduced a new dimension to the word "accident" under the Warsaw Convention by giving it pervasive scope to include such acts as security body searches performed by the airlines.\textsuperscript{21} In this context, the word "accident" loses its fortuity and it becomes applicable to an expected or calculated act. Thus, if an airline knows or ought to have known that an infected passenger was on board its flight, causing others on board to be infected, it may well mean that the act of the airline would be construed by the courts as an accident within the purview of the Warsaw Convention.

\section{A. Liability Under the Warsaw Convention}

It is an incontrovertible principle of tort law that tortious liability exists primarily to compensate the victim by compelling the wrongdoer to pay for the damage he has done.\textsuperscript{22} The second international conference on Private International law\textsuperscript{23} which led to the introduction of the Warsaw Convention\textsuperscript{24} obviously followed this basic principle but deviated to align the provisions of the Warsaw Convention to existing exigencies of civil aviation. The Conference based its approach toward air carrier liability on the fault theory of tort—which has its genesis in the Industrial Revolution where common law adopted the principle that a wrong doer or tortfeasor must be at fault for him to be compelled to compensate the

\textsuperscript{20} Convention for the Unification of Certain Rules Relating to International Carriage by Air, Oct. 12, 1929,
\textsuperscript{23} Warsaw Convention, Oct. 12, 1929, 49 Stat. 3000.
\textsuperscript{24} Convention for the Unification of Certain Rules Relating to International Carriage by Air, supra note 20.
injured. The fault theory was introduced as a solution to the problems caused by injury to persons by the proliferation of machinery during the industrial revolution and on the basis that those responsible for introducing faulty machinery should pay those who are injured by them.

One of the fundamental deviations from the fault liability principle in the context of the Warsaw Conference was that, instead of retaining the basic premise that the person who alleges injury must prove that the injury was caused by the alleged wrongdoer, the Conference recognized the obligation of the carrier to assume the burden of proof. This was done seemingly to obviate the inherent difficulties which are posed in situations of air carriage where it would be difficult, if not impossible, to determine fault from evidence which is reduced to debris and wreckage after an aircraft accident.

The Conference succinctly subsumed its views on liability through the words of its Reporter:

These rules sprang from the fault theory of the liability of the carrier toward passengers and goods, and from the obligation of the carrier to assume the burden of proof. The presumption of fault on the shoulders of the carrier was, however, limited by the nature itself of the carriage in question, carriage whose risks are known by the passenger and consignor. The Conference had agreed that the carrier would be absolved from all liability when he had taken reasonable and ordinary measures to avoid the damage... one restriction on this liability had been agreed upon. If for commercial transactions one could concede the liability of the carrier, it did not seem logical to maintain this liability for the navigational errors of his servants, if he proves that he himself took proper measures to avoid a damage.25

The Conference went on to suggest that if the damage arises of an "intentional illicit act" for which the carrier was liable, he should not have the right to avail himself of the provisions of the Convention.26 The words "intentional illicit act" were later changed to "willful misconduct" by the Conference at the request of the British delegate Sir Alfred Dennis and the Greek delegate Mr. Youpis.27

Deeming that it was not equitable to impose absolute liability upon the carrier, the Conference admitted that the carrier's responsibility would be limited to liability limits of monetary value and, furthermore, he could be freed of all liability when he had taken the reasonable and normal measures to avoid the damage.28

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26. Id. at 58.
27. Id. at 59-66.
28. Id. at 251-52.
The Conference obviously based the Warsaw Convention on tort law principles of liability, where tort duties are primarily fixed by law in contrast to contractual obligations which can arise only from voluntary agreement.\(^\text{29}\) Sixty-six years after the Warsaw Convention was introduced, however, there has been a palpable shift towards introducing a contractual element by the 1995 IATA Inter-carrier Agreement which, although not having the legal status of a Convention but remaining an agreement among air carriers, retains the basic presumption of air carrier liability of the Convention but rejects the liability limitations of the Warsaw Convention and its Protocols by recognizing that the compensatory amount that a carrier should pay for personal injury or death may be contractually agreed upon by the carrier and claimant according to the law of the domicile of the claimant.

Admittedly, this is not what the Conference envisaged. However, it must be borne in mind that the Conference recognized that the Warsaw Convention applied only to the unification of “certain” rules—as proposed by the delegate of Czechoslovakia. Also, the underlying purpose of the IATA initiative—which is to allow for greater flexibility for insurance underwriters on the one hand, and more leverage for airlines in their risk management on the other—is fundamentally consistent with the views of the Warsaw Conference. At the same time, the Convention does not preclude the right of a carrier to enter into agreement with a claimant on the issue of compensation. The Warsaw Conference itself recognized that:

in reality, this Convention creates against the air carrier an exceptional system, because in the majority of the countries of the world, contracts of carriage are concluded under a system of free contract. The carrier is free to insert in the contract clauses which exclude or reduce his liability, as much as for goods as for travellers . . . .\(^\text{30}\)

The Inter-Carrier Agreement which was approved by IATA carriers at their Annual General Meeting in Kuala Lumpur in October, 1995, claims to preserve the Warsaw Convention but carriers agree to take action to waive the limitation of liability on recoverable compensatory damages in claims for death, wounding or other bodily injury so that recoverable compensatory damages may be determined and awarded by reference to the law of the domicile of the passenger. This provision in effect introduces a contractual element to an otherwise pure tortuous liability regime. The agreement attacks the monetary limits of liability of the Convention and retains all other provisions of liability—which are

\(^{29}\) Fleming, supra Note 22, at 2.

\(^{30}\) Second Int'l Conf. on Private Aeronautical L., supra note 25, at 47.
essentially the presumption of liability of the carrier and his defenses against such a presumption.

With the rejection of the liability limits, the provision relating to breaking such limits in instances where the carrier is guilty of wilful misconduct has also been rejected. Therefore, effectively, certain elements of tortious liability that the Convention had have been expunged from the Convention. In the final analysis, the principle of fault which the architects of the Warsaw Convention entrenched into the Convention has been rejected by the IATA agreement. Lee Kreindler observes:

The fault system is extremely important to the public. It is a public protection.

It has improved aviation safety and security. While I don't profess to understand what the international airlines are now up to, it is clear to me that one of their purposes is to put an end to the tort system, in international airline transportation, at least as between the passenger and the airline, and that I oppose. 31

Kreindler points out the ambivalence of the IATA Agreement in designating the law of the domicile of the passenger as being applicable for the award of compensatory damages, while it retains the provision of the Warsaw Convention which designates jurisdictions. 32 Sean Gates picks up the issue of “domicile” and observes that the IATA agreement refers to Article 28 of the Warsaw Convention which it claims relates to “domicile” but in actual fact does not. In fact, Gates questions whether “domicile” would cover personal or corporate domicile and holds that this is another area where the IATA Agreement has not shown clarity. 33

B. GENERAL PRINCIPLES

Generally in law an accusation has to be proved by the person who alleges it. Therefore, a presumption of innocence applies to an accused person until he is proven guilty. However in the instance of carriage by air of passengers the airline is presumed liable if a passenger alleges personal injury or if his dependants allege his death as having been caused by the airline. 34 Of course the airline can show in its defence that it had taken all necessary measures to avoid the damage 35 or that there was

32. Id. at 6.
33. Sean Gates, IATA Inter Carrier Agreement—The Trojan Horse for a Fifth Jurisdiction?, LLOYD'S AVIATION L. vol. 14 no. 23, Dec. 1, 1995, at 1, 2.
35. Id. at 116.
contributory negligence and obviate or vitiate its liability. This curious anomaly of the law imposing on the airline a presumption of liability is contained in the Warsaw Convention, Article 17 of which states:

The carrier shall be liable for damage sustained in the event of the death or wounding of a passenger, if the accident which caused the damage so sustained took place on board the aircraft or in the course of any of the operations of embarking or disembarking.

To control the floodgates of litigation and discourage spurious claimants the Convention admits of certain defences the airline may invoke and above all limits the liability of the airline to passengers and dependents of deceased passengers in monetary terms. The Warsaw System therefore presents to the lawyer an interesting and different area of the law which is worthy of discussion.

Article 17 of the Warsaw Convention needs analysis in some detail in order that the circumstances in which a claim may be sustained against an airline for passenger injury or death be clearly identified. Further, the defenses available to the airline and the monetary limits of liability need also to be discussed.

"Accident" in Air Law

In commercial aviation, the word "accident" is sometimes given as broad a definition as those just considered. The Chicago Convention of 1944 defines accident as "occurrence associated with the operation of an aircraft." The Warsaw Convention in Article 17 speaks of the "the accident which caused the damage" reducing the accident to the cause rather than to the death or injury. The United States Supreme Court has held that an accident must be unexpected and external to the passenger. It is not sufficient that the plaintiff suffers injury as a result of his own internal reaction to the usual, normal and expected operation of the aircraft. Such incidents as hijackings, terrorist attacks and bomb threats, have been considered to be accidents, together with aircraft crashes. An accident could even involve such lesser incidents as tyre failure on take-off and the supply of infected food causing food poisoning of

36. Id. at 117.
38. Shawcross, supra note 34, at 153.
40. Id.
42. Arkin v. Trans Int'l Airlines Inc, 19 Avi Cas 18, 311 (E.D.N.Y. 1985).
In 1982 a passenger travelling from New York to Manila suffered a massive coronary seizure in flight. The allegation against the airline was that as a result of the failure of the employees of the airline to render medical assistance the patient’s condition suffered irreparable deterioration resulting in death. Responsibility devolved upon the court to fit this incident to that of an “accident” within the meaning of the Warsaw Convention. The court readily did this by deeming that the word “accident” in air law in this instance was not the heart attack itself but the failure on the part of the airline to render medical assistance in flight. The Court said, “After all, it is no different from an airline’s liability in a hijacking incident where the accident is not the acts of the hijackers but the alleged failure on the part of the carrier to provide adequate security.” The airline was accordingly found liable for damage so sustained by the deceased passenger.

In a contemporaneous case, a passenger brought action in the US District Court of Puerto Rico for a hernia sustained by the lifting of a heavy suitcase from the conveyor belt. A baggage handler of the defendant airline had refused to carry the suitcase and the plaintiff had solicited aid from her relatives who were not allowed to enter the baggage area by a guard on duty. The action against the airline was dismissed by the court primarily on the grounds that the plaintiff did not suffer an unexpected injury as she had previously undergone a gall bladder operation and would have known her condition to be delicate.

In 1983, a medical practitioner suffering from a head cold and respiratory infection boarded an aircraft. He disembarked completely deaf. The plaintiff averred that he suffered discomfort in his ears at descent probably due to sudden pressure changes that may have occurred. He alleged that the airline knew or ought to have known that passengers suffering from head colds would risk losing their hearing. In addition, it was alleged that the airline owed a duty to warn the passenger that it was dangerous to travel with a head cold. The airline denied the existence of such a duty. The U.S. District Court for the Southern District of New York reasoned that it would be incongruous to impose a duty on an airline to envisage all possible human afflictions and assess their effect on air travel and warn passengers accordingly. In any event, the airline was in this instance not aware that the passenger was suffering from a head cold. In this decision the court clearly indicated that the presumption of

liability imposed by the Warsaw Convention on airlines and the highest-degree-of-care doctrine applicable thereto should not be taken advantage of by plaintiffs. 46 Similarly there would be no cause of action against an airline where a passenger’s ill health is aggravated due to acceleration at take off or deceleration at landing. 47

In April 1984 an intermediate Appellate Court in New York was faced with the task of deciding whether an airline can be held liable for the death of a passenger who chokes to death owing to his own intoxication. The decision was in the affirmative and the court in enforcing judgment against the airline drew the analogy between a dispensing druggist and an airline. The airline serves its passengers with drink and thus undertakes the responsibility not to serve in excess and to exercise reasonable care for the safety of passengers. In addition, in the event of excessive intoxication of a passenger, the airline is under a legal duty to render such medical assistance as is necessary to revive the passenger or in any event to keep him out of danger. In the light of this principle, the airline has a further duty to protect others from a drunken passenger who gets out of control. 48

In Air France v. Saks 49 the United States Supreme Court interpreted the word “accident” in the context of the Warsaw Convention to mean an occurrence whereby a passenger is injured owing to an unexpected or unusual event or happening that is external to the passenger, 50 and that where the injury results from the passengers own internal reaction to the normal exigencies of air travel such injury would not be construed as having resulted from an accident. In this case, the plaintiff was a passenger on an Air France flight from Paris to Los Angeles. During the descent the plaintiff suffered severe pain in her left ear which was aggravated thereafter. The plaintiff, who consulted a doctor after the plane landed, was informed that she was rendered completely deaf in her left ear. The plaintiff brought an action in a California State court on the grounds that her hearing loss was due to the negligent maintenance by the airline of the pressurization system of the aircraft which transported her. Air France moved that the allegation of the plaintiff cannot be sustained within the meaning of the word “accident” of Article 17 of the Warsaw Convention was meant to be an unusual and unexpected happening. Further, the airline alleged that at all times the pressurization system of the

50. Id. at 1345.
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a aircraft had been normal. The District Court granted summary judgment to the plaintiff on the basis that “accident” in Article 17 was meant to be an unusual and unexpected happening. The Supreme Court rejected the rationale adopted by the lower court on the ground that Article 17 refers to an accident which causes an injury and therefore it is the cause and not the effect that is the determinant. Accordingly, the Supreme Court held that air carriers would be liable only if an accident caused the passenger injury. Thus, an injury that was in itself an accident was insufficient to satisfy the requirements of Article 17 of the Warsaw Convention.

There will be no accident if in a normal flight free of turbulence a passenger suffers discomfort from a condition he suffers from such as a hiatus hernia or thrombophlebitis. In Abramson v. Japan Airlines an airline passenger suffered an aggravation of a pre-existing hiatal hernia shortly after take-off from Anchorage on a flight to Tokyo. The passenger, who was under medication for his condition for six years, had not informed the carrier prior to boarding. The passenger, however, claimed that had he been given occupation of a few empty seats he could have massaged his stomach to normalcy. The airline had claimed that there were no empty seats in flight, contrary to the passenger’s claim that there were in fact nine empty seats in flight in the first class section of the aircraft. The passenger claimed that his hernia attack constituted an “accident” within the provisions of Article 17 of the Convention. The court rejected this claim and held that the plaintiff’s difficulty was not in any way related to his transportation by air and accordingly, there was no accident under Article 17.

It would have been interesting if the court applied the principle of Seguritan’s case where failure to render medical assistance by the airline was construed as falling within the purview of the word “accident”. After all, the airline did not make any attempt at rendering assistance to the passenger in Abramson’s case. The court’s reasoning in the latter case contradicts the earlier decision and leads to a logical absurdity. The intention of the Convention was seemingly to provide a uniform system of compensation for passengers bringing claims against airlines operating international air services. To suggest that the failure of an airline to render required assistance is excusable under the Convention is completely at odds with earlier decisions and also arguably with the intention and purpose of the Convention itself.

Insofar as the word “wounding” of a passenger in Article 17 is concerned, courts have initially held that such would only be in instances of

"bodily injury" and consequently would be palpably conspicuous physical injury. This excluded mental injury. However, a later decision held that types of injuries enumerated should be construed expansively to encompass as many types of injury as are colourably within the ambit of the enumerated types including mental and psychosomatic injuries. This decision has been followed consistently in a strong line of cases. In the United States, mental injury is now entrenched in most jurisdictions as an independently compensable head of damages. As indeed C.J. Burnett said in Medlin v. Allied Investment Co:

Memory and empathy tells us that "hurt" perceived through sensory media other than that of touch may be just as painful if not more than the hurt perceived by the tactile sense. Moreover, physicians tell us that the consequences of invasion of the person accomplished through the perceptory media of sight and sound may be also as damaging if not more damaging than invasions of the persons accomplished through the sense of touch. Indeed, therefore, mental anguish or injury would now be recognized by most jurisdictions, as falling within the purview of "wounding" of a passenger under Article 17 of the Warsaw Convention.

It is apparent from the cursus curiae that a stringent standard of proof of the nature of the occurrence is insisted upon by the courts if liability of the carrier is to be established under Article 17 of the Warsaw Convention. In Salce v. Aer Lingus Airlines the District Court for the Southern District of New York required the plaintiff to show that the landing of the aircraft in which the plaintiff travelled was anything other than a normal landing. The plaintiff averred that he had received personal injuries due to the hard landing of the aircraft. In the absence of clear evidence of a hard landing, the court would presume that the landing performed by the aircraft in this instance was not an unexpected or unusual event that would satisfy the requirements of an "accident" under the Warsaw Convention.

However, when facts are self evident as in the case of Salerno v. Pan American World Airways, the courts would not hesitate to award damages to a plaintiff passenger. In this case, the District Court for the

59. Id. at 273-274.
Southern District of New York held that knowledge of a bomb threat which subsequently caused a miscarriage to a passenger came within the meaning of scope of the word "accident." The plaintiff, together with her two children, were passengers aboard a PAN AM flight from Miami to Uruguay. The cockpit crew, after take off, instructed the cabin crew to look for a bomb which the former had been informed by air traffic control to be on board. The crew notified the passengers including the plaintiff. She suffered a miscarriage 24 hours after having been informed of the alleged bomb on board and having watched the cabin crew looking for the object. The court held that an "accident" within the meaning of the Warsaw Convention caused the plaintiff's injuries because a bomb threat is "external to the passenger" and in an unexpected and unusual event outside the usual, normal and expected operation of the aircraft.  

The above discussion surfaces the salutary principle that the word "accident" is considered far more liberally in modern air law than is done under other areas of common law. It also underscores the fact that courts would be more inclined to treat acts of omission on the part of airlines as an "accident" as was shown in Seguritan's case.  

The airline is presumed liable for an "accident" where a drunken passenger assaults another, or where a passenger suffers a heart attack and is not given the necessary medical attention in flight as is possible, just to name two instances. Of course, the claimant has to adduce clear evidence of the event and the ensuing injury.

C. DEFENCES AVAILABLE TO THE AIRLINES

The foregoing discussion involved two key factors which govern the civil liability of airlines. They are, the presumption of liability that is imposed upon the airline and the liability limits that apply to the protected airline from unlimited liability and spurious claimants. There are two other factors which operate as adjuncts to the initial concepts. They are that the airline may show certain facts in its defence to rebut the presumption and that if the airline is found to be guilty of wilful misconduct it is precluded from invoking the liability limits under the Warsaw Convention. Viewed at a glance, the said four concepts seem to the grouped into two sets of balancing measures. The end result is that whilst on the one hand the airline is subject to stringent standards of liability, on the other, it is protected by two provisions which limit its liability in monetary terms and allows a complete or partial defence in rebuttal of the presumption.

Article 20(1) of the Warsaw Convention provides that the airline

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62. Id.
shall not be liable if it proves that the airline and its agents had taken all necessary measures to avoid the damage or that it was impossible for the airline and its agent to take such measures. Shawcross and Beaumont are of the view that the phrase “all necessary measures” is an unhappy one in that the mere happening of the passenger injury or death presupposes the fact that the airline or its agents had not in fact taken all necessary measures to prevent the occurrence. The airline usually takes such precautions as making regular announcements to passengers on the status of a flight starting with instructions on security and safety measures that are available in the aircraft. These measures are taken by the airline to conform to the requirements of the Warsaw Convention that the airline has to take all necessary measures to prevent an accident in order that the presumption of liability is rebutted. Thus in a case decided in 1963 it was held that a passenger who leaves her seat when the aircraft goes through turbulent atmosphere is barred from claiming under the Warsaw Convention for personal injury. Here it was held that an admonition of the airline that the passengers were to remain seated with their seat belts fastened during the time in question was proof of the airline having taken the necessary measures as envisaged in the Warsaw Convention. This case also established the fact that “all necessary measures” was too wide in scope and that a proper interpretation of the intention of the Warsaw Convention would be to consider the airline to require taking all “reasonably necessary measures.” In a more recent case J. Chapman imputed objectivity to the phrase “reasonably necessary measures” by declaring that such measures should be considered necessary by “the reasonable man.” A similar approach was taken in a subsequent case where the court held that the airline should show more than the fact that it was not negligent in order to invoke Article 20 (1) of the Warsaw Convention. The United States also follows this approach of objectivity. In Manufacturers Hanover Trust Co. v. Alitalia Airlines it was emphasised that the airline must show that all reasonable measures had been taken from an objective standpoint in order that the benefit of the defence be accrued to the airline. Some French decisions have also approached this defence on similar lines and required a stringent test of generality in order that the criteria for allowing the defence by approved.

64. SHAWCROSS & BEAUMONT, supra note 34, at 116.
66. See Chisholm, 1 Lloyds Rep. at 626.
68. 2 All E.R. 188 (1986).
The airline which has the burden of proof cannot seek refuge in showing that normal precautions were taken. For example, normal precautions in attending to the safety of the passengers prior to a flight is not sufficient. If therefore the airline cannot adduce a reasonable explanation as to why the accident occurred despite the reasonably necessary precautions being taken it is unlikely to succeed in its defence.\footnote{Panalpina Int'l Transp., Ltd. v. Densil Underwear, Ltd., 1 Lloyds Rep. 187 (1981).} Insofar as the requirement of impossibility to take precautions is concerned, the courts have required clear evidence of the difficulties faced by the airline in avoiding the disaster. In one case of a crash landing the court required that it was insufficient for the airline to show that the aircraft was in perfect condition and that the pilot took all steps to effect a good landing. The airline had to show that the weather conditions were so bad that the aircraft could not land in another airport.\footnote{Mandreoli v. Cie Beige d'Assurance Aviation, Milan 1972 (1974) Dir Mar 157.} In \textit{Haddad v. Cie Air France}, where an airline had to accept suspicious passengers who later perpetrated a hijacking, the court held that the airline could not deny boarding to the passengers who later proved to be hijackers.\footnote{Haddad v. Cie Air-France, 36 R.F.D.A. 342 (1982).} In that instance the airline had found it impossible to take all necessary precautions and was considered sound in defence under Article 20 (1). A similar approach was taken in the case of \textit{Barboni v. Cie Air-France} where the court held that when an airline receives a bomb threat whilst in flight and performs an emergency evacuation, a passenger who is injured by evacuation through the escape shute cannot claim liability of the airline since it would have been impossible for the airline to take any other measure.\footnote{Barboni v. Cie Air-France, 36 R.F.D.A. 355 (1982).}

If the airline proves that the damage was caused by or contributed to by the negligence of the injured person the court may, in accordance with the provisions of its own law, exonerate the carrier wholly or partly from his liability.\footnote{Warsaw Convention, Oct. 12, 1929, 49 Stat. 3000, Art. 21.} Contributory negligence under the Warsaw Convention has been treated subjectively as and when cases are adjudicated. The courts have not set an objective standard as in the earlier defence. For instance in \textit{Goldman v. Thai Airways International Ltd.} it was held that a passenger is not guilty of contributory negligence if he keeps his seat belt unfastened through the flight and suffers injury when there is no sign given by the aircraft control panel to keep the seat belt on.\footnote{Goldman v. Thai Airways Int'l Inc., 3 All E.R. 693 (1983).} However, if a passenger removes a bandage or brace that he is required to keep on for an existing injury and he suffers injury in flight due to the removal of the support he would be found to have contributed to the negligence re-
sulting in his injuries.77

Article 25(1) of the Warsaw Convention states that the airline shall not be entitled to avail itself of the provisions of the Warsaw Convention which excludes or limits its liability, if the damage is caused by the wilful misconduct or by such default on the part of the airline as, in accordance with the law of the court to which the case is submitted, is considered to be equivalent to wilful misconduct. Article 25 (1) extends this liability to acts of the agent of the airline acting within the scope of his employment and attributes such wilful misconduct to the airline. Such action as the failure of the technical crew of the aircraft to monitor weather conditions and the failure to execute a proper approach on adverse weather conditions are examples of wilful misconduct of the airline78 Similarly the failure of a crew which is going off duty to inform the incoming crew of a defect in the aircraft or any such relevant issue which would affect the safety of the aircraft could be construed as an act of wilful misconduct on the part of the airline.79

The effect of Article 25 is that the plaintiff becomes entitled to lift the limit of liability of the airline as prescribed in Article 22 of the Warsaw Convention if he proves that the airline was guilty of wilful misconduct. Thus the burden of proof falls on the plaintiff and if he succeeds he may claim an amount over and above the prescribed limits of airline liability.

The limitation of liability of the carrier that the Warsaw Convention imposes could be circumvented by the plaintiff proving that the carrier was guilty of wilful misconduct in causing the injury. Wilful misconduct as an exception to the limitation of liability rule appears in all three air law conventions that admit of liability limitations.80 The original French text of the Warsaw Convention states that if the carrier causes the damage intentionally or wrongfully or by such fault as, in accordance with the court seized of the case, is equivalent thereto, he shall not be entitled to claim the limitation of liability.81 Drión maintains that the English translation inaccurately states that the liability limitations of a carrier will be obviated if the damage is caused by his wilful misconduct or by such de-

fault.\textsuperscript{82} The contentious issue in this question is what kind of misconduct is required?\textsuperscript{83} Drion is of the opinion that by approaching the issue in terms of conflicting concepts, the question whether \textit{faute lourde} as proposed originally in the French text and for which there was an English equivalent of gross negligence was in fact more appropriate than the word \textit{dol} which now occupies the document and for which no accurate English translation exists, has emerged as to what standards may be used in extrapolating the words \textit{dol} or wilful misconduct.\textsuperscript{84} Miller\textsuperscript{85} takes a similar view when she states that the evils of conceptualistic thinking that had pervaded the drafting of Article 25 which rendered it destitute of coherence, has now been rectified by the Hague Convention which has introduced the words "done with intent to cause damage or recklessly and with knowledge that the damage would probably result."\textsuperscript{86}

This confusion was really the precursor to diverse interpretations and approaches to the concept of wilful misconduct under Article 25 of the Warsaw Convention. The French Government took steps by its \textit{Air Carrier Act} of 1957 to rectify ambiguities in this area by interpreting \textit{dol} in the Convention as \textit{faute inexcusable}, or deliberate fault which implies knowledge of the probability of damage and its reckless acceptance without valid reason,\textsuperscript{87} making a strong analogy with the Hague Protocol's contents. This interpretation, needless to say, brought out the question whether such reckless acceptance would be viewed subjectively or objectively.

The Belgian decision of \textit{Tondriau v. Air India} considered the issue of Article 25 of the Convention and the Hague interpretation. The facts of the case were usual, involving the death of a passenger and a consequent claim under the Convention by his dependents.\textsuperscript{88} The significance of the case law, however, in the fact that the Belgian court followed the decision of \textit{Emery v. SABENA} and held that, in the consideration of the pilot's negligence under Article 25, an objective test would apply, and the normal behaviour of a good pilot would be the applicable criterion.\textsuperscript{89} The court held:

\begin{quote}
Whereas the plaintiffs need not prove, apart from the wrongful act, that the pilot of the aircraft personally had knowledge that damage would probably
\end{quote}

\textsuperscript{82} Huibert Drion, \textsc{Limitation of Liabilities in Int'l Air L.} (Martinus Nijhoff ed., The Hague 1954).
\textsuperscript{83} \textit{Id.}
\textsuperscript{84} \textit{Id. at 200.}
\textsuperscript{85} Georgette Miller, \textsc{Air Carrier's Liability Under the Warsaw System}, op.cit. 200.
\textsuperscript{87} Miller, \textit{supra} note 85, at 202.
\textsuperscript{89} Emery \textit{v. SABENA}, R.F.D.A. 184 (1967).
result from it; it is sufficient that they prove that a reasonably prudent pilot ought to have had this knowledge.  

The court rationalised that a good pilot ought in the circumstances to have known the existence of a risk and no pilot of an aircraft engaged in air transport ought to take any risk needlessly. The Brussels Court of Appeal however, reversed this judgment and applied a subjective test, asserting that the Hague protocol called for “effective knowledge.” Professor Bin Cheng seems to prefer the objective test in the interpretation of “wilful misconduct” in Article 25, on the grounds that a subjective test would defeat the spirit of the Convention and that judges would be “flying in the face of justice in search of absolute equity in individual cases.”

Peter Martin, analysing the Court of Appeal decision in Goldman v. Thai Airways International Ltd., agrees with Bin Cheng and criticizes the lower court decision which awarded Mr. Goldman substantial damages for injuring his hip as a result of being thrown around in his seat in turbulence, in an instance where the captain had not switched on the “fasten seat belt” sign. Martin maintains that Mr. Goldman failed to prove that the pilot knew that damage would probably result from his act, as envisaged in the Hague Protocol principle. Being an aviation insurance lawyer, Martin is concerned that, while the English courts have a proclivity towards deciding Article 25 issues subjectively, insurance underwriters could view the breach of the limits stringently. Both on the count of the need for objectivity and on the count of the adverse effects on insurance, it is difficult to disagree with Cheng and Martin.

The question of air carrier liability and the approach taken in its context by the Warsaw Convention has seen the emergence of the scholarly analysis of two issues: Should liability of the carrier be based on fault and consequently on the principles of negligence and limited liability or should liability be based on strict liability? Drion, in his 1954 treatise on liability inquires into the various rationales and scenarios that may come up in an intellectual extrapolation of the subject. He examines the fact that an insurance system for liability, which would inextricably be linked to a strict liability concept, would be desirable, as a plaintiff would be able to claim compensation from an impecunious defendant through the

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90. Id. at 4. 
94. Drion, supra note 82, at 7.
objective and quantified rules of liability. This precludes a plaintiff from accident, since the Convention admits of challenge on the grounds of the possibility, thus precluding the application of scores of differing domestic laws.

Hague concept of fault and limited liability, or does one embrace a system of strict liability which assures the aggrieved party of pecuniary or rei persecutory recompense, while obviating the need for lengthy determinations of who was at fault after the fact. In other words, does one point a finger at the carrier in the first instance, then limit his liability and again break the limit if he is at fault? or make the carrier pay a sum of money, the maximum limits of which have been set, with the assurance that such limits would not shoot up unconscionably if the carrier was negligent?

The ultimate question therefore is, does one keep the Warsaw-Hague concept of fault and limited liability, or does one embrace a system of strict liability which assures the aggrieved party of pecuniary or rei persecutory recompense, while obviating the need for lengthy determinations of who was at fault after the fact. In other words, does one point a finger at the carrier in the first instance, then limit his liability and again break the limit if he is at fault? or make the carrier pay a sum of money, the maximum limits of which have been set, with the assurance that such limits would not shoot up unconscionably if the carrier was negligent?

The Convention unified legal principles relating to air carrier liability, thus precluding the application of scores of differing domestic laws. It however, did not succeed in presenting to the world unequivocally objective and quantified rules of liability. This precludes a plaintiff from knowing that he would be, as a rule, compensated if he is injured in an air accident, since the Convention admits of challenge on the grounds of the

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95. Id. at 8.
96. Id.
98. Reed v. Wiser, 555 F.2d 1079, 1080 (2d Cir. 1977).
plaintiff's conduct before, during or after the accident. The strict liability principle introduced by the Guatemala City Protocol and carried through by the Montreal protocols on the other hand has been applauded on the grounds that:

First, it gets money into the hands of the passengers much more quickly. Second, it saves transaction expenses which includes legal fees and other substantial litigation costs. Third, it provides compensation to passengers in those factual situations where no responsible party is at fault, such as in an act of terrorism.\(^99\)

Alexander Tobolewski points out very validly that actual aviation practice in terms of aviation insurance by the airlines has nothing to do with limitation of liability and claims, since airlines insure their fleets and liabilities for colossal amounts in the insurance market.\(^100\) He suggests therefore, the harmonisation of the law and actual practice (presumably by infusing more specific quanta in damages) and simplification of the system of recovery \textit{inter alia}, both of which strongly suggests a regime such as the one envisaged in the Montreal Protocols.\(^101\) Werner Guldimann concludes:

The most important and urgent matter in the present decade is the continuation of the efforts undertaken by ICAO to re-establish the former universality and uniformity of the Warsaw system by having the Montreal Protocols No 3 and 4 rapidly ratified by the greatest possible number of contracting States.\(^102\)

Although Professor Bin Cheng holds the view that the Montreal Protocols are: heavily weighted towards the carrier; the limits therein are inadequate; and that the unbreakeability of the limit of the SDR value is undesirable,\(^103\) the view that strict liability should be embraced seems more sensible, in view of the inconceivable number of passengers carried every year by air, the possible eradication of legal contingency fees, and above all, giving teeth to the meaning and purpose of law—that it should be an instrument of solace, not an opportunity for debate.

In an evaluation of the Warsaw System\(^104\) it has been said in 1979


\(^101\) \textit{Id.} at 266.


\(^103\) Bin Cheng, \textit{What is Wrong with the Montreal Additional Protocol No. 3?}, \textit{Air Law v. XIV} no. 6 220, 232 (1989).

that during the first 25 years of the existence of the Warsaw Convention, it had served the aviation community satisfactorily. Peter Martin bases this observation on the argument that when the Hague Protocol was being drafted in 1955, it was recorded that only 55 Warsaw cases had been adjudicated, and that is a very small number of cases for an instrument of the stature of the Warsaw Convention. The unifying process of the liability of an air carrier, started by the Warsaw Convention, dealt with liability concepts, quanta of compensation, exceptions on liability, jurisdictional issues and prescription of action. It is sad however, that together with the original Warsaw Convention, there are now 7 other international agreements, few of which have ever seen the light of day. This means that the unification process started by the Warsaw Convention had been criticised and found wanting at various stages of its chequered history. The original document has been excoriated so many times, prompting Professor Cheng to call it the "Warsaw shambles" although it remained, when these comments were made of it, the most widely implemented private international law convention.

Ex facie, from a strictly practical standpoint, it would appear that many facets of unification of the Warsaw Convention have come under interpretation by different philosophies, presumably due to the lack of specificity of the principles of unification and a fortiori, the language used. For instance, the delivery of the passenger ticket and the attendant carrier liability came under a series of confounding judicial thought processes, where in two cases the courts decided that the ticket had to be delivered in such a manner as to afford the passenger a reasonable opportunity to take measures to protect against liability insurance, only to decide in Chan v. Korean Airlines that the only requirement of Article 3 of the Convention was that a ticket be delivered. Goldman v. Thai Airways International Limited was another case where two confusing issues were decided upon. The first involved the question whether the

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3, 4, of varying dates. It should also be noted that the Montreal Agreement of 1966,—a private arrangement between air carriers, also purported to amend the Warsaw Convention. Hereafter, joint references to all these instruments shall be referred to as the Warsaw system.


106. Id.


108. Martin, supra note 105, at 239.


concept of 'wilful misconduct' as reflected in Article 25 of the Convention was to be interpreted objectively or subjectively. The second issue concerned compensatory limits which were so confusing to both the courts and the parties to litigation that an outside settlement was effected on a mutually acceptable basis. The issue regarding compensatory limits for death or personal injury has had a consistent evolution, starting from the Warsaw Convention at Approximately 8300/ US dollars, increased two-fold by the Hague Protocol 1955, increased again by the Guatemala City Protocol to 100,000 special drawing rights (SDR) (about 130,000, US dollars) with the Montreal Protocols going even higher. The currency conversion to gold value has been another contention of many parties to litigation and the case of Franklin Mint v. TWA left the situation in fiscal anarchy by deciding that in the United States, the Poincare gold franc has to converted to the last official price of gold before the US left the gold market, and not the free market price of gold. This not only made the overall American attitude towards seeking enhanced compensation turn 360 degrees, but also awarded unrealistically low compensation to the plaintiff. Further, a case in Australia has given a new interpretation to the notion of carrier negligence in the carriage of cargo, and a New Zealand case has decided that any interested party can now claim compensation under a cargo claim.

The Montreal Agreement of 1966—a private agreement between carriers plying the United States was also the result of failure by contracting States to reach an international solution to the problem of unifying principles of liability, particularly insofar as the quantum of damages was concerned. The Montreal Agreement amply demonstrates, as an ICAO document points out, that a private agreement between air carriers, sponsored by IATA can unhinge and question the credibility of a multilateral international treaty between sovereign States. Mankiewicz attributes this chaotic state of disagreement to the stand taken by the United States when he states:

Indeed, there is real irony in the history of the Warsaw Convention. For more than thirty years, the United States of America have steadily and successfully fought for, and obtained and signed six protocols to amend the Warsaw Convention as well as a “Convention Supplementary to the Warsaw Convention.” But they have ratified not one of these Warsaw instruments. In spite of the huge amounts of time and money spent all these years by

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ICAO and its member States, the US judiciary is still saddled with the awkward task of applying, construing constructively or destructively, misinterpreting and circumventing a convention which is now 60 years old. . . .117

There is only one viable alternative towards rectifying this anomaly and preserving the unification efforts of the Warsaw Convention, and that comes in the nature of ratifying the Montreal Protocols 3 and 4. As Professor Michael Milde States:

There is hardly any viable alternative to a determined effort to bring the Montreal Protocols Nos 3 and 4 into force. If that aim is not accomplished in the very near future, we may witness a trend to denunciation of the Warsaw System by several States with the ensuing chaotic conflicts of laws, conflicts of jurisdiction, unpredictably high compensation claims and skyrocketing increase in insurance premiums.118

The civil liability of an airline for the causing of death or injury to passengers has been established by international treaty and entrenched in law by judicial interpretation. The courts have attempted to balance the interest of both the airline and the passenger as indeed has been the perceived intention of the Warsaw Convention. The predominant feature of this area of civil liability is that air transport in terms of the commercial transportation of passengers is incontrovertibly the mode of transport that involves the highest levels of technology. Therefore, courts may find difficulty in ascertaining negligence, wilful misconduct and the overall liability of the airline in the face of complex technical arguments and defence. However, this reason alone should not justify obviating the tortious element that has so carefully been entrenched in the Warsaw Convention by its founders and used by Courts over the last 66 years. As the foregoing discussions reflect, liability issues under the Warsaw Convention has been consistently addressed by the Courts on the basis of their interpretation of negligence, wilful misconduct and contributory negligence, all of which are exclusively issues involving principles of tort law.

Relevance of "accident" to the Economy Class Syndrome

It is clear that the conventional interpretation of the term "accident" in tort liability has been extended in aviation cases under Article 17 of the Warsaw Convention where the Courts have imputed intention to the carrier in certain instances. To this extent, the Seguritan119 case—which addressed the issue of the carrier’s liability in not being able to regular

117. Mankiewicz, supra note 107, at 259.
medical assistance when necessary—and the O'Leary case\textsuperscript{120} more liquor than he could consume in flight—perforce prove that the courts have interpreted the Warsaw Convention to enforce liability of the carrier on the principles of intention. Wilful misconduct, therefore has played an important role in establishing that, in certain circumstances at least, it would be justified in considering that the extent of the carrier's fault is a valid consideration in the award of damages.

Fault liability as enforced by the Warsaw Convention may also be adequately reflected in intentional negligence, where the carrier intentionally breaches the duty of care he owes the passenger. Determination of a breach of a duty or care as a distinct evidentiary tool by the Courts would act towards accident prevention in that instances of carrier liability which emerge from accident investigations could then be used as admissible evidence.

The new trend introduced by the Montreal Convention of 1999 in doing away with fault liability and introducing a system of liability that may apply irrespective of fault but aligned to monetary compensation based upon subjective assessments of jurisdictional liability has its genesis in the decade between 1960 and 1970. During this period civil law liability in tort entered a new phase, effectively superannuating the existing system of liability and replacing it with a system of liability insurance. Tortious liability was no longer considered cost effective, and was no match for less expensive insurance. Jurists thought it more equitable, and, above all, practical to embrace a legal system that espoused loss distribution, which acted as the national precursor to liability insurance. This system of liability was assisted along the way by three reasons which militated against fault liability and acted as catalysts towards the successful launch of liability insurance. Firstly, a tort system based upon fault was expensive to administer, when compared with any system of insurance; secondly, litigation was fraught with delay, which a plaintiff could often ill-afford; thirdly, the unpredictability of the result of cases based upon fault liability often put plaintiffs under pressure to settle their claims for amounts less than they would receive if their claims went successfully to trial.

\textit{Wilful misconduct of the carrier}

Of the two instances in which the Warsaw Convention provides that the carrier's liability is unlimited, one relates to the absence of documentation (absence of the passenger ticket and baggage check or air waybill) on the grounds that the document of carriage evidences the special regime of limited liability as prescribed in the Warsaw Convention. The

other, which has turned out to be contentious, deals with instances where the damage is caused by the carrier's wilful misconduct, or such default on his part as, in accordance with the law of the court which exercises jurisdiction in the case, is considered to be the equivalent of wilful misconduct. Article 25 of the Warsaw Convention provides:

The carrier shall not be entitled to avail himself of the provisions of this Convention or exclude or limit his liability, if the damage is caused by his wilful misconduct or by such default on his part as, in accordance with the law of the Court seized of the case, is considered to be equivalent to wilful misconduct.\textsuperscript{121}

The provision further stipulates that the carrier shall not be entitled to avail himself of the above provisions, if the damage is caused as aforesaid by any agent of the carrier acting within the scope of his employment.\textsuperscript{122}

The primary significance of Article 25 is that it addresses both wilful misconduct and the “equivalent” of wilful misconduct. The authentic and original text of the Warsaw Convention, which is in the French Language, uses the words “dol” and “faute... equivalente au dol”. There is a palpable inconsistency between English translation of the original text and the original text itself in that the French word “dol” personifies the intention to inflict an injury on a person, whereas the English words “wilful misconduct” requires the defendant carrier to be aware of both his conduct and the reasonable and probable consequences of his conduct, in the nature of the damage which may ensue from the carriers act. Wilful misconduct, therefore, may not necessarily involve the intention of the carrier, his servants or agents and remains wider in scope as a ground of liability.

Most civil law jurisdictions have replaced “dol” with “gross negligence.” Drion dismisses the element of intention by citing examples such as the theft or pilferage of goods or baggage (which are more frequent in occurrence than aircraft accidents) which may not necessarily always occur with the concurrence or knowledge of the carrier and cites a list of possible instances where gross negligence would form more justification for the invocation of Article 25.\textsuperscript{123} Notable examples are assault or indecent behaviour by personnel of carrier; accidents caused by conduct of personnel; serving bad food; bumpy rides causing passenger injury; and failure to instruct passengers of rough weather etc.\textsuperscript{124} Drion also makes

\textsuperscript{122} Id. Art. 25, 2.
\textsuperscript{123} Huibert Drion, LIMITATION OF LIABILITIES IN INT’L AIR LAW 212 (Martinus Nijhoff ed.,The Hague 1954).
\textsuperscript{124} Id. at 213.
the valid point of citing delay in carriage as having many dimensions which may be accommodated within the purview of Article 25 without warranting the consideration of intention.¹²⁵

Common law jurisdictions on the other hand have separated “wilful misconduct” from “negligence” and insisted that the conduct of the carrier has to be “wilful” or intentional for a successful case to be grounded on Article 25 of the Warsaw Convention. This approach is consistent with the original contention of the British delegate to the Warsaw Conference, who claimed that wilful misconduct should pertain to “acts committed deliberately or acts of carelessness without any regard for the consequences.”¹²⁶ In the 1952 British case of Horabin v. British Overseas Airways Corp. the Court held:

To be guilty of wilful misconduct the person concerned must appreciate that he is acting wrongfully, or is wrongfully omitting to act and yet persists in so acting or omitting to act regardless of the consequences, or acts or omits to act with reckless indifference as to what the result may be.¹²⁷

In the same year, in the United States, the New York Supreme Court Appellate Division held that wilful misconduct was dependant upon the facts of a particular case, but in order that acts may be characterized as wilful there must be on the part of the person or persons sought to be charged, a conscious intent to do or to omit doing the act from which harm results to another, or an intentional omission of a manifest duty. There must be a realization of the probability of injury from the conduct and a disregard of the probable consequences of such conduct.¹²⁸

The above approach has been followed by subsequent American decisions which have classified wilful misconduct as requiring “conscious intent to do or omit doing an act from which harm results to another”¹²⁹ and “wilful performance of an act that is likely to result in damage or wilful action with a reckless disregard of the probable consequences.”¹³⁰

As to the second limb of Article 25.1 which provides that the equivalent of wilful misconduct would suffice to impose liability, the Convention leaves the scope of the provision wide open to include an instance of the carrier knowingly providing small seats and not advising the passenger of the inherent dangers related thereto.

¹²⁵. Id. at 213.
¹²⁶. SECOND INT’L CONFERENCE ON PRIVATE AERONAUTICAL L., supra note 25, at 42.
Recent Judicial Decisions on Wilful Misconduct

Arguably the watershed decision on the notion of wilful misconduct in recent times was contained in the case In re Korean Airlines Disaster of September 1, 1983 where the trial court considered wilful misconduct to be:

The performance of an act with knowledge that the act will probably result in an injury or damage, or in some manner as to imply reckless disregard for the consequences of its performance.\(^{131}\)

The above pronouncement was used by the American Courts, in the 1994 decision of Pasinato v. American Airlines Inc. who concluded that the act in question of a flight attendant did not constitute wilful misconduct within the purview of Article 25.2 of the Warsaw Convention.\(^{132}\) In the Pasinato case, a passenger of an American Airlines flight which was bound for Chicago from Italy was struck on the head when a heavy totebag fell from an overhead bin in the cabin. The incident was the outcome of an initial request by the passenger for a pillow immediately after take off, where the flight attendant, in a bid to open the overhead bin above the passenger to retrieve the pillow, was unable to prevent a totebag falling from the bin onto the passenger’s head. The passenger and her husband sued American Airlines under Article 25 on the grounds of wilful misconduct. The trial court was of the view:

there is no dispute that the flight attendant opened the overhead bin to get a pillow for another passenger. The flight attendant’s disposition indicates that she opened the bin with one hand, in her customary manner, with the other hand placed defensively above her head near the bin to prevent an object from falling upon her or a passenger sitting below. Further, the flight attendant stated that she tried to catch the totebag that fell from the bin (and may have touched it as it fell), but that it fell too quickly.\(^{133}\)

The court took cognizance of the contention of American Airlines that the technical and cabin crews give reported warnings to passengers of the dangers of opening overhead bins, both over the public address system of the aircraft and by personal messages. The evidence of the flight attendant—that incidents of objects falling from overhead bins were infrequent and generally harmless—based on her experience, was also considered relevant. The Court found difficulty in applying the criterion of the Korean Airlines Disaster case in that it was difficult for the Court, if not impossible, to envision how the flight attendant’s actions could amount to wilful misconduct.\(^{134}\) It was of the view that the pivotal criterion for de-
termining the existence of wilful misconduct—knowledge that the act would probably result in an injury or damage—was absent. *A fortiori*, the Court observed that the other criterion established in the *Korean Airlines* case—that of an act which is performed in a manner indicating reckless disregard for the consequences—was also missing in the *Pasinato* case.

In the 1994 case of *Baba v. Compagnie Nationale Air France*, involving damage to cargo, a Federal trial court in Washington found for the plaintiff and awarded damages against the act of the defendant carrier for improperly packing and storing hand-woven Persian carpets, as a result of which some of the carpets were damaged owing to the seepage of rain water when the carpets were kept outside by the carrier pending their loading onto the aircraft.135 The Court in this instance followed the Bench in *Pasinato* by reiterating the criteria for the proof of wilful misconduct as established by the *Korean Air* litigation. A compelling piece of evidence which enabled the court to arrive at its conclusion in the *Saba* case was the fact that the air carrier had disregarded its own cargo handling regulations in storing the carpets outdoors, in the rain. In its findings the court held:

In short, through a series of acts, the performance of which were intentional, the carrier has demonstrated a reckless disregard of the consequences of its performance. This disregard is emphasized by the fact that no damage report was ever produced.136

The court, while waiving the liability limits of the Warsaw Convention in the *Saba* case noted that a combination of facts can, taken together, amount to wilful misconduct. It was sufficient, in the Court’s view for an act to be intended, and not necessary for the resulting injury or wrongfulness of the act to reflect intention or knowledge. It was also significant that the Court further observed that a finding of wilful misconduct was appropriate when the act or omission constituted a violation of a rule or regulation of the defendant carrier itself.

Courts in the United States have been cautious to determine the parameters of “scope of employment” as envisaged in Article 25.2 of the Warsaw convention, which imputes liability to the carrier with regard to acts of its employers acting within the scope of their employment. In the 1995 case of *Üzochukwu v. Air Express International Ltd.* where a New York Federal trial court had to decide on a case of theft by two airline employees of cargo of the two carriers, it was held that the fact that the employers had used forged documents to perpetrate the offence of theft was sufficient to conclude that the act was outside the scope of employ-

136. *Id.*
The court also noted that it was the local police, and not the airline, who required the carrying out of the security check.

1996 offers a helpful insight into the rationale for determination of wilful misconduct. The trial court allowed the plaintiff's claim that the loss of his laptop computer during a security check of the airline was due to the airline's wilful misconduct. In the court's view, the plaintiff had failed to prove that the airline intentionally mishandled his baggage with knowledge that the performance of that act would probably result in injury or damage or that intentional performance of an act in such a manner as to imply reckless disregard of the probably consequences.

In Robinson v Northwest Airlines Inc., a case decided in March 1996 and involving circumstances similar to the Pasinato case, the United States Court of Appeals dismissed the appeal of the plaintiff who had lost judgment in the trial court against the carrier. The trial court had allowed a motion of the carrier that the plaintiff's claim in relation to her being injured by a piece of hand luggage falling from an overhead bin while the plane was taxiing, and additional injuries caused to her by a passenger striking her on the head with the latter's baggage were valid at law.

The Court of Appeals in affirming the dismissal of the action of the plaintiff noted that while a common carrier (a carrier who opens itself to the world to conduct business in the carriage by air of passengers, baggage and goods) owes a high degree of care to its passengers, it cannot be considered an insurer of the passenger's safety. The court found that the plaintiff failed to raise an issue of fact regarding the carrier's breach of duty towards her. The court was of the view:

Short of physical constraint of each passenger until each is individually escorted off the plane, we fail to see what Northwest could have done to prevent this accident. At best, that is precisely what the plaintiff has established; the fact that an accident occurred. However, as noted above, common carriers are not insurers of their passenger safety.

A similar approach can be seen in the contemporaneous case of Bell v. Swiss Air Transport Co. Ltd where an Intermediate Appellate court in New York State refused to allow the plaintiff's claim that the loss of his laptop computer during a security check of the airline was due to the airline's wilful misconduct. In the court's view, the plaintiff had failed to prove that the airline intentionally mishandled his baggage with knowledge or reckless disregard for the probable consequences of his conduct. The court also noted that it was the local police, and not the airline, who had required the carrying out of the security check.

The case of Singh v. Pan American World Airways decided in May, 1996 offers a helpful insight into the rationale for determination of wilful

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139. Id.
misconduct. In wrongful death and personal injury actions arising out of the 1995 hijacking of a Pan Am flight between Bombay and New York, the jury concluded that the carrier had been guilty of wilful misconduct on the reasoning that the management of the carrier knew, or ought to have known of serious lapses in its security programme. In fact, there had been representations made by the carrier’s staff to the management on several occasions prior to the hijacking. Furthermore, the jury was influenced in its conclusion by the fact that the carrier was aware of terrorist activity at European, Middle Eastern and Asian high risk airports and that very little had been done by the carrier to provide enhanced security at these airports.

In the case of the crash of Thai Airways Flight TG-311 near Kathmandu, Nepal in July 1992, the question at issue was whether the air crew had been guilty of wilful misconduct in flying into terrain. The fatal crash occurred during approach to Kathmandu airport—an airport known to be one of the most difficult in the world to land. Evidence had revealed that the captain had given the bearings of the aircraft to the control tower shortly before the crash, and that such were inconsistent with instruction previously given by the tower to the crew in the cockpit of the aircraft. The court concluded that the plane had veered towards terrain surrounding the airport due to the crew’s conscious failure to monitor their navigational instruments. The court held:

the captain and the first officer knew or should have known that failing to perform their duty to continuously monitor the aircraft’s navigational instruments would create a grave danger under the circumstances. . . . [B]oth the captain and the first officer were well aware that their duty to consciously monitor navigational instruments was an act necessary for safety. . . . [T]heir duty to perform this crucial act was so obvious under the circumstances that failing to perform it was reckless in the extreme. . . .

The Thai Airways case therefore marks an instance where the elements of wilful misconduct were imputed to the crew on the basis that due to their expertise, they knew or ought to have known the reasonable and probable consequences of their act.

A further dimension to the notion of wilful misconduct was added in the Northwest Airlines Air Crash Case of August 1996, where the Court of Appeals of the Sixth Circuit added that a finding of wilful misconduct may be based upon consideration of a series of actions or inactions.

143. Thai Airways found guilty of Wilful Misconduct in 1992 Kathmandu Crash Litigation, Lloyd’s Aviation L. v. 15 n. 6, March 15, 1996 at 1.
144. Id at 2-3.
The court was of the view that since many complex safety systems interact during an air plane flight, an air disaster would usually require multiple acts. In other words, the court held that it was permissible for a jury to consider an airline's individual errors or a series of errors and not restrict itself to the only act which seemingly caused an accident.

If one were to analyse the rationale of wilful misconduct in the light of the *cursus curiae* so far discussed, one would conclude that wilful misconduct hinges itself on knowledge of the perpetrator that damage would result or reckless disregard for consequences of an act on the part of the perpetrator. The question which then arises is whether an instance of the carrier knowingly providing small seats and not advising the passengers of the dangers of prolonged air travel in confined spaces or as would subscribe to the notion of wilful misconduct as it is perceived at the present time.

3. Conclusion

Admittedly, it would be extremely difficult for an airline to determine the proclivity of their passengers to latent illnesses such as venous thromboembolism. Therefore, instances of negligence pertaining to an airline accepting for travel a person who could possibly be afflicted with the disease may arguably be difficult to determine. However, it would not be uncommon to critically evaluate the conduct of an airline, which, knowing full well that the seat pitch in the aircraft would cramp an average-size passenger and being cognizant of the medical evidence which identifies prolonged air travel in confined spaces as a risk factor for deep vein thrombosis, does not take any precautions toward the prevention of the occurrence. The cases of *Seguritan, Horabin, Thai Airways* and the *Korean Airlines Disaster* strongly suggest the need for vigilance on the part of airlines to follow scientific and medical developments related to air transport and passenger safety.

It must be emphasized that, in selling an airline ticket for travel by air, an airline offers a composite service, not only to carry a passenger from point A to B, but also to ensure that transportation is accomplished in a safe and sanitary manner. Therefore, the services offered by the airline in the area ergonomics and professional advise as to the risks entailed in air travel become extremely relevant and critical to the issue.

As for issues of liability under the Warsaw Convention, although the *Tseng* Case widened the scope of the word "accident" the case itself addressed a personal security check on a passenger and it remains to be seen whether courts would interpret negligence on the part of the airline to warn the passenger of inherent dangers and advise him of the appro-

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appropriate precautions as wilful misconduct under the Warsaw Convention. It certainly could be argued, that in the light of the varied interpretations emerging from the *cursus curiae* that an accident under the Convention, although not explicitly defined in any past instance, could be considered as “any incident unexpected and external to the passenger which is avoidable by the airline and which causes death, wounding or injury to a passenger.” Therefore, although no conclusive medical evidence has been released distinctly and conclusively linking Venous Thromboembolisms to the so called “Economy Class Syndrome,” since there is strong evidence to suggest a risk factor in air travel, the airline could be expected to take or seen to take some precaution against the danger.

Airlines would be well advised to apprise passengers that, in order to minimise risk of venous thromboembolism, some of the guidelines are that they should not place baggage in the space under the seat, as it may reduce the ability to move the legs; exercise legs at regular intervals while seated, in order to improve blood flow; change positions regularly; take a stroll down the aisle every once in a while; avoid sleeping in a cramped position; avoid using alcohol, tobacco, narcotic drugs and hypnotic drugs; and consume as much water and other fluids during the flight as possible.
Review of Labor Law Developments in the Transportation Industries

Harry A. Rissetto*

Over the past year, there have been no marquee labor law decisions in the transportation industries. Nevertheless, in air, rail, trucking and maritime, there continue to be important labor issues that hold the attention of labor law specialists on both sides of the table.

• In the railroad industry, the major Class I carriers are engaged in a round of multi-employer collective bargaining with the rail brotherhoods. This time around, all the major railroads are bargaining together, and the outcome of these negotiations may go far to define the future structure of labor management relations in the railroad industry.

• In the airline industry, most of the major carriers are involved in collective bargaining negotiations with one or more of the labor organizations representing major groups of employees. Unlike the rail industry, these negotiations take place on a carrier by carrier basis. Major open issues include the White House’s willingness to appoint Presidential Emergency Boards (“PEB”) in airline labor disputes. The prospect for a PEB procedure, if direct bargaining and mediation fail, can and will affect the dynamics of bargaining.

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Will there be a third act to the drama before the curtain rises on economic self help?

- The labor organizations in the airline industry are developing alternatives to a full fledged strike. A particularly eponymous tactic is called “CHAOS.” The ability of the employers to deal with these strike alternatives will have an important effect on the collective bargaining process. The United Airlines experience this summer illustrates the public’s impatience with uncertain reliability.

- At the intersection of the trucking and airline industries is an ongoing dispute over the statutory border between the Railway Labor Act and the National Labor Relations Act. The labor dispute involves a group of drivers employed by Emery Worldwide Airlines in connection with a priority mail contract with the United States Postal Service. The Teamsters Union contends that they are subject to the NLRA and the employer argues that they are employees of an air carrier and covered by the Railway Labor Act. The dispute has bounced between the NLRB and the National Mediation Board and is currently pending before the NMB for a decision that will be transmitted to the NLRB. This dispute raises the fundamental issue of whether all employees of any air carrier are subject to the Railway Labor Act. Alternatively, can an air carrier or railroad employ some groups of employees subject to the RLA and other groups of employees subject to the National Labor Relations Act. Historically, virtually all employees of airlines and railroads were covered by the Railway Labor Act, even when the functional relationship to the airlines operation was most attenuated.

- The trucking industry continues to be a spectator in what seems to be a continuing election process within the International Brotherhood of Teamsters. The first election to be conducted under the new rules approved by the Federal Court will take place during the fall of 2001. Delegates to the IBT Convention that will precede the election are actively campaigning. In some respects, this is a primary for the main event which is likely to involve incumbent James Hoffa and challenger Tom Leedham from Oregon. The recent death of Judge Edelstein, who administered the election process that was developed under the consent decree in United States v. Teamsters Union creates another dimension of uncertainty. The identity of the District Judge who will succeed Judge Edelstein may well determine the practical impact of the consent decree on the Teamsters Union and the Trucking Industry.

- The Maritime Industry has put the long running containerization
dispute more or less behind it. The issues du jour in that industry are attempts by the IBT and the ILWU to organize grayaged drivers servicing the dock areas. Are they employees or independent contractors? Thus far the administrative decision seem to have favored the latter, but the union organizing efforts seems to be a continuing one, particularly in the Northwest.

**Some Interesting Court Decisions**

Behind the headlines, there have been a number of court decisions in the transportation industry that are of interest to labor law practitioners. A brief description and analysis of several of the more significant ones appear below.

In *Air Line Pilots Ass'n v. Northwest Airlines Inc.* the U.S. Court of Appeals for the District of Columbia examined whether an employer could be required to bargain with a union about its practice of insisting on an arbitration clause for claims of employment discrimination as a pre-condition to employment.¹ In this case, Northwest Airlines had a policy of requiring newly hired pilot trainees to sign a document titled “Conditions of Employment.” Sometime in 1995, Northwest Airlines added an arbitration clause into the Conditions of Employment, which required its new pilots to submit all claims of employment discrimination to binding arbitration.² Northwest Airlines also introduced several other new conditions into its Conditions of Employment.³ Upon learning of the arbitration clause and the other provisions, the Air Line Pilots Association (“ALPA”) the representative of Northwest’s pilots argued that the employer violated the Railway Labor Act 45 U.S.C §151 et. seq. when it unilaterally added the new provisions. ALPA claimed that the arbitration clause was unlawful because Northwest Airlines had not collectively bargained with ALPA for it. In the alternative, the ALPA argued that the arbitration clause violated the employee’s statutory right to submit claims of employment discrimination to the courts. ALPA filed suit seeking an injunction to prevent Northwest from continuing to use the arbitration provision.

The U.S. Court of Appeals for the District of Columbia in a decision that was affirmed by the full court, ruled that Northwest Airlines could retain the arbitration provision in its Conditions of Employment. In

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². *Id.* at 480.
³. The other conditions included: (1) setting the pilots monthly salaries during the probationary period; (2) requiring pilots to submit to a medical examination if Northwest believes he or she can no longer perform essential job functions; (3) acknowledging that Northwest can change various working conditions at its option. *Air Line Pilots Ass'n v. Northwest Airlines Inc.*, 199 F.3d 477 (D.C. Cir. 1999).
reaching its decision, the U.S. Court of Appeals looked to two previous rulings by the U.S. Supreme Court on waiver of claims of employment discrimination. First, the Court of Appeals examined the Supreme Court's ruling in *Alexander v. Gardner-Denver Co.* In *Alexander*, the Supreme Court held that a union cannot waive the rights of the employees it represents to bring a claim of statutory discrimination in a judicial forum. The U.S. Court of Appeals also analyzed a more recent opinion by the U.S. Supreme Court on employee waiver of statutory forums for employment discrimination claims in *Gilmer v. Interstate/Johnson Lane Corp.* In *Gilmer*, the Supreme Court held "an individual employee may himself validly agree in advance to binding arbitration of a statutory claim he may later have against his employer." Applying the holdings of *Alexander* and *Gilmer* together, the Court of Appeals in *ALPA v. Northwest* found that each employee may individually decide whether he or she wants to agree to submit claims of employment discrimination to arbitration. This is a matter between the employer and new employees. It is not a subject for collective bargaining.

The real significance of the *Air Line Pilots* case is that it creates a limitation for a union's ability to negotiate on behalf of newly employed pilots. According to the ruling in this case, a union cannot negotiate to prevent an employer from imposing an employment discrimination arbitration clause similar to the one created by Northwest Airlines. In effect, the Court of Appeals found that the collective bargaining agreement process has no role with respect to the individual claims of discrimination.

In *Bishop v. Air Line Pilots Ass'n* the U.S. Court of Appeals for the Ninth Circuit examined whether the Air Line Pilots Association violated the RLA when it unilaterally modified its procedures for ratifying collective bargaining agreements. In *Bishop*, the Plaintiffs were pilots at Wings West. Prior to this litigation, the National Mediation Board had concluded that Wings West and three other regional airlines (Flagship, Executive and Simmons) were for RLA purposes a single employer operating as American Eagle.

After the NMB's decision, ALPA became the bargaining representative for the four American Eagle carriers. ALPA created a master executive council ("MEC") to negotiate a consolidated collective bargaining
agreement. The MEC adopted a resolution to seek a single collective bargaining agreement and a unified seniority list. Shortly after the creation of the MEC, American Eagle announced that it was preparing to introduce new planes into its fleet. American Eagle and ALPA reached a tentative agreement for a unified seniority system, which needed to be ratified by the pilots. However, the pilots at one airline, Wings West voted to reject the seniority system agreement. Nonetheless, the vote totals from all four airlines indicated that a majority of the pilots had voted in favor of the seniority agreement. The MEC and ALPA agreed to modify the ratification procedures so that if a majority of the total American Eagle pilots voted for the seniority system, it would be binding on all four of the regional airlines. ALPA notified its pilots about the new ratification system. The seniority system agreement was ratified by a total of 62% of all of American Eagle’s pilots.

The Plaintiffs were members of Wings West Airlines who had voted against the agreement and alleged that the ALPA violated its duties under the Railway Labor Act by negotiating a single agreement for all four airlines. According to the Plaintiffs, the ALPA favored pilots at Simmons and Flagship and pressured the other pilots to vote to ratify the agreement. In addition, the Plaintiffs claimed that the ALPA changed the ratification process to create a favorable outcome for the seniority agreement. The ALPA countered that it was seeking a comprehensive unified agreement that would end what the ALPA perceived was a practice of pitting one airline’s pilots against another in collective bargaining. Did ALPA violate its duty of fair representation when it imposed the collective bargaining agreement and seniority lists on all four regional airlines?

The Court continued a long line of precedent to the effect that a union’s representation of its members is highly deferential. In addition, the Court noted that “a union’s interpretation of its own rules, regulations and constitution is entitled to a high degree of deference.” The Plaintiffs were unable to demonstrate that the ALPA acted out of self interest or contrary to the union’s best interest. According to the Court, it was a reasonable goal for the ALPA to seek a unified collective bargaining agreement for all four airlines. The Wings West pilots had neither veto power or the right to opt out of the agreement.

In Express One International v. National Mediation Board the U.S. District Court in Texas considered whether the National Mediation Board (“NMB”) conducted an adequate investigation into allegations

10. Id.
that there had been interference with the "laboratory conditions" required in a union representation election. In this case, flight deck employees of Plaintiff Express One were preparing to vote on union representation. Thirty-nine days before the election, a mysterious message appeared on the aviation bulletin board of America Online ("AOL") under the screen name of Express One. The message purported to discourage employees from selecting union representation. Express One immediately sent a message to its flight deck employees stating that it had nothing to do with the AOL message. Shortly thereafter, Express One contacted the National Mediation Board ("NMB") requesting the issuance of a subpoena to AOL to determine who posted the message. Three days before the date for the vote count, the NMB established a hearing schedule on the subpoena issue. The International Brotherhood of Teamsters ("IBT") won the election and Express One objected to the election results arguing that the AOL posting had created election interference. After hearing both Express One's and the IBT's positions on the subpoena issue, the NMB decided that the AOL posting did not interfere with the election. Express One filed suit against the NMB claiming that it had failed to adequately investigate its claim of election interference under 45 U.S.C. §152 of the Railway Labor Act.

The U.S. District Court found the NMB satisfied its investigation duties under the Railway Labor Act and Express One was required to engage in collective bargaining with the IBT. The Court noted that "An NMB investigation is... not required to take any particular form." The Railway Labor Act does not specify the type of investigation that needs to occur. Finally, the Court found that if the NMB had conducted an investigation regardless of whether it was thorough, its duties would be satisfied.

The significance of the Express One case is that a reviewing court will not intrude very deeply into the NMB's decisions during a representation election. It will not second guess the "effectiveness" or "thoroughness" of the procedures used by the NMB in an election investigation. According to the District Court, all that is required is a finding that the NMB conducted some form of investigation. Even if the investigation is limited, the NMB's findings or nonfindings will stand.

13. Specifically, the message said "For you local union supporters, I'd be watching your backs. We know who most of you are posting your anti-company propaganda. We're not stupid." Express One Int'l v. Nat'l Mediation, 2000 U.S. Dist. Lexis 7963 at *2 (N.D. Tex. June 7, 2000).
14. Id. at *3.
In Burlington Northern and Santa Fe Railway Co. v. Brotherhood of Maintenance of Way Employees, the U.S. District Court in Texas examined whether three different forms of injunctive relief should issue in response to a strike over a minor dispute. This litigation began when the union protested what it contended was a change in the status quo and the employer contended was an arbitral ("minor") dispute. Soon after, BMWE struck over the disagreement. BNSF obtained a temporary restraining order to halt the strike several hours later. The matter was submitted to arbitration, and the arbitrator decided the dispute that had led to the strike. After the arbitrator's decision, BNSF filed a motion for summary judgment seeking a permanent injunction to prevent any future strikes over the specific issue that prompted the May 12, 1998 strike. BNSF also sought a general injunction to prevent future strikes over any disputes that may arise over application of seniority and qualification rules in the collective bargaining agreement. Finally, BNSF sought an injunction requiring BMWE to give 72 hours advance notice before commencing any strike. BMWE filed a motion for summary judgment claiming that BNSF was not entitled to a permanent injunction to prevent future strikes.

Before discussing the Court's decision, it is important to define the major differences between "major" disputes and "minor" disputes. According to the U.S. Supreme Court, a minor dispute "may be conclusively resolved by interpretation of an existing agreement between labor and management." Conversely, a major dispute, "arises when the carrier makes a unilateral change in rates of pay, rules, or working conditions of its employees as provided for in the collective bargaining agreement."

The District Court declared that the dispute between BMWE and BNSF was a minor dispute under the RLA. Therefore, BMWE's strike on May 12, 1998 was illegal under the RLA. Because there was a strong threat of a future strike, the Court ordered an injunction to prevent BMWE employees from striking over the rules dispute that precipitated the May 12 strike or disputes involving the same issue.

The District Court refused to issue an injunction to prevent future BMWE strikes over any disputes arising over other applications of the same rules. The District Court looked to the fact that the Norris-LaGuardia Act has a strong policy against enjoining the activities of labor unions. According to the Norris-LaGuardia Act a labor injunction must

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18. Id. at 302.
be limited to "a prohibition of such specific acts." The District Court reasoned that BNSF’s request was ambiguous because it could not define the specific circumstances or factual scenario under the rules that would precipitate a strike. According to the Court, BNSF needed to make a more specific request relating to the rules for an injunction to issue.

The District Court also refused to grant BNSF’s injunction request to require BMWE to give 72 hours notice before commencing a strike. The District Court determined that the advance notice requirement was unwarranted because the BMWE had only struck against other railways three times in the previous eight years and one of the strikes was over a minor dispute.

More recently, in *Norfolk Southern Railway Co. v. Brotherhood of Locomotive Engineers* the U.S. Court of Appeals for the Fourth Circuit examined whether a damages remedy was appropriate in an RLA minor dispute. In this case, Norfolk Southern Railway filed a claim for $250,000 damages which resulted from the five-hour strike.

The Court of Appeals for the Fourth Circuit classified the disagreement between the union and the employer as a minor dispute and held that “a damages remedy for a minor dispute is at odds with the structure and purpose of the RLA... and the remedy would detract from the Act’s requirement that minor disputes be resolved through bargaining or compulsory arbitration.” In reaching its decision, the Court of Appeals conducted an extensive review of the RLA’s legislative history and the statutory framework, particularly portions of the Act dealing with minor disputes. The Court found no reference to a damages remedy. The parties to a labor dispute must attempt to settle their minor disputes by conference, and if that fails either side may refer the dispute to compulsory arbitration before the Adjustment board.

The Court of Appeals also relied on the U.S. Supreme Court’s decision in *Brotherhood of R.R. Trainmen v. Chicago River and Indiana R.R. Co.*, which held that federal courts could enjoin rail strikes when they were over with arbitral disputes. The Supreme Court was silent on the issue of monetary damages related to minor disputes. In addition, the Fifth and Sixth circuits had already addressed this issue and held that a

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22. *Id.* at *3*. The damages were for payment of overtime wages, the payment of wages to employees who were not productive on the day of the strike, and costs associated with the delay of freight trains.
23. *Id.* at 29.
The Court of Appeals analyzed two additional U.S. Supreme Court decisions which examined whether a party could be awarded an implied remedy not specifically defined in a statute. In Franklin v. Gwinnett County Public Schools, the Supreme Court examined whether it could imply a remedy not specifically provided for in a statute. The Supreme Court noted that “absent clear direction to the contrary by Congress, the federal courts have the power to award any appropriate relief in a cognizable cause of action brought pursuant to a federal statute.” According to the Supreme Court, a reviewing court considering whether to imply a remedy must “evaluate the state of the law when the legislature passed the statute.” In Gebser v. Lago Vista Independent School District, the Supreme Court further elaborated by noting that a reviewing court must consider whether an implied damages remedy would frustrate the purposes of the statute. The Court in NS decided that both tests favored rejecting the damages remedy because it would be inconsistent with the regime of collective bargaining that is central to the RLA.

In Slay Transportation Co. Inc. the National Labor Relations Board examined whether the common law agency test should be applied to determine if a group of 71 truck drivers were employees or independent contractors. The drivers owned their own tractors which they leased to Slay Transportation, the employer. All drivers were required to display Slay’s logo on their tractors and follow various company procedures.

In deciding to apply the common law agency test to determine independent contractor or employee status, the National Labor Relations Board relied on the U.S. Supreme Court decision in NLRB v. United Insurance Co. of America. In United Insurance, the Supreme Court noted “the obvious purpose of [the Taft-Hartley Act] was to have the board and the courts apply general agency principles in distinguishing between employees and independent contractors under the Act.” In addition, the NLRB looked to its own previous decision in Roadway Package System

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26. See CSX Transp., Inc. v. Marquar, 980 F.2d 359 (6th Cir. 1992); see also, Burlington N. R.R. Co. v. Bhd of Maint. of Way Employees, 961 F.2d 86 (5th Cir. 1992); see also, Louisville & Nashville R.R. Co. v. Brown, 252 F.2d 149 (5th Cir. 1958).
28. Id. at 71.
29. Id.
33. Id., at 256.
Inc. which applied the common law agency test.\textsuperscript{34}

According to the common law agency test, to determine whether an individual is an employee or an independent contractor, one must consider: (a) the extent of control which, by the agreement, the master may exercise over the details of the work; (b) whether or not the one employed is engaged in a distinct occupation or business; (c) the kind of occupation, with reference to whether, in the locality the work is usually done under the direction of the employer or by a specialist without supervision; (d) the skill required in the particular occupation; (e) whether the employer or the workman supplies the instrumentalities, tools and the place of work for the person doing the work; (f) the length of time for which the person is employed; (g) the method of payment, whether by the time or by the job; (h) whether or not the work is part of the regular business of the employer; (i) whether or not the parties believe they are creating the relation of master and servant; (j) whether the principal is or is not in the business.\textsuperscript{35}

In the present situation the NLRB found that the truck drivers were employees. The NLRB looked to the fact that the employer controlled driver work standards through training, testing, and dispatch operations and procedures. In addition the NLRB was persuaded by the fact that, “all drivers are given specific instructions as to the manner in which they are to perform their tasks including where loading or unloading will take place, when they are to be available for loading or unloading and the time the product must be delivered.”

The significance of this case is that the NLRB will use the common law agency test to determine whether individuals are employees or independent contractors.

\textsuperscript{34} 1998 N.L.R.B. 628.

\textsuperscript{35} Restatement (Second) of Agency, §220, 485-86 (1958).
Comments

The Effects of the Amendments to the Baggage Check Provisions of the Warsaw Convention—Clearing the Way For More Efficient Check-in Procedures

Gillian Flener*

INTRODUCTION

Under the Warsaw Convention, passengers with lost or damaged baggage could recover the full amount of their baggage if they could show that an airline failed to comply with baggage check provisions.¹ However, Montreal Protocol No. 4, which amends the Warsaw Convention, in part, by eliminating two of the baggage check requirements, took effect in the United States on March 4, 1999.² Further, the Convention for the Unification of Certain Rules of International Carriage by Air

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(hereinafter "Convention") was signed at Montreal on May 28, 1999, and was submitted to the Senate on September 6, 2000 for advice and consent to ratification. Upon entry into force for the United States, this Convention, where applicable, would supersede the Warsaw Convention and its amendments contained in Montreal Protocol No. 4.

Amendments to the baggage check provisions, while intended to simplify baggage check procedures, actually have adverse effects on passengers who might seek recovery from airlines for lost or damaged baggage. First, they take away the requirement that airlines record the number and weight of a passenger's baggage on the claim checks, effectively denying passengers this frequently used avenue of recovery. Second, even if passengers can show airlines' noncompliance with the remaining baggage check provisions, passengers might not recover the full value of their baggage because the amendments limit recovery unless the passenger declares a higher value.

The trend of court decisions addressing the amount of a typical passenger's recovery for lost or damaged baggage, due to carrier fault, seemed to be moving toward decisions in favor of the passenger. Non-commercial passengers were beginning to receive full recovery of the actual value of their baggage, and courts seemed to be moving away from decisions that often favored airlines.

The following discussion is intended to set forth the background of the Warsaw Convention, its baggage check provisions, and the provisions' subsequent amendments. This article then analyzes cases concerning the baggage check provisions in order to illustrate the difference in passengers' recoveries prior and subsequent to the amendments to the baggage check provisions.

I. BACKGROUND

A. THE WARSAW CONVENTION

The Warsaw Convention is an international treaty that governs claims arising out of the international carriage of persons and property by air, and it limits airline liability for death, injury, and loss of property. The Warsaw Convention was drafted at international conferences in Paris in 1925 and Warsaw in 1929, and the United States signed the treaty in


1934. In 1929, the airline industry was still relatively new, and negotiators feared that liability for catastrophic judgments could hinder the industry’s development. Thus, one of the Warsaw Convention’s goals was to limit the potential liability of air carriers. To balance this, the Warsaw Convention contained certain baggage check provisions with which airlines were required to comply. “A central quid pro quo of the [Warsaw] Convention is presumptive liability for the loss of cargo (Article 18), but a low limit on carrier liability calculated by the weight of the cargo (Article 22).”

Article 18(1) provides that “the carrier shall be liable for damage sustained in the event of the destruction or loss of, or of damage to, any checked baggage or any goods, if the occurrence which caused the damage so sustained took place during the transportation by air.” Article 18(2) defines “transportation by air,” in part, as “the period during which the baggage . . . [is] in [the] charge of the carrier . . . in an airport or on board an aircraft.”

Article 4, Sections (3)(d), (f), and (h), and Section (4) initially and often successfully provided the basis for claims in cases involving lost or damaged baggage. Article 4 sets forth the specific process airlines were required to follow with respect to baggage checks:

(3) The baggage check shall contain the following particulars . . . (d) The number of the passenger ticket . . . (f) The number and weight of the packages . . . (h) A statement that the transportation is subject to the rules relating to liability established by this [C]onvention. (4) . . . [I]f the baggage check does not contain the particulars set out at (d), (f), and (h) above, the carrier shall not be entitled to avail himself of those provisions of the convention which exclude or limit his liability.

Plaintiff-passengers often emphasized these provisions because an airline’s failure to follow even one of them should have precluded the applicability of the liability limitations, thus maximizing an airline passenger’s recovery to the actual value of the baggage, rather than $9.07 per pound of baggage.

Article 22(2) of the Warsaw Convention sets forth the particulars of

8. Id.
9. Warsaw Convention, supra note 1, art. 4(3)(d), (f), and (h), 4(4).
10. Spanner, 177 F.3d at 1175.
11. Warsaw Convention, supra note 1, art. 18(1).
12. Warsaw Convention, supra note 1, art. 18(2).
13. Warsaw Convention, supra note 1, art. 4(3)(d), (f), and (h), 4(4).
14. Id.
15. Warsaw Convention, supra note 1, art. 4(3)(d), (f), and (h), 4(4), 22(2).
the limited liability provision. Article 22(2) states that in the transportation of checked baggage, the liability of the carrier shall be limited to a sum of 250 francs per kilogram unless the passenger makes a special declaration of value. Thus, the rate applied to lost or damaged baggage was $9.07 per pound. This is the provision that airlines often attempted to rely on in contending that plaintiffs' recoveries should be limited.

B. THE AMENDMENTS TO THE WARSAW CONVENTION

The Montreal Protocol No. 4 took effect in the United States on March 4, 1999, eliminating the requirement that a carrier record the number and weight of a passenger’s baggage on the claim check. In essence, for a passenger to recover from an airline for lost or damaged baggage, based on the airline’s failure to record the weight and number of a passenger’s bags, the passenger’s claims must have arisen before March 4, 1999. Further, passengers must have brought or are limited to bringing those claims within two years of the circumstances giving rise to their claims.

Where applicable and if ratified, the Convention signed on May 28, 1999, will supersede the Warsaw Convention, as amended by the Montreal Protocol No. 4. Article 55(1) "establishes the supremacy of this Convention, as between States commonly party to this Convention, over the Warsaw Convention, the Hague Protocol, the Guadalajara Convention, the Guatemala City Protocol, and Montreal Protocols Nos. 1, 2, 3 and 4." Articles 53(1) and 53(6) of the Convention set forth the provisions concerning signature, ratification and entry into force of the Convention.

Should airline customers with lost or damaged luggage, whose claims arose after March 4, 1999, wish to proceed with claims based on improper baggage check procedures, they will need to do so under the Convention's provisions. Although the claims cannot be based on failure to

16. Warsaw Convention, supra note 1, art. 22(2).
17. Id.
18. Trans World Airlines, Inc. v. Franklin Mint Corp., 466 U.S. 243, 256-60 (1984), reh'g denied, 467 U.S. 1231 (1984)(addressing the conversion from the French franc into the U.S. dollar and holding that the Civil Aeronautics Board's declared liability limit of $9.07 per pound of cargo, based on the official gold conversion rate, is consistent with the Warsaw Convention, and is thus a valid basis for conversion).
20. Id.
21. Warsaw Convention, supra note 1, art. 29(1).
22. Supra text accompanying note 4.
23. Convention, supra note 3 at *74.
24. Convention, supra note 3, art. 53(1), (6) at *112, 113-14.
25. Supra text accompanying note 22.
record the weight and number of the passenger's bags, they can be based on an airline's failure to either: (1) give passengers written notice that the Convention may limit carrier liability for the loss of, damage to, or the destruction of baggage; or (2) provide the passenger with a baggage identification tag for each piece of checked baggage.\(^{26}\) However, regardless of compliance with these provisions, passengers' recoveries will still be subject to limited liability.\(^{27}\)

Article 17(2) of the Convention basically combines Articles 18(1) and 18(2) of the Warsaw Convention.\(^{28}\) Article 17(2) of the Convention provides, in part, "[t]he carrier is liable for damage sustained in case of destruction or loss of, or damage to, checked baggage upon condition only that the event . . . took place on board the aircraft or during any period within which the checked baggage was in the charge of the carrier."\(^{29}\) Therefore, like the Warsaw Convention and its related instruments, the carrier is strictly liable for damages for checked baggage that is lost or damaged.\(^{30}\) However, this presumption is subject to limited specified defenses.\(^{31}\)

Articles 3(3) and 3(4) of the Convention are similar to Articles 4(3)(d) and 4(3)(h) of the Warsaw Convention.\(^{32}\) Article 3(3) states that "[t]he carrier shall deliver to the passenger a baggage identification tag for each piece of checked baggage."\(^{33}\) Prior to the Convention, the baggage check could be and usually was incorporated into the passenger's ticket.\(^{34}\) Article 3(4) provides that "[t]he passenger shall be given written notice to the effect that where this Convention is applicable it governs and may limit the liability of carriers in respect to death or injury and for destruction or loss of, or damage to, baggage, and for delay."\(^{35}\) This paragraph preserves the requirement set forth in the Warsaw Convention, that carriers give passengers written notice of liability limitations.\(^{36}\)

Article 3 of the Convention, which sets forth, in part, the duties of the parties relating to the carriage of passengers and baggage, makes no mention that a carrier shall record the number and weight of the pack-

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26. Convention, supra note 3, at *33-34.
27. Convention, supra note 3, art. 3(5) at *80-81.
28. Convention, supra note 3, art. 17(2) at *88; Warsaw Convention, supra note 1, art. 18(1) and (2).
29. Convention, supra note 3, art. 17(2) at *88.
30. Convention, supra note 3 at *44-45.
31. Id.
32. Convention, supra note 3, art. 3(3) and (4) at *80; Warsaw Convention, supra note 1, art. 4(3)(d) and (h).
33. Convention, supra note 3, art. 3(3) at *80.
34. Convention, supra note 3 at *33.
35. Convention, supra note 3, art. 3(4) at *80.
36. Convention, supra note 3 at *34; Warsaw Convention, supra note 1, art. 4(3)(b).
ages on the baggage check.\textsuperscript{37} In other words, the Convention contains no provision that parallels Article 4(3)(f) of the Warsaw Convention. Airlines are thus no longer required to weigh passengers' baggage.

However, whereas the Warsaw Convention only limited carrier liability upon a showing of compliance with the baggage check procedures, the Convention limits liability for lost or damaged baggage regardless of carrier compliance with baggage check procedures.\textsuperscript{38} "Non-compliance with the provisions of the foregoing paragraphs shall not affect the existence or the validity of the contract of carriage, which shall, nonetheless, be subject to the rules of this Convention including those relating to limitation of liability."\textsuperscript{39} Thus, the Convention's liability limits for baggage shall govern, even if the carrier fails to provide the passenger with a baggage identification tag or give passengers written notification of the Convention's applicability.\textsuperscript{40}

Article 22(2) of the Convention changes the limits of liability in relation to baggage from that set forth in the Warsaw Convention.\textsuperscript{41} "Paragraph 2 limits carrier liability for destruction, loss, damage, or delay of both checked and unchecked baggage to 1,000 SDR [Special Drawing Rights] per passenger (approximately $1,350), unless the passenger declares a higher value."\textsuperscript{42}

Finally, Article 35(1) of the Convention is substantially the same as Article 29(1) of the Warsaw Convention.\textsuperscript{43} Article 35(1) of the Convention, concerning limitations of actions, provides that "[t]he right to damages shall be extinguished if an action is not brought within an period of two years, reckoned from the date of arrival at the destination, or from the date on which the aircraft ought to have arrived, or from the date on which the carriage stopped."\textsuperscript{44}

The Montreal Protocol No. 4 and its subsequent amendments in the Convention greatly affect future passengers' options for bringing claims for lost or damaged baggage, based on an airline's failure to comply with baggage check provisions. Specifically, the amendments obviate the need that airlines comply with those provisions setting forth the requirement that the carrier record the number and weight of the passengers' bags.\textsuperscript{45} "In future cases, a carrier will not surrender its limited liability simply by

\begin{thebibliography}{9}
\bibitem{note1} Supra note 1, art. 22(2).
\bibitem{note2} Convention, supra note 3, art. 22(2).
\bibitem{note3} Convention, supra note 3, art. 3(1)-(5) at *80-81; Warsaw Convention, supra note 1, art. 4(4); Convention, supra note 3, art. 3(5) at *80-81.
\bibitem{note4} Convention, supra note 3 at *52.
\bibitem{note5} Convention, supra note 3, art. 35(1) at *104; Warsaw Convention, supra note 1, art. 29(1).
\bibitem{note6} Convention, supra note 3, art. 35(1) at *104.
\bibitem{note7} Supra text accompanying note 2.
\end{thebibliography}
THE BAGGAGE CHECK PROVISIONS

A. THE WARSAW CONVENTION

I. Caselaw Addressing Article 4(3)(f)

a. The Commercial or Sophisticated Traveler

Some courts have limited customers' recoveries regardless of the airlines' failure to comply with Article 4(3)(f) of the Warsaw Convention, which provides that a baggage check must contain the number and weight of the packages. For example, in *Martin v. Pan American World Airways*, the plaintiff argued that Pan Am was not entitled to take advantage of the limited liability provisions of the Warsaw Convention, in part, because the airline did not record the weight of her bags as required by Article 4(3)(f). The Court concluded that the airline's failure to record the weight of the plaintiff's luggage was a technical and insubstantial omission which did not prejudice the plaintiff, and which should not act to extend the airline's liability beyond the limits set forth in the Warsaw Convention. The Court reasoned that the plaintiff was an experienced traveler, and air travelers understand that separate insurance is available to cover the risks of loss of luggage. Further, the plaintiff had been advised of the limited liability provisions of the Warsaw Convention and could have elected to take the risk of excess damage or insure, and here, the plaintiff chose not to insure.
The Court reached a similar conclusion in Republic National Bank of New York v. Eastern Airlines when it held that the plaintiff-traveler was more like a commercial shipper than a typical airline passenger. There, the Court stated:

[T]he purpose of the weight requirement is to enable passengers to calculate the amount recoverable from the carrier under the Warsaw Convention for lost or damaged baggage. A passenger need only multiply the amount recoverable per pound under the Convention ($9.07) by the weight of his baggage to arrive at this figure. Once having made the calculation, a passenger has enough information to decide whether to purchase insurance.

The Court then reasoned that the plaintiff had not been prejudiced because regardless of whether the plaintiff knew the exact weight of its baggage, the plaintiff could not have recovered $2 million (the contents of one of plaintiff’s bags) unless its bag weighed 220,507 pounds. The plaintiff thus must have been on notice that insurance coverage would have been necessary to adequately protect its shipment, especially because the plaintiff, a professional courier, stated in its export declaration that its bag weighed fifty-two pounds.

In Abbaa v. Pan American World Airways, the plaintiffs argued that the baggage checks for their lost baggage did not indicate the weight of the packages and that the Warsaw Convention’s limitations were therefore inapplicable. The Court agreed with Pan Am’s position that technical failures to comply with the Warsaw Convention will not preclude applying the limitations on liability when the omissions have not prejudiced the claimants. The Court stated that plaintiffs were not prejudiced by Pan Am’s failure to note the weight of the baggage because Mr. Abbaa knew the approximate weight of the baggage, and the plaintiffs are in the business of exporting merchandise, or have several times exported goods through international air carriers. Further, the plaintiffs chose not to obtain additional insurance for the full value of the baggage, and chose not to declare excess value on the shipment when offered the opportunity before departure.

Finally, in Lourenco v. Trans World Airlines, the Court held that the failure to record the weight and number of the plaintiffs’ luggage was a technical and insubstantial omission and denied the defendant the benefit
of the limitation of liability provisions of the Warsaw Convention. In *Lourenco*, the plaintiffs were carrying valuable jewelry, and Mr. Lourenco was an employee of Trans World Airlines. The plaintiffs did not make a special declaration of value concerning the contents of their luggage, did not request special handling of the baggage, and did not purchase special insurance covering the full value of their possessions.

*Martin, Republic National Bank, Abbaa,* and *Lourenco* are all similar to each other in that the Courts held that the plaintiffs in these cases were not prejudiced by the airlines' failure to record the number and weight of the plaintiffs' bags, and thus the airlines' liabilities were limited. However, these cases dealt with what the courts considered commercial or sophisticated travelers rather than typical non-commercial travelers. Similarly, the courts in these cases may have reasoned that they should hold these plaintiffs to somewhat higher of a standard as a result of the plaintiffs' experience in travel, their prior dealings with the shipment of goods, both combined with the value of the contents of their luggage.

b. The Typical or Non-Commercial Traveler

In *Cruz v. American Airlines*, discussed below, the Court held that the airline's failure to include the weight of the baggage, as required by Article 4(3)(f), precluded its reliance on the Warsaw Convention. Courts had reached similar conclusions in many other cases dealing with this provision of the Warsaw Convention. For example, in *Da Rosa v.*

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63. *Id.* at 533.

64. *Id.*

65. *But see* New Pentax Film, Inc. v. Trans World Airlines, Inc., 936 F. Supp. 142, 151 (S.D.N.Y. 1996)(court was not willing to determine where plaintiff fell in the range between “sophisticated commercial traveler” and “typical airline passenger”); Feeney, 948 P.2d at 112 (stating that federal courts tend to agree that technical omissions which do not prejudice the passenger are not violative of the Convention's purpose of limiting airline liability); see also *Hibbard v. Trans World Airlines, Inc.*, 592 N.E.2d 889, 892 (Ohio Ct. App. 1990).

66. *Cruz*, 193 F.3d at 527-30; discussion infra Part II.A.1.b.i.

67. *Tchokponhove v. Air Afrique*, 953 F. Supp. 79, 82-84 (S.D.N.Y. 1996)(passenger, whose luggage contained cameras and other electronic equipment, was entitled to damages from carrier for cost of replacing items contained in lost luggage because carrier failed to record the number of the passenger ticket and the number and weight of the packages on the passenger's baggage check); *Kupferman v. Pakistan Int'l Airlines*, 438 N.Y.S.2d 189, 192 (N.Y. Civ. Ct. 1981)(examination of plaintiffs' passenger tickets and baggage checks indicated noncompliance with Article 4(3)(f), and airline's liability was clearly not subject to any monetary restriction pursuant to Article 22(2) of the Warsaw Convention); *Schedlmayer v. Trans Int'l Airlines*, 416 N.Y.S.2d 461, 463-64 (N.Y. Civ. Ct. 1979)(fact that no check was issued does not alter the status of the hand luggage as checked baggage because the Warsaw Convention, by its very terms, makes a provision for such a situation); *Perri*, 104 F. Supp. 2d at 166-69 (court found that plaintiff was a typical airline passenger, and defendants could not invoke the limited liability provisions of the Warsaw Convention because ticket agents did not write the weight of plaintiff's luggage directly on her
Tap Air Portugal, the defendant-airline lost the plaintiff's baggage containing artwork valued at $36,000. The issue in that case was whether the omission of the number and weight of the packages was material or merely technical. The Court found that the omission was material and therefore, the limited liability provisions of the Convention did not apply. The Court further held that it is not unreasonable or overly technical to require the carrier to comply with the minimum requirements plainly set out by the Convention.

The Court quoted Vekris v. Peoples Express Airlines in support of its refusal to apply the liability limitations of the Warsaw Convention:

[In cases involving non-commercial airline passengers, Article 4 should be interpreted literally. Travelers must be notified of the exact weight of their baggage so that they will know the limit of the airline's liability. Since the effect of the Convention is to keep the liability of the airlines artificially low, it is not unreasonable to require that carriers comply with the strict requirements of Article 4 before availing themselves of the liability limits.]

The plaintiff in Vekris had checked two pieces consisting of a canvas suitcase and a cardboard tube. The cardboard tube, which contained the plaintiff's paintings purportedly worth $45,000, never surfaced. The Court struck the defendant's defense of limited liability because the baggage checks issued by the defendant did not contain the number and weight of the packages.

In Gill v. Lufthansa German Airlines, the plaintiff was forced to check his bag so that he could board the plane. His bag arrived four hours late, allegedly scuttling his business deal. The Court similarly determined that the airline's failure to comply with baggage check provisions precluded limitation of liability. In discussing an airline's need to comply with the Article 4 baggage check provisions of the Warsaw Convention, the Court stated that while the Convention limits the risk to the airline, it also contains a presumption of carrier liability that works to the

69. Id. at 1509.
70. Id.
71. Id. at 1510.
73. Vekris, 707 F. Supp. at 675.
74. Id.
75. Id. at 676, 678.
77. Id. at 1454.
78. Id. at 1455-56.
advantage of the passengers. Similarly, in *Maghsoudi v. Pan American World Airways*, neither the plaintiff's ticket and baggage check nor his baggage claim check contained any information as to the weight of his luggage. The Court held the liability limitations inapplicable, stating that because the Warsaw Convention was drafted with a bias in favor of the air carriers, the court was reluctant to ignore the clear language of the treaty without a compelling justification for doing so.

Also, in *Hill v. American Airlines*, the Court stated that because American issued a baggage check not containing the particulars required by the Warsaw Convention, including the weight of the baggage, American was not entitled to avail itself of the limitation of its liability. Here, the Court disagreed with the holding in *Martin*, stating that if there is going to be an economic loss, it should be borne by the party in control of the risk. The Court went on to state:

Here, control of the risk is in the airline in two regards: 1) the airline could limit its liability by complying with the conditions as stated in the [C]onvention, and that is exclusively within the power of the airline, and 2) the airline has exclusive control over the handling and delivery of the baggage.

Finally, in *Spanner v. United Airlines*, United argued that the technical requirements of the Warsaw Convention varied depending on the prejudice to, or the sophistication of, the passenger or shipper. The Court held that United was not entitled to limited liability because United had failed to show that it had indicated the weight and number of the plaintiff's bags on the baggage check. The Court provided that even where a distinction is made between unsophisticated and sophisticated passengers and shippers, the typical airline passenger still retains the benefits of strict enforcement of the Warsaw Convention.

i. *Cruz v. American Airlines, Inc.*

*Cruz v. American Airlines* exemplifies the trend in court decisions that were favoring the typical, non-commercial traveler, prior to the amendments to the baggage check provisions of the Warsaw Convention. The Court held that American Airline's (hereinafter "American") failure

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79. *Id.* at 1454.
81. *Id.* at 1278-79.
83. *Id.*
84. *Id.*
85. *Spanner*, 177 F.3d at 1176.
86. *Id.* at 1175-1177.
87. *Id.* at 1176.
to include the weight of the baggage, as required by Article 4(3)(f), prevented American's reliance on the limited liability provisions of the Warsaw Convention.88

a. Facts and Procedural History

Fourteen members of the Cruz family had purchased airline tickets for travel from Washington to Santo Domingo.89 Each family member checked two suitcases and was issued a baggage claim stub for each piece of luggage, none of which indicated the weight of the suitcases.90 Ultimately, five of their suitcases did not arrive in Santo Domingo, so they promptly filed a missing property report with American.91

Among other claims, the Cruzes argued that American could not limit the amount of recovery because the airline did not comply with Article 4(3)(f) of the Warsaw Convention, and therefore, pursuant to Article 4(4), American could not invoke the liability limitations set forth in Article 22(2) of the Warsaw Convention.92

Notwithstanding Plaintiffs' arguments, the district court ruled in favor of American and limited the Cruzes' recovery to $9.07 per pound of luggage.93 The district court stated that Article 4(4) does not require that an airline comply with all of the particulars of Article 4, Sections 3(d), (f), and (h), but rather, "a carrier loses its liability limitation protection only if it complies with none of the particulars."94 The court based its interpretation of Article 4(4) on the conjunctive meaning of the word "and," and stated that the plain language of the provision directs that liability is lifted only if all three particulars are missing.95

b. The Circuit Court's Opinion

American proposed several arguments as to why the Court should uphold the lower court's opinion and interpret the Warsaw Convention in its favor. First, American argued that using the plain language of the provision, airlines are not required to comply with all three particulars set forth in Article 4(4).96 The Court, however, refused to accept this interpretation of the provision.97 The Court recognized that the district
court's interpretation is linguistically possible, but did not think it was a reasonable construction. "It is rather clear to us that the word 'and' means that Article 4(4) of the Convention obliges a carrier to comply with each of the three particulars." 99

Second, American argued that the Cruzes were not prejudiced by the airline's failure to weigh the luggage because bags that are not weighed were deemed to weigh 100 pounds. 100 The Court stated that this argument is simply another way of stating that Article 4(3)(f)'s requirement makes little real sense. 101 After considering the purpose in weighing baggage, the Court held that "the language of the Convention is unyielding and we have no warrant to dispose with portions we might think purposeless." 102

Third, American used the reasoning set forth in Martin to indirectly argue the "primary purpose" of the Warsaw Convention, which is to limit air carrier liability. 103 American attempted to adopt the language set forth in Martin, that an airline's failure to record luggage weight is a technical and insubstantial omission that should not act to extend an airline's liability. 104 The Cruz Court rejected this argument stating that "calling the requirement technical does not reduce its obligatory force—if a carrier wishes to assert the Convention's liability limitations." 105

Fourth, American argued the need for "uniformity" in construing treaties so that the Court may be authorized to ignore the requirements of Article 4(4). 106 The Court then cited two cases where the requirements set forth in Article 4(4) were ignored. 107 The Court, however, emphasized several cases where strict compliance with the requirements of Article 4(4) was necessary in order for the airlines to benefit from the limited liability provisions set forth in Article 22(2). 108 The Court rejected American's argument, stating that it could just as easily be argued that uniformity would be served by accepting the Cruzes' position. 109 Asserting the authority of the United States Supreme Court, the appellate court stated: "[E]ven had all federal courts that had considered the issue

98. Id. (emphasis added).
99. Id.
100. Id.
101. Id.
102. Id.
103. Id.; Martin, 563 F. Supp. at 141.
104. Cruz, 193 F.3d at 529; Martin, 563 F. Supp. at 141.
105. Cruz, 193 F.3d at 529.
106. Id.
107. Id. (citing Republic Nat'l Bank, 815 F.2d at 238; Abbaa, 673 F. Supp. at 992-94).
108. Cruz, 193 F.3d at 529-30 (citing Spanner, 177 F.3d at 1175-76; Tchokponhove, 953 F. Supp. at 79; Da Rosa, 796 F. Supp. at 1509-10; Gill, 620 F. Supp. at 1456; Maghsoudi, 470 F. Supp. at 1278-80).
109. Cruz, 193 F.3d at 530.
decided that they had the authority to ignore the Treaty's language, we would not have joined them. If there are circuit conflicts, it is for the Supreme Court to supply uniformity.\textsuperscript{110}

Finally, American asserted that Montreal Protocol No. 4 clarifies the Warsaw Convention's language.\textsuperscript{111} The Court also rejected this argument, stating that Montreal Protocol No. 4 clearly amends prior law, and it cannot be given retroactive effect as American would like.\textsuperscript{112}

The Court then stated that the district court's interpretation of Article 4(4) was in error, and the airline's failure to comply with Article 4(3)(f) precluded it from invoking the $9.07 per pound limit provided in Article 22(2).\textsuperscript{113} The Court held that the Cruzes would be entitled to recover for the actual value of their lost luggage.\textsuperscript{114}

c. Strict Interpretation of the Warsaw Convention

Both the Cruz and the Spanner Courts discuss Chan v. Korean Air Lines in order to reject the airlines' arguments concerning interpretations of the Warsaw Convention—interpretations that were permitting airlines to limit passengers' recoveries regardless of the airlines' failures to comply with the baggage check procedures in the Warsaw Convention.\textsuperscript{115} In Chan, the Supreme Court held: "We must thus be governed by the text—solemnly adopted by governments of many separate nations—whatever conclusions might be drawn from the intricate drafting history that petitioners and the United States have brought to our attention.... [W]here the text is clear . . . we have no power to insert an amendment."\textsuperscript{116}

In Spanner, the Court found that United could not overcome the clear text of Article 4 of the Warsaw Convention.\textsuperscript{117} The Court went on to state that it would be difficult to imagine textual commands of greater clarity.\textsuperscript{118} Finally, the Court stated that reading into Article 4 a condition that the passenger can recover full value only if the passenger is prejudiced is, under Chan, an impermissible Amendment of Article 4.\textsuperscript{119}

In Siben v. American Airlines, the Court stated that courts in the Second Circuit and in New York State, when applying the Warsaw Con-

In Perri v. Delta Air Lines, while recognizing the substantive change in law with respect to the recording of the number and weight of a passenger’s baggage, the Court held that because the airline had failed to comply with Article 4(3)(f), and the plaintiff’s claims were brought before Montreal Protocol No. 4 went into effect, the airline could not claim limited liability as it was set forth in Article 22(2) of the Warsaw Convention. The Court agreed with the Cruz Court that had rejected American’s argument that Montreal Protocol No. 4 was a “clarification” of the Warsaw Convention’s language, and thus should have applied retroactively to the Cruzes’ claims. The Perri Court found that “Montreal Protocol No. 4 amended Article 4 and that this substantive change in the law cannot be applied retroactively in this case.”

2. Caselaw Addressing Articles 4(3)(d) and 4(3)(h)

Under the Warsaw Convention, a passenger-plaintiff could also have attempted to proceed with a claim for failure to comply with one of the other baggage check provisions, specifically, failure to record the number of the passenger ticket on the baggage check. In Tchokponhouve v. Air Afrique, the Court noted that:

[T]he number of the passenger ticket as required by subsection (d) is not a technical or insubstantial omission from a baggage receipt. The number of the passenger ticket identifies the passenger to whom the baggage belongs and is the principal means of returning baggage to the passenger from whom it was received. The omission from the baggage receipt of the number of the passenger ticket clearly prejudices the passenger whose luggage goes astray.

Although the notice of applicability statement and number of the passenger ticket had to have been printed on the “baggage check,” the
baggage check could have been and was often incorporated into the passenger ticket. Therefore, passengers were not likely to advance these claims because airlines could easily prove compliance with these provisions by showing that they incorporated the passenger ticket number and notice of applicability into the passenger’s ticket.

A passenger-plaintiff could also have attempted to proceed under the Warsaw Convention for failure to provide notice of the applicability of the Warsaw Convention. A passenger must have notice of the applicability of the Warsaw Convention in order for the Warsaw Convention to be binding on the passenger. Article 4, Section (3)(h) provides that a baggage check must contain a statement that the transportation is subject to the provisions of the Warsaw Convention. “That notice not only serves to make the passenger aware of the Convention and its effects, but gives him the opportunity to declare that the value of checked baggage is in excess of the standard limits and thereby to increase recovery under the Convention to the declared value.”

In *Lisi v. Alitalia-Linee Aeree Italiane*, the Court held that the defendant was not entitled to avail itself of the liability limitations of the Warsaw Convention, in part, because it had failed to comply with Article 4(3)(h). The defendant did not adequately give notice of the applicability of the Warsaw Convention concerning limited liability for lost or damaged baggage. The Court thought that one look at the tickets and checks compelled its decision:

The footnotes printed in microscopic type at the bottom of the outside front cover and coupons, as well as condition 2(a) camouflaged in Lilliputian print in a thicket of “Conditions of Contract” crowded on page 4, are both unnoticeable and unreadable. Indeed, the exculpatory statements on which defendant relies are virtually invisible. They are ineffectively positioned,

126. *Da Rosa*, 796 F. Supp. at 1509 n.3 (citing Republic Nat'l Bank, 815 F.2d at 235 (finding the Warsaw Convention applied where notice was printed on the passenger’s ticket)); *Seth v. British Overseas Airways Corp.*, 329 F.2d 302, 307 (1st Cir. 1964)(noting that the baggage check may be incorporated into the passenger ticket), cert. denied, 379 U.S. 858 (1964); *Gill*, 620 F. Supp. at 1455 n.1 (referring to plaintiff’s ticket as his “claim check”).
128. *Warsaw Convention, supra* note 1, art. 4(3)(h).
129. *Gill*, 620 F. Supp. at 1454 (citing Warsaw Convention, Article 22(2)).
130. *Lisi v. Alitalia-Linee Aeree Italiane*, S.p.A., 253 F. Supp. 237, 239-40, 243 (S.D.N.Y. 1966), aff'd, 390 U.S. 455 (1968); *see also Egan v. Kollsman Instrument Corp.*, 234 N.E.2d 199, 202-03 (N.Y. 1967)(wrongful death suit where court compares facts to Lisi case with respect to failure to give notice of the Warsaw Convention’s liability limitations concerning death and personal injury, pursuant to Article 3 concerning passenger tickets), cert. denied, 390 U.S. 1039 (1968); *but see Chan*, 490 U.S. 122 at 125-127 (court holds that carrier does not lose benefit of damages limitation of Warsaw Convention by failing to provide notice of limited liability concerning death or personal injury on the passenger ticket, but noted distinction between Articles 3 and 4 of the Warsaw Convention).
diminutively sized, and unemphasized by bold face type, contrasting color, or anything else. The simple truth is that they are so artfully camouflaged that their presence is concealed.132

In Stolk v. Compagnie Nationale Air France, the defendant argued that the plaintiff knew or should have known of the limitations of the Warsaw Convention because plaintiff read or should have read the notice of such limitations for loss of baggage, which was set forth in the passenger's ticket and baggage check.133 The defendant further asserted that the notice of the Warsaw Convention's limitations on liability relating to death and personal injury, printed in ten-point type, was sufficient to give the plaintiff notice of the applicability of the Warsaw Convention's limitations concerning lost baggage.134 The Court held that the plaintiff was under no obligation to read the statement of limitations of liability.135 "[T]he very specific requirement of Art[icle] 4 makes it mandatory for the carrier to include a statement of the applicable limitations in the Baggage Check if it wishes to limit its exposure for loss or damage to baggage."136 The Court concluded that the ten-point type notice relating to death and personal injury liability did not meet the Article 4 baggage check requirements, and the defendant thus could not avail itself of the liability limitations.137

B. The Convention Superseding the Warsaw Convention and Its Amendments to the Baggage Check Provisions

Under Article 17(2) of the Convention, the airline is strictly liable for damages to checked baggage.138 Therefore, a plaintiff whose claims arose or will arise after March 4, 1999 can base his or her lawsuit on an

132. Id. at 243.
134. Id. at 60 (emphasis added).
135. Id; see also Domangue v. E. Airlines, Inc., 722 F.2d 256, 259 n.15 (5th Cir. 1984)(noting that plaintiff's actual knowledge was not the issue, but rather, whether the airline afforded him the opportunity to learn of the Warsaw Convention's liability limitations on death and personal injury).
137. Id. at 62; but see Parker v. Pan Am. World Airways, Inc., 447 S.W.2d 731, 735 (Tex. Ct. App. 1969)(court found that printing on the back of the ticket and baggage check, though small, was certainly readable); Seth, 329 F.2d at 307 (court held that the statement on the passenger's ticket gave the passenger clear notice that limitations on the carrier's liability for the loss of checked baggage are provided by the Warsaw Convention and that the carrier will avail itself of those limitations if it can); Feeney, 948 P.2d at 113 (holding that the trial court did not err in concluding that a combination of notices on the passenger ticket/baggage check and on the baggage claims was adequate to notify plaintiffs of the potential applicability of the Warsaw Convention's limitation provisions).
138. Convention, supra note 3 at *44-45, art. 17(2) at *88.
airline’s failure to comply with two baggage check provisions of the Convention: (1) an airline’s failure to deliver to the passenger a baggage identification tag for each piece of checked baggage; or (2) an airline’s failure to give written notice to the passenger that the Convention governs and may limit the liability of carriers for destruction or loss of, or damage to baggage.\textsuperscript{139} However, the Convention will limit the airline’s liability regardless of whether the carrier complies with the baggage identification tag requirement and notice of applicability statement.\textsuperscript{140} Article 22(2) of the Convention limits carrier liability for destruction, loss or damage to baggage to approximately $1,350 per passenger unless the passenger declares a higher value.\textsuperscript{141}

III. Conclusion

Prior to the amendments to the baggage check provisions of the Warsaw Convention, passengers often sought full recovery of the value of their baggage by asserting the airlines’ noncompliance with Article 4(3)(f). This provision provides that an airline must record the weight and number of the passenger’s bags on the baggage check, and based on this provision, the trend seemed to be moving toward court decisions in passengers’ favors.\textsuperscript{142} Passengers also brought claims for failure to include the ticket number on the baggage check or failure to give a statement of the applicability of the Warsaw Convention concerning limited liability for lost or damaged baggage.\textsuperscript{143}

However, the Convention signed on May 28, 1999, which superseded the Warsaw Convention and its related instruments, effectively limits the types of claims passengers can proceed under. Further, regardless of airlines’ compliance, passengers’ recoveries will be limited.

Airlines are no longer required to record the weight and number of a passenger’s bags, even though the purpose behind weighing the baggage was to enable passengers to calculate their recovery, should their bags be lost or damaged. This information was meant to help a passenger decide whether he or she would like to purchase insurance. Now, a passenger’s recovery will be limited by a pre-determined fixed value, so airlines will presumably have less of an incentive to comply with baggage check procedures.

One of the purposes of the Warsaw Convention was to limit airlines’ liability, and the 1999 Convention further achieves this purpose. How-

\begin{itemize}
\item \textsuperscript{139} Convention, supra note 3, art. 3(3) and (4) at *80.
\item \textsuperscript{140} Convention, supra note 3, art. 3(5) at *80-81.
\item \textsuperscript{141} Convention, supra note 3 at *52.
\item \textsuperscript{142} Warsaw Convention, supra note 1, art. 4(3)(f).
\item \textsuperscript{143} Warsaw Convention, supra note 1, art. 4(3)(d) and (h).
\end{itemize}
ever, the scale is now tipped in the industry's favor. Despite efforts to substantially reduce the number of entries required on baggage checks, clearing the way for more efficient check-in procedures, the baggage check amendments upset the important balance between airlines and passengers.
Developing Antitrust Policy on the Internet: Lessons from the Airline Industry

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I. INTRODUCTION

Is it too early to determine how antitrust laws should be applied to electronic commerce ("e-commerce") on the Internet? Some argue that it is too early to determine how, but also whether antitrust should apply to the Internet at all. Due to the broad reach and complexities of the Internet, developing antitrust policy must seem like a daunting and intimidating task to the parties involved. The search for a model to analyze and apply is a foundational step in developing any policy.

Antitrust policy should be built around a framework whose underlying goals and broad strategies can remain relatively fixed, but flexible enough so that changes can be made as both regulators and e-commerce entities learn more. Some, including the Federal Trade Commission (FTC), have suggested that the computerized reservation systems ("CRSs") from the airline industry may be an appropriate business model to assist in the development of e-commerce antitrust policy. This suggestion is based on the belief that anti-trust enforcement successfully intervened back when the airlines used these CRSs to price fix. Other reasons supporting the use of the airline industry CRSs as an antitrust model include its similarity to the Internet in terms of global reach, the multiplicity of players, the complexity and ever-changing route structures as well as differing fares of diverse carriers.

ANTITRUST - FRIEND OR FOE?

"Is antitrust enforcement a 'friend' or 'foe' of high-tech? Let's begin at the beginning."1 The first issue is whether any antitrust guidance or regulation is needed on the Internet. Some think not, given its broad

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1. Orson Swindle, Commissioner, Federal Trade Commission, Address at the Federalist

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reach, its ever-changing essence, its absence of ownership, and it’s sheer difficulty in monopolizing. Some policy experts argue that the antitrust analysis provides a framework for prudent enforcement of competition no matter what market is at issue. This position supports antitrust enforcement, since e-commerce is just one more method in a long line of alternative methods of commercial transactions. There is no reason the current antitrust laws should not apply to e-commerce on the Internet. As Charles R. Geisst concluded in Monopolies in America,

“The history of monopoly in the United States since the early nineteenth century still relies upon a watchful government to keep big business in check. While acknowledging that our watchful government can be influenced or swayed by the political climate, in any period, antitrust oversight is still necessary. Despite whatever successes and failures, applications of the antitrust laws to this day are still very susceptible to prevailing political trends.”

The outcome of so many cases supports Geisst’s view. One could not argue against the heavy influence of political trends in the United States on antitrust enforcement. Might it be too ethnocentric to assume our country’s antitrust enforcement mechanisms have a central place in e-commerce enforcement, when we simultaneously agree that our own political trends provide a heavy influence in the direction or strength of enforcement? Whether or not the U.S. is the key enforcer, there is significant debate as to whether such oversight and guidelines are still needed in all areas of business. “Now the catalyst is the new global economy, with instant communication and computer technologies as its spine. [T]here is none of the antitrust crusading of Teddy Roosevelt’s day, and little of the populist reaction.”

The reason we are not seeing the “antitrust crusading” of earlier days is because such action would be counterproductive in today’s rapidly developing business-technology environment. Today, antitrust application, particularly with respect to e-commerce, is on uncharted territory, and territory that is shared with many worldwide players, both private and public. As such, the antitrust enforcers may be more successful if they partner with the business players in an effort, first to learn the potential

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areas for violation, and second, to accept that these very same areas are at the heart of e-commerce success.

In view of this dichotomy, the antitrust risks must be either tolerated or somehow balanced so as not to stifle innovation. To the extent that antitrust policy must be applied to e-commerce, it warrants this precarious balance. Policy must be designed to prevent collusive agreements and the abuse of market power, yet still allow the full force of innovation to proceed at its market-determined pace. Although the growth of the e-commerce market is unprecedented, Federal Trade Commission (FTC) advocates argue that traditional antitrust principles still apply. The FTC itself appears sensitive to this dichotomy yet still believes it has a vital role to play in developing, monitoring and enforcing antitrust policy on the Internet.

Other policy specialists disagree and believe a collaborative approach to the Internet, free from government interference is in order. One point of those who oppose FTC interference is that e-commerce has been successful largely because the government has not had a regulatory role. They then point to taxation and question how the rapid growth in e-commerce could be quickly stifled if users were forced to pay a sales tax. "Antitrust, if it ever were needed, is as obsolete as Windows will soon be." It appears these opponents have not noticed that even the FTC is taking a collaborative approach in catalyzing cooperative discussions be-

5. Lester Thurow, *The Zero-Sum Society*, (1980). This Massachusetts Institute of Technology Economist wrote that "the time has come to recognize that the antitrust approach has been a failure. The costs it imposes far exceed any benefits it brings." While not considered at all a radical groups, one example sometimes held out as demonstrating that the FTC is not needed to police the Internet, is the Platform for Internet Content Selection (PICS). PICS available at http://www.w3.org/PICS. PICS is an industry group dedicated to the development of technologies that give users control over the kinds of material they and their children have access to online. Several Internet Service Providers join together on this platform. PICS standards will use the open and interactive nature of the Internet to rate content in a way that can be used with blocking software and still provide an experience suitable to any audience. The standards will be self-rating, enabling content providers to voluntarily label the content they create and distribute. Id.

6. Internet Tax Freedom Act, Pub. L. No. 105-277 (1998). This Act imposed a three-year moratorium, expiring in October 2001, on discriminatory new taxes on the Internet. The law also established a 19-member Advisory Commission on Electronic Commerce (ACEC) to study what type of tax treatment should be applied to the Internet, examining whether states should be allowed to collect sales taxes from companies with no physical presence. The Commission reported to Congress April 2000. The key recommendation included proposals to extend the moratorium on Internet-specific taxes for five years and to make permanent the ban on Internet access taxes.

7. R. Barro, *Why the Antitrust Cops Should Lay Off High Tech*, *Business Week* at 20 (August 17, 1998). See J. Freedman, Why We don't Want Net Regulation, Tech Central Station Policy Tracks at 1 (July 30, 2000). "A major reason that America's high-tech industry has been so good for consumers and investors is that, for most of its history, Silicon Valley has benefited from Washington's neglect." Id.
tween all of the parties involved. The FTC is aiming for a collaboratively developed, workable policy that can serve and protect the consumers and the competition rather then stifle innovativeness. As one of the FTC Commissioners put it, “Antitrust enforcement . . . should be a “friend” of competition and a “foe” of anything that harms competition.”

This paper frames the topic by introducing the Internet and e-commerce as a market place. It offers a brief overview of key antitrust regulation and introduces the players involved, mentioning their actions to date as well as their approaches or attitudes with regard to the Internet. The heart of this paper reviews early challenges to electronic information exchanges that involve a distant ancestor of the Internet. This ancestor, the airline CRS, may have been the predecessor of the first e-commerce exchanges.

Before the Internet was in widespread use, airlines were allegedly using electronic means to share fare information, to coordinate prices, and to discourage customer discounts; the Justice Department settled a related landmark case in 1994. This paper analyzes that case to determine whether any of the guidelines from that consent decree can be adapted to provide solutions from a policy perspective for e-commerce on the Internet. Since no analysis should occur in a vacuum, this paper also contrasts several aspects of the traditional airline industry with e-commerce on the Internet. While the author’s position is that antitrust laws should become a fundamental cornerstone of national and international e-commerce policy, the conclusion is that the precedents established with respect to CRS within the airline industry offer minimal, but helpful value to developing e-commerce antitrust policy.

8. An example of this collaborative approach is reflected in the Internet Corporation for Assigned Names and Numbers, known as Icann. Icann is the board that oversees the Internet’s addressing system. It was created in 1998 by the Commerce Department to open up the monopoly on registering domain names. It’s mission is to ensure that each domain name is unique. This prevents conflicting registration companies from handing out the same address. While Icann reviews recommendations intimately, the new domain requires the approval of the Commerce Department. Chris Gaither, 7 Domains to Compete With .Com, NEW YORK TIMES TECHNOLOGY, November 17, 2000, available at http://www.nytimes.com/2000.

9. A review of the many speeches of the various commissioners of the FTC clearly shows their efforts at learning the Internet needs and possibilities from all parties involved. These speeches can be accessed via the FTC website, available at http://www.ftc.gov/speeches.

II. BACKGROUND

A. AIRLINES AND E-COMMERCE: STRANGE BEDFELLOWS

The airline industry has a rich history from which to learn and it does share some similarities with the Internet:

1. The airline industry is global, so U.S. jurisdictional problems and conflict of laws have been addressed. Since the Internet and e-commerce are global in scope, the United States government has been at the forefront of proposing policies through the World Trade Organization. However, creation of policy takes time. Meanwhile, the private sector, national governments, and multilateral organizations will continue to struggle with old public policy issues as well as new issues resulting from this emerging technology. While there may be some helpful comparisons with the airline industry on this matter, those comparisons are not addressed in this paper.

2. The airline industry’s CRSs have been in use for decades. These CRSs offered opportunities for price signaling and boycott in a manner similar to e-commerce on the Internet.

As such, we can be guided by reviewing applicable segments of the airline industry’s history.

B. A BRIEF OVERVIEW OF THE AIRLINE INDUSTRY

Some have postulated that the airline industry is an appropriate place to look for guidance on developing front line issues regarding antitrust on the Internet. A quick introduction to the airline industry follows: The airline industry was deregulated in 1978, 23 years ago. At that time, the Civil Aeronautics Board had the authority to create rules governing antitrust within the airline industry. The airline industry was regulated much like the utility industry. The authority of the CAB over the airlines was somewhat comparable to the FTC’s authority over antitrust matters of non-regulated industries.

Then on January 1, 1985, most of the CAB authority, as well as responsibility for rules administration, were transferred to the Department of Transportation (DOT). On January 4, 1985, the CAB released a Notice of Transfer, Removal and Re-issuance of Regulations to the Trans-
portation Department. At that time, the DOT was in the process of consolidating all of the Board’s antitrust rules, found in various sections of the Board’s rules, into a new Part 303.

The purpose of deregulation was, of course, to make the industry more consumer affordable and competitive. Ever since deregulation occurred, there are “experts” on both sides of the argument, positioning with essentially equal strength, that deregulation has been either a god-send or the downfall of the industry. Generally, prices are down. Frequent and convenient service is available to most all cities. This industry, unlike the Internet, is heavily reactive to and dependent upon the fluctuating price of fuel as well as the burden of volatile union labor agreements.

It appears that the airlines have accomplished some of the goals of antitrust enforcement. Though deregulated, the airline industry and government have worked together to create efficiencies. This cooperation, at least as it appears to those outside the industry, is perhaps a model of the type of relationship that the FTC and e-commerce businesses could look to for guidance. There are airline industry precedents, available to serve as business models for analysis, that date back to 1974.

C. A Brief Overview of Antitrust Legislation

One foundational principle of antitrust is that trusts and monopolies are concentrations of wealth in the hands of a few and that these conglomerations of economic resources are considered to cause injury to both individuals and the public. This is because such trusts and conglomerations are believed to reduce competition in the market place and result in undesirable price controls. As a result, the argument goes, the markets stagnate and sap individual initiative. The loser in this scenario is of course, the consumer. Remember, the proper goal of antitrust law should be to prevent acts and practices that are harmful to “consumer

13. Rules and Regs. Civil Aeronautics Bd., 50 F.R. 451, available at 1985 WL 83047 (January 4, 1985). The Airline Deregulation Act of 1978, Pub. L. No. 95-504, 92 Stat. 1705 (codified as amended in scattered sections of 49 U.S.C.), provided for the gradual transition from an airline industry that was controlled by government regulation to one largely controlled by the marketplace. As a part of the final phase of this process, the CAB ceased to exist on December 31, 1984 and most of its authority transferred to the Department of Transportation. Some of this authority, such as oversight protection, was included in the CAB Sunset Act of 1984.


16. Id.
To prevent these trusts and monopolies from creating restraints on trade or commerce and reducing competition, Congress passed the Sherman Antitrust Act in 1890. The Sherman Act serves as the pillar of antitrust law. The Sherman Act, under §1, prohibits “every contract, combination . . . or conspiracy in restraint of trade or commerce among the several States, or with foreign nations. . . .” Such contracts or conspiracies in restraint of trade could apply to mergers and joint ventures. The Sherman Act under §2 prohibits monopolies or attempted monopolies that actually restrain trade. Section 2 also covers price fixing and price signaling. A bit later came the Clayton Act. The Clayton Act, passed in 1914, prohibits mergers or acquisitions that substantially lessen competition or tend to create monopolies. The emphasis of the Clayton Act is on activities that “may tend” to restrain trade.

The third piece of legislation that must be looked to in developing policy for e-commerce is an amendment to the Clayton Act, better known as the Robinson-Patman Anti Discrimination or Price Discrimination Act. The Robinson-Patman Act governs, among other matters, price discrimination. It requires sellers to treat all competing customers on

19. Under §1 of the Sherman Act, business people are required to conduct their business matters and make commercial decisions unilaterally and independently, not in collaboration with their competitors. This is actually at the heart of several airline cases analyzed in this note. An unlawful agreement could be one between two or more competitors or between a manufacturer and its customer. The agreement need not be overt and need not be reduced to writing. An unlawful agreement may be inferred from any written or oral communication that appears to have motivated parties to engage in agreed upon conduct. Even casual conversations or confidential discussions may provide a basis for a §1 claim.
21. “Every person who shall monopolize, attempt to monopolize, combine of conspire with any other person or persons, to monopolize any part of the trade or commerce among the several states . . . shall be . . . guilty of a felony.” 15 U.S.C. §2 (1999).
22. Under the Sherman Act §2, it is unlawful to monopolize a market. It is not the result of having a monopoly that is illegal, as this could happen by having superior quality, a better product, marketing, management or luck. 15 U.S. C. §2 (1999).
24. Some restraints are directly covered by the Clayton Act. Generally, the Clayton Act standard is looser than the Sherman Act. The Clayton Act standard of illegality is where the restraint or merger or acquisition may tend substantially to lessen competition or create a monopoly in any line of commerce.
26. The Robinson-Patman Act also prevents a supplier from charging different prices to competing purchasers of products of like grade and quality where the effect of such price discrimination may be to injure competition. Discrimination in price may take many forms such as cash discounts, volume discounts or rebates, credits, free delivery or freight allowances, favorable credit terms or free merchandise. Alan J. Weinschel, Antitrust and Cyberspace, in
the same basis, unless there is some recognized legal justification for different treatment.\textsuperscript{27} For example, if two purchasers are traditional brick and mortar businesses in the same neighborhood, their prices as well as promotional support such as advertising and product demonstrators, must be offered on a proportionally equal basis. The rational is that they compete with each other so there must be a level playing field. However, if traditional customers were on opposite sides of the world, they would not logically compete with each other and the above requirement would not apply. Having said that, today, with e-commerce on the Internet, two business on opposite sides of the world can directly compete with each other. E-commerce brings us global competition, as though the businesses are in the same neighborhood. The Robinson-Patman Act offers several affirmative defenses that may be used to justify varying treatment, if such treatment simply reflects the lower costs of doing business with a large customer. Or, for example, if it is necessary to meet other direct competition. However, presumably these defenses would not be acceptable because global e-commerce businesses compete in the same neighborhood.

There are two categories of antitrust offenses, per se and rule of reason. Per se violations include unlawful agreements whose sole objective is to restrain competition and enhance or maintain prices.\textsuperscript{28} Rule of reason is the gauge used to judge all other antitrust matters. An early forerunner of the Internet, where the rule of reason was used, is the Chicago Board of Trade case.\textsuperscript{29} This case presents the classic sort of initial articulation of the Rule of Reason in antitrust §1 cases.

The antitrust laws that came out of the robber-baron era have not gotten in the way of mega-mergers or other actions related to the Internet. They are enforced, sometimes aggressively so, but the enforcement is selective and flexible. "AOL Time Warner [is] free to dominate their markets, as long as they do not egregiously violate the rules. The chief rule: Do not use market power to manipulate prices or take unfair advantage of competitors."\textsuperscript{30} The Commissioner of the FTC responds to this as though he sees it through the eyes of the consumer. "However laudable other policy objectives might be, the proper goal for antitrust enforcement is to preserve and protect the benefits that consumers derive


\textsuperscript{28} United States v. Addyston Pipe & Steel Co., 85 F. 271 (1898), aff'd 175 United States 211 (1899).

\textsuperscript{29} Chicago Board of Trade v. United States, 246 U.S. 231 (1918).

\textsuperscript{30} Louis Uchitelle, Who's Afraid Now That Big is No Longer Bad? N.Y. TIMES, November 5, 2000.}
Developing Antitrust Policy on the Internet

To prepare for the rash of new antitrust questions brought on by the Internet and electronic commerce, the FTC and DOJ must look well beyond the Sherman Antitrust Act. Even the Robinson-Patman analysis must be adjusted to apply to electronic commerce. Since Robinson-Patman prevents discrimination between “competing” customers, for example those in the same geographic area, how will “competing” customers be defined on the Internet? In this sense, the airline industry has been there. All customers of the airlines as well as of e-commerce compete with each other since geographic differences are non-existent. Much like CRSs of the airlines, the Internet creates a national and international marketplace online. It will be more difficult for merchandisers to charge different prices to any party via Internet, unless there is a strong justification for doing so.

III. Antitrust Regulators and Enforcers

Last summer, the FTC took the unusual step of calling a two-day conference to discuss the development of Internet antitrust policy. The FTC invited executives, lawyers and consumer advocates to discuss how to regulate B2B marketplaces. The workshop titled, “Competition Policy in the World of B2B Electronic Marketplaces” attracted more than 500 attendees. It included six separate panel discussions led by FTC staff asking questions regarding the future of electronic marketplaces. Several interesting pieces of information flowed from this gathering.

Clearly, the FTC recognizes that e-commerce offers enormous potential to improve efficiencies and cost-savings as well as the potential to raise antitrust concerns. While they have not yet developed guidelines aimed at this marketplace, it is largely because they want to be careful not to stifle innovation. In the FTC Chairman’s opening remarks, he stressed that the FTC intends to study and understand e-commerce before regulating it. The FTC currently has no targets or enforcement policy. They acknowledge that e-commerce offers both efficiencies and potential antitrust problems. They are now looking for insights into how


to ensure that e-commerce harnesses these efficiencies, creates competition and operates in a competitive environment.

Another FTC Commissioner, Orson Swindle, spoke later and emphasized that the FTC, politicians and other regulators do not yet have the knowledge required to regulate e-commerce. He believes that regulators must get this right, otherwise they could do terrible harm. He predicted that in the future, e-commerce would no longer involve special innovation, but would be just a cost of doing business.33 Consistent with the FTC Chairs comments, the panel expressed concern that premature regulation could stifle innovation. Jointly, industries and consumers will be the ones who determine whether emerging e-commerce business models succeed.

The FTC has invested substantial time and energy in looking at technology’s impact on both competition and consumer protection and believes traditional antitrust rules apply.34 E-commerce raises interesting and complex policy issues like privacy, security, and cross-border jurisdiction. Further, Commissioner Thompson emphasized that not just one set of stakeholders, neither the industry, government or consumers, will be able to address the issues alone. Rather, the best policy resolutions will stem from an “interactive approach, where regulators and industries engage in a dialogue and take a critical look at issues, like anti-competitive behavior, and think about how to address the concerns.”35

Yet another FTC Commissioner, Leary, observed that the antitrust laws have survived and developed over the years even with increased economic sophistication. The issues raised in B2B e-commerce are similar and applicable to those raised in joint ventures;36

1. share of market power,
2. size and scope of the deal,
3. essential facility,
4. due process for removal of members,
5. ancillary restraints,
6. price signaling,
7. spill-over effects and
8. least restrictive alternatives apply.

35. Id.
He predicted that B2B e-commerce interactions will create winners and losers. As always, when there are losers, there will be litigation.\textsuperscript{37}

Public policy implications were discussed and it was agreed that the future of e-commerce hinges on the technology, the market mechanism, the number of participants and the unique requirements of the particular industry. Each interaction requires liquidity and standardization if the consumers are to get the most benefit out of it. Companies need the ability and incentive to participate in a number of e-commerce exchanges, either in a vertical arrangement or in a supply chain network. The number of participants will depend on the degree of standardization of the product offerings. There was overall agreement the market would develop a number of exchanges to meet the needs of customers. The panelists supported the FTC's study of antitrust implications of the B2B e-commerce marketplace.\textsuperscript{38}

Information sharing was raised as a hot topic of discussion. Information sharing can lead to collusion or be used to assist customers in their decision making process.\textsuperscript{39} Real time reporting of transactions facilitates price signaling, yet it also provides good customer service. The panelist then raised the similarities to the type of price signaling used by the airline computer reservation systems 25 years ago. To protect against this, several present suggested that the FTC look to the United States v. Airline Tariff Publishing Co. decision, as instructive. This case is analyzed later in this paper. While some panelists, for example, Mark Cooper, Research Director of Consumer Federation of America, suggested that the FTC should develop rules, either formally or informally, to protect against anti-competitive information sharing,\textsuperscript{40} others, like the representative from the National Association of Manufacturers (NAM) did not see information exchange as a potential problem.\textsuperscript{41} His argument posits that information sharing should not be a concern because the information provided is anonymous, so that customers cannot identify which company is posting the pricing data. Since price-source identification is unlikely, collusion seems unlikely as well. Information sharing decreases the transaction costs and increases productivity. The final point is that the suppliers are not likely to share information with their competitors.\textsuperscript{42}

\textsuperscript{37} Id.

\textsuperscript{38} Id.

\textsuperscript{39} It was the exchange of information combined with advanced pricing that was at the heart of the Airline Tariff Publishing case, discussed later in this note.

\textsuperscript{40} Mark Cooper, Research Director of Consumer Federation of America, Address at the FTC Conference (July 29, 2000) available at http://www.ftc.gov.

\textsuperscript{41} Jerry Jasinowski, National Association of Manufacturers, Remarks from the FTC Conference (July 9, 2000) available at http://www.ftc.gov.

\textsuperscript{42} FTC Workshop summary, supra.
A. ROLE OF THE FEDERAL TRADE COMMISSION

FTC supporters believe the FTC should act as a referee, protecting the process of competition so that competition may occur on its merits. The FTC believes it can make sure innovation in electronic commerce is not compromised by either artificial barriers to entry or by regulatory fiat. The FTC boasts that a century of experience with traditional industries demonstrates that market-based competition is almost always preferable to greater private market power or government regulation. The strongest argument in favor of FTC regulation of e-commerce on the Internet is the vast experience of the FTC.

While not addressed specifically to the FTC, in July 1997, President Clinton issued a "Directive on Electronic Commerce." He set forth a Memorandum for the Heads of Executive Departments and Agencies guiding the government’s actions according to the following principles:

1. The private sector should lead in the development of e-commerce
2. Government should avoid undue restrictions on e-commerce.
3. Where government involvement is needed, its aim should be to support and enforce a predictable, minimalist, consistent and simple legal environment for commerce.
4. Government should recognize the unique qualities of the Internet.
5. E-commerce over the Internet should be facilitated on a global basis by the private sector and national governments.

Given U.S. policy is to be established in light of these five principles, the FTC's official position over the last few years is on target. It's efforts are more directed at cooperation and learning from the other players, rather than taking a restrictive approach in overseeing electronic commerce over the Internet.

B. ENTER THE DEPARTMENT OF JUSTICE

One year ago, the FTC and the Department of Justice (DOJ) issued a draft, “Antitrust Guidelines for Collaborations Among Competitors.” These guidelines summarize and provide a description of the relevant

43. Incumbent competitors sometimes create artificial barriers to entry in an effort to keep more competition out. They succeed at this by impeding the development or growth of the market through exclusionary conduct either collective or unilateral. David A. Balto, "Emerging Issues . . . supra. See FTC News Release available at http://www.ftc.gov/opa/1999/9904/imall (April 15, 1999).
45. Id.
The guidelines cover the following:

1. There is a “safe harbor” for collaborations that account for less than 20% of the market. They are not likely to face a challenge. The majority of strategic Internet alliances will fall under this safe harbor.

2. Arrangements that do not meet the safe harbor and fall short of “full integration” will receive rule of reason evaluation. Before, some suggested that the rule of reason was only available where a legal entity was formed of fully integrated joint ventures.

3. When FTC and DOJ agencies apply the rule of reason, they will make an early inquiry as to whether there are likely anti-competitive effects. If none, the joint venture will be quickly approved.

4. Where joint venture members retain the incentive and ability to compete against the venture (“insider competition”), enforcement action may not be warranted where the action may have otherwise been warranted.

This fourth guideline may be the savior for e-commerce. Internet site exchanges create a marketplace for companies in the same business. The sites can compile huge amounts of sensitive data and are often jointly owned by corporate rivals. These very sites also create opportunities for collusion and price-fixing that did not exist before.

Further, in May 2000, the FTC issued a comprehensive report to Congress addressing online privacy. U.S. companies engaged in e-commerce are already subject to the Federal Unfair and Deceptive Trade Practices Act. This statute governs unfair business practices, but not online privacy specifically. Although the U.S. policy has encouraged the private sector to take the lead in self-regulating online privacy, the FTC found that such efforts were inadequate. In its report, the FTC recommended that Congress pass legislation to protect online privacy based on the following four accepted principles: notice, choice, access, and security. Businesses advocating legislation based on widely accepted principles...
ples concerning online privacy point out that U.S. law would be consistent with the E.U. directive and provide consumers with confidence using the Internet for E-commerce.

C. DEPARTMENT OF TRANSPORTATION (DOT)

In 1998, the DOT proposed guidelines on Unfair Competitive Practices for the airline industry. The proposed policy statement below is worth reviewing to determine whether any of it should apply to e-commerce. The policy defines specific kinds of competitive behavior that is unfair and exclusionary. It was, in part, a result of the concern that major carriers were willing to lose money in the short term to drive off competition. The number of very low cost seats can only be viewed as economically viable if the carrier’s objective is to force out the competitive start up carriers. Start-ups have voiced this complaint for some time and even the Justice Department is investigating whether the biggest airlines are using anti-competitive practices at hub airports. As is the case in all anti-trust policy, the Guidelines on Unfair Competitive Practices are designed, not to protect the individual start-up carriers, but to simply level the playing field.

While the DOT intends to examine possible unfair practices on a case-by-case basis, the policy states three identifiable patterns of behavior that will trigger an investigation. These three triggers are:

1. the major carrier adds capacity and sells such a large number of seats at very low fares that the ensuing self-diversion of revenue results in lower local revenue than would result from a reasonable alternative response,
2. the number of local passengers that the major carrier carries at the new entrant’s low fares (or at similar fares that are substantially below the major carrier’s previous fares) exceeds the new entrant’s total seat capacity, resulting, through self-diversion, in lower local revenue than would be from a reasonable alternative response,

§§ 6801-6810 and §§6821-6827 (1999). Generally, the GLB Act requires financial institutions and other persons to issue regulations to implement notice requirements and restrictions on a financial institution’s ability to disclose nonpublic personal information about consumers to nonaffiliated third parties, unless they satisfy disclosure and opt-out requirements and consumer has not elected to opt out of the disclosure. The F.T.C. has been a major player in the development of privacy law. It has already brought six law enforcement cases alleging that the defendants’ data collection and dissemination practices violate the FTC Act. D.Reed Freeman, Jr., in Online Privacy (2000) available at http://www.findlaw.com.


53. Id.
3. the number of local passengers that the major carrier carries at the new entrants low fares (or at similar fares that are substantially below the major carrier’s previous fares) exceeds the number of low-fare passengers carried by the new entrant, resulting, through self-diversion, in lower local revenue than would be from a reasonable alternative response.

The DOT clarified that this is not an attempt to re-regulate the aviation industry. DOT representatives met with airline management and workers, lawmakers, consumers, leaders, city and state officials and others to discuss these guidelines. One of DOT goals is to expand opportunities to new entrants. Commissioner Slater’s remarks emphasize the fact that there were about 600 million passengers flying in 1998, yet by 2010, one billion people are predicted to be flying each year. The DOT emphasizes the importance of working with the industry to maintain competitiveness, safety and economies for consumers.

While instructive with regard to the backdrop of the airline industry’s history, the real lessons relative to the Internet concern the airline owned computer reservation systems, where much antitrust litigation has occurred.

IV. GUIDANCE FROM THE AIRLINES

In the seventies and early eighties, prior to everyday use of e-commerce, large, traditional competitors in the airline industry controlled a vital tool for competition, the CRS. The major carriers were able to handicap innovative rivals by:

1. denying new competitors access,
2. ordering information in a manner that biased the booking of flights on the CRS owners’ airline and,
3. conspiring by publishing fares well in advance of effective date.

The Department of Transportation began to regulate these practices, by publishing CSR rules. Their purpose is to assure consumers the benefits of effective competition by keeping the carriers who own distribu-

55. Id.
56. Using the SABRE system, American Airlines was able to bias the presentation of a comprehensive flight listing by giving its own offerings slightly more richness and greater prominence. Evans and Wurster, Blown to Bits, 39 (Boston Consulting Group, 2000).
57. The Department of Transportation serves as an antitrust enforcement agency with explicit statutory authority in the transportation industry, comparable to that of the FTC in the rest of the economy. Alfred E. Kahn, from Summary of Oral Statement Before the Senate Committee
tion technology from using it to exclude or injure competitors through biasing the presentation of data.

A. DEPARTMENT OF TRANSPORTATION RULES FOR CSRS

DOT rules for CRSs were established in the early 1980s, to assure consumers the benefits of effective competition by keeping air carriers that own distribution technology from using it to exclude or injure competitors through biasing the presentation of data. The rules require among other things, that a carrier-owner of a CRS must distribute its fares and schedules to all systems to the same extent it participates in the system it owns.58

The DOT has a long-pending rulemaking on whether these rules should be updated to expand the definition of CRS to include all reservations made over the Internet, by other travel concerns. DOT has called for updated public comments. While the spirit of wanting to expand the rulemaking to cover the airline ticketing over the Internet is understandable, the actual application may fall far short of what the Internet requires. However, applying the rules to the Internet is a positive first step.

B. COLLUSION, INFORMATION SHARING, PRICE SIGNALING

Sadly, these three words are common within the history of the airline industry. Maybe because of the number of lawsuits regarding matters relating to CRS antitrust violations and hidden predatory pricing in the hub and spoke system.59 Information sharing can be a way of negotiating agreements among sellers to raise prices; it can be a way of facilitating problem-solving that cartels face in how to raise prices or reduce output; and it can also be used as a way to detect and punish deviators.

During the late seventies and eighties, there were a rash of antitrust cases within the airline industry. This may have been in part, a backlash from deregulation in 1978 and from the many start-up carriers trying to become established. While a number of cases dealt with monopoly power and predatory pricing arrangements, this note will attempt to focus exclu-

58. The DOT has authority under 49 U.S.C. 41712 to stop unfair exclusionary conduct in the airline industry. This statute authorizes the DOT to prohibit conduct that does not actually amount to a violation of the antitrust laws, but could be considered anticompetitive under the antitrust principles. See also, Bill Mosley, Proposed Statement of Enforcement Policy on Unfair Exclusionary Conduct by Airlines, U.S D.O.T. News (April 6, 1998) available in http://www.dot.gov/affairs/1998/dot6398a.htm.

59. While there is a wealth of material regarding predatory pricing within the hub and spoke system, such analysis is beyond the scope of this note.
sively on those cases involving computer reservation systems as those outcomes are most applicable to the Internet.

The much-touted Airline Tariff Publishing (ATP) Case resulted in a consent decree. The FTC is interested in this particular case and decree and this is the case they raised as a topic in the FTC workshop on e-commerce. The FTC asked participants if anything from the consent decree could be applied to the antitrust analysis for the Internet. Quite possibly, the FTC missed the mark here as the CRS rules issued by the DOT\textsuperscript{60} in the eighties could have a more effective application to the Internet than most of the ATP case rules. A review of the transcript of the FTC workshop leads one to believe there was little enthusiasm for applying the ATP case lessons to the Internet. Nonetheless, there are some principles that can be extracted from the ATP case and combined with other cases to formulate a foundation for antitrust guidance for e-commerce.

C. AIRLINE CRS ANTITRUST CASE HIGHLIGHTS

(1) Alaska Airlines v. United Airlines and Northwest v. American Airlines

In 1974, American Airlines obtained government approval to attempt to persuade the other major airlines to pool their resources and create a jointly owned CRS. The CRS was intended to provide participating travel agents with schedule, fare, and seat availability information for every airline that subscribes to the CRS. Further, a CRS allows travel agents to send and receive airline booking data, book space on flights, and automatically prepare tickets and advance boarding passes. Since the facts of this case provide a useful background to understanding the ATP case, they are summarized below.

The proposed joint project collapsed in 1976 due to insufficient funding. Soon after, United Airlines (UA) announced that it would create a proprietary CRS under the trade name of Apollo. American Airlines (AA) followed suit, by announcing that it would create its own CRS, under the name SABRE. SABRE, was comprised of six IBM mainframe computers that are connected to nearly 100,000 other devices, including computer terminals, ticket printers, and boarding pass printers. More than 11,000 travel agency locations used SABRE to handle airline as well as hotel and car reservations for their clients. SABRE contains schedules for more than 650 airlines and projects more than one year into the future. At that time, SABRE processed over 10 million reservations a month.

\footnote{60. See supra, note 54.}
Other airlines also developed their own CRSs. SABRE (AA) soon became the largest and Apollo (UA) was the second largest. Shortly after these two CSRs began operations, Congress deregulated the airline industry.\textsuperscript{61} Deregulation increased the demand for computerized fare and flight availability information, since a substantial percentage of total air passenger bookings were made through CRSs.

The CRSs worked by having the airline pass flight information to them, then the CSRs would provide this information to the travel agents. The travel agents in turn used the information to serve consumers, who naturally desire the lowest airfares and the most convenient flights. The travel agents would pay the CSR nominal fee, if any. However, the CRS charged other airlines a substantial amount for such services. The Civil Aeronautics Board ("the Board") ruled in 1984 that each CRS owner must charge its airline customers a uniform rate.\textsuperscript{62}

The CRS market's structure made it resistant to normal disciplinary mechanisms. For example, a CRS's market share\textsuperscript{63} might be thought to depend on how many travel agents and how many airlines subscribe to it. However, since all airlines subscribe to all CSRs, the only variable to determine market share was the number of travel agents who subscribed. American charged $1.75 fee to each airline to secure one booking. It was of little consequence because it earned a corresponding multi hundred-dollar fare. Economics tell us that an airline will withdraw from a CRS if the airline's cost exceeds the net revenue gained by the booking.

The plaintiff airlines were each previous subscribers to Apollo and SABRE. They brought this suit under the Sherman Act because they were unhappy about their largest competitors ability to extract substantial booking fees from them. They argued that UA and AA had each violated §2 of the Sherman Act\textsuperscript{64} by, among other things: (1) denying plaintiffs reasonable access to their CRS services, which were alleged to be "essential facilities;" and (2) "leveraging" their dominance in the CRS market to gain a competitive advantage in the downstream air transportation market.\textsuperscript{65}

The district court granted summary judgment in favor of defendants on both claims. Plaintiffs appealed. At the conclusion of pretrial proceedings in September 1989, two separate CRS cases were ready for trial:

\begin{itemize}
  \item 62. See 14 C.F.R. § 255.5(a).
  \item 63. The market share of a CRS is the actual proportion of flights that are booked through it.
  \item 64. Recall, §2 of the Sherman Act deals with monopolization and attempted monopolization. 15 U.S.C. §2, (1999). The offense of monopoly occurs when an entity with "monopoly power" engages in anticompetitive or predatory conduct to maintain or further that power. An attempt to monopolize requires a specific intent to monopolize along with a dangerous probability that the entities efforts will be successful in achieving a monopoly.
  \item 65. Alaska Airlines V. United, 60 USLW 2327, 1991-2 Trade Cases P 69,624.
\end{itemize}
(1) a suit by Northwest Airlines against American Airlines, and (2) a suit by Alaska Airlines, Midway Airlines, and Muse Air Corporation (now part of Southwest Airlines) against United Airlines. The district court consolidated these cases and tried both of them simultaneously. The District Court for the Central District of California, granted partial summary judgment against plaintiff competitors, and they appealed. The Court of Appeals held that any leverage that airlines gained over competitors through control of computerized systems fell short of power to eliminate competition and thus did not violate antitrust laws. The court of appeals affirmed the lower court.66

(2) United Airlines v. Civil Aeronautics Board

While an actual case never arose from this action by United Airlines,67 it may represent an example of perhaps the largest of the violators attempting to charge the “enforcer” with arbitrary and capricious behavior. The well-known Justice Posner, while still a Circuit Judge, heard a petition to review the rules issued by the Civil Aeronautics Board concerning CRSs that airlines develop and then provided to travelers.

Judge Posner’s opinion upheld the CAB’s anti-bias rule. The court essentially held that unless an airline limits its operations to one small region, it must persuade several of the largest airlines to list its flights in their [CRS] systems if it is to have a fair chance of success.69 It is thus dependent for an essential facility on what may be its principal competitors. Judge Posner’s opinion includes a number of helpful observations.

The Seventh Circuit held, as a matter of administrative law, that the CAB’s exercise of rulemaking authority was within the scope delegated by Congress.70 Under these statutory provisions the CAB is authorized to forbid anticompetitive practices “before they become serious enough to violate the Sherman Act.”71 The court ruled that the CAB’s ruling was “plausible, if not compelling, [and its] rules can not be set aside as arbitrary and capricious.”72 The Seventh Circuit did not rule that United’s CSR (Apollo) was an essential facility; it merely held that the Board’s analysis was not arbitrary and capricious in light of its statutory authority.

66. Id. While concerted conduct is subject to sanction under Sherman Act if it merely restrains trade, unilateral conduct is subject to sanction only if it either actually monopolizes or threatens monopolization. Sherman Anti-Trust Act, §§ 1, 2, 15 U.S.C.A. §§ 1, 2; Clayton Act, §§ 4, 5, 5(a), 15 U.S.C.A. §§ 15, 16, 16(a).
68. United is also a frequently named defendant in airline antitrust actions.
69. See, United Airlines, supra.
71. UA v. C.A.B., 766 F. 2d at 1114.
72. Id. at 1116.
Thus, the Board has the power to outlaw conduct that may restrain competition.

More interesting, however, are Judge Posner’s comments on the CRS market:

If the owner of a computerized reservation system used the system to weaken competition from other airlines, it is a little hard to see why those airlines would not simply switch their patronage to a competing system that was not biased against them. Competition would (one might have thought) force at least some of the owners of competing systems to offer unbiased listings in order to expand the market for their systems. Even if every airline owner refused, because of the impact on its air transportation revenues, to give equal prominence to a competitor’s flights, there is nothing to stop independent companies from offering a computerized reservation system with no such inhibitions—and one does.73

The court, however, goes on to state that an airline needs to be listed “at least in the largest” CRSs. “Of course, if the owner of a system charges such a high price that no competing airline will pay it, the owner is hurt. It not only loses revenues from that airline; its system will be worth less to travel agents if it contains less information. But the owner may be able to extract a high enough price from competitors to slow their growth; indeed, that may be the purpose of the high prices.”74

He concluded that the CRS vendor will charge as high a price as it can without losing participating airlines (and thereby decreasing the attractiveness of its’ CRS).

Posner held that the rules were not arbitrary and capricious and he denied the petition.

(3) Air Passenger Computer Reservations System Antitrust Litigation v. American Airlines

In 1988, the U.S. District Court, C.D. California, heard the case of the Air Passenger Computer Reservations Systems Antitrust Litigation v American Airlines.75 This case involved several carriers against American Airlines (AA) and United Airlines (UA).76 The many carriers
brought action against AA and UA alleging antitrust violations and attempts to monopolize certain air transportation markets and computerized reservation systems. These charges were brought under §2 of the Sherman Antitrust Act. Recall, §2 prohibits monopolization, attempted monopolization and conspiracy to monopolize. In the absence of any purpose to create or maintain a monopoly, the Sherman Act does not restrict the long-recognized right of a trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.

On motion for summary judgment, the District Court held that:

1. Computerized reservation systems do not constitute essential facilities;
2. Monopoly leveraging theory was not available; but
3. Genuine issue of material fact existed with respect to allegations of monopolization and attempted monopolization.

One of the charges was “predatory pricing.” Predatory pricing refers to a firm’s attempt to drive a competitor out of business, or to discourage a potential competitor from entering the market, by selling its output at an artificially low price. The theory is that, once the rival has been dispatched from the market, predator will be able to reap monopoly profits that will more than pay for the losses incurred during the predatory period.

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78. This principle is referred to as the Colgate Doctrine. United States v. Colgate & Co., 250 U.S. 300, 307 (1919).
79. The essential facilities doctrine imposes on a business the obligation to provide its competitors reasonable access to that facility. Byars v. Bluff City News Co., 609 F.2d 843, 856 (6th Cir.1979). An essential facility is one which cannot be reasonably duplicated and to which access is necessary if one wishes to compete. Fishman v. Estate of Wirtz, 807 F.2d 520, 539 (7th Cir.1983). A refusal to deal in this context violates section 2 because control of an essential facility can “extend monopoly power from one stage of production to another, and from one market into another.” MCI Communications Corp. v. American Tel. & Tel. Co., 708 F.2d 1081, 1132 (7th Cir.1983). “Essential Facilities,” under a monopolistic refusal to deal, is where the supplier refuses to deal in order to control a downstream market. For example, in MCI v. AT&T, the court found (1) Control of an essential facility by a monopolist; (2) Competitor’s inability practically or reasonable to duplicate the essential facility; (3) Denial of the use of the facility to a competitor; and (4) Feasibility of providing the facility. MCI v. AT&T, 708 F. 2d 1081, 1132-33 (7th Cir. 1983). The Supreme Court has never held that unlawful refusal to deal can only be established under the “essential facilities” rubric. ITS v. Eastman Kodak, 125 F. 3d 1195 (9th Cir. 1997). Section 2 “prohibits a monopolist from refusing to deal in order to create or maintain a monopoly absent legitimate business justification” Id. at 1209. The plaintiff need not prove “essential facility” or “necessity.” Id.
The prosecution showed a dangerous probability of success of UA and AAs attempts to monopolize air travel to and from particular hubs. The evidence demonstrated significant access restrictions to the hub. A powerful showing was evidence that the defendant airline's market share rose from 30% to 63% during the time in question. Also presented was the fact that three different airlines left the market during the same period of alleged anticompetitive conduct.\(^81\)

An inference that the airline willfully attempted to attain or maintain monopoly power with respect to computerized reservation system by tying up its participating travel agents, could also be drawn from the evidence. The evidence was that the airlines contracts with travel agents, as users of its system, were meant to lock in the agents to long term arrangements and high liquidated damage provisions. This way, the airlines could increase display bias\(^82\) of the CRSs without seriously risking loss of subscribing travel agents.\(^83\) The plaintiff airlines alleged that the competing airlines computerized reservations system violated the antitrust laws. They could show the competitor's market power by showing (1) that all the vendors of computerized reservations systems had market power due to vigorous competition in the air transportation market that required all airlines to be carried on all of the reservation systems or (2) by showing that competitor's implementation of coercive contractual provisions raised entry barriers\(^84\) and created or allowed the airline to maintain a monopoly power.\(^85\)

An antitrust plaintiff must prove injury causally connected to the violation of antitrust laws and that the injury is of the type the antitrust laws were intended to prevent. Here, the plaintiffs showed a direct injury caused by monopoly power. The evidence demonstrated that booking fees charged by the airline to the competitors for use of its computerized reservation system were supra competitive and that the revenues which were diverted by the display bias of the system\(^86\) constituted overcharges, showing a direct injury that was caused by monopoly power.


\(^{82}\) Display bias is when the airline programs the display to show all of it's own flights first to the city pairs requested. Only after its flights are all displayed would the other carrier's competing schedules come into view.


\(^{84}\) "Raising the entry barriers" is a form of exclusionary conduct. The monopolistic exclusionary conduct is proven by demonstrating the behavior is (1) directed against a competitor, and (2) with the purpose to create or maintain a monopoly. Lorain Journal Co. v. United States, 342 U. S. 143 (1951). However, the monopolist may rebut by establishing business justification. \textit{Id.}

\(^{85}\) \textit{Id.}

\(^{86}\) \textit{See Display Bias, supra note 82.}
Orbitz

Orbitz is not a case to study; not yet anyway. Orbitz is a website of the five largest U.S. Airlines. These competitors continue to compete on price and service in their core businesses and in the retailing of their businesses, while collaborating to create an e-commerce purchasing options for passengers. Orbitz's states that its' purpose is to add an online option to existing distribution channels so the public can view all publicly available schedules and fare options at the same time. Its' objective is to provide more information then has been available before.

Some argue that Orbitz represents a venture that may be used for anticompetitive purposes. The claim is that the airlines would use the Internet with concerted action and competitive advantage (the ability to advertise and sell the lowest fare) only to members of the joint venture. The fear of non-members is that the lowest fares available will be accessed exclusively on the Orbitz system. Antitrust is not designed to protect individual competitors from fair but aggressive competition. Rather, it is to protect the fairness of the competitive process by guaranteeing a level playing field for competitors. Where most competitors in an industry work jointly to the detriment of their non-cooperating competitors, the competitive process is disrupted.

The major concern with the Orbitz type of joint ownership distribution system is boycott, where competitors join to squeeze out the non-members. While Orbitz plans to allow other airlines to obtain the service, it is as a non-equity partner. The marketing arrangements for these non-equity partners are designed to "strongly incentivize" the carriers to pro-

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87. Orbitz is an Internet website formed by a coalition of five of the nations largest airlines—Delta, United, Northwest, Continental and American. The website will distribute travel directly to travelers by competing with travel agents. The five owners represent over 80% of the U.S. air transportation market. Additional airlines have joined as non-equity partners. The agreement states that members are not bound to provide all of their fares "exclusively" to Orbitz.

88. This is similar to Covisint. Covisint is an e-commerce site which enables auto manufacturers and suppliers to conduct business directly. The manufacturers post their contract needs and the supplier's bid on those posted contracts. In 2000, the FTC investigated whether the Covisint site was a possible §7 violation and concluded it was not. The main reason the FTC reached this conclusion is the fact that Covisint allows unrestricted access-any manufacturer or supplier expressing an interest in joining may do so. This key point differs from Orbitz in that there are some complex rules and costs involved for any airlines outside the five majors to join.

89. On February 16, 2000, in a letter to the Assistant Attorney General, the American Society of Travel Agents (ASTA) requested that the DOJ issue Civil Investigative Demands to all of the partners of Orbitz to determine whether the partnership is consistent with the draft Antitrust Guidelines for Collaboration among competitors. ASTA's contention is that "the U.S. airline industry has begun to operate as a single enterprise, "of which the joint website is just the most recent manifestation."
vide their information “exclusively” to Orbitz. It is this very exclusivity that can become an antitrust violation.

(5) Airline Tariff Publishing Case

This is the case that the FTC raised for discussion in its B2B e-commerce workshop in June 2000. This case began in 1992 the Justice Department filed a complaint against nine of the major U.S. airlines.90 The complaint claimed violation of §1 of the Sherman Act91 to prevent and restrain these carriers.

The Airline Tariff Publishing Company (ATP), a corporation that was wholly owned by a group of the defendants, was in the business of collecting and disseminating electronically (and by mail) fare amounts and restrictions from each of the carriers to all of them. Along with each fare submitted to ATP by an airline, is included a fare basis code, the dollar amount and the fare rules. These rules contain specific conditions or restrictions under which a fare can be used or sold. In addition to the rules, an airline can attach up to two footnotes to each fare. Footnotes typically contained further restrictions on the fares. They may contain the first and last ticketing dates.92 No passengers may purchase a ticket under the fare posted until that date arrives.

Additionally, the carriers often changed the first ticketing date to an earlier or later time or withdrew the fare altogether before the date arrives. Similarly, a last ticketing date was often changed to an earlier or later time; if earlier, the airline could withdraw the fare before the last ticket date arrived. By using first ticket dates, the airline could create fares that were not currently available for sale. By changing the dates, they could change the days the fares would become available.

Each of these airlines would submit this type of data to ATP at least once every business day. ATP would then disseminate all of the data to each airline and its’ computer reservation system. Many of the carriers employed sophisticated computer programs to sort fare information and generate detailed reports that the airline would use to monitor and analyze each other’s fare changes, prospectively.

The complaint charged two violations: price fixing93 and coordination facilitating device. The price fixing cause of action charged that the leading U.S. airlines had fixed prices using a computer system run by an

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90. Information taken from the complaint filed by the Department of Justice, available at http://www.antitrust.org/cases/airlinetariff/aircomp.html.
92. A first ticketing date states the first date a fare would be available for sale if the fare were ultimately offered to the public.
93. Price Fixing was charged beginning April 1988 and continuing through at least May 1990.
airline joint venture. The government produced evidence that there was much communication among the airlines that amounted to offers, negotiations and acceptances. The judgment applied to United Airlines, US Air, Alaska Airlines, American Airlines, Continental Airlines, Delta Air Lines, Norwest, and TWA. The second complaint accused ATP and the co-conspirators of engaging in a combination and conspiracy in unreasonable restraint of interstate trade and commerce against §1. Specifically, the airlines were accused of taking the following actions:

1. The carriers engaged in a dialogue about future planned or contemplated fare increases, changes in restrictions and the elimination of discounts.
2. The carriers communicated to one another the ties or links between proposed fare changes in city-pair markets.
3. They exchanged proposals to change fares and negotiated increases to fares, changes in fare restrictions and the elimination of discounts, using first and last ticket dates, fare codes and footnote designators.

94. In one historical case of price fixing, a group of firms comprising 90% of corrugated container sales in the Southeastern United States agreed to exchange price information. However, there was no agreement to set prices based on this information. The court decided that this exchange of information served to stabilize prices, albeit in a downward direction. While some price competition remained, generally this exchange of information led competitors to match a previous price discouraging downward price movements. Dissenting justices argued that easy entry into this market made it impractical for any firm to earn monopoly profits even with the exchange of pricing information. They charged the government did not prove that price levels would have dropped at a faster rate in the absence of pricing information exchange. United States v. Container Corp. of Am., 393 U.S. 333 (1969). The dissenting judge had a decent argument. While the ATP case has quite similar facts, the fact that it occurred in an industry with high entry costs, vs. low entry costs as in Container Corp. weakens the application of Container Corp.'s dissent to the ATP case. See also, United States v. United States Gypsum Company. This case also involved an exchange of price information. Gypsum board manufacturers exchanged information on contract prices. United States vs. United States Gypsum Co., 438 U.S. 422 (1978). This industry was highly concentrated with an eight-firm concentration ratio of 94% and a 15-firm concentration ratio of 100%. Id. The court held that the exchange of price information served to reduce competition and stabilize prices. Further, the court worried that exchange of price information could lead to the development of concerted price-fixing that is per se illegal. The court examined secrecy in auctions and bidding. Id. On today's Internet there is open access, thereby reducing the potential for secret bidding or posting future prices.


96. "Footnote designators" are footnotes, identified by alphanumeric codes that contain conditions on the use of the fare. While the footnotes typically contained the first ticket dates or last dates, they also contain other limitations, such as applicable traded periods. An airline can attach the same footnote to more than one fare. After ATP received the fare changes from the airline, it processed the changes, and disseminated information on those changes at least once per week. The airlines employed sophisticated computer programs that sort the fare information received from ATP and produced detailed reports. These reports allowed the airlines to monitor and analyze immediately each other's fare changes, including ticketing dates and the links among fare changes in different markets. See, The Complaint of the U.S. of America v. Airline
4. They monitored each other's future intentions regarding fare increases, withdrawal or fare changes lessening uncertainty concerning each other's pricing intentions.97

The complaint stated that the offense would continue unless relief is granted.98

The DOJ claimed that the combination and conspiracy on the part of the airlines reduced price competition and unreasonably restrained trade causing consumers to be deprived of the benefits of free and open competition. The suit claimed that the effect of the behaviors included:

1. coordinated interaction among the airlines has been made more frequent, more successful and more complete;
2. price competition among the airlines ... has been unreasonably restrained.
3. Consumers . . . have been deprived of the benefits of free and open competition in the sale of such services.99

Ultimately, they settled the lawsuit. The government believed that the way the information was submitted by the airlines, for example with 30 days advance notice, facilitated agreements among the airline competitors, by offering the ability to signal displeasure when one carrier was discounting. The government viewed this as express agreement in violation of the Sherman Act.100

E. THE ATP COMPLIANCE PROGRAM

The Airline Tariff Publishing case final settlement agreement was called the Compliance Program. The Compliance Program required each airline to create an antitrust compliance program that included appointing an antitrust compliance officer. The compliance officer would have responsibility for accomplishing the antitrust compliance program agreed to with the final judgment. The officer is required to supervise the review of activities of the airline to ensure that it complies with the final judgment in this settlement. This includes providing a copy of the final judgment to each officer and employee who has responsibility for approving, disapproving, analyzing, monitoring, studying, recommending, implementing any fares, or disseminating fares to ATP, CRS or another airline.

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97. Id.
100. Id.
The officer must also provide an annual briefing to each of the officers and employees involved with establishing and disseminating fares on the meaning and the requirements of the final judgment and the antitrust laws and advising them that the defendant’s legal advisors are available to confer with them regarding compliance with the final judgment and the antitrust laws. Further, the officer is required to obtain an annual written statement from each of these employees stating they have read, understand and agree to abide by the terms of the final judgment and that failure to comply could result in conviction for criminal contempt of court.

The judgment also involved quite onerous record keeping requirements to prove the officer annually briefed and obtained written statements from each employee as well as records regarding last fare dates, dissemination dates, copies of all advertisements used with any last ticket dates and other records related to dates, cities and advertisements. These records must be maintained for three years from the first date any advertisement appeared or the first date any such last ticket date appeared in the ATP or a CRS.

Further, the officer is required, upon learning of any past or future violations of the judgment, to take appropriate action to terminate or modify any activity required to ensure compliance with the judgment, and to maintain all records in such a way that they will be readily accessible. To prove this, a duly authorized representatives of the government shall, with written request of the Assistant Attorney General in charge of the Antitrust Division, be permitted to access for inspection and copying all documents in the possession or under the control of the airline.

Finally, the airlines are required to submit their annual plans, with a certification of compliance to the Attorney General each year for 10 years (until 2004). The effect of this final consent order was to prevent the airlines from using various communication methods to engage in quasi-public negotiations about price levels.

V. AIRLINE CRS LESSONS LEARNED: THE OBVIOUS AND NOT SO OBVIOUS

The lessons offered by airline litigation which surround CRSs, teach us some matters that are more obvious than others.

It is obvious that predatory pricing and price fixing among competitor airlines or Internet businesses violate §1 of the Sherman Act. Business must make their decisions unilaterally and independently and not in collaboration with competitors. Equally obvious is the fact that combinations of competitors who join to squeeze out competition are engaging in boycotts, also in violation of §1. The airlines attempts around price fixing
by using starting and ending ticketing dates are comparable to the old quantity or territorial dividing as attempts around price fixing.

The ATP case, where the government produced evidence that there was a great deal of communication between the carriers that amounted to offers, negotiations, and acceptances, demonstrates that the Internet enriches the opportunities for communication. It may have actually been this communication that cemented the governments’ case.101 While improving communication, it may also make it more difficult to infer agreements when there is parallel pricing.

The airline experience clearly teaches e-commerce enterprises not to publish future prices with coded messages indicating how long the particular future price would remain effective and whether the business would change it’s mind if competitors did not join in the price range. Competitors may not agree on actual prices they will charge or pay in the future for a product or service. In defining price fixing, the Supreme Court stated, “price fixing includes more than the mere establishment of uniform prices. . . prices are fixed if the range within which purchases or sales will be made is agreed upon. They are fixed because they are agreed upon."102

More recent court decisions reflect a higher burden in presenting a successful prima facie case under §1, where competitive harm cannot be demonstrated. As we move more and more away from the per se rule103 towards the rule of reason,104 the defendants appear to be gaining an advantage.

Contrast the courts approach to antitrust with that of the FTC. While the FTC (probably because of the high volume of investigations required) are using a “quick look,” by considering the presumption of competitive harm and the ability of the defendant to rebut that presumption, the courts must allow a full analysis and rely on either the per se rule or the rule of reason.

101. In the ATP case, it was not enough to show that competitors just engaged in parallel behaviors, such as charging the same prices. To be illegal, there had to be evidence of something more. The communication was a decisive factor in the courts view. See Jonathan B. Baker, “Identifying Horizontal Price Fixing in the Electronic Marketplace,” 65 ANTITRUST LAW J. 41-55 (Fall 1996).


103. The per se rule is used on those restraints of trade that are absolutely unreasonable, making it unnecessary to inquire into their effects and without requiring proof of adverse effects on competition. The restraints that fall under a per se analysis include price fixing, quantity fixing, divisions of customer or territory among competitors and boycott. Per se violations are criminal.

104. The rule of reason under §1 of the Sherman Act makes unlawful contracts, combinations or conspiracies that restrain trade. Much of antitrust jurisprudence for the last 110 years has been using the rule of reason to establish a dividing line between “reasonable” and “unreasonable” actions.
Developing Antitrust Policy on the Internet

Given the nature of the e-commerce, market power will rarely be present as entry is easy and the ability to charge very competitive prices will be extremely rare. The bottlenecks that may occur on the Internet will be far more rare then anything that has occurred in the airline industry. Further, the impact of restraints we saw in the airline cases are in the context of a relevant product market and relevant geographic market. The Internet does not necessarily create relevant product markets and because of the global nature of the Internet, a geographic market is almost irrelevant.

It is unlikely that a price increase of one product on the Internet will cause customers to substitute another product. Therefore it will be unusually difficult to determine whether there are constraints on the ability of a hypothetical monopolist to raise prices.

A. DIFFERENCES: AIRLINE VS. INTERNET

The culture of the Internet differs significantly from that of the airline industry. The Internet is collaborative and cooperative. Unlike the cutthroat competition that has distinguished the airline industry and the airline cases, the e-commerce establishments on the Internet may be more analogous to a trade union, business association, coalition, or certified group of workers. The cooperative trade unions of the past were charged with §1 violations comparing prices. In Maple Flooring, members of a trade union met and prices were discussed however, the prices discussed were current and past prices and the court found this acceptable.105 The court found that where trade associations or combinations of persons or companies openly and fairly gather and disseminate information as to the cost, volume of production, past actual prices, stocks of merchandise on hand and approximate cost for transportation is information shared without reaching any agreement or engaging in any concerted action with respect to prices or production or restraining competition.106 The price sharing on the Internet is less like the airlines—which shared future prices—and more like the Maple Flooring trade members. What we know from the airline cases is that sharing future prices is tantamount to price fixing. It is an illegal violation to discuss future prices.

We know from the airline industry cases that the industry is either “imperfect competition” or, in the more recent decade, arguably, an “oligopoly.” This is unlike the Internet, which actually has the potential to achieve “perfect competition” if the balance between the innovative ground breaking culture is gently balanced with rules and regulations.

The airline industry developed in an extremely competitive and al-

106. Id.
most cutthroat environment. This is in contrast to the Internet. From inception the Internet's primary focus is to exchange and share information. The environment seems to want to share in an unrestricted manner. The keys to the future may very much depend on whether this climate takes a turn towards the cutthroat culture of the airline industry, which is not likely.

If price sharing is open and reflective of current prices, rather than exclusive and secret, there will likely be no real problems with antitrust. It is highly unlikely that electronic commerce businesses will try to post future prices as a signal to price fix. Such behavior would only cause confusion among consumers.

It is also interesting to note that many of the executives in the airline industry were almost trained in antitrust techniques in the better business schools around the country; whereas the Internet executives are often Ivy league dropouts who may be somewhat more idealistic, risk-takers who never got far enough along in college to understand the lucrative possibilities from illegal antitrust action. The airlines staffs tend to be on the large side, as is generally required when specialists are involved. In e-commerce concerns, there tend to be relatively small if any internal staffs. E-commerce concerns are more likely to rely on consultants and independent contractors then on building large internal staffs.

Moving finally to operations, there is another striking difference. The airlines are historically structured vertically and there is generally, in-depth specialized knowledge within each carrier. The e-commerce companies are more horizontal. E-commerce concerns tend to cross markets and span industries, relying more on joint ventures for synergies.

**B. Future Battles**

The Internet, much like the whole field of antitrust, and much like the airline industry, is ever-changing. The ten-year running on the ATP consent decree was not obvious. Perhaps this time limit was agreed to because the industry is evolving so rapidly. Its expiration allows time for both sides to reevaluate and make adjustments as necessary. Since e-commerce on the Internet is also evolving rapidly, maybe it is worth taking incremental measures with short fixed timeframes to also allow for reevaluation of the Internet evolution and its' needs.

Now that we have considered the middle ground, where are the real battles likely to occur? In reviewing the airline industry, much of the litigation involves mergers and monopoly pricing (related however, more to the hub and spoke structure and the covert pricing it allows then within the CRSs). In addition, the airline industry is experiencing many suits related to inadequate customer service, although not analyzed in this
note. Then, of course on the Internet, there is the Microsoft type of legis-
lation, which should not be seen again at this magnitude.

What we did not learn is how courts will resolve the difficulty of identifying and characterizing cartel or association activity. It remains
difficult in the airline industry, as it will be with e-commerce, when there
is no evidence of any explicit agreement, yet parallel pricing by competi-
tors occurs. Most likely the courts will not require explicit agreement.
As with the airlines, agreements may be proven by evidence of an infer-
ence of tacit collusion, such as the combination of voluntary price moves,
with signaling and acceptances.

Despite the amount of talk and review of the ATP case, little of the actual written consent decree may be of use regulating e-commerce on the Internet for the reasons outlined below:

(1) Airlines, even after deregulation\textsuperscript{107} still have a relatively sizable
headcount, particularly on the administrative side, so they could with-
stand a bit more administrative work. A reading of the final judgment from the ATP case, specifies that a senior level attorney must act as the Compliance Officer and several individuals from the attorney’s staff must build and monitor the compliance program. They would need to devote a chunk of time to create the program and provide oversight, communication and reporting. While most airlines have enough staff to meet this burden, many e-commerce businesses are not adequately staffed; and many have no in-house counsel. More often, they are individual entre-
preneurs with little or no support staff. One reason for the influx of busi-
ness involved in electronic commerce is the ability to do much with little. The Internet may actually attract individuals who may be otherwise op-
posed to traditional structure, bureaucracy and adherence to rules.

(2) The final judgment, as drafted, requires paper intensive monitor-
ing. While the consent decree is as recent as 1994, business have still come a far way from maintaining paper files and records. Today, most of the electronic business records are maintained electronically. Certainly the final judgment would need to be modified to eliminate the paper re-
quirements and replace them as necessary and feasible with computer files.

(3) If these rules were implemented for all e-commerce businesses, how would the FTC or the DOJ ever enforce compliance? Given the number of e-businesses affected, the burden of monitoring adherence to the rules would be impossible, or cost prohibitive to meet.

\textsuperscript{107} Prior to deregulation, airlines were able to overstaff as any need arose. The pay levels were high and as staffing needs increased, the airline could just apply for approval of a rate increase to cover the additional staff. Back then, they were less concerned about having higher fares because as soon as one carrier received approval for a rate increase, the others would follow suit. Under their regulated period, airline prices seemed to continue on a steady increase.
(4) Further, it must be determined whether the regulations would only apply to U.S. Internet based companies. If so, the additional headcount and effort would certainly put U.S. concerns at a competitive disadvantage with overseas entities right from the start.

(5) Of all the requirements, I suspect the annual briefing, if done properly could provide the most value, especially if a serious component of the briefing included the explanation, identification, and implementation of the least restrictive alternative to accomplish the legitimate goals of each Internet exchange. Importantly, this internal briefing effort can be far more effective in preventing violations then attempting to follow the antitrust guidelines in the consent decree from the Airline Tariff Publishing Case. Nonetheless, many of the concepts behind the ATP consent decree can be of use to e-commerce, and are heavily relied on below to develop a framework for e-commerce.

VI. INTERNET POLICY FRAMEWORK

In discussing application of airline antitrust policy to e-commerce, it is important to keep certain considerations in balance. Before recommending a framework, it is worth summarizing some earlier points in this note and fusing them with the balancing considerations. First, in framing policy discussions, it is important to remember that Antitrust oversight or enforcement efforts should not prematurely or aggressively stifle the continuing evolution of electronic commerce on the Internet. Nor should antitrust efforts ignore the potential to seriously harm the competitive process. Collaboration is one foundation upon which the Internet has been built. It is more difficult to infer an agreement to mirror prices if pricing information is openly shared among rivals, as it often is in electronic commerce.

Antitrust efforts will require a detailed review of subtle ways of sharing and using information about competitors' pricing, to identify potential problems and techniques for minimizing these problems. At the same time, care must be taken to ensure that consumers' privacy is maintained.

Antitrust policy for e-commerce entities can be developed within the framework of a series of ten questions generated largely from the airline experience. Using what was learned in the airline antitrust CRS cases, these questions provide guidance in evaluating any e-commerce Internet transaction for possible antitrust abuse and in establishing official policy. The following ten questions provide the framework:

(1) Where is the information going?

One way to distinguish between legitimate business exchanges versus bad exchanges is to consider where the information is going. The airline
cases teach us that if the information is mainly an exchange among rivals, it may be suspect. Further, an exchange of information that occurs more rapidly between rivals than between sellers and buyers may also be suspect. Generally, in exchanges on the Internet, the information is given to consumers at the same time it is given to rivals. While rivals could exchange information first with rivals via email, this is unlikely as it offers a “smoking gun” to the DOJ and the FTC who would ensure that those emails be put into evidence. To address this question, possibly the FTC should publish guidelines regarding the announcement of upcoming “sales” of items over the Internet. Where the primary information exchanges are among the buyers of an item only, price signaling is not an area of concern.

(2) **What type of goods or services and terms are being discussed?**

Legitimacy may also depend on what kind of goods are being dealt with and what kind of exchanges are occurring. For example, are all of the terms of the exchange published? Secrecy regarding the terms, or a comment indicating that the terms are to be negotiated is a red flag. One could charge different customers different prices for identical goods and services by offering extended payment terms. If there is any suspicion about the possibility of hidden communication, the attorney should suggest a more straightforward, more prudent way to conduct the exchange.

(3) **What is the legitimate business purpose behind the exchange?**

This should be asked whenever there is any question as to why an exchange occurred in a certain manner. If the parties involved are given proper antitrust education, counseling and awareness, those involved in legitimate business exchanges usually do not need to disclose any information to each other that could be dangerous from a competitive standpoint. If there is no logical business purpose, cease the exchange.

(4) **Are any of the published prices contingent?**

The ATP case involved price signaling. The airlines were putting a contingent price out to be viewed by their rivals, and they had the opportunity to pull those prices back if their rivals did not respond in a certain way. This is different then when rivals on the Internet put prices out for basically instantaneous transactions. It is then difficult if not impossible to collude.

(5) What is the timing of the prices being offered?

Consider whether the price offered currently available or only offered in the future. A major issue involved in the ATP case was timing. The prices were posted many days before the effective date. The consent decree restricted the posting of prices to those that are currently in effect.

(6) Is there more information offered than that required by customers?

If so, review the information to determine why it might be included. A key issue from the ATP case was the use of footnotes for direct signaling. The footnotes contained information that was not demanded by the customers. This created an opportunity to signal another airline by using codes. The codes indicated that if the other airlines did not raise the fare in this city pair, the flagging airline would lower its’ price in one of the key markets of the competing airline. On the Internet, footnotes could take many forms including things such as free shipping on particular "window" dates. Where footnotes offer extra information, the FTC should enforce a mandate that such “future miscellaneous information” be carried out and not withdrawn. However, this sort of flagging competitors is less likely via the Internet due to consumer protection rules.

(7) How adequate is the businesses firewall?

The exchange of information internally via the Internet has become a must for business. However, it is equally important to ensure the firewall protecting unauthorized internal and external exchanges is sufficient so as to prevent against collusion. While the author does not know how firewall security is technically evaluated, perhaps an Internet association group could create a checklist for companies to self-evaluate the security of their firewall and internal security environment. Possibly this could be developed into an accepted standards certification program. Those in non-compliance or receiving only a low certification could be “hacked” by the FTC and fined or otherwise penalized if they do not adequately perform.

(8) Does the exchange represent a group boycott or concerted refusal to deal?

When most competitors in an industry work jointly with the purpose or effect of damaging their non-cooperating competitors, the competitive process is improperly disrupted. Airlines learned that they need to be subtler in the way they share and use information about their competitors’ pricing. Reverse types of boycotts are becoming popular and should not be cause for antitrust concern. A “plain vanilla” reverse boycott is where the buyer is actually putting the squeeze on the seller of the goods.

Many tout such exchanges as ways for people in an industry to get together and essentially knock down the price of important inputs in their business. Consider Walmart, the world's largest retailer, who required suppliers to sell through their automated system. Walmart has been a master at squeezing low prices out of suppliers, using its own market clout.\textsuperscript{109} While generally a reverse boycott actually increases competition and should benefit the consumer, there is a potential variation on the traditional boycott that could be used to squeeze out the competition. The problem is where businesses use the Internet exchanges as a way to boycott "non-players." An example of this could result if Orbitz is approved.\textsuperscript{110} Orbitz is proposed to be established with equity and non-equity partners. The proposed agreement between the carriers states that the member airlines are not bound to provide all their fares exclusively to Orbitz, however all of the non-equity members are required to provide annual marketing support having what could reach a multimillion-dollar value.\textsuperscript{111} There is a list of optional activities that can be counted as marketing support. Most on this list require out of pocket expenditures that could cost millions of dollars. However, one attractive option on this list offers the potential of avoiding all charges.\textsuperscript{112} As a possible incentive to achieve exclusivity, full credit is given on the difference between the dis-


\textsuperscript{110} Orbitz is the proposed computer reservation joint Internet website owned jointly by five of the largest U.S. airlines-Delta, United, Northwest, Continental and American. Its' purpose is to distribute travel directly to travelers. As a result, they will compete directly with both online and brick and mortar travel agents.

\textsuperscript{111} "Section 2.2 of the Agreement titled "Marketing Support," provides the following: (a) Airline shall provide Company with In-Kind Promotions (a) during the initial twelve month period of this Agreement, with a dollar value equal to Airline's Market Share multiplied by _ million U.S. dollars; and (b) in each subsequent twelve month period in an amount equal to _ percent of Airlines Travel Revenue during the immediately preceding twelve month period not to exceed _ million U.S. dollars during any twelve month period following the initial twelve month period. . . Airline's In-Kind Promotions shall be implemented in accordance with the valuation methodology set forth in Exhibit B. Company and Airline shall mutually determine the timing and value of each In-Kind Promotion by mutual agreement of the parties. If either party proposes In-Kind Promotions that are not listed in Exhibit B, the parties shall work together in good faith to value such In-Kind Promotions." Expert from: Comments of the American Antitrust Institute Relating to Orbitz and the D.O.T.'s C.R.S. Rulemaking, American Antitrust Institute (September 18, 2000) available at http://www.antitrustinstitute.org.

\textsuperscript{112} "Exhibit B of the Agreement describes six categories of In-Kind Promotions and their valuation method. These include: (1) company name/logo included in advertisements; (2) Company name/logo included on in-flight collateral; (3) company name/logo included in direct mail; (4) Affinity program supplements; (5) Passenger database information; and (6) Special promotions. There are three categories of Special promotions: (1) Exclusive promotions or fares available only on Company Site; (2) Promotions or fares available only on Company Site or airline site; and (3) Other. . . If an airline makes its promotional fares available only to Orbitz, the value is determined by multiplying the value of the discount to the next lowest published fare by the number of discounted transactions booked through Orbitz; . . . " Id.
counted fare and the next lowest published fare, for all fares booked by Orbitz where Orbitz is the exclusive recipient of the relevant data (italics added). The lowest fares in the marketplace could then be exclusively on the Orbitz system. This arrangement is the type of possible boycott that could potentially violate the Sherman Act. Another similar arrangement is the Covisint buyers website run by the major auto manufacturers.\textsuperscript{113} It is quite possible that the only way to evaluate this question is by a very detailed review of any such agreements to determine whether a boycott is a potential.

(9) \textit{What level of antitrust knowledge and interest does the entity's management demonstrate?}

This draws directly from the ATP case regarding internal antitrust education and peer pressure regarding compliance. While I do not think it is feasible to require the tremendous amount of paperwork and record keeping required by the consent decree, the spirit of the decree is worth encouraging and considering when investigating antitrust compliance.

(10) \textit{If applicable, is the entity complying with the CSR rules developed by the DOT in the eighties?}\textsuperscript{114}

The intent is to review the entities' distribution system. Ensure that all of the information (fares and schedules) is being communicated to all systems to the same extent it provides information via the system it owns. This is simply to assure consumers the benefits of effective competition by keeping owners of Internet distribution systems from using it to exclude or injure competitors through biasing the presentation of data.

The panel discussing this issue at the FTC Workshop seemed largely to agree that Internet exchanges will deliberately attempt to put themselves together in a way that does not raise antitrust concerns, (i.e. to shield information flow to their rivals). This is an important factor to keep in mind in developing e-commerce policy and hopefully we will see the result of this over time.

\section*{VII. Conclusion}

Currently, there are no firm antitrust rules dealing with e-commerce on the Internet. It has been operating much as a free distribution channel. Overall, the competitive analysis of e-commerce on the Internet is more familiar than it is strange. This antitrust analysis for the Internet

\textsuperscript{113} Covisint is an e-commerce site to allow auto manufacturers and suppliers to conduct business directly. The manufacturers post their contract needs and the supplier's bid on those posted contracts. See supra, note 88.

\textsuperscript{114} See supra note 58 and accompanying text.
will use the traditional tools of antitrust, because they are known. The facts of any specific agreement, the purpose and market of any exchange and the actual behavior challenged will determine the outcome. Unfortunately, much of the ATP agreement on its face, is far too impractical to apply to such a dynamic, evolutionary and diverse industry as e-commerce for the reasons discussed above.

Antitrust policy should be built around a framework whose underlying goals and broad strategies can remain relatively fixed, but within which changes in application can be made as both regulators and e-commerce entities learn more. New global applications will continue to develop and others will change. This means the underlying policy framework needs to be flexible and to embody a workable process by which experience and new information can adjust and further enhance policy or reduce controls over time as experience and operational feasibility dictate.

Much of the ATP litigation and settlement essentially resulted in internal self-enforcement. This concept of self-enforcement is the most useful element the ATP case has to offer e-commerce. Self-enforcement should be the framework for e-commerce policy.

Finally, in developing antitrust policy for e-commerce, great care should be taken to avoid mechanical or formulaic approaches that, whether intentionally or not, effectively "lock" us into particular regulations long after they become outmoded. We should be planning for the long pull, not developing near-term quick fixes. The airline CRS self-enforcement and reporting is only for a period of ten years. The airline CRSs have been operating without undo antitrust concern for the last six years. However, the ten-year period is due to expire in 2004. Then what?

It would be no real surprise if the airline industry returns to aggressive experimentation in ways to signal pricing, monopolize selected routes, combine in mega mergers and generally work to scare away new entrants. Simultaneously, it is quite possibly we will find that the e-commerce companies have effectively monitored themselves and for the most part avoided antitrust violations on the Internet. The author's suspicion is that whether or not this occurs in the airline industry, the e-commerce companies will not follow suite. The short history and experience of e-commerce leads one to believe that e-commerce entities will continue to value and imitate successful business models that rely on cooperation and synergies in a friendly, yet competitive environment.
Aces & Boats

As the Popularity of Cruise Ship Gambling Soars, Why Do the Airlines Remain Grounded?

Jesse Witt*

This note examines the sharp distinction in federal law which permits regulated gaming on all manners of nautical vessels yet denies similar privileges to the airlines. The note concludes that there is substantial justification for granting both foreign and domestic air carriers the right to offer gaming to their passengers on international flights.

I. BACKGROUND

On June 9, 1994, the United States Congress approved the Federal Aviation Administration Authorization Act.1 Passed without debate2 was a provision in the Act stating that “[a]n air carrier or foreign air carrier may not install, transport, or operate, or permit the use of, any gambling device on board an aircraft in foreign air transportation.”3 Known as the “Gorton Amendment,” this provision has generated considerable

2. 140 CONG. REC. 12,483 (1994).
consternation among foreign air carriers, who claim that it unlawfully subjects them to United States law even while they operate in their own airspace.4

The genesis for the Gorton Amendment, ironically, was a request for the Congress to relax its existing prohibition of in-flight gaming on domestic airlines.5 Northwest Airlines had lobbied the Congress to permit gaming on international flights, arguing that domestic carriers would be at a competitive disadvantage with foreign carriers who planned to offer gaming to their passengers while in international airspace.6 The technology was already available to offer a variety of recreational video game options at every passenger's seat, and adding the option to play for money would simply be a matter of installing proper software.7 Businessmen such as Lee Iacocca argued that gaming and other in-flight entertainment would soon surpass ticket sales as the primary source of revenue.8 Such seemed a very enticing proposition in light of the severely declining profits in international aviation.9 The airlines further announced that they would use the additional revenue from gaming to help keep fares low.10 The Congress, nonetheless, determined that the best way to level the playing field would be to expand the American restrictions to prohibit foreign carriers from offering gaming on any flights to or from the United States.11

II. THE GORTON AMENDMENT

The Congress's decision to ban gaming on all international flights disregards established principles of international law. Although it is settled that the Congress may restrict the gaming activities of an American citizen anywhere on the globe,12 the propriety of a law unilaterally passed by one state so as to restrict the conduct of a foreign individual in his home sovereignty is dubious.13 Nonetheless, the Gorton Amendment is considered to be valid and enforceable against any air carrier wishing to

6. Id. at 258.
7. Id. at 254.
8. Julie Schmit, Iacocca Bets In-Flight Gaming Will Take Off, USA Today, Oct. 10, 1994, at 3B.
9. See Grover, supra note 4, at 246.
10. O'Donnell, supra note 5, at 256.
13. Brian A. Foont, Comment, American Prohibitions Against Gambling in International
do business in American airspace, and similar laws have received favorable review in American courts.14

Fresh from his feuds with the Spokane and Colville Tribes over Indian casinos in Washington State,15 Senator Slade Gorton (R-Wash.) advanced a bill in 1994 to close what he called "an unintended loophole in U.S. law" that prevented only American carriers from offering gaming.16 Although his rhetoric embraced protectionist sentiments, Gorton correctly noted the disadvantage that domestic airlines faced.

[Foreign carriers such as Virgin Atlantic and Singapore Airlines have already announced that they intend to provide in-flight gambling.

This development will put U.S. carriers at a significant competitive disadvantage. An aviation consulting firm has estimated that U.S.-flag carriers could lose $680 million a year in revenues from international passengers who decide to travel on foreign-flag carriers in order to gamble.

This competitive inequity must be redressed. U.S.-flag carriers, which are trying to rebound after 4 straight years of being battered with staggering losses, should not be forced by discriminatory U.S. laws to endure such financial hardship.17

Unfortunately, rather than move to repeal the discriminatory laws, Gorton put forth an amendment that extended their effect to all carriers regardless of nationality.18

In fairness, Gorton seemed to be offering his bill as a temporary stopgap to forestall immediate losses by domestic airlines, and his amendment accordingly commissioned two studies to evaluate the seriousness of the risks that in-flight gaming posed.19 However, despite a finding that the electronics of on-board gaming systems would not interfere with an airplane's operation, the lack of data describing how passengers might behave subsequently led the Department of Transportation to withhold endorsement of in-flight gaming.20 Nearly seven years after its passage, the Gorton Amendment remains law, and what may have been intended

17. Id.
as a mere stopgap now looms as a potential logjam for international relations.

In response to the enactment of the Gorton Amendment, ten major international airlines formed a group known as the International Airline Coalition on the Rule of Law. 21 According to the Coalition, the United States's attempt to ban in-flight gambling on foreign air carriers is an unjustified assertion of American jurisdiction over otherwise lawful conduct on foreign aircraft outside United States territory. 22 The Coalition's effort has subsequently been joined by a number of foreign governments and the European Union Commission. 23

The Coalition's argument rests primarily on the body of treaties that have come to define international civil aviation law. 24 In particular, the Coalition relies 25 upon the Chicago Convention of 1944 by which "[t]he contracting states recognize that every State has complete and exclusive sovereignty over the airspace above its territory." 26 The Chicago Convention further requires that aircraft traveling over a foreign territory abide by the laws of that territory. 27 By its terms, the Chicago Convention clearly forbids a nation to extend its laws across the border of another signatory nation, but this is precisely the action of the Gorton Amendment with respect to gaming over the skies of other nations. 28

Likewise, the Geneva Convention on the High Seas of 1958 ruled that the high seas and their superincumbent airspaces are not subject to the sovereignty of any nation. 29 When an aircraft flies over areas of undetermined sovereignty, it is subject only to the jurisdiction of its own state of registry or nationality. 30 Again, the Gorton Amendment's attempt to extend American jurisdiction over foreign planes in international airspace is directly contrary to treaty. 31

The fallout from this dispute may become severe. The European Union and the United States House of Representatives recently traded noise restriction proposals that would have effectively prohibited American- and European-manufactured planes from entering the other's re-

21. Id. at 236.
22. Id.
24. Grover, supra note 4, at 238.
25. Id.
27. Id.
28. See id. at 239.
29. O'Donnell, supra note 5, at 262.
30. Id. at 262-63.
31. See id. at 264.
spective airspace. One can readily envision a situation in which rival nations begin passing restrictive and protectionist laws purporting to exercise jurisdiction over another sovereign's aircraft. In such an environment, the cooperative spirit under which the international civil aviation industry has flourished could quickly die out.

Given the substantial questions about the United States' authority to effectuate the Gorton Amendment and the wisdom of pursuing such a course of action at all, one must consider very carefully whether such provisions are necessary. Although gaming aboard airplanes has never seen widespread use, the maritime industry provides some analogous data about the profits and pitfalls to be expected.

III. FACED WITH THE SAME QUESTION IN 1991, CONGRESS ACTED TO LEGALIZE SHIPBOARD CASINOS

Preceding passage of the Gorton Amendment by several years was a similar lobbying effort undertaken by the American cruise ship industry. Domestic cruise lines, restricted by the same law which forbid transport of gaming equipment on airplanes, had found themselves unable to compete with foreign-flagged vessels that offered shipboard casinos. Taking the exact opposite approach as it would subsequently follow with the airlines, however, the Congress amended the law in 1991 to permit ships sailing under American flag to offer gambling in international waters. This change did not abrogate the prohibition on "cruises to nowhere" or floating casinos, which remained illegal under the Gambling Ship Act. However, in 1994—the same year in which it passed the Gorton Amendment—the Congress acted to except vessels beyond the territorial waters of the United States during any "voyage of . . . a commercial vessel transporting passengers engaged in gambling aboard the vessel beyond the territorial waters of the United States, during which passengers embark or disembark the vessel in the United States."

Throughout this process, riverboat casinos have remained free from the federal laws proscribing transport of gaming equipment, provided that they remain at all times on waters subject to the control of state
The Gambling Ship Act, likewise, has always contained an express exemption for vessels remaining at all times within the jurisdiction of one state.42

There is no clear explanation for why the Congress has taken such different tacks with respect to gaming in the two complementary industries of airlines and cruise ships, but perhaps the answer lies simply in the fact that airline gaming is unexplored territory. Gambling on ships and riverboats, by contrast, has been advocated as a continuation of American nautical history.43 This has in some cases been underscored by a statutory requirement that the vessels replicate historic paddlewheelers as nearly as practicable.44 On land, similar rationales have mandated that casinos built in historic mining communities conform to Nineteenth Century architecture.45

This is not to say that a return to gaming on ships has come without controversy. Whether certain unseaworthy barges hosting casinos are to be deemed “vessels” under admiralty jurisprudence has been the subject of much recent attention.46 In one case, the Firth Circuit upheld a ruling that a barge with only decorative instrumentation and a false paddlewheel was not a “vessel” so as to permit a seaman’s claim under the Jones Act.47 Cruise ships and functional riverboats clearly do fall within maritime jurisdiction, however.48

In another noteworthy case, New York Mayor Rudolph Giuliani attempted to curtail operation of a casino ship sailing daily from Brooklyn by pressuring the United States Attorney to claim an expansion of the United States’ territorial seas based on the Antiterrorism and Effective Death Penalty Act of 1996,49 which had extended federal criminal jurisdiction from three to twelve miles offshore.50 This move achieved the

45. See Colo. Const. art. 18, § 9(3)(b).
47. Pavone v. Miss. Riverboat Amusement Corp., 52 F.3d 560, 565 (5th Cir. 1995).
48. Psareliss et al., supra note 46, at 66.
desired result of increasing travel time to the point where gaming on the ship was no longer profitable.\textsuperscript{51} The Second Circuit however, rejected the argument that the extension of jurisdiction for a narrowly defined purposed could be extrapolated to an expansion of the United States’s territorial sea.\textsuperscript{52} Interestingly, after losing in the courts, Giuliani immediately reversed his position and proposed expanding gambling in New York Harbor by constructing a huge casino on Governors Island.\textsuperscript{53}

IV. CRUISE SHIP CASINOS HAVE SHOWN THAT GAMING INCREASES REVENUE & PASSENGER ENJOYMENT

The relaxation of gaming prohibitions has brought substantial revenues for the American cruise ship industry.\textsuperscript{54} The operator of a shipboard casino typically enjoys a high profit margin on most card games, and a modest bank of shipboard slot machines can generate hundreds of thousands of dollars monthly.\textsuperscript{55} One estimate calculates that American air carriers could reap gross revenues of $300 million annually from in-flight gaming while incurring operating expenses of only $75 million.\textsuperscript{56} In fact, after losing most of its passenger market to the airlines in the 1960s, the installation of casinos and other resort-like attractions have helped move the cruise ship industry “from moribund to muscle-bound” in recent years.\textsuperscript{57}

The recreational draw of gaming, therefore, should not be underestimated. One official has noted that shipboard casinos not only run neck-and-neck with bars as the leading source of shipboard revenues, but that they also constitute an expected part of the cruise experience for many passengers.\textsuperscript{58} Virgin-Atlantic has, in fact, stated that it intends to offer gaming only as added entertainment for its passengers, not as a source of increased revenue.\textsuperscript{59} At Virgin-Atlantic’s Heathrow Airport departure lounge today, passengers can already play blackjack for frequent flier points instead of cash.\textsuperscript{60}

\begin{itemize}
\item \textsuperscript{51} Id. at 453.
\item \textsuperscript{52} United States v. One Big Six Wheel, 166 F.3d 498, 501 (2d Cir. 1999).
\item \textsuperscript{53} Jarvis, supra note 50, at 456.
\item \textsuperscript{54} Bill Ordine, Shipboard Gambling Has Its Differences, PHIL INQ., OCT. 1, 2000, at L10.
\item \textsuperscript{55} Brook Hill Snow, Gamblers Are in Luck on Cruise Ships, ORLANDO SENTINEL, Feb. 23, 1992, at H4.
\item \textsuperscript{56} Mead Jennings, Aces High / In-Flight Gaming on Airlines, AIRLINE BUS., July 1, 1996, at 56.
\item \textsuperscript{57} Mark Roberts, Floating Fantasy, ECONOMIST, Jan. 10, 1998, at S14.
\item \textsuperscript{58} Ordine, supra note 54, at L10.
\item \textsuperscript{59} Jennings, supra note 56, at 56.
\item \textsuperscript{60} Adam W. Keats, In-Flight Gaming Opposed, LAS VEGAS REV. J., July 3, 1994, at 13E.
\end{itemize}
V. THE AIRLINES COULD AVOID MOST NEGATIVE ASPECTS OF LEGAL GAMING

Critics of expanded gaming point to economic models that show casinos taking more from communities than they return.\(^61\) Truthfully, casinos can function as a vehicle to move funds from losing players to the casino ownership, to the winning players, and to the state.\(^62\) Oftentimes, this equates to an overall loss to the local community, particularly where the casino has substantial foreign ownership interests.\(^63\) However, it seems highly unlikely that the microeconomic phenomenon of a casino ship taking money out of the community where it docks\(^64\) would reappear in the decentralized world of the international air passenger.

More importantly, if in-flight gaming is realized, most industry proponents have indicated that losses would be limited to a per-flight maximum of a few hundred dollars.\(^65\) British Airways hopes to implement such a system but would set higher limits in first-class than in coach.\(^66\) In this manner, the airlines can reduce the likelihood that a passenger will lose more than she can afford.

The airlines would also do well to require passengers to enable or disable the gambling functions at the time of ticket purchase. Although this could reduce spontaneous use of the systems, it would also give problem gamblers a chance to exclude themselves from temptation in advance.\(^67\)

Another common means of diminishing the negative impact of gaming on a new forum is to limit the maximum bet that a player may wager on any one hand or play.\(^68\) Statutory limits of this type are ubiquitous where legislators first seek to introduce legal gaming\(^69\) and would likely surface as part of any initial proposal to permit in-flight gaming. However, one must wonder whether restricting how much a player can bet at

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63. Id.
64. See id. at 330.
66. Jennings, supra note 56, at 56.
a time truly helps control her overall losses. Adjusting her bet up or
down as cards leave the deck is one of the few ways that a player can
offset the house’s advantage. By wagering more after unfavorable
cards have been played (and vice-versa), the player can increase her
 chances of finishing ahead. A priori, restrictions on the amount a
player can bet will necessarily limit her resources and bolster the house’s
advantage. Although the player may stand to lose less money on any
given play, she can also expect to lose more money overall. Thus, despite
the initial appeal of a limited wager, the wisdom of such a tool must be
considered very carefully.

VI. PROPER PROCEDURES CAN MINIMIZE FLIGHT
ATTENDANTS’ INCONVENIENCE

The discussion of in-flight gaming has also prompted flight attend­
ants to raise concerns about having to handle irate gamblers in addition
to their existing tasks. Such is a particularly important need in light of
increasing reports of “air rage.” Unlike the huge staffs employed by
cruise ship casinos, flight attendants would likely be charged with super­
vising any gaming on airplanes.

In recognition of these concerns, the airlines have proposed systems
that should curtail significant incidents. No cash would be involved, as all
transactions would utilize credit cards. The gaming systems would pro­
vide their own online technical assistance, and polarized screens and
headphones would minimize the need to relocate minors or others who
might object to a neighboring passenger’s gaming. Once properly es­
tablished, these procedures should minimize flight attendants’ involve­
ment with the gaming systems altogether and allow them to concentrate
on their principle duties.

VII. CONCLUSION

In an effort to sell the behemoth A3XX jet, Airbus Industrie re­
cently began a series of ads depicting its planes as virtual cruise ships in

71. See id.
72. See id.
73. Keats, supra note 60, at 13E.
74. Eric Brazil, AIR RAGE / Berserk passenger tries to crash British 747, SAN FRANCISCO
75. Psareliss, supra note 46, at 71.
76. Keats, supra note 60, at 13E.
77. Grover, supra note 4, at 245.
78. Id.
79. Id.
the sky, complete with onboard casinos. While such a vision may never be realized, the prospect of electronic gaming at passengers' seats is an inevitable reality. The question is how far the United States will strain international relations before it concedes to withdraw its attempt to foist American societal views on unwilling foreign entities. In light of the airline industry's need for an injection of capital, the tenuous nature of the Gorton Amendment under international law, the enormous success of casinos on cruise ships, and the existence of adequate means to control the negative effects of gaming, the Congress should give immediate and careful consideration to repealing the prohibition on in-flight gaming for all carriers.

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Rail Unions 24
I. WELCOME

Intermodal Founding Fathers of
North America Conference
Snowmass Village at Aspen, 27-29 July 1999

(Bottom row, left to right) Fredrick E. Boone, Craig E. Philip, David J. DeBoer, Reginald B. Short, Roy L. Hayes, James G. Cunningham;
(second row) Raymond F. Ascencio, Marty Tendler, Richard H. Steiner, William B. Hubbard, Kenneth R. Wykle, Robert S. Ingram;
(third row) Brooks A. Bentz, Phillip C. Yeager, Charles F. Kaye, George C. Woodward, Henry V. Logan, William E. Greenwood, Ronald E. Lawless;
(fourth row) Arron J. Gellman, Tim Lake, Gordon A. Volkers, Gordon C. Miller, F.H. Howard
(top row) Jack Lanigan, Theodore Prince.
It is my privilege to welcome our distinguished visitors and faculty to the Intermodal Transportation Institute’s Founding Fathers of North America Conference. As I have become educated about transportation, and intermodalism in particular, I have learned that this is an industry of collaboration and integration. The industry integrates economics, business, the environment, ethics, and safety. It collaborates with towns, cities, states, and the federal government as well as with a variety of academic disciplines.

It was not very long ago that the University of Denver was known as “Tramway Tech,” a name that we acquired for two reasons. In the late 19th century and the early part of the 20th century, one of our professors, Sidney Short, had more than 500 patents in transportation innovations, including the invention of the electric tramcar. And Governor Evans, who founded the University, had a son who was instrumental in bringing trams to Denver. We have come a long way since then.

In August of 1999, we will offer the first master’s degree in intermodal transportation systems through our Intermodal Transportation Institute. Only three years ago, Chancellor Daniel L. Ritchie asked me to survey the faculty to determine where they felt we should focus our academic energies and expertise during our $250 million capital campaign. The faculty suggested that we create six centers of excellence, one each for the environment, ethics and values, tourism, media studies, contemporary issues, and transportation. Each of these areas has subsequently become an interdisciplinary institute or center within the University.

On behalf of the University of Denver and Chancellor Ritchie, I want to welcome you to our conference honoring the founding fathers of the intermodal freight transportation industry.

Pat Broe
ITI Board of Directors
Chairman of the Board, OmniTRAX

Welcome to Colorado. I love three things about Colorado. I love the people. I love how we have gone from an agricultural environment to one of high tech. And, I love the University of Denver.

While I have only been on the Board of Directors of the Intermodal Transportation Institute for a short time, I love being associated with intermodal people like J.B. Hunt, who invented trucking and how to cram
On behalf of the Board of Directors of the University of Denver Intermodal Transportation Institute, I want to welcome you to this special conference. These two days in July 1999 mark the beginning of a major new school in transportation science. At this conference, as well as on the ITI Board, are many of the giants that created the North American intermodal industry, which is evolving worldwide. Also at this conference, interesting enough, are some of the new ITI students who will graduate this time in 2000 with a Masters of Science degree in intermodal transportations systems. The next generation of transportation experts is on its way.

First, I want to recognize the person who really laid the foundation for ITI, the Intermodal Transportation Institute at the University of Denver—Professor Joseph Szyliowicz. With the support of the University of Denver administration and faculty, he invited me to become chairman of a board of directors, and so ITI was formally established in the fall of 1996. Professor Szyliowicz is truly the founder of the very active and successful ITI.
ITI began its public policy forums quickly and invited the three secretaries of transportation of Canada, United States, and Mexico to come to the University of Denver and discuss their respective nation's intermodal policy and intermodal vision. The North American Intermodal Transportation Summit of October 1997 was very successful. Next, ITI and its Board worked with Mississippi State University to sponsor the National Center for Intermodal Transportation (NCIT), which became a reality with the Transportation Equity Act for the 21st Century (TEA-21) in June 1998. Designated a National University Transportation Center for the planning and assessment of intermodal transportation systems, NCIT is a true partnership between the two universities, the University of Denver and Mississippi State University, and is moving ahead with its research agenda.

The convening of the Intermodal Founding Fathers of North America Conference in July 1999 initiates the ITI Intermodal Founding Fathers Oral History Program. This oral history program is a critical element to ITI and its Master of Science in Intermodal Transportation Systems, which will begin with its first class of students August 1999. Your oral history will be the foundation for the textbooks and for the research for these students and for this new graduate program, the first graduate program ever in intermodal transportation. In a sense, when you are interviewed as a part of the oral history program, you are actually giving lectures to future students. So, I urge you to be candid, to talk of success and of failures, and to not be timid—tell it the way you saw it.

Second, being the chairman of an industry board like this is truly an honor. And the people who are on this board, like so many of you, are the real pioneers and founders of this intermodal industry. The board and I ask you, the intermodal industry, to support this new graduate program. It needs to be supported financially and scholastically; you should provide students; you should guest lecturer in the classroom; and you should grant research support. You, too, can play a major role in helping guide this ITI and its destiny.

Third, I, personally, want to recognize and thank Ted Prince, who is an ITI board member and the conference chairman, for his extraordinary effort in organizing this conference and the oral history program. In addition, I want to thank Cathy Johnson, ITI administration, and Donna Wilson, the representative of Chancellor Ritchie and Provost Zaranka, for their commitment to the success of this conference. As chairman and on behalf of the ITI Board of Directors, I want to salute Chancellor Daniel L. Ritchie, Provost William Zaranka, and Donna Wilson for their willingness to commit to and facilitate the development of ITI.

In conclusion, the board and I want to congratulate the ITI faculty members on their hard work and their dedication to ITI and this new
graduate program—Joseph Szyliowicz, Paul Stephen Dempsey, Andrew R. Goetz, Carol Emerson Johnson, and Patrick Sherry. As this program grows, they will be joined by other professors and instructors and teachers. We look forward to ITI setting the pace for intermodal education and research during the 21st century.

Theodore Prince  
Chairman, Founding Fathers Conference  
ITI Board Member  
Principal, Transgistics LLC

On behalf of the Intermodal Transportation Institute and its Board of Directors, it gives me great pleasure to welcome you to the Intermodal Founding Fathers of North America Conference, a conference that is significant because intermodalism is probably one of the three most important transportation innovations of this century. The other two are the invention of the airplane and the diesel engine.

And, as important as intermodalism is, strictly in terms of transportation, it is even more important when we think about it in the context of international trade. International trade is now fully one-third of the economy of this country and it continues to grow. International trade would not be possible without containerization and the introduction of intermodalism. A generation ago it took 50 days for cargo to move from Hong Kong to New York in a breakbulk vessel traversing the Panama Canal. Now, we do that routinely in 17 days, a reduction of two-thirds, through the combination of new vessel technology and the rail double-stack movement off the West Coast.
In addition, it is an honor to introduce a very exciting group—the Intermodal Founding Fathers Class of 1999. While I certainly would not presume to intrude into this class of founding fathers, I do want to make two personal observations. First, I consider myself a child of intermodalism. I was born in December of 1956, which means that in April of 1956, there were two important discoveries: my parents discovered that they were going to have me and the Ideal-X, the first container ship, was sailing from Newark Bay. Nothing has been the same since. And in the other category of many changes but few improvements, as my grandmother used to say, I was named after my grandfather, who was very involved with the railroad industry and also developed something called the Prince Plan in the early 1930s. Today that would go by the discussion of open access, which is a very tender subject with our railroad colleagues, but I believe that it shows that we are two-thirds of a century later and very important public policy issues and intermodal items are not yet resolved.

This conference has gathered together the collective wisdom of the people that created the intermodal industry in this country, in this North America—an industry that is really the model for the rest of the world. This is an exceptional group of pioneers and leaders. I have been very fortunate because I have worked with many of them and several have been my bosses at one time or another. Some have been customers, some are now my customers, many are friends, but I have continued to learn from all of them. And, during this conference, we will continue to learn from them—the lessons of building a new industry, the intermodal freight transportation industry.
II. KEYNOTE PRESENTATIONS

Service Equals Growth

Lester M. Passa
President and CEO
CSX Intermodal

John Snow, the chairman, president, and CEO of CSX Corporation, had planned to be at this Intermodal Founding Fathers of North America Conference, but over the last 60 days, he split Conrail, transitioned the management team at CSX, and sold the liner company at SeaLand. John has been an advocate of intermodal since his days at the US Department of Transportation, and when he joined CSX in the mid-1980s, one of the first things that he did was create CSX Intermodal. He saw the wisdom of a group of people, led by Neil Porter, to take this industry to a new level. He sends the following personal note to you:

“To all of my friends at the ITI's Founding Fathers of North America Conference: I deeply regret that I cannot join you to honor our industry's heroes,
those visionaries who recognized intermodal’s potential and built the foundation on which this great industry has grown and flourished. I cannot think of any part of the transportation industry that has been blessed with so many gifted and far-sighted individuals. I am thinking of Malcolm McLean, Phil Yeager, Don Orris, Tom Finkbiner, Neil Porter, J. B. Hunt, and a host of others, all outstanding leaders who took notions, concepts, and goals, and quite honestly, by sheer force of conviction and determination, made intermodal a reality. Because of you, our industry is strong and poised for even greater success. At CSX, we know that we have only just begun to tap the potential and the possibilities that intermodal presents, and we have made a huge investment in intermodal. The ultimate success of the Conrail merger depends on intermodal growth; it depends on bringing new transportation efficiencies to the nation’s major consuming markets and ports. And, it really depends on taking intermodal to a whole new level of excellence. I am sure that you will talk about many of the things the industry is doing to enhance the intermodal business. But, we believe one of the ingredients, one of the critical ingredients, is the manner in which we must all continue to work together more closely—shippers, railroads, motor carriers, steamship companies, and logistics professionals. Cooperation is at the heart of our business; it is what makes intermodal work and will be at the core of any success that we enjoy in the future. I am proud that CSX is taking a prominent role in the Intermodal Founding Fathers Oral History Program. Our level of involvement is an indication of CSX’s commitment to the future of intermodal transportation—a future filled with opportunity, thanks to the leaders that are being honored. I am proud to consider myself a part of you and all that you do. John Snow.”

These comments come from John’s heart and reveal his thoughts about the intermodal business and the respect that he holds for its founders. And, in my basically short time at CSX Intermodal and in the intermodal industry, I have to endorse these sentiments wholeheartedly. Intermodalism is still a relatively young industry, but the Hall of Fame is an impressive one. We owe a debt of gratitude to the visionaries who have had such a profound impact on the development of this industry. I would like to mention a few of these visionaries; by mentioning these few, however, I am slighting no one. I think of Phil Yeager, who went out and invigorated a whole industry and basically brought a level of professionalism and common sense to our business in the process; Don Orris, who took a nationwide stack train network, saw the economic efficiencies, and, needless to say, sees the value of continuing; and J.B. Hunt, who had the guts to put his trucks on trains. I think of Tom Finkbiner, who took the best of the road and the rail in the hybrid called “RoadRailer.” He started small, and through persistence and technological improvement, he has produced a very effective, very high customer-service company. And, I think of Neil Porter, who took over the reins at CSX Intermodal about 14 years ago and brought a whole new level of professionalism, creativity, and innovative thinking. And, when I think back over the last 10 years,
one of the driving forces behind the growth of intermodalism was the bold move by J.B. Hunt.

When I was at Conrail in the mid-1980s, I was a planner in the intermodal group and worked for Gordon Kuhn, a champion of intermodal. We went to an intermodal expo and met with people from J.B. Hunt and others. On the way back, Gordon put a plan together to open Conrail's network. He decided that it was time to create doublestack clearance efficiencies for both of Conrail's routes, now called the NYC (former New York Central), which is the CSX route over the water level, and the PRR (former Pennsylvania Railroad), which is the Norfolk Southern route through Pennsylvania. However, had Gordon not made that decision in the mid-1980s and made things happen, we would not be, in many cases, where we are today with Conrail. Gordon felt that it was an investment in the future. Fundamentally, it was this investment in the infrastructure of the business, and the personal commitment to make it happen, that is now letting customers of both CSX and Norfolk Southern reap the benefits of having two competitors with extensive capability in the Northeast.

**Service Equals Growth**

In reflecting on these people and what happened, I think about one equation—service equals growth, which is probably the hardest equation in the rail industry to comprehend. These individuals, and others, have forced this equation to be understood. It is a mathematical equation. And, it is one of the shining lights in the rail business in the last 25 years. All of these men, and so many more men and women throughout the industry, set the stage and laid the foundation for where we are in 1999. We have come from circus trains and manifest humps to $50 million state-of-the-art intermodal terminals. We have gone from "ho-hum" service to service that fundamentally hums.

The merger-related road bumps that have occurred over the last few years are not long-term. Service was humming up until the split of Conrail. We have gone from handling a total of 3 million units to over 10 million units in the US. Transportation officials and political officials from all over the world travel to visit our terminals, to pick our brains, to talk to our people, to watch our trains, and to study our best practices. It works here. There is a reason for this Intermodal Founding Fathers Conference and for the Intermodal Founding Fathers Oral History Program. It is because we have outstanding people who have built an outstanding industry. I am proud to be a part of this industry and proud to be among you.
Growth from Challenges

The challenges that we have faced and have overcome over the last 20 years—lousy service, inadequate infrastructure, damaged freight, abysmal customer service—were tough. However, just as the legacy of the founding fathers was to meet these challenges head on, it must become our legacy in 1999 to meet the challenges of the future. We know that we have to achieve a higher and more consistent service level. We need to broaden our market reach. We must continue to use technology to improve everything that we do at the terminal, on the trains, over the liner road, and across the Internet. These challenges can be met. There is a large statue of a horse in front of the Federal Trade Commission Building. The muscles are just bristling, as it is ready to go forward. This horse is intermodalism as it prepares for the millennium.

Growth through Investment and Technology

There has been much said about capacity and capital investment. In the past two years, CSX has spent $125 million on new terminals in places like Chicago, Philadelphia, Atlanta, Savannah, and Cleveland. We have invested $200 million to build a new double-track, high-speed railroad between Chicago and Cleveland, which was the single biggest project CSX or any of its predecessors had ever undertaken. All of these efforts expanded capacity on the intermodal network. We were not alone in that process. Norfolk Southern, Burlington Northern Santa Fe, and Union Pacific have all made similar capital investments to prepare for growth.

In addition, we are becoming one big dot-com world. The real question is what is this new technology going to do to the business of transportation in the 21st century. The introduction of the automobile, the airplane, and the microwave oven has fundamentally changed the way we do business in 1999. And, for 10 years, people have been talking about how this new technology is going to change the way we do business, and we are now beginning to see its impact. It will change the way the world trades, the way it communicates, the way it builds, the way it inventories, the way it does everything.

We all have to become foot soldiers in this technological revolution. The new graduating classes of students must look at the utilization of technology and how it can change the business processes and how it can allow growth in capacity without more physical assets but just by having better information. We have only begun to scratch the surface in understanding the changes that are going to be driven by the shift to a dot-com world. Becoming a preeminent leader in Internet commerce is one of our most important challenges.
As one of the Honorary Fellows of the Intermodal Transportation Institute (ITI), Lester M. Passa is presented a certificate of recognition, honoring his contributions to the development of the intermodal freight transportation industry of North America, by Gilbert E. Carmichael, chairman of the ITI Board.

We have a lot of hard work ahead of us. We have been talking about improved service for years. I believe that the railroad mergers will finally give us the opportunity to cut down on the number of handoffs, to build new products, and to provide terrific single-line service in many of the markets that we serve. Improved service is within our reach. With better and more consistent service, we will broaden our reach to shippers who have never used intermodal and to truckers who have never seen an intermodal terminal. With better technology and by becoming a leading citizen in the dot-com world, we will make our trains more efficient, we will move goods through our terminals faster, and we will make doing business with us easier. I am confident that we can meet these challenges and that, together, we can move this industry to the next level of sustained excellence.

As a Founding Father, your job is not done. All of us will continue to call on you and look to you for guidance, insight, direction, wisdom, and pointers. We are all students of the game, the intermodal game, and together we will never stop working and striving to make intermodal the leading force in North American transportation.
Intermodal—The Future

Jim Shattuck
Vice Chairman
Union Pacific Railroad Company

The Union Pacific (UP) currently represents three merged railroads. As we were putting the last piece together, we wondered many times if these mergers were really worth it, but we know now that they are. It is a lifetime deal, and we have a great foundation for growth. During the time we were putting the current UP system together, we developed a 10-year strategic plan, which took about a year to develop. We wanted to make sure that we optimized the use of our network by developing our strategy for the next 10 years. This discussion focuses on the intermodal piece of that strategic plan.

Examining the UP Business Mix

The UP is fortunate to have a good, balanced business mix with good growth opportunities. Intermodal represents about 16 percent of our revenue or $1.7 billion in 1999. Ten years from now intermodal will be a
significantly larger percentage of the mix. The UP intermodal business in 1999 is comprised of 44 percent international business. Typically, international customers want some container-yard capacity, and the UP service plan is based on ship arrivals and ship rotations. These customers expect reliable service, good velocity, and they will pay a premium based on service delivery. In the domestic segment, there are a lot of different types of customers. There are the asset owners, like Pacer, J.B. Hunt, and Schneider, and non-asset owners or intermodal marketing companies (IMCs). In this segment, they all expect reliable service and they want us to be easy to do business with. With this as background, what do we at the UP see as the future of intermodal? What role is intermodal going to play in our business as we go forward?

In the market assessment phase of the UP strategy development, we identified twenty-two different market strategies coupled with three different operating strategies: a selective, a yield management, and an aggressive strategy. We combined the market and operating strategies and developed five different portfolios. Then, we did an economic evaluation of the five portfolios to help us select a strategy. The intermodal segment was unusual because of the huge range of growth opportunity, from $2 billion to $7 billion within 10 years, with little shift in market share from truck. The same holds true in the UP industrial products area. The
growth is not as large as in the intermodal segment, but like intermodal, we currently have a small market share in this growing industrial products area.

**Growing the UP Intermodal Business**

One of the consultants who we were working with had a concept called the “efficient frontier,” which focuses on maximizing capital efficiency. As you move up the frontier, capital requirements are greater. This concept provided us with guidelines for establishing a combination of strategies. We may have an aggressive strategy for one market and a maintenance strategy for another. Intermodal fits the yield strategy and requires significant capital.

Looking at the history of intermodal at the UP, we had fast growth early due to the stacktrain, motor carriers coming into the market, and the development of IMCs. In 1993, with severe floods, our growth slowed. Our share grew again until we had our post-merger service crisis, when it flattened out again. We are now back on a growth track and are significantly exceeding growth of the intercity freight industrial production index.
The market available to rail in the western US is estimated at 75 million units. However, the western railroads have only 8 percent of this market, so we have a very little piece of the overall market. Currently, 1 percent is over water, 8 percent is on rail, and 91 percent is still on truck. The market share is large, but we are not competitive in many cases. The motor freight operators would like to use the railroads more, but our service reliability is just not there yet. We have to offer truck-like reliability if we are going to grow the intermodal business.

We must get variability out of our service. Looking at background information and our understanding about the future, we plotted three different strategies for intermodal. The selective strategy has a compounded annual growth rate of 6.4 percent versus the index of 5.6 percent. The yield strategy is in the middle at 12.2 percent growth, and the very aggressive strategy is higher still. The one characteristic of all these strategies is that they are all flat when they start out and then improve. A lot of this has to do with what is happening in other business segments, capital expenditures, and when we can bring facilities on line. The UP is focusing on the yield strategy.

Not surprisingly, as service improves, we will see more and more opportunities to grow the business in intermodal. Service is the real key.
The question is how do we get the right combinations together in our yield strategy to leverage our franchise and provide a level of service that will allow us to grow?

**Meeting the Service Imperative**

Service is imperative for profitable growth. As a result, the UP is focusing on investments that help to address service. We are identifying where we have bottlenecks, what corridor we should play in, and, with a yield strategy, whether we can manage different levels of service. Meeting the service imperative is not simply spending money. A great deal has to do with management processes, with being disciplined, and with having priorities and a realistic transportation plan. Equally important is how we are organized for decision-making.

Technology is another key to the future of the UP. The next generation of computer-aided dispatching addresses optimizing the use of our network. Positive train separation and positive train control will allow us to get more capacity and improve asset utilization. Technology will have a big role to play as we move up the service spectrum. Finally, we have to put iron in the ground, spend capital on the right projects, figure out how to get through Chicago, and have the discipline to execute our transportation plan consistently—recognizing we must be selective because we cannot be everything to everybody.

We decided to take advantage of the stacktrain economics and really focus on containerization. We know that we have to put some good services together with our eastern partners—through services that are seamless going east. We must tie our expansions to markets we understand, making sure we understand where to invest in new facilities. Finally, we need to get a product out there that is, in fact, truck-competitive.

**Examining the Risks**

What are the risks to this strategy? Not being able to meet our service requirements is a real downside risk. On the other hand, there is probably an equal upside, if we can do better than an 85 percent service index. In the pricing area, we have to be able to get prices that allow us to reinvest in the business. There are risks on both sides of the spectrum. Truck economics deal with the new technology in the truck world, such as fuel efficiencies, truck size and weight, and the use of double and triple trailers. On the upside, truck economics have to do with quality of life issues and drivers. There are risks on both sides here as well.

There is a well-organized customer campaign that offers a misleading message: “All we want is increased competition.” It is the view of the railroad that what these customers really want is a major reduction in rail...
rates for certain shippers by seeking legislation that would force one railroad to allow a second, competing railroad to use its facility, when the market would not support the construction of a facility by the second railroad. This will result in a downward cycle for our industry.

**Focusing on the Future**

The Staggers Rail Act of 1980 was enacted and the results have been amazing. Prior to the Staggers Act

- 20 percent of our industry was in bankruptcy;
- the average return on investment was less than 2 percent;
- there was a high accident rate; and,
- there was a capital shortfall of $20 billion.

Since Staggers, our productivity has increased 170 percent (80 percent of which was returned to our customers in terms of reduced rates); the accident rates have declined by 70 percent; and we have reinvested some $230 billion to revitalize the railroad industry.

This is a very serious issue for our industry. We understand that some have different views—some have characterized the re-regulation campaign as a contest between customers and the railroads—it is not. It is a fundamental policy issue: Should Congress mandate changes in the na-
tional rail policy that will reduce revenue and investment funds by lowering rates for certain customers? The railroad industry is on the way back. Re-regulation would undermine the gains customers and railroads have made as well as the ability of railroads to raise the capital required to expand, to become more productive, and to provide the reliable service that we are all striving for.

It is up to us, as an industry, to take advantage of the opportunities that we have in the intermodal world. There is a huge revenue upside. We must have the discipline to focus on service, while recognizing we cannot be everything to everybody. The intermodal market offers the Union Pacific tremendous growth opportunities. Achieving the potential is up to us.
Intermodalism—The Past Is Prologue

Charles (Chuck) L. Schultz
Executive Vice President and CMO
Burlington Northern Santa Fe Corporation

After I accepted the invitation to speak at the Intermodal Founding Fathers of North America Conference, I gathered the oldest of our people together and brainstormed all the different things that either the former Santa Fe or the former Burlington Northern did in the initial stages of intermodalism. It is an impressive list: in 1959 the Flexi-Van; in 1963 working with Mi-Jack—the first true intermodal crane; in 1968 the beginning of a very unique marketing relationship with UPS; in 1969 the Landbridge and the Super C; and, in 1970 we started what we thought were the first dedicated intermodal trains. More recently, we had the first zero failure UPS peak season in 1994; we initiated the HUB container program in 1998; and, we entered a unique marketing relationship with Wal-Mart and launched the Ice Cold Express™ refrigerated RoadRailer product in 1999. And, the list goes on.
Twenty years ago the industry was on the brink of nationalization. Today it is a growth industry. It is a Wall Street success story. A lot of us railroaders would like to see a little more Wall Street success reflected in the price of the stock, but it really has been a success story. The mergers are going to be very competitive programs. Our merger is the furthest down the road, and I think that we are getting where we need to be now in terms of having a better product than what we had before.

Intermodal business is the railroad industry’s brightest spot. The growth has been tremendous. There is a container or trailer handled some place every second of every day, 24 hours a day. Shippers have demonstrated that there is a lot of momentum for intermodal. Railroads have demonstrated that they can move less than truckload (LTL) freight. Railroads have demonstrated that they can move full truckload freight. However, in the last year and a half, the railroad industry has tripped, stumbled, and fallen.

**Intermodal is one of the Industry’s Brightest Spots**

- Growth machine for the industry
- A container or trailer handled every second of every day
- Shippers demonstrating clear momentum toward intermodal
  - Viable mode for both FTL and LTL carriers
  - Primary mode for some FTL carriers

**Service, Service, Service**

The benefits of intermodal are cost and reliability. Reliability has been an inconsistent benefit. To go forward, reliability must be more consistent. In terms of impact, no other means of hauling as much freight can compare with the railroad. In addition, the railroad brings capacity. There is not another mode that can handle huge swings in freight in very short periods of time.
The key to growth is service, service, and service. Differentiation is important. Reliability is important. Supply chain management is important. We need to demonstrate that the product we have will be beneficial to the owner of the freight and that we can do more than just lower their transportation costs, lower their inventory costs, and change some of their financial picture. Ease of doing business is essential. Railroads must be easy to do business with.

The BNSF Vision

The corporate vision of the Burlington Northern and Santa Fe Railway (BNSF) is to realize its tremendous potential by providing transportation services that consistently meet our customers’ expectations. I believe that BNSF has the highest concentration of intermodal business in the industry. Twenty-eight percent of our business is intermodal, and it is the fastest growing component. In 1998, we moved 3.1 million trailers and containers across our system. That is a load handled every 10 seconds, 365 days a year, 24 hours per day.

We do believe in a differentiated service. We have four very diverse market segments: the less than truckload (LTL) parcel, the asset truckload, the intermodal marketing companies, and then the steamship lines. While there is some overlap, all of these markets are somewhat different. They all have different needs in terms of cutoff, availability, and speed.
BNSF has initiated a national account program so we can better understand shippers' supply chains and to get a little closer to the beneficial owner of the freight. We believe that if we are truly going to provide a valuable service, then we have to understand our customers. That is the success story with UPS—one of BNSF's largest customers. Basically, we understood what UPS's needs were, and then we built our product around UPS's requirements. The Wal-Mart program is another success story. In 1995 the intermodal business was $1.95 billion. We will finish 1999 in the $2.6 billion range. It is a huge business for us, and it has been growing steadily.

At BNSF we segment the business. We are convinced that intermodal is not a single product, but that there are many different products meeting many different needs. Our mission is pretty simple. We want to improve significantly the customer's perception of doing business with us by transforming the way we interface with them through a series of both process and cultural changes.

The objectives are simple. We have to figure out where we are, what we need to fix, and devise a game plan to fix it. We have organized into four different teams. We have more than 75 people in the organization on these teams. They encompass all aspects of marketing, customer service, and operations. We have several quick start teams. We have surveys going. We have various specific customer-focus groups. By the end of 1999 we will establish a customer board of directors. We are going into some very specific profiles for all of our top accounts and will redesign all of our customer service and marketing processes. By the end of 1999, we will have an overall short-term and long-term e-commerce strategy for the company. We must do these things to move to the next step.

The BNSF Strategy

BNSF has spent a lot of money, and Wall Street has not exactly rewarded us. Since the merger, we have spent about $8.5 billion. That amounts to $5,000 a minute for every single minute that the merged company has been in existence. We have had enough rail re-tied for two roundtrips between New York and California. We have re-laid enough rail for a roundtrip from Denver to Seattle. We have re-surfaced enough track to go around the world twice. We have laid enough rail to go between Denver and Fort Worth, and by the end of 1999, one out of every three BNSF locomotives will be less than four years old. This is the commitment of BNSF to do our part.
How are we doing? Not good enough, but better. We performed poorly in 1997 and 1998 in one aspect of service—on time performance. There were many reasons for this poor performance. Our competitor in the West was in trouble, so a lot of freight came to BNSF that we were not completely prepared to handle. Service went down, and some freight went back to the highway. In June 1999, however, intermodal service was around 94 percent. We must get into the 90s, stay there, then move into the mid-90s, and on to the upper 90s. The corporate commitment of BNSF is to remain at high service levels so that intermodal will continue growing. The evidence of our success will be when customers find it easy to do business with us and when they receive their freight 100 percent on time and damage-free.

Evidences of Success

We will know we have succeeded when customers:

- Find it easy to do business with us
- Receive 100% on-time, damage-free service
- Receive accurate and timely information regarding their shipments
- Receive the best value for their transportation dollar
The Future of Intermodal

I asked the same group of former intermodalists I talked about earlier to gaze into a crystal ball. Their prognostications are most interesting.

- In 2002, the first 15,000 TEU vessel is launched.
- In 2003, most terminal operations are converted to ground stack, doubling the parking capacity at most intermodal facilities.
- In 2004, someone finally defines what a scheduled railroad is.
- In 2005, the whole industry becomes a scheduled railroad.
- In 2005, a 45,000 TEU vessel is announced and a national dray network is formed.
- In 2006, all of the Chicago railroads collaborate and build a “super hub,” a shared facility.
- In 2007, the high-speed intermodal trains are operating 125 miles per hour.
- In 2008, the 80,000 TEU vessel is launched.
- In 2009, two transcontinental railroads are established.
- And, in 2010 the intermodal market share will become 50 percent of both everything that moves on the highway as well as everything that moves on the railroad.

It has been said that sometimes innovation is building on another person’s idea. Unlike Thomas Edison who invented the light bulb, or the Wright Brothers who were the first to fly an airplane, or Alexander Graham Bell and the telephone, Henry Ford did not invent anything. What Henry Ford did was to improve the way something was being done. Our job is to improve intermodal and to move it forward.
III. PANEL PRESENTATIONS

Equipment Panel

George C. Woodward, Moderator

The story of equipment is a fascinating one, and it is a story that we may have lost sight of, given the world that we live in today. These industry leaders had the opportunity to create something, to do something before standardization. They were the people who actually signed on the line and took on mortgages and lease payments when there was still a significant amount of risk to these actions.

The ability to transfer and move freight efficiently has been a key factor in the development of intermodal. The early history of intermodal is linked with equipment innovations and new technologies. This continues today.

PANELISTS

Charles F. Kaye, Henry V. (Hank) Logan,
Aaron J. Gellman, David J. DeBoer

(Left to right) Hank Logan, Charles Kaye, Aaron Gellman, Dave DeBoer, and George Woodward.
Charles F. Kaye  
Chairman  
Transportation Investments, Inc.

Equipment is tangible; you can touch it and see it, and I have always enjoyed the unique fragrance of new equipment and looking at shiny new trailers or domestic containers and seeing them move. XTRA Corporation, which I was associated with for over 20 years, is the oldest, existing, major equipment leasing company in the United States. The leasing industry did not really exist in terms of large equipment leasing prior to the mid-1950s, and then it started on a very, very modest basis. Large equipment is specifically trailers, domestic and foreign containers, chassis, and some terminal equipment. How was this large equipment acquired in the world that existed in the mid-1950s to early-1960s? There were many players in the game at that time, some of whom had conflicting interests.

The Equipment Players

The railroads were important and clearly a major player because they were the ones who ultimately carried the equipment that carried the freight. The motor carriers were extremely important because they were major competitors. The marine carriers, at that time, were not as important. Freight forwarders, consolidators, played a large role. And, the federal government was a big, big player, for, as you recall, we were living in a wholly regulated industry in those days. The Interstate Commerce Commission (ICC) was the “bauble of marble” in Washington DC to which we all paid homage, if we were in these businesses. It is no accident that in those days the presidents of the major railroads in the United States usually emanated from the legal department, as it was a highly regulated industry. In addition, the federal government was terribly important because of its ability to control interest rates, which to people who had to finance equipment, was terribly important.

The interstate highway system was beginning to be built at this time. It carried some of the seeds that bring us to this intermodal conference because it allowed the motor carriers a means of travel that they did not have before, and they did it on our tax dollars. At the same time, you have a group of people who were trying to invent a new system, called piggyback, a way of moving trailers on flatcars. And last, but not least with respect to financing, is the fact that the investment tax credit was invoked actually three times over this period of time. For a company such as XTRA, the tax credit provided a major advantage.

In 1956 and 1957, intermodal was really struggling, and all of these people were competing with each other for part of what seemed like a good idea but was very fragmented. The banks were involved, to be sure,
and insurance companies were also involved. But there was nothing on the scene, such as large mutual funds, that moved equity around. Commercial paper was not available at all. Preferred stock from leasing companies was not even thought of at this time. We were dealing with pretty cosmopolitan but very traditional ways of financing.

I grew up during the Depression, and I always thought that banks in the Midwest were the most conservative institutions I had ever seen. I expected banks in the East to be even more so. Nevertheless, banks in the East really were, and are, risk-takers, and their experience is different historically. They did not lose farms; they did not go through a lot of bankruptcies with family businesses the way banks did in the Midwest. It was a new environment for me in the East. It was an environment that gave rise to the financing of piggyback equipment because the Eastern bankers were willing to take the risk.

The Equipment Leasing Company

Enter people looking for equipment and enter the leasing company. Two or three people with an idea formed XTRA. Carl Tomm, long since dead and who was with the Boston & Maine Railroad (B&M), and Selwyn Kudick and Frank Ventre put the money together. They hired the vice president of a trucking company and they got some trailers. The major trailer manufacturers were not willing to give equipment, under any guise, to the leasing companies, because leasing companies were competition to the manufacturers and because some manufacturers were also in the leasing business. The fledgling leasing companies had to look at minor players in the trailer business. Interestingly, almost all of these trailer manufacturers evolved from wagon makers.

People started with no assets, just with a dream. They mortgaged their homes to get the startup money. I came over from the Massachusetts Institute of Technology (MIT). I thought I was an operating person when I went there, but it turned out I was thrust immediately into the financing side. It became clear that XTRA needed at least two things. First, they needed some economic credibility, so we took the company public and put it on the American Stock Exchange and raised some money. Prior to that time, all of the cash flow that came in from our modest earnings was put right back into equipment. A very modest salary was paid to the founders and even more modest salaries were paid to the employees.

Second, we had to make sure that we could offer a product that could track the equipment, a product that could also be a sales tool. I brought in some of my friends from MIT, and we established a software program and set up a tracking program for our equipment. We later gave...
the program to the railroads, first to the Santa Fe, and they were excited about the product. It was good business and helped our system. These two things got XTRA going.

The Equipment Financing Practices

To finance a piece of equipment at this time, we would use conditional sales contracts. Sounds pretty simple, except that no bank would underwrite conditional sales contracts unless the manufacturer went on the paper. So we had a very complicated piece of paper. At the end of the line was a leasing company that promised to pay, but if they could not, the manufacturer was on the paper. For a long period of time, this was the only way to finance equipment. It was painful; it was tortuous. Eventually some of the banks in the East and the Boston banks were willing to lend money on equipment. The Bank of Boston gained a franchise in lending money to transportation companies and wrote the first evergreen loans for Ryder Transportation. This was not a big leap for Ryder, but it was for XTRA because this gave us a modicum of legitimacy. We also went to the insurance companies, and some of them would underwrite the financing. XTRA progressed and used this kind of financing to get additional equipment.

It then became apparent that we needed even more credibility in an economic sense. So we took the company from the American Stock Exchange and moved it to the New York Stock Exchange. To do that, we had to meet certain criteria for listing, including having a certain number of assets and a certain amount of revenue. Forget whether we made any money or not, which we were making, we had to have the revenue. Thus, we acquired capital, because in those days, the company's stock price was pretty high.

Once on the New York Stock Exchange, we gained financing with other banks and in other places. Things worked pretty well and the company prospered. During those years, however, a 3 or 4 percent inflation rate was a given and it began to accelerate. For the equipment business, it meant that the trailers had an economic second and third life, which allowed us to take a little more risk and to borrow under the equation R = G, or risk equals gain. We were willing to take the risk because we knew that we could sell the equipment at greater than our accounting book value. Equipment had an innate value, which was a great advantage.

We were betting on inflation, but in 1970 inflation began to get out of hand. President Nixon put a wage and price freeze on, and we were in big trouble, except for the conditional sales contracts. We did not pay them. We did not pay them with the acquiescence of the manufacturers.
and the banks. They declared a moratorium. Not much was ever published about this, but for about nine months no money changed hands among XTRA Corporation and the conditional sales contract manufacturers and the banks. When the price freeze was lifted, we went back into business and all was forgotten. However, this helped XTRA during a very rough time. It also got XTRA out of financing with insurance companies and into the world where we could write commercial paper, we could float preferred stock, and we were able to bring in the money necessary to go to a capital budget in the hundreds of millions dollars a year. One year, XTRA actually had $125 million in capital expenditures. This was big for a leasing company; this was a lot of trailers and domestic containers.

Now, if you look back at the beginning of intermodalism, you can see this marvelous exponential evolution in technology, not unlike the experience in the business of computer technology today. I have enjoyed my role in the development of this industry, an industry where people were willing to take risks.

**Henry V. (Hank) Logan**  
Senior Vice President of Fleet Management  
TTX Company

TTX is honored to participate in this conference. This is an industry that is obviously near and dear to our hearts, and we believe that TTX has made a substantial contribution to the success of the intermodal freight transportation industry. I will cover, in broad terms, some of the early history of TTX, then called Trailer Train Company. Some of the facets of the company operation form a major part of the foundation for the company as it exists today.

The 1955-56 timeframe is really when this thing called piggyback was beginning to make sense to many people within the industry. A number of railroads and others had been experimenting with the movement of trailers on flatcars prior to 1956, but there were problems associated with this. Some of the problems were related to the availability of flatcars and to the varied means of hauling trailers on those flatcars and securing them to the flatcars. There were, frankly, too many different forms of hardware that were in existence to enable the industry to really begin to grow the way a number of people thought it could and should. A number of real founding fathers thought through these problems and decided that it would be in the best interest of the entire industry to create an entity charged with the responsibility of operating and maintaining a pool of equipment that could be used to foster the growth of piggyback.
TTX Charter

The original founding fathers of intermodal freight were, in fact, the Pennsylvania Railroad (PRR) and the Norfolk & Western Railway (N&W). It is not coincidental that these two railroads got together, since the PRR, more or less, controlled the N&W. But, interestingly enough, when the Trailer Train charter was first written, the basic objective of Trailer Train was to foster the growth of piggyback by providing a fleet of high-quality equipment that could be made available to a number of different railroads at the lowest possible cost. The railroads would, presumably, own a piece of the company.

Even in November 1955, there was concern that this business was not likely to be terribly profitable. To help offset the prospect of low profitability, low-cost rolling stock became an important part of the TTX concept. Last, but not least, TTX would provide a fleet with a standardized design, and this would attack the problems of the multitude of different car types and tie-down systems that were in use. There were as many different car types and as many different tie-down systems as there were railroads involved in piggybacking. The most common set of hardware was a series of chocks, chains, and jacks that were used to secure a trailer to a flatcar. As I understand it, there were some 42 separate pieces of hardware that had to be engaged to get a trailer attached to a flatcar.

The fundamental company objectives, which I outlined, really have not changed very much at all, and here we are 43 years later with the same language written into the formal contract that lays out the terms and the conditions of the arrangement between TTX and participating railroads. So the company got up and running. Stock was issued. The PRR, the N&W, and a company called Rail Trailer were the initial purchasers of the stock. There were some six thousand shares outstanding. The company was off and running, but it was not a cakewalk.

Early Days of TTX

There were a number of problems encountered in those early days. First, the desire to create this nationwide pool presumed that there would be widespread consensus for the desirability of standardized equipment and of piggyback itself. Jim Newell, more than anyone else, had the primary responsibility of selling the concept of Trailer Train and allowing it to grow and be successful. There were quarters within the industry that were suspicious of piggybacking. There were those who really believed that if we did not get involved in the hauling of trailers on rail that the truckers would begin to have serious problems, which could cause their demise. The third problem was that this was a new concept, untried, an experiment. Certainly, the hardware and the system itself were new, but
so was the concept of creating a company to own and operate these flatcars.

The TTX Club

We did not have a financing problem. We were backed by the mighty Pennsylvania Railroad, which provided financing guarantees for all of the initial flatcars purchased by TTX. This arrangement continued as additional stockholders joined the Trailer Train club. Every railroad that joined the company was obligated to buy 500 shares of stock and to sign a guarantee on the financing for any new fleet additions. The initial group of stock, the first 6,000 shares and the stock purchased by the first 10 railroads that ultimately joined Trailer Train, was purchased at a $100 a share. Each railroad paid $50,000 to join TTX. The July 1999 book value of the TTX stock is $68,000 a share. While TTX is not exactly a “dot-com,” its record is not bad. Between 1955 and 1958, 10 railroads were added. But, by 1964, we had 41 major railroads, each owning 500 shares of TTX stock, providing a firm foundation for success.

Flatcar Hardware

There were a number of really dramatic breakthroughs in hardware that made the flatcar perform more effectively. Without argument, the most significant breakthrough was the development of the trailer hitch, the device that replaced the 42 pieces of hardware discussed earlier. The trailer hitch provided the means to secure the trailer to the deck of the flatcar in the most efficient possible manner. According to legend, Lester Robinson sketched the design for a trailer hitch on a napkin in a restaurant in Chicago. This single innovation added a tremendous degree of efficiency to the entire system. It took a number of years before the next significant breakthrough occurred, the development of the all-purpose intermodal flatcar. The 89-foot, 4-inch flatcar turned out to be the workhorse of the TTX intermodal fleet. It appeared on the scene as the transition between trailer and container. This car was a cost-effective way of handling the trailers as well as the containers, which in the early 1960s were in their infancy. The TTX fleet was expanded rather aggressively to develop this fleet of all-purpose equipment.

In between the development of the all-purpose car and the doublestack, which I would characterize as the next significant technical breakthrough, there were a number of fine-tuning exercises. Better end-of-car cushioning devices and the single-axle car were technology improvements. They were important improvements but not as pivotal as the hitch or the all-purpose car and, certainly, not as important as the doublestack car. The doublestack revolution, more than anything else, prompted the
significant expansion of the TTX operation over the past seven or eight years.

**TTX Equipment Pool Management**

TTX was innovative in the management of its equipment pool. The founding fathers developed the concept of a truly free-running pool, a fleet of intermodal flatcars that would be available for every member of the pool, as needed. Flatcars would be allowed to go from railroad A to railroad B, and railroad B could hold them as long as was needed to await a load without returning them to anyone. This contrasted with the policy of a railroad-owned car, which required that an empty car be returned to the railroad whose marks were on the car, contributing to a tremendous amount of inefficiency and the accumulation of empty miles. The free-running pool concept, on a scale the size of the TTX fleet, represented a tremendous improvement in efficiency that has found its way into the intermodal system overall.

The second significant point was the absence of any long-term rental obligation on the part of any railroad that uses TTX cars. The TTX lease, if you can call it that, is five days. If any railroad does not need a TTX car at the end of five days, it merely calls TTX, declares the car surplus, and it is our job to find someone else who does need it. So the five-day-turn-back policy, as we call it, goes back to the early days of the company. In large measure, it is a pricing mechanism that allows us to know where cars are needed and where cars are surplus. We can use that information to direct cars from areas of surplus to areas of need.

**TTX Pricing Policy**

The low-cost policy, which was outlined in November 1965 by Jim Newell and his colleagues, has turned out to be a major part of the overall TTX strategy. Some people think of TTX as a nonprofit company. If this is true, then we are the most profitable nonprofit company on the Planet Earth. Nevertheless, we do have a policy of not maximizing profits. The TTX pricing system is designed to produce a target level of profit that allows us to go to Moodys and Standard & Poors and our lenders to demonstrate that we have managed the company consistently with promises we have made for ratios, like fixed-charge coverage and debt equity. All of our pricing is designed to meet those target levels.

In 1998, for example, we had very good utilization, exceeded our estimates, and, in fact, lowered our prices $37 million so that we came in right at the targets we had set. The low-price concept helps make the railroads more competitive and more efficient, as does the so-called pool pricing convention, in which we charge the same for a car of similar eco-
nomic utility, regardless of when the car was purchased or what we actually paid for it. If I had different prices for different vintage cars, similar to the old ICC car-hire rate system, I would be faced with constant queries about which railroad got the expensive cars versus which one got the cheap ones. The formal contract has been supplemented on many occasions and, frankly, tweaked to recognize changes in the business.

Very active advisory committees, from each of the railroads that are part of the TTX pool, played an important role in that tweaking exercise. The most active is the Intermodal Advisory Committee. This committee, more than any other, writes the rules, tweaks the contract, and provides the consensus on the changes in the contract to meet the changing requirements.

TTX Maintenance Philosophy

The maintenance philosophy at TTX has been a very important part of the company from the beginning. The founding fathers seized the opportunity to create this new fleet of equipment and decided that the fleet was going to be managed by a preventative maintenance philosophy. TTX keeps individual records on its cars, including the mileage; cars are sent in for maintenance when they have accumulated a predetermined level of miles, rather than waiting for the cars to fail and then sending them for maintenance. The real point is that we knew that service levels in the intermodal marketplace would be rather stringent, if the railroads were going to compete effectively with the highway carriers. Cars would have to be available on an as needed basis with a high degree of reliability. So this preventative maintenance philosophy has been critical to the success of TTX. Moreover, until this time, no one had owned such a large fleet of cars with this tremendous amount of information on performance of components and maintenance standards in a high-mileage environment. The TTX fleet has, many times, been referred to as a laboratory-on-wheels.

Many have contributed to the success at TTX. Jim Newell played a key role developing the TTX philosophy as did Gene Ryan, who is regarded by many as the father of modern intermodalism. Over the years, the TTX Board has had a number of stellar individuals from the industry. Bill Johnson, the retired chairman of the Illinois Central, was a lawyer at the Pennsylvania Railroad when the formal contract was being developed. He played a major role in developing the rules and regulations that we continue to follow. I am frequently asked how anything got done when we had 41 railroads on the board. I can tell you that it got done very effectively. The presence of 41 railroads was no more of a problem than the 9 railroads in 1999.
TTX will have 10.2 million loads in 1999. The Pacific Rim trade phenomenon has been a major contributor to the demand for containers coming in through the West Coast of the US and has hastened the growth of the TTX fleet. Right now, we have 86,000 doublestack cars, well over one-half of the 154,000 intermodal fleet overall.

The market determines what it wants, and our job at TTX is to make sure that the railroads in our pool have sufficient equipment to meet their needs. We have not been shy about spending money. Some $4 billion has been spent on equipment over the past 10 years. Well over one-half of this was for the intermodal fleet. This spending program is designed to support the efforts of the railroad industry to expand the intermodal market. Much of the freight volume handled by the nation’s railroads tends to follow the rise and fall in the gross domestic product (GDP) of the US and the world. The best opportunity for growth through increased market share rests in the potential to tap the demand for intermodal service.

Aaron J. Gellman
Director of the Transportation Center
Northwestern University

When considering the equipment history of intermodal, it is important to acknowledge that much of the development of intermodal equipment comes from the military during World War II. It is not that the contribution of the military was so lasting from a dimensional standpoint, but that the principles established by the military served us well, for the most part, and have been well integrated into everything since then. For example, the military recognized that what we were really talking about was not so much intermodal as multimodal, at least three modes and not just two. Second, the military claimed to recognize the importance of standardization of dimensions and standardization of lifting points. Indeed, the military pushed every standardization effort, including the committee that set the standards we live by today. After the war, the military demonstrated the unit load principle and became very interested in containers.

In addition, an experience during the Korean War had an influence on equipment decisions and the course that equipment technology has taken. I was in the US Army at the Transportation Research and Engineering Command at Fort Eustis, Virginia, and it happened that the Army had decided to move CONEX containers, a very nonstandard container today, directly from the Columbus General Depot in Ohio to Korea, literally through the battlefront in many cases. The Army asked
the railroads to participate in this move from Columbus, Ohio, to shipside on the West Coast. The railroad industry refused to consider it because the government insisted upon a Freight-All-Kinds (FAK) rate. General E.C.R. Lasher, a pro-railroad officer, concluded that the railroads were not going to respond, and we went to the truckers. I was asked to be involved in this process. We talked to the trucking industry association. The truckers got very excited about the project and they took all the traffic for a time.

At this point the railroads complained to Congress. I was a Second Lieutenant, but I had a graduate degree in transportation management, which was not usual for those working for the US Army Transportation Corp in uniform. As a result, I was asked to go up to Capitol Hill and talk to people there. The senator who was most in favor of giving this traffic to the railroads was Paul Douglas, who had a PhD in economics from Chicago. The point was that the railroads were not enthusiastic at all about the unit load principle. The railroads in Canada were enthusiastic about it but not those in the United States. History records that the traffic shifted away from the truckers to the railroads at the end of the Korean War.

Double-length Flatcars

The double-length flatcar became the standard for rail intermodal from the late 1950s until the mid-1980s. There is plenty of documentation to suggest that the double-length flatcar was favored, rather than the 40- to 50-foot flatcar, because of economic regulation by the Interstate Commerce Commission (ICC). Rail Form A had a major component called cost-per-car mile. The ICC was trying to decide whether rates were compensatory. John Ingram, who was then president of the Eastern Railroads President's Conference, determined that the rates that the conference had to charge would never pass muster with the ICC if a short car was used because of the cost-per-car mile component of Rail Form A. This is how the double-length car was born. This is a very good example of how economic regulation hindered technological change in the railroad industry, not only in this context, but also for decades until railroad regulation was abolished in 1980. But, of course, this is not the whole story of equipment prior to deregulation in 1980.

First the double-length car had tremendous operating problems that were not foreseen. Double-length cars were unstable and were dumped regularly into ditches under certain situations, such as drop bar, curvature, and grade conditions. In addition, the government re-entered the scene in a big way and, this time, in a pernicious way. The US Department of Transportation (USDOT) decided that the US railroad industry
should feature trailer-on-flatcar (TOFC) and not container-on-flatcar (COFC). The USDOT would not allow the ICC to consider proposals for lower rates for hauling containers rather than trailers. The rationale was that the truckers of America had lots of trailers but no containers and no one could be expected to invest in containers.

**Trailers and Containers**

During this period, a very important event took place. Ivan Ethington, the chief operating officer on the Burlington Northern, was interested in the cost differences between hauling trailers and hauling containers and consulted Alan Cripe and me. He assembled two trains with identical gross weight to find out if there was any difference in tonnage for locomotives hauling containers on flatcar or trailers on flatcar. The trains ran 61 miles-per-hour between yards, touching 70 miles-per-hour briefly. Ivan found that the tonnage for the locomotives was not quite three times as high for hauling containers as it was for hauling trailers. They presented their data to the USDOT, and they were laughed out of court. The Denver & Rio Grande Western (D&RGW) and the Southern Pacific said they wanted to charge less for hauling containers than trailers. The ICC would not hear of it.

It is also important to note that from 1960 to 1980 a number of innovative cars were proposed and some prototypes were even supplied, but the US rail carriers, by and large, rejected them. Doublestack cars were presented to the US railroads for consideration; they would have none of it. Articulated cars with the "autoporter" were presented, but the railroads would not accept them. And, there were RoadRailer-like cars. Today we have many examples of doublestack, articulated, RoadRailer units.

**Deregulation of 1980**

The fact is deregulation happened in 1980. The railroads were deregulated; the truckers were deregulated for interstate commerce; but the shippers were also deregulated in the sense that they could now demand containers. Deregulation also contributed to the tremendous technological change that occurred for a decade and that affected intermodal and other forms of transportation. Shippers caused the big shift in equipment technology, and no shipper was more prominent in this than APL Rail.

Deregulation also influenced equipment development in trailers, containers, and terminals. For example, the plate-wall trailer is an important technological change that never would have taken place without deregulation, because everyone wanted lower costs. Recently, technological change related to intermodal transport has slowed. I would hypothesize
that it is largely because of a dramatic shift away from transport to logistics or supply-chain management. We need to go back and consider what a transport system can produce for the country. The further development and growth of intermodal transportation, beyond the present time, is again going to require entrepreneurship.

David J. DeBoer
President
Greenbrier Intermodal

I want to make three points. First, you will hear a lot of truth telling from the panelists at this conference. Because we have known each other for so long, it will be impossible to lie to each other. Second, intermodal history has been made standing on the shoulders of the people who went before. This industry would not have developed had it not been for the XTRAs and the Rea1cos to provide the boxes and the TTXs to provide the capital for the cars. Third, I think that I spent more money on terminals than all of my Southern Pacific (SP) predecessors combined, just because I had a very understanding CEO. There were not very many of those around. And, this is one of the important things we need to focus on.

Hank Logan talked a little bit about the isolation and the feelings of other people toward intermodal people on the railroad side. I was at Southern Pacific (SP) two weeks when the chief commercial officer pulled me aside and told me that the SP was a boxcar railroad. Many of us have had that kind of experience, and it came not only from the commercial side but also from the operating side. It is an important part of why we have gotten where we are. We did not have a lot of friends in the rest of the railroad. Generally, we tended to mix with each other a lot more than our counterparts in other parts of the railroad.

I started to reflect on why we were not squashed along the way. A lot of people did not like us. Looking at the economic history of the United States from the middle of the 1840s until after World War II, the railroads were the largest segment of the business economy of the United States except for two years just before the Depression. This means that the railroad industry was like Microsoft or AOL. After World War II and with the building of the interstate highway system, the largest segment of the business economy went into a precipitous slide. Everything was going downhill for the railroads except for one little piece of the business and that was intermodal. From the 1950s on, it was this one part of the railroad business that a CEO could go in and brag about to his stockholders and to Wall Street.
Driving Forces behind Intermodal

A handful of people and their corporations were the driving forces behind intermodal. One of them was Jim Newell. Jim was a vice president of operations of the Pennsylvania Railroad, the largest railroad in the country, and the president of TTX at the same time. And, he loved intermodal. He was a rare individual and he stood alone. All of his contemporaries were on the other side of the fence. It was not until the 1970s that three other vice presidents of operations (VPOs) became big supporters of intermodal. Southern Railway's Stan Crane, Santa Fe Railway's Larry Cena, and SP's Dick Spence were very powerful VPOs who were big intermodal supporters.

To make technological progress in this industry, it takes corporations that are innovative and it takes individuals within those corporations to drive the process. For example, doublestack began as an alliance between the shipper, the car-builder, and an innovative railroad. The Southern Pacific, American Car & Foundry (ACF), and SeaLand were the innovators. Paul Garin in the mechanical department at SP, Bill Thomford, a car designer at SP, and Tom Fante, who was one of my predecessors in SP's intermodal department, all got together with George Reed and Eugene Cordani at ACF and Bob Ingram at SeaLand in 1975 or 1976. They came out with a prototype in 1977 of the first doublestack car. In 1979, they went forward again, to determine what an articulated car would do to the economics and to the ride quality. In 1979, they built a three-unit car. Interestingly enough, it had a 125-ton intermediate truck. And, in 1981, we ordered 42 five-unit cars for service. Don Orris, who was working for APL, suspected that the Southern Pacific had given a very favorable rate to SeaLand, recognizing the economics of doublestack cars. The commercial department assured Don that this was not true. But, in fact, it was true. Don with his company then started working with Thrall and with the Union Pacific and set up a container network of his own and was very successful.

Advantages and Economics of Doublestack

The advantages and economics of doublestack are well known. One of the things that is less well known is what doublestack did for the quality of service that intermodal was able to offer. As an operating officer, I was generally embarrassed to take my customers out on the railroad because, in the old days, you had slack in the train—sort of like a great big slinky toy out on the tracks. Part of the train was going uphill and stretching out, part of it was coming downhill and running in. There were huge dynamic forces in the train, and if you were in severe grade and
curve territory, no matter how good the road foreman was, the business
car people would wind up with their lunch in their laps.

With doublestack, this all went away. Articulation came in, and in­
stead of 160 feet of slack in a train for 200 boxes, there was 10 feet. We
had better ride quality than a passenger train. For the first time, we had a
service that was competitive from a ride quality standpoint. Ride quality
became as important to intermodal as the economics.

Again, APL recognized this and did the incredible. It took two con­
tainers and put them on a car on a train; APL then put a dining room
table with china and a chandelier in the top container and ran the train
across the country. APL opened the container up at the other end of the
country and only one fork had moved. The fuel savings with doublestack
were huge, but it took some time to appreciate the ride quality aspects.
Again, we instrumented a train in conjunction with APL and ran a load
from Oakland to Detroit. As I looked at a tape of the trip, the scale
readings were down in the 2s instead of the norm of 10 or 12; then, all of a
sudden, the readings went to 7 and 7½. As turned out, the load was taken
off the train in Chicago and was run over the highway. The higher num­
bers were highway vertical loads. The railroad-ride quality had become
better than the highway-ride quality. This was an amazing step forward.
But without Don Orris and Bob Ingram and their two companies, I do
not think the doublestack revolution would have happened.

I was told, as I left the SP to become a car builder, that there were
only going to be 2,000 wells ever built and that they would haul all of the
container traffic that would ever be hauled in doublestack. My business
plan looked a little different than that. There were a total of 61,000 wells
of doublestacks built by 1999. We have built about two thirds, or $3 bil­
lion worth, so it has been a little better business than some thought.

There have been a lot of tweaks along the way. We have completed
our ninth doublestack design with a 53-foot car that is currently being put
into service. Many railroaders thought that we would obsolete the fleet.
In the past 15 years, the 89-foot fleet has gone from something like 60,000
cars, except for the three-unit cars, down to about 4,000 or 5,000. In the
same period, the wells have gone up to 61,000. One of the reasons that it
has been so much fun is that intermodal has always been a changing busi­
ness, and I think that it will continue to be.
Intermodal transportation would not exist as it does today without the introduction of containerization by the maritime sector. Neither would global trade. Clearly by its very nature, all maritime transportation is intermodal, usually involving at least a steamship and a truck, very often rail, and increasingly other modes, such as air. Today's intermodal world has been greatly affected by double-stack transportation and domestic containerization, and the distinguished pioneers on this panel transcended the whole intermodal integration of maritime with rails and surface and the whole transportation network. Don Orris and his group "the Oakland Raiders" really helped the railroad industry understand what it meant to run a service of quality and reliability.

PANELISTS

Donald C. Orris, Peter I. Keller,
Nolan R. Gimpel, F. H. (Joe) Howard

(Left to right) Joe Howard, Don Orris, Nolan Gimpel, Peter Keller, Ted Prince, and Gil Carmichael.
Donald C. Orris  
Chairman and Chief Executive Officer  
Pacer International, Inc.

I have done a lot of things in transportation, but the stack car is going to be the thing that marks me for life, good, bad, or indifferent. I will be the first to tell you that I did not invent the idea of a stack car. My concept had nothing to do with the building of the first cars. I did participate as a part of the American President Lines in the development of a stack car and the commercial arrangements that were associated with that development.

First Stackcar

The first attempt that I was involved in with the stack car concept was when I was with the Denver & Rio Grande Western (D&RGW), a railroad that existed between Denver and Salt Lake and that also served Aspen at that time. In 1975 we were trying to come up with innovative ideas that would help our little railroad exist. We explored the development of a stack car, trying to come up with a new plan, a new approach to the intermodal business market. Our approach was very simple in that we looked at the highway and the rail system in North America and asked what the limits were that we had to operate within in order to develop a piece of hardware that would universally move over most of the transportation system. As time progressed we learned that some of these limits, especially the height limit on rail, were, in fact, in error or changeable economically.

In 1975, at our request, Thrall designed a stack car. It was designed to take advantage of the 89-foot length, yet actually consisted of one container in the well and two on top. A three-container car, if you will. We were targeting new markets, and we went out with pricing, service schedules, everything as a part of this overall package to sell this concept at that time. This car was equipped to carry a refrigerator (reefer) generator, because one of the target markets was to take us into the perishable business, which at that time had already diminished from being a significant part of the rail intermodal industry. Part of the presentation to the Burlington, Western Pacific, and our railroad was to obtain market support for this equipment. The intermodal marketing company (IMC) industry, at that time, came forward and basically offered up freight purely for the development of the car, whether it was successful or not. This industry stood behind the car and it was a cost-free opportunity for the railroads. Two of the railroads agreed to go forward and one declined in spite of a no-cost risk, because they really did not want to see containerization come into US intermodal transportation. This was 1975, and the
First Doublestack

In 1978 American Car & Foundry (ACF) built the first doublestack car in conjunction with SeaLand and Southern Pacific Railroad (SP). Initially, they were three platform, articulated cars and they did not bring about a substantive change in the industry. We at APL came along in 1984, with Thrall and Union Pacific, and basically developed a car substantially different from the previous cars. We put these cars into service without doing the traditional testing, and we had to have special interchange agreements because the cars were not approved for general railroad service.

Thrall took terrific risks. The car-building industry was literally on its tail at that time, and Thrall guaranteed that the car would work. You will never see another warranty like this from any equipment manufacturer, but they did it. Union Pacific also took on a great deal of risk because we were dealing with centers of gravity that did not exist, prior to this time, in terms of height off of the rail. There were also braking issues since the braking capacity on these cars was not within the existing standards.

APL, especially, took a lot of risks. We signed up for these agreements on a take-or-pay basis, which meant that we were buying trainloads going both directions, we were standing behind them, and we were purchasing the equipment. APL was known for equipment innovation and they supported a lot of things, including 9-foot, 6-inch containers, 45-footers, and non-Panamax container ships. They were accustomed to a high-risk environment. I should add that many of APL’s management came from SeaLand, so perhaps this all goes back to Malcolm MacLean and the establishment of intermodal. But, the fact that everybody at that time was willing to step out of their existing paradigms—Thrall by providing an unheard of warranty, Union Pacific by allowing this car to operate across its railroad without having the usual testing and confidence level, and APL with its investment and willingness to take risks. Incidentally, all of these cars had a failure in the braking system and had to be repaired within the first couple of months. The innovation occurred, but not without bumps in the road.

Doublestack Improvements

One of the biggest changes during the development of the car was in a 30-pound device that was supposed to secure the top container. The
device failed and somebody had the bright idea to go to the inter-box connector that the ocean industry used. There were questions on whether or not it would operate within a rail environment. In fact, it did. It eliminated that very heavy bulkhead seen on the earlier cars and allowed multi-sized containers to be utilized on the cars without restraints. The equipment served international 20s and 40s as well as domestic 45s, 48s, and 53s.

With regard to articulation, a five-platform car eliminated 40 percent of the wheels, which got rid of much of the mechanical expense associated with this equipment. It also brought the containers closer together, helping the aerodynamics. The use of a common truck-assembly stopped the rocking motion. To test our theory, we literally set up a dining room, without any bracing or blocking, and shipped it from Los Angeles to New York. The dining room stayed intact, and this test really demonstrated the ride quality of doublestack. It was a great way to tell people that we had a superior ride quality. It said if we can do this, nothing else matters.

The biggest problem with this equipment was height. We were told when we started that, with all the money in the world, we could not change the height limitations on Conrail. Somebody challenged that statement and changed the height limits, which really opened up the eastern corridor. APL, Union Pacific, and Western Pacific shared in the expense of opening up the central corridor. As I recall, it cost 15 million dollars. SP later lowered tunnels on the West Coast and basically made this hardware usable across most of the mainline track in North America today. There are still some north-south routes in the East that are not able to accommodate a stackcar. The car had 20s, 45s, 53s, and 48-foot containers on it, offering universal capability. This design, subsequently, took over for all of the car manufacturers.

**Doublestack Economics**

Crews are paid by the train. There are about 280 to 400 containers on a train versus a traditional intermodal train with a hundred plus trailers. The economics are the real issue. There are other economic contributors in terms of fuel, mechanical wear, the elimination of the end of car cushioning, which again contributed to ride quality. All of these played out such that the transportation experts could see that the savings involved in stack versus highway, or the other rail alternatives, made it a superior product.

Probably APL's biggest contribution was the fact that we took those savings into the marketplace. Not only did we negotiate for our international price improvements but benefits for domestic cargo as well. When we first entered the doublestack business and ran our first train east-
bound, we were responsible for the whole train, both ways, take or pay. We showed up in Chicago, and Universal Carloading, which was to be our partner, was not prepared to load it westbound. Frankly, we were on the street looking for business and, again, the IMC industry was there to support us. Tom Hardin of HUB signed up for 15 or 20 that first week. That is how the innovation went across the industry, because the economics were passed on to the customer. Of course, anytime you have hardware innovation, marketing always sells its advantages about an hour before it is invented and operational. But, that is the tradition of the business and that is how our commerce works, what makes this country what it is.

**Stacktrain Dominant User**

The dominant user of stacktrain is international freight, basically offering a bill of lading somewhere in a foreign country going to a point in the US or from a point in the US back to that foreign country. It would, however, be an error to think that doublestack has caused this. It has not. It is not rail economics versus ocean economics, because if it was, all that freight would be still going around North America via water. What the shipping companies really look at is deployment. They decide whether it is better to turn ships that they have in service in the Pacific and reap the benefits of the traditional, high, eastbound rates from Asia and the west-bound loading, if it is available, or to go around the world, moving much of their capacity empty between the West Coast of the US and the East, then reloading and taking exports on to Europe. Ship lines go both ways. The economics are so powerful that they overcome anything that doublestack might do or not do for the shipping lines.

So, this is not the reason why international trade in the US has grown to the extent it has. It really has to do with the overall economics of the ocean carriers. Intermodal and stacktrain innovation have helped by providing a through product that is a quality product for the ocean carriers. But, this is not the cause. In 1999 the ocean industry represents a little more than one-third of the total intermodal business.

**Growth of Doublestack**

There is still a lot of business that is not in containers, like UPS. In metric tons in 1999, intermodal represents a little less than 20 percent of the rail business, but it is the growing segment. The doublestack in 1999 represents about one-half of the intermodal freight movements, and it will continue to grow. As Hank Logan stated, the rail system, in spite of recent merger problems, will continue to produce a better product. I believe this, and I believe that the railroad will be the mode that will con-
continue to dominate the movement of consumer goods in North America because it is the best long-haul transportation alternative.

Peter I. Keller
Executive Vice President and COO
NYK Line (North America) Inc.

History really does repeat itself, particularly where business issues are concerned. Business is also often likened to war. In the military we were taught to understand our adversary and his history. If business issues and problems are the enemy, we should understand them and their history. I would like to draw on some of my own experiences, first at SeaLand and then later at the Cast Group Limited, to illustrate some of the recurring historical problems that we face.

In 1968, when I started at Port Elizabeth, SeaLand had a terrific little facility. It was the envy of the industry at that time. Fine people like Bill Hubbard had spent some time working on it and designing it. We had six gates, a huge amount of gate capacity at the time; three cranes, soon to be five; four berths; and thousands of parking spaces. This place was going to last us forever. We also had a lot of chassis to put the boxes on, but what we really had, what we were most proud of, was a state-of-the-art yard control system that featured punched cards.

Anticipating Growth

The problem was, and continues to be, volume. Volume always exceeded our expectations. We could never build enough, quickly enough, or change procedures, systems, and methodologies quickly and efficiently enough to keep up with growth. We always seemed to need more gates, always seemed to need more tractors, always looked to pave more land. We even needed more punch cards. Yet, when it was time to project the growth, or to look at new business levels, the operating people, like me, were always quick to suggest we could stand on our heads and do another hundred thousand boxes. The reality is that we did not prepare adequately for growth—yesterday or today.

The little SeaLand facility was already busy and getting full, and then came big, new fast ships. Enter the SL7s. They were really beautiful ships—big, sleek, fast. Thirty-three knots was their cruise speed across the Atlantic and the Pacific oceans. They were huge, with 35- and 40-foot boxes, and an immense 2000 TEUs (twenty-foot equivalent units). Wherever the SL7s called sorely taxed the existing terminal facilities. Land needed to be paved, parking expanded, gates built, boxes and chassis
The port authority police force was not amused. Similarities are there, business volumes continue to expand beyond our highest expectations. Capacity issues. We see all of these problems reoccurring, and they will. Gard to the SL7 introduction, we seemed to stay with the status quo until look at the large vessels with their increased capacity and increased volume coming through our terminals. Think about crane size and terminal capacity issues. We see all of these problems reoccurring, and they will only get worse as we continue to move to the new generation of vessels. Business volumes continue to expand beyond our highest expectations.

Implementing New Technologies

In considering the terminal planning processes, particularly with regard to the SL7 introduction, we seemed to stay with the status quo until
the bitter end, not really opening ourselves up to the use of new and improved technologies and to a broader thinking. There are numerous innovative approaches around us that we seem hesitant to consider. Rather, we seem content to stay with the top picks, the straddle carriers, and regrettably the containers on chassis, when we know that there are a myriad of new ideas to consider. These technologies simply will not take us where we need to go into the next millennium at 6 to 8 percent volume increases and more per annum. Whether we are a railroad, a steamship company, or a port, the land constraints, the environmental realities of our inability to fill in wetlands, or to cut down mountains, and the realities of noise, and particular emissions, mandate the immediate development of new, more efficient operating methodologies.

Has anybody really thought about why we need all of these chassis in the United States? Certainly we do not have them in abundance anywhere else in the world. Canada, just to the north, works very nicely without a huge inventory of wheels and their excessive cost. Furthermore, the continuing lack of productivity in our terminals is totally unacceptable. We spend millions of dollars every year on container cranes capable of doing 60 or more moves an hour, yet we seem content with a productivity level in the area of 30-40 moves an hour. It always seems easy to blame the crane operator and labor, but I believe that most of us understand that the real culprit is the technology that we use in our terminals, the information flows, the information processes.

We simply must develop new approaches to feed containers to and from the cranes that service the ships. The maritime industry must take new, fresh approaches to these and other issues if we are to support the growth that we know is coming, growth that we are often not equipped to deal with in the short, intermediate, or long term.

Examining the Power of the Intermodal Experience

When I left SeaLand in 1982, I went up to Cast Group Limited in Montreal, Canada, mainly to see what bankruptcy was like, and it was interesting. Cast was, what in those days could best be termed, an innovative but unprofitable renegade carrier. The founder of Cast, a gentleman by the name of Frank Narby who came out of Federal Navigation, was an early believer in intermodalism, and he used intermodalism very effectively and to his commercial advantage. In the early 1970s, Narby saw an opportunity to develop market share by using intermodal movement over alternative, cheaper, and more reliable ports. In the late 1960s and 1970s, labor disruptions on the East Coast of the United States were the rule and not the exception. Costs were rising steadily and productivity was stalled. At that time the larger customers were just getting accus-
tomed to the advantages of containerization, and they were very frustrated as their distribution patterns were disrupted.

Narby had been in the steel trades in the Great Lakes and understood that price is king. He was operating breakbulk vessels to the Saint Lawrence River with steel and exiting with iron ore. He decided to put a few containers on the decks of these vessels and land them in Montreal. At that time, Montreal was relatively cheap, had berthing available, and, more importantly, had direct rail links to the major markets of the US Midwest. With his maritime and vessel cost well below his competition on the East Coast, and with a fairly regular service that he could sell to the Fords and 3Ms of this world, the stage was set for a shift of market. It shifted from the historic natural gateway of the East Coast of the US— the Ports of New York, Baltimore, and Norfolk—to the Midwest, using intermodalism. Today as much as 50 percent of the US Midwest cargo from the Atlantic range continues to move over Canada. We have now learned, and most of us understand, that customers do not necessarily care about how the cargo flows, but rather that it gets to its destination on time and at the lowest through delivered cost. Price is king.

At Cast, we took the intermodal experience to very broad levels through strong partnerships at different times with both the Canadian National and the Canadian Pacific Railroads. Through these partnerships we did some interesting things. In the late 1980s we were, in fact, taking containers off the ship, running line haul rail power onto the terminal within 8 hours of vessel arrival, arriving in Chicago 32 to 36 hours later, and unloading from the train. And people say that on-dock rail does not work. It works if you make it work. We also had our own trucks and provided very competitive services via Montreal into warehouses at Port Elizabeth. We had more than 40 percent of the New England market to the detriment of the non-productive Port of Boston.

Here, indeed, was a real world example of the power of intermodalism. We had developed innovative, low-cost networks that provided reasonable, quality services to the shipping public at very competitive rates. We need to remember the lessons of low-cost, productivity, and alternative, innovative approaches as we consider the shipping products and services that we provide in the future. The market will continue to demand ever-lower unit costs with ever-increasing product quality for ever-growing volumes. This will be the real challenge for the new intermodal executives of today and tomorrow.
When I got off the ships in 1970, I looked for a job and found myself in beautiful downtown Weehawken, New Jersey, stowing Sea Train vessels. It was a short-lived experience because I found myself in Philadelphia about a year later, which was equally as entertaining from a longshoreman perspective. Work slowdowns, poor productivity, damage, you name it and we had it. The upshot of this was my first real brush with intermodalism. The costs of doing business in Philadelphia were so high that we quickly determined that running a shuttle service by truck back up to Weehawken made a lot more sense than putting the ship in at Philadelphia.

Within two years of joining Sea Train, I basically put myself out of a job in Philadelphia. Management next wanted me to figure out a way to serve the Port of Boston, and so we started a barge service from Weehawken to Boston, which became relatively successful. However, dealing with the Boston longshoremen made the Philadelphia longshoremen look reasonable. Then Sea Train sent me down to Wilmington, North Carolina, to work the ships. Sea Train, with two stick cranes, was doing a lot of the tobacco business to Europe out of North and South Carolina. I got involved doing that and wound up commuting between Wilmington and Philadelphia and Boston.

Running Containers

Then the next challenge was running containers from the West Coast over to the Port of Norfolk on the East Coast. I really knew nothing about the railroads, but I knew enough to get a name, especially when I could not find my boxes. So Reggie Short and I became great friends. After a lot of initial fighting, Reggie got the job done. I received the accolades at Sea Train and was promoted to the West Coast.

At that time, Sea Train had to renegotiate its contract with the Santa Fe and the Norfolk and Western Railway (N&W). I was told that not only could I not improve our rates, but that there was no future in intermodal business for the Santa Fe Railroad. This was how Sea Train ultimately got its first deal with the Southern Pacific. Sea Train really started with the concept of the true landbridge. It was moving cargo from Asia on ships, bringing it to the West Coast, moving it across the continent, putting it on ships on the East Coast, and going to Europe. The real problem was that the volumes were very small, and nobody was tracking anything, nobody was monitoring anything. The transit times varied depending on just how things fell into place. At the same time, the sales
force at Sea Train thought this was a good way to beat the tariffs. From an operational perspective, it was a nightmare because we wound up with containers and chassis all over the country with no idea where they were.

After the Santa Fe-N&W fiasco, we started with two ships in the Japan-Korea service and within a few years turned that into eight ships, calling to Japan, Korea, Hong Kong, and Taiwan. These ships, believe it or not, small though they were, were 50 percent intermodal cargo between the true landbridge cargo and the mini-landbridge cargo. So it was quite an evolution.

The other thing that happened of note was that a man from Denver named Don Orris kept coming around. Don worked for a mammoth railroad called the Denver & Rio Grande Western. For putting the Denver & Rio Grande Western in our routing, he would get us some empty repositioning back to the West Coast. We did do some business together and it was good for both the railroad and for Sea Train.

Later on, I went back to the East Coast for Sea Train, and Don went to work for APL. I interviewed with American President Lines (APL), was hired, and went back to New York and found myself, all these years later, in beautiful South Kearny, New Jersey. APL opened the facility in South Kearny, started carrier tracking, and we began taking destiny into our own hands with the railroads and with the delivery of the cargo.

**Port of Oakland**

Subsequent to APL, I went to work for the Port of Oakland, California, and I inherited quite a legacy there. We were way out in front of the curve on container development and the Asia trade development and had built a lot of infrastructure at the port. When the container boom hit, and the Asian economy started to perk up, the Port of Oakland was very well situated to handle a lot of that volume, and it did, and it grew very, very nicely.

As time went on, however, Los Angeles and Long Beach also created infrastructure, later Seattle and Tacoma created infrastructure, and people discovered that there was a huge local market in Los Angeles and Long Beach. Other people thought it was a shorter sailing time to Seattle and Tacoma. But nobody wanted to call at Oakland first. And, of course, everybody wants intermodal freight off at the first port of call. Oakland wound up with some very serious demographic and geographic issues in terms of where it was situated and in terms of the smaller local target base. It started to decline as an intermodal port. In addition, the port was unable to get dredging done and could not accommodate the new ships. That was the third part of my experience.
SSA

The fourth part of my intermodal experience is with Stevedoring Services of America (SSA). We have been involved in intermodal not only in the United States through our affiliation with Rail Services of America, but also through on-dock rail in some facilities and through intermodal terminals in other places, such as Mexico in our joint venture with Transportacion Maritima Mexicana (TMM). A good percentage of the cargo is actually destined to Mexico City.

Now, here we are 30 years later still talking about resolving many of the same issues. The biggest difficulty, in my opinion, is how you pay for these things. I agree that to move intermodal forward, we need to make technological advances, we need to improve service, and we need to make the transactions more and more seamless. But, most importantly, we need to find a way to make and to keep the business economical and profitable.

F.H. (Joe) Howard
Former President
Halterm Limited

My initial maritime experience was at the Port of Halifax, Nova Scotia, Canada, beginning in 1971. The port is located near the extreme eastern edge of Canada; it is a big port with a lot of deep water, six feet of tide, and had no business. Most of the business was going to the Port of Montreal, Montreal being the dominant port of eastern Canada. In the four months of winter, however, the Saint Lawrence River freezes, and this is when the Port of Halifax came into its own with breakbulk vessels and finger piers.

Nova Scotia is not a strong province. Canada is based upon the political principle of a strong central government and relatively weak provincial governments, which means that the provincial governments are always suspicious of the federal government. The federal government runs things by pork barrel, grants, investments, guaranteed loans, etc. The economy of Nova Scotia was a little bit of fish, a little bit of paper, a little bit of bad coal, and the headquarters of the Canadian Navy.

A very public-spirited man in Halifax, with strong political connections and a passion to get Halifax out of this winter-only role, was exposed to containerization at a conference. He persuaded provincial and municipal governments to form a corporation called Halifax International Containers Limited. The company became a partner along with Canadian National (CN) in the formation of Halterm Limited, which became the terminal operator. Since this company was to be incorporated
in Nova Scotia, it had to have a Nova Scotia president, and I was fortunate enough to be offered the job. I had come out of the railroad business and out of General Motors with the Portager piggyback/container car.

A third partner in Halterm Limited, in addition to CN and the government of Nova Scotia, was Clarke Steamships, which ran a coastal shipping line up to Labrador and around to Newfoundland. Stanley Clarke got the inspiration to go on the high seas. It took him $20 million, but he went into a partnership with the Belgians and the British to form Dart Line. It was very convenient because that made Dart our first customer; Clarke also extracted a guarantee that his rates would be 10 percent lower than his competitors. He was a very capable operator.

This public-spirited man of Halifax had also persuaded the National Harbors Board, which was the Canadian government agency that owned all the ports, to stop building finger piers and to build a container pier. It did, with tremendous cooperation from Canadian National, which laid out the terminal. The National Harbors Board bought some cranes and sold them to Halterm Limited, and we were in business.

**Developing Halterm Limited**

Canadian National then established a freight-all-kinds container rate from Halifax to Montreal and Toronto, based on a guaranteed minimum of 15,000 TEUs per year. At that volume, the rate was only available to ocean carriers. This was a unique rate proposal and something not done in the United States. The steamship lines absorbed this rate and offered through bills of lading from Antwerp to Montreal. Container carriers stopped in Halifax just long enough for their containers to be put on the train. We had an on-dock terminal in 1971, with rails right beside the ship or maybe a hundred yards away. Canadian National also provided a lot of expert marketing and, as usual in Halifax, was suspect because it was government-owned.

There was constant pressure to lower CN's rates. So I hired two outside consultants, both from the United States, who were knowledgeable about railroad costs. They looked at CN closely and told me that CN was barely covering its variable costs. CN had, however, two strong officers in their marketing department who always refused to cut the rates.

It also became known that we were using nine-man gangs to unload the ships at the Port of Halifax, and Helen Bentley of MARAD thought that was great. She could not understand why American ports could not use nine-man gangs. The fact is that there was another nine-man gang loading the railcars, so we really had about the same number of longshoremen as any other port. The longshoremen were very suspicious of
Halterm at first, especially of me since I had “come from away.” We spent several hours in courtrooms to prevent unauthorized work stoppages that were contrary to the contract. But the longshoremen finally came along, and we got a permanent workforce.

We were railroad dominated and very pleasantly so. We had virtually no truck business; the economy of Nova Scotia does not lend itself to containerization, so we had no 50-mile longshoreman rule. Then, we went out after the customers. We got Atlantic Container Line, Columbus Line, and Hapag-Lloyd. Zim became a big customer. We chased after Sea Train, US Lines, New England Express, and the Japanese as well as SeaLand and Maersk, who came in after I got fired. For a while we were the biggest container operator in Canada, running about 300,000 TEUs per year. Halifax is on the Great Circle Route between the Bristol Channel and New York, which meant that every ship going to or from New York could call at the Port of Halifax for Canadian cargo.

Then Cast came to Montreal, Canadian Pacific Ships moved from Quebec City to Montreal, and the Port of Montreal became bigger than the Port of Halifax. Montreal is still bigger, with two-thirds of its business going to Chicago. Halifax does only a little business to Chicago because it is an 1800-mile trip by rail.

Halterm Limited has made a profit since the day it started. The Port of Halifax is doing very well at about 400,000 TEUs per year. It is not likely to get any bigger because its competition is still New York.

Vancouver has now eclipsed Montreal as the biggest container port in Canada because, among other things, the westbound Pacific container rates are so low that container lines are soliciting cargo that formerly went breakbulk, including lumber and pulp and paper. As a result, their container traffic is going up but their tonnage is not. Much of it is being converted away from where it really belongs.
Early Customers Panel
Edward M. Emmett, Moderator

There are two absolutes in freight transportation. One absolute is that modes of transportation exist for the customers. Policymakers do not always understand that, and the modes do not always understand that, but without the customers, modes cannot exist. The second absolute is that the business of freight transportation is one of constant change, and change produces winners and losers. This is a panel of winners, people and companies who have gone through dramatic change, come out on top, and helped the entire intermodal industry work better.

PANELISTS
Marty Tendler, J. Paul Seehaver,
Kenneth R. Wykle, Andy Hok Fan Sze

(Left to right) Kenneth Wykle, Marty Tendler, Andy Hok Fan Sze, Paul Seehaver, and Ed Emmett.
Ralston Purina got involved with intermodal in the early 1970s. We would normally put packing supplies in an intermodal shipment because the service was really bad and the damage was really high. We were the largest domestic agricultural provider of animal feed and pet foods. We could not afford, at that time, to put finished goods on intermodal because trailers would be sent to hump yards where the product would be damaged and the service was poor. Why did we use it? Well, the price was cheap, and we had a big inventory of packing supplies at that time.

Ralston shipped primarily by boxcar. The railroads were adamant about boxcars. We loved boxcars too, not for service, but for cost. Our on-time performance ranged from two-days late to three-days early. That was the standard that we lived by.

**Shift to Trucks**

In the late 1970s Ralston began converting from railroads to trucks. We were using J.B. Hunt quite extensively. We were in total shock because the service, all of a sudden, got so good. We were used to seven-and eight-day transit times, and with trucks, customers could get it tomorrow. It was phenomenal. By the early 1980s, we had converted from 97 percent rail to 97 percent truck, and the service was incredible. Our customers were excited, and they soon began to ask for shipments within two hours, then within one hour. Today, we are within fifteen minutes of the delivery schedule appointment. So service is paramount for our business.

Also in the early 1980s, we saw the start up of the third parties. Hub, Alliance, R.C. Matney, and National Piggyback came on the scene, and they were making life a little easier for a lot of the shippers, if only because the paperwork was less. By comparison, we used to get a rail bill and two drayage bills per shipment. It was costing a lot of money just to handle all of the bills. So not only did rail provide poor service, rail also cost us more administratively.

**Shift to Rail**

After the Staggers Act of 1980, railroad labor went from 500,000 workers to about 225,000 by the end of the decade. This took costs out of the system, and railroads went from “engineer beware” to the very efficient rail system that we have today. The key to the whole intermodal change was management commitment. I just cannot say enough about
the management commitment in operations. It changed everything. People, such as Mike Haverty who was at Santa Fe Railroad at the time, were committed to making intermodal work. That is what sold me on intermodal. When the senior management came in and committed to provide service, Ralston started putting more and more freight on the intermodal network.

There were visionaries out there. They brought us the stacktrain and the RoadRailer. The efficiencies were great, but service brought it home. Service was critical. When you are a shipper, and you have to have product to a customer within a 15-minute window, you cannot afford a poor service record. In fact, the Quality Service Network (QSN), run by the Santa Fe, and the Expediter, run by the Burlington Northern, ran 500 to 700 miles. The service reliability was incredible—99 to 100 percent. It was beating trucks, not equaling them.

The cost structure was very attractive. In fact, the railroads priced their products below the motor carriers. The network that was built by these two railroads, the Santa Fe and the Burlington Northern, was close to incredible. We ended up putting 100 percent of our freight on their lines because of the reliability of the service.

In the late 1980s, I put Mike Haverty together with Paul Bergeant, who is now J.B. Hunt's executive vice president of marketing. "Transportation 101" would suggest that the long-haul service belonged to the railroad and the short-haul, regional service belonged to the motor carriers. I committed, at that time, that if rail and truck could ever put a program together, that Ralston would love to be the Beta site to have this program take off. It was really rewarding for me to see the two different modes working together.

The other technology was the RoadRailer. Norfolk Southern grabbed it. At that time, we had a cereal facility up in Michigan, and we were pushing the railroads to test it because we were convinced that the technology was right and that the service was there.

**Future of Intermodal**

Where are we today? Intermodal in the 1990s has long-haul stacktrains and, although limited, the RoadRailer. We have not really seen new innovation, probably because of mergers. The railroads have become internally focused rather than customer focused. Companies become innovative when they listen to their customers.

What is needed in the future is management commitment. We have to start integrating the processes for all of us to survive. It is so frustrating to see trade associations spending their monies beating each other up. The future requires shippers, railroads, truckers, and ocean carriers to lay
down the guns, get in a room, and talk about efficiencies because the economy is growing. As a group, we need to start working together, and I am confident we can meet the challenges that are going to face us in the new millennium.

J. Paul Seehaver
Executive Director, Logistics Programs
US Postal Service

My first introduction to intermodalism came when I was about nine or ten years old. My dad would, occasionally, on Saturday go out and survey the railroad he had responsibility for, and I would join him on those trips. On one of these trips, we stopped by a new yard facility, where he showed trailers being loaded on flatcars. He called it “the road to the future.” He was confident that railroads would take business from the highways and put it on flatcars. Since I was nine or ten years old, I did not pay a lot of attention.

I have been asked to discuss intermodalism and the US Postal Service, not the railroads. Specifically, I was asked to address about four different things. First, what led me to believe that my intermodal ideas had promise. Second, what obstacles have I overcome and were they anticipated. Third, how have my expectations changed over time. And, finally, and fittingly, what lessons should the industry learn from the past. To answer these questions, I need to first identify my vision of the future for intermodalism and the US Postal Service.

An Intermodal Vision

In the mid- to late-1970s, the Postal Service predominantly used long-haul trucking as the choice of transportation to move its mail from coast to coast and between the coasts. Although we had a railroad Post Office, which had a fine tradition since 1864, its last run was in 1977. At about this same time, we had begun moving, as many other shippers had, into intermodal business as an alternative to highway, and a poor alternative at that. Fundamentally, my vision was that the service we enjoyed from the highway providers could easily be matched or beaten, and at lower cost, by the railroad providers. I knew that to be the case because my dad told me it was true when I was nine or ten years old. This is my vision—that we could engage the rail carriers to provide intermodal service that met or exceeded the service that we enjoyed on highway, and that the rail carriers could provide the service at lower cost, and that the rail carriers could provide the service with the consumption of less fuel, something good for the nation.
The problem that first got me deeply involved with intermodal activities occurred in July 1977, when we discovered some Christmas mail from the prior year in three trailers located in a rail yard on the East Coast. The mail was a little old, having sat there for about six months. I headed a task force to discover what caused this problem. We calculated that if we could find the cause, then we could find the solution. It was rather straightforward. The reason that the trailers sat there was because we did not know they were coming. The process that we had at the time was that we would tender a trailer to a rail carrier in Chicago and expect delivery some several days later in New York. If the trailer got there, there was no problem. If the trailer did not get there, we did not know it. We had no tracking system. Clearly what we needed to do was put in place a tracking system that would identify where trailers failed to make the mark, and we could do some investigation and find those trailers.

Over that summer we developed a manual van-control system, in which we faxed information back and forth between terminals saying: "We have dispatched the trailer. It should arrive on such-and-such a day. Be on the lookout for it." It had a check-and-balance system, and we used that system for about three years. I claimed success with that system because we did not discover any lost trailers. I am not sure whether the system did that or dumb luck did it, but my team and I took credit for the success.

A Rail Management System

Part of what this early stage did was to provide a method or process by which we could better track our trailers. And we reasoned that if we could track these trailers electronically, if we could do a computerized system, then we would have some empirical data on trailers—which ones departed, which ones arrived, which ones did not, and which ones we needed to do something about. From that, it also became evident that we needed to know the transit time from origin to destination. Frankly, I was surprised to learn that the contract we held at that time did not require the rail carriers to provide us with any velocity of service. The requirement was that if we tender a trailer two hours before train departure time, the trailer has to be on the train. At the destination, two hours after the train arrived, the trailer had to be tendered back to us. But how long it took in between was not contracted for.

It became clear that if we had an electronic scorecard, if we knew what time we delivered a trailer, what time it returned, and what the transit time was, then we could improve the performance of the rail carriers. Instead of sometimes taking four, six, or eight days to arrive at a destination, we could hold the railroads accountable for fulfilling a spe-
cific requirement. So we developed a system, we put it in place, and I am very proud to say that it is still in place and operating today. This system provided empirical data on departures, arrivals, and overall performance.

The next trick was to change the contracts so that we would be able to hold the railroads accountable. After all, we still had not asked them to set up a special velocity. So we looked at a matrix of our world, and our world, at that time, boiled down to about twenty-one, origin-destination, city pairs, where we processed bulk mail or parcel mail. We identified the network. Then, we realized that the railroads did not have ramp yards at all of the cities and that it was really a smaller matrix.

We narrowed it down to the cities where the railroads had ramp yards coinciding with our city pairs. We came to the conclusion that if we had about forty or fifty origin-destination pairs to monitor and manage with this rail management system, and if we put out specific requirements, then we could improve the service in these corridors, which would improve the service that we enjoyed overall. We also felt that we could drive down our costs at the same time. So, we put the solicitation on the street. Not surprisingly, we received a wide range of offers, which was something new. We had not asked for this before. Nor had we been pressing rail carriers for performance. We got varied responses.

But, the good news is that a couple of the major carriers weighed in very well. Conrail, for example, showed up with a team from marketing, from pricing, and, very importantly, from operations. The operations representative knew the schedules of all the manifest freight trains. He knew how fast they could operate, and he knew what had to be done for Trail-Van trains in order to get across the railroad. In a very healthy discussion, the team identified where it could make service, identified where an extra day was needed, or an extra several hours, or whether, by adjusting the time we tendered trailers, it could make a better service package. Conrail made us a very fine offer, and we awarded Conrail a very large contract.

The Santa Fe weighed in on the other side for the western carriers. The Santa Fe, too, brought in representatives from marketing, from pricing, and from operations, a representative who also knew his railroad like the back of his hand. The Santa Fe prepared a very similar package for traffic moving west of the Mississippi River. A couple of the other carriers did not come in as well prepared and, frankly, some of them just did not get it. But, the good news is that working with Conrail and Santa Fe, we put together a great package and we dramatically improved performance for the US Postal Service. By driving them a little and by working with them as partners, we also improved the service and the velocity on some of the schedules for the general freight haulers who rode the same trains. We are very pleased with that outcome.
Over time, we developed some additional enhancements. We discovered that we really did not need to have an interchange point—a railroad yard where the railroads put the trailers on a flatcar. Rather, we could extend the reach if we used intermodal service. So we put out an offering. We really did not care where the railroad ramped or de-ramped the trailer. That was railroad business. What we cared about was getting the trailer back at a specific destination at a specific time. How the railroad got from Greensboro to Seattle, for example, was its business. From that we expanded our reach, and we developed a truly intermodal network that did not encompass just 40 origin-destination pairs but 200.

This was great service, but we were still breaking the service at the Mississippi River. We could run as far as Chicago, interchange at Chicago where Conrail would de-ramp the trailer, and run it over the highway. The Santa Fe would pick the trailer up, load it, and then run its train out of town. We would lose 24 hours in Chicago. Then, some of our expectations changed.

At the beginning we thought that we would be the leaders in change and that we would be the ones who had to come up with the preponderance of the ideas. In fact, that really did not take place. Instead, Conrail and the Santa Fe came to us and suggested that if we would solicit for service from New York to Los Angeles, and from New York to San Francisco, they would be able to put together a package for us that would reduce the running time considerably. They proposed to develop a run-through train at Chicago, so that Conrail would bring the train into Chicago, cut off the power, bring on Santa Fe power, put a new crew on, and steam out of town four hours later, rather than twenty-four hours later. They established seventy-six hour coast-to-coast service for us. This was a tremendous improvement. We awarded a contract that ran virtually 100 percent on time.

Some of the other innovations resulted from the partnership arrangement with our rail carriers. The railroads wondered why they should put additional work effort, additional engines on trains, in order to deliver the trailers early when they got paid the same price as getting there on-time. As a result, we developed a bonus program. If the railroad delivered the trailers early, we gave them a bonus because there was value added for us. The corollary was that, if the trailers arrived late, we exacted a penalty. So we implemented a bonus/penalty system, and this tension and the visibility helped the railroads keep their eye on the ball. They recognized every week, when they received their compensation, the amount of money that was taken away because they ran trains late or because they delivered the trailers late. The report also indicated the bonus and the potential to eliminate the penalty and gain an even larger bonus.
This tension helped a great deal, and it also helped the Postal Service with its operations. Our operating people really did not like the railroads. After all, if the railroads were required to deliver the trailers at six o'clock in the morning, they showed up at six o'clock in the morning. Whereas if the truckers were there, and they had to get there at six, they often would run early because there was an incentive—they got to go home early. This bonus-penalty tension also set up a process that gave our operating managers more time to process the mail, giving additional credibility to our people.

The Obstacles

What obstacles did we find as we went through this process? The years of poor service in the railroads certainly was one of the obstacles, but this was overcome because of the attention paid by several of the leading carriers. This really was not a surprise obstacle, but it was there. Another obstacle was the fuel crisis during the 1980s. As a quasi-federal agency, we were mandated to reduce significantly the amount of fuel that we consumed. By converting from highway to rail, we were able to take a seven-to-one ratio reduction in the amount of fuel that we consumed. That was great news for us. Because we implemented the rail management system to measure performance and because of the changes that we made as partners with the rail carriers, we were able to get off the highway, get on the railroads, drive down our costs, and drive down our fuel consumption. Great synergy took place.

The Expectations

How did my expectations change over time? They changed dramatically. The rail carriers, as true partners, presented suggestions to us—often more suggestions than we could deal with—on how to improve collectively the position of the railroad and improve the position of the Postal Service. And, at the same time, this synergy caused improvement for the industry—running faster trains, at higher velocity, and more frequently. The biggest shift was the shift from a supplier/customer base to a true partnership.

We also looked at changes in technology. RoadRailer is certainly one of new technologies. We had an offer to test RoadRailer service between St. Louis and Detroit. Norfolk Southern suggested that we test it to see if it could do as well or better than highway carriers. We tested it during Christmas. We took a little risk, and we ran a parallel test with highway service, which we knew was running at about 100 percent. Norfolk Southern met the expectations, beating the highway service by about an hour during the 30-day test period, except for three days. For those
three days we had a horrendous snowstorm in northern Indiana, southern Michigan, and Ohio that shut down the highways. But, it did not shut down the railroad, and it beat the highway contractors by a full day. From that, we expanded our use of RoadRailer service with Norfolk Southern everywhere it went.

We also expanded our use of RoadRailer service with Amtrak. In 1990, we announced at the International Intermodal Conference that we would invest seed money with Amtrak so that it could develop the capability of operating RoadRailer service on high-speed passenger trains for the exclusive use of the Postal Service. Over the succeeding several years, Amtrak developed high-speed RoadRailers that ran, and now run, in an expanding network in passenger service. We are looking to expand that network to compete, not with the truckers who are our partners and partners with the railroads, but with airplanes. We can run down the Eastern Rail Corridor faster than we can fly between New York and Washington DC. We are looking at the same expansion in other parts of the nation as well.

The Lessons Learned—Customer Service

Finally, what lessons should the intermodal industry take from the past and promulgate for the future? I would say learn the requirements and understand the needs and the desires of the customers. Live with your customers. Be part of them. Understand their business, and understand the politics of their business as well. Give the customers what they want and help them learn what they ought to ask for. Conform your business to the needs of your customers. Become more like partners than simply suppliers. Be proactive. Do not over-promise, and when you fail, admit it.

I guess the best example of integrity and how we ought to do business is when the Brotherhood of Locomotive Engineers took a strike and subsequent lock-out by the industry in the 1990s. All of the rail carriers that we had contracts with, except one, said that they simply would not honor the contracts during this work stoppage. The sole exception was Conrail. Conrail knew its customers and knew their politics. It knew how hard it was to win the business in the first place, and it was intent on keeping the business. The company recognized that it was in this for the long haul, not the short-term gain. Conrail announced that it would protect all of the contract service in spite of the strike. As an intermodal carrier, it did not need to use the steel wheels. It protected every one of the lanes. We rewarded Conrail by automatically renewing all its contracts during the next contract term. The long-term reward is that Con-
rail continued to be our carrier of choice, and it set a higher standard for the rest of the industry to follow.

Kenneth R. Wykle
Federal Highway Administrator
United States Department of Transportation

Although I am at the US Department of Transportation, I have been asked, for the purposes of this conference, to address the military and the military's perspective as a customer of the intermodal system. I certainly believe that the US Department of Defense was one of the true, early pioneers in intermodalism and in the use of containers. In the early 1950s, the military developed the Container Express (CONEX), a container that started to unitize material and small pieces of equipment. The CONEX was roughly 8 feet high, 8 feet wide, and 6 feet deep and was standardized with lifting points on the top for loading on breakbulk ships and runners on the bottom with slots for a forklift. The purpose was to consolidate small items into a larger box, recognizing the speed needed to load and discharge ships as well as to load and transport the items by surface transportation—highway as well as rail.

The CONEX offered ease of handling—3 to 4 lifts versus 16 lifts of pallets on a flatbed trailer truck. Perhaps as much as anything, the CONEX protected items from the elements and provided security. The CONEXs were managed by numbers, similar to the way the 20- and 40-foot boxes are today. They had a number stamped on them, and there was much more of a challenge to maintain inventory with no automation. Basically, the military asked organizations and carriers to do an annual inventory of CONEXs and to send them back. CONEXs were easily diverted and used for things other than transportation. They made great storage sheds, they made great frames for bunkers, and they had a lot of uses other than shipping.

Container Development in the 1960s

With the Vietnam War in the 1960s, CONEXs were in high demand for moving “troop accompany type” (TAT) supplies, particularly smaller items and materials. The security of this cargo was important as it transited the entire system, but there were not enough CONEXs to meet the demand. Of course, containerization, as we know it today, was starting to come along because of the work that Malcolm McLean had done at SeaLand. SeaLand actually started providing service to Vietnam. The military started taking advantage of the containers and the shipments to Vietnam as well as all the breakbulk ships that were going there.
During this period of time, the military also did a few small experiments with moving ammunition inside these containers. At the time, there were self-sustaining ships that brought these containers to Vietnam. They had their own on-board crane. The large, shore-side cranes that we have today were not necessary. The ships would discharge the containers onto chassis or onto the pier, and then the containers would be moved forward to storage areas, not too far inland. But some were actually moved to the fighting division base camps and to the brigade field bases, to move the ammunition as far forward in the combat zone as possible.

This was a new way of doing business and certainly caused some challenges, from the customer's standpoint. When the container arrived at the division or the brigade area, the military did not have the material handling equipment to set the container on the ground. Therefore, unloading was very difficult. There was no way to get past the first one or two rows of pallets in the container and the trailer was up off of the ground. Human ingenuity was used. Chains were put around the pallets, and they were dragged to the door, and then a forklift lifted them out, or cables were used to do the same thing. Or, in some cases, soldiers got in there and unloaded the large containers by hand.

But again, the advantages were in the speed of shipping the freight from the United States directly to the forward areas of the battle zone. This was really the first time this type of transportation had been available. It offered protection from the elements and security from pilfering, but it did cause some other problems. It was difficult to know what was inside the container. The manifest paper would get lost, the rain would fade the markings, or sometimes it was just listed as general cargo. Or, the cargo might be listed as ammunition, but what type of ammunition? As a result of these experiences, toward the end of the war the US Army started developing a containerized ammunition distribution system, using what we call a MilVan, a 20-foot box made out of heavier, corrugated metal. It had slots in the bottom like the old CONEX but larger forklifts were used to lift the box off of a flatbed truck or off of a chassis when it got to the forward areas and the combat zone, making it more accessible and easier to unload.

The US Army started procuring the larger forklifts to be able to lift this additional weight, and it contracted for extending boom-type forklifts that could reach back into the container and then low-mast forklifts that could drive all the way inside the container to take the pallets out. But safety issues became a concern in terms of which explosives could be stacked side-by-side. In the old way of shipping ammunition in breakbulk ships, there were bulkheads, and the rounds would go in one hold, the powder would go in another, and the fuses would go in another.
The container ship no longer had these bulkheads, and so a lot of work had to be done with the Coast Guard to resolve these safety issues.

Today, ammunition has to be shipped through the designated ammunition ports, primarily Sunny Point, North Carolina, or Concord, California. As the Army, the Air Force, and the other services started shipping more ammunition by containers, it was difficult to get a full shipload. What happened, often, was that breakbulk cargo would go in the hold of the vessel and then containers would be loaded topside, as the military continued to work with this form of delivering ammunition and improving efficiency. Commercial containers were also used to ship ammunition, and they are used today.

**Intermodal Development in the 1970s**

During this period the military started embracing containerization and intermodal transportation because of the significant advantages of speed in deploying units and shipping sustaining supplies. The military began moving by container as much of the smaller items that could be containerized or palletized. Certainly high-value items—post exchange, commissary goods, repair parts, packaged petroleum products, lube oil, greases—were all shipped by container. At the same time in 1970, while I was stationed in England, the military began experimenting with moving private automobiles in containers. When soldiers are deployed overseas, in the majority of locations, they are authorized to take their cars with them. The cars had been shipped in breakbulk ships, and to get them in the hold, a sling was used. Naturally, the probability of damage was great.

The challenge came with wheeled vehicles because everything, except the smallest jeep, was too large to go into a container. Nevertheless, the military was eager to take advantage of the increased productivity container ships provided, and a lot of tests were done. Flat racks, basically sideless containers, were used with just the four stanchions on each end. But they increased the number of lifts. Looking to increase capability and to speed up deployments, the military purchased SL7 ships from SeaLand. Even though these ships could go 33 knots, they were too expensive from a commercial standpoint. So the military bought them and converted them to roll-on/roll-off vessels or combination roll-on/roll-off container vessels. They are still in use today and proved to be very effective in Desert Shield/Desert Storm. Eight of them moved some 25 to 30 percent of the military cargo that was shipped.

The military continued to make refinements to the containerized ammunition distribution system, moving ammunition directly from the depots in the continental United States as far forward in the combat zone as
Containerization in the 1980s

During Desert Shield/Desert Storm, some 35,000 containers were shipped, proving the advantages of containerization. The challenges of inventory identification and management—knowing what is inside of a container and then finding the container in a stack of 20,000 containers—still remained.

During this time, the military was also developing something called a palletized loading system. As the name implies, this is just a large pallet that is the same size as a 20-foot box, but completely sideless. We put pallets of ammunition on it, tied them down, and put the large pallet in the cell of a container ship. Once discharged and placed on the ground, a truck with a large arm that extends could pick up the pallet and put it onto the truck, just like the trash trucks operate. This concept proved very successful, in terms of moving containers in the combat zone.

The Air Force certainly was interested in moving cargo intermodally. Back in the 1960s, the Air Force developed a system for rapidly moving material onto cargo aircraft. The system consisted of a flat pallet about 108 inches by 88 inches and about 2 inches thick. The pallet was aluminum, so it could hold a maximum of 10,000 pounds. A cargo net was placed over the pallet. The Air Force developed cargo-handling equipment for moving these flat pallets. Today, all of the aircraft are equipped to take these pallets, from the C130, the C141, the C5, and the latest—the C17. These cargo planes all have roller systems in the floor and they can be offloaded in a matter of minutes, as compared to hours for other air forces. This is a very efficient system. It has some challenges from an intermodal perspective, because it is a flat pallet designed to operate on the aircraft floor-roller system. The forks of a forklift cannot go underneath the pallet. At the base, these pallets have to be put up on four-by-fours or something in order for the forks of a forklift to get under them, then they can be loaded on the flatbed truck and taken to the air base loading area. These pallets also present challenges in visibility, because they are not numbered in any way and because they are in high demand in a combat zone. They provide very good flooring for tents; they provide very good overhead protection, particularly with sandbags on top. The challenge is to keep them in this basically close-looped military system.
Protection of the cargo from the elements is a challenge as well as maintaining its security.

**Future Direction of the Military**

The future direction for the US Department of Defense (DOD) is maximum utilization of the commercial transportation systems. It is recognized that the commercial world, whether it is the aviation industry or the shipping industry, has great worldwide networks. DOD's goal is to use these to the maximum extent possible and to use the military capability for the out-of-the-way, hard-to-reach, not-normally-serviced combat areas. The direction is moving to roll-on/roll-off ships for unit equipment. This has proved to be the most efficient, effective way to move tanks, artillery pieces, trucks, and so forth. There are some current efforts to develop high-speed seacraft (40 knots) to improve rapid deployment capability. There also is an emphasis on radio frequency identification technology—read/write type tags to identify contents of the containers—and on management information systems for “factory to fox hole” in-transit visibility. The supply chain management piece, all the way from the depot right to the fighting position, is key to maintaining as little intermediate inventory as possible and to keeping things flowing on a predictable, reliable basis. Additionally, the Air Force is going to continue to use its palletized 463L system. It is currently the best in the world for moving material from the United States to a combat theater.

**Andy Hok Fan Sze**
President and Chief Executive Officer
Clipper Express Company

The Clipper Group consists of three operating entities. The Clipper Express Company, which was the original company founded by Jerry Chambers in 1938, is a freight forwarder. Over the years it has gone from the less-than-truckload (LTL) freight forwarding business into the intermodal marketing company (IMC) business. We also founded two companies at the beginning of deregulation in the early 1980s, one specializes in the temperature-protection transportation of produce and the other in truck brokerage and over-the-road trucking.

The freight forwarding industry was an early pioneer in intermodal, and freight forwarders got started in the 1940s as the railroads exited the less-than-carload (LCL) business. The freight forwarders supported those who wanted to move LCL using a combination of truck, rail car, and also truck trailer. Some of the big players were Universal Carloading, Western Carloading, Merchant Stor Dor, Lifschultz, and Acne Fast...
Freight. The heydays were from the 1940s to about the 1960s, when the truckers, beginning to get bigger, gained market share. Because of their capability to run all over the country, gradually the trucking companies overtook the forwarders, taking most of the market share on the small shipments from the freight forwarders.

Clipper thrives on change and is an innovative company. Clipper decided it would become a shipper’s agent, which gradually evolved into IMCs. We decided we would work with the shippers’ associations to get things done. This is why Clipper, today, is the only surviving freight forwarder in the business.

**Clipper Equipment Ownership Policy**

One thing that distinguishes Clipper is its willingness to invest in intermodal. Clipper has actually owned and operated 15 different types of rail intermodal equipment. What motivated Clipper to go into equipment ownership? Some of the equipment needed to move the small shipments was simply unavailable from the railroads. By owning specialized equipment, Clipper saw that it could gain tremendous improvements in productivity, especially when it came to the drop-frame type of equipment. With double decking, Clipper could put more of the smaller shipments inside the trailer.

What did we learn from equipment ownership? One of the things that we learned is that you must not compete with the railroad. You will always lose. We tried to own equipment that the railroad would probably not want to own. We learned that when you own equipment and when you work with the railroad, not only are you dealing with technological change but also with changes in direction at the railroad. This can immediately put an equipment owner at an economic disadvantage.

For example, back in the early 1980s Hub and Clipper owned dry van fleets. When the railroad had a tremendous equipment surplus, there was absolutely no benefit for an equipment owner. So both Hub and Clipper were forced to find homes for this equipment very quickly. From this point onward, we became even more careful when it came to equipment ownership. We wanted to be sure that we would always have a lessor that would provide the capital to purchase equipment. We would lease it from them for three to five years and we would try to ladder the lease so that if things went badly, we would have a way out. In addition, we have learned how to limit equipment damages. We “beef up” the trailers very well, such as putting in all kinds of protection in a sensitive area of the refrigeration equipment so that the electronics will not be smashed.
Other Lessons Learned

In the early 1970s, we tried a blanket-wrapped furniture transportation service that lasted about a year. We found out that moving blanket-wrapped furniture just did not work too well in a rail environment, until the invention of the doublestack containers. We had so many damage claims that it was unprofitable. We also, shortly thereafter, tried to get into the business of shipping cars, and we did that for about a year. We found out that the core competency of a small-shipment, carton-freight carrier did not include marking down the little scratches on the cars in the inspection reports. When you are moving cars and fail to note these scratches on the inspection report, the company winds up giving a new paint job to every customer. That lasted a short while, and we learned from it. Now, we will sell the transportation of a car in an integrated container or truckload quantity. The customer will block and brace the car, close the door, and we handle the transportation. Since we started doing it this way, things have worked out pretty well.

We have put in some dockway receiving rates, which is a new thing in our business. Rather than sending our own truck to pick up the shipment, we allow our customer to bring the shipment to our dock, and we receive it at the dock. We save money for not having to pick up the cargo, and then we share all the savings with the customers. To customers that run their own trucks locally, it is a very desirable feature. This has worked out well for us.

In the early 1980s, we also learned that the shippers' agents and the shippers' associations, because they are unregulated, were able to ride very quickly the growth of intermodal by putting in very competitive rates in the marketplace. Because we were a regulated freight forwarder, anytime that we put in a rate reduction in response to a rail rate reduction, we incited the anger of the motor carrier industry. The motor carrier industry filed protests against us at the ICC, and successfully dragged out our rate review by the ICC by as much as three to four months. Sometimes we did not get ICC approval, so we were losing market share right and left. Ultimately, we were able to file suit successfully in the federal court and eventually gained the freedom to be able put in rates without any resistance from the motor carriers.

As a company, we also work very hard to increase and publicize the benefits of shipping intermodally. In the 1980s we ran a series of ads that heavily promoted the environmental benefits of shipping by intermodal. We actually have statistics that show the shipping public how many barrels of oil are saved by shipping intermodally. We have devoted a good deal of money to painting animal murals on the trailers, depicting endangered species, tying intermodal to the environment. This has generally
worked very well in moving goods, with the exception that, occasionally, when goods are moving through some of the states in the West, one of our gorillas or one of our rhinos gets shot through the head.

Clipper was also an early proponent of the doublestack. In 1972, we actually drew up a diagram for the railroad and showed them all of the benefits of doublestacking. We lacked the shipping traffic that APL could bring to the table, so this was not successful at that time. But the thought was something that we conceived early on. In this business, you have to be willing to commit, you have to be willing to innovate, and you have to be able to deal with change.
Railroad Operational Panel

Hugh L. Randall, Moderator

These men are legends in the intermodal business, caught between customer expectations and requirements and the enormous cultural transformation that had to take place inside railroads to get this new business called intermodal launched. They faced the challenges of working with the operating department to provide the reliable service to meet the customers’ requirements; with the finance departments to educate them on the need for capital for new facilities and for new equipment; and with the drayage operators to figure out how to offer the customers door-to-door service, not ramp-to-ramp. And, they worked with labor to try and reach the accommodations that would enable the delivery of the service that the customers required.

PANELISTS
Reginald B. Short, D. P. (Dave) Valentine, Robert S. Ingram, Brooks A. Bentz

(Left to right) Ted Prince, Bob Ingram, Brooks Bentz, Hugh Randall, Dave Valentine, Reggie Short, and Gil Carmichael.
Reginald B. Short  
Retired Sales Manager/Western Region  
Norfolk Southern Corporation

I got into the intermodal business as a result of my last assignment on the Pennsylvania Railroad where I was freight and accounting agent at Pittsburgh on Eleventh Street, which was then the largest less-than-truckload (LTL) operation in the United States. We unloaded 300 cars a day and put out approximately 200 cars a day on a six-day basis. I evaluated the type of traffic that the Pennsylvania Railroad was handling in LTL, and I got a very good idea why the motor carriers were making money and the Pennsylvania Railroad was not making any money on LTL. We were handling lampshades, furniture, pottery, all of which are very labor intensive when they are moved from one boxcar to another.

**Intermodal Operations at the N&W**

As my enthusiasm for working in that kind of environment was coming to an end, I had the opportunity to go to the Wabash Railroad, which was wholly owned by the Pennsylvania Railroad, and get involved with its intermodal operations. After the merger with the Norfolk & Western Railway (N&W), I went to the N&W to create the intermodal department on 1 September 1967. At that time, the N&W was the world’s most profitable railroad, mainly because of the amount of its domestic and international coal traffic. The N&W, throughout its limited system, was geared to handling coal traffic and handling it properly and efficiently, and it made a lot of money.

In my discussions about becoming director, I asked that I report to both the vice-president of merchandise traffic and the vice-president of operations. It took about a year and a half under that kind of an operation before the vice-president of operations threw the towel in, leaving me reporting only to the vice-president of merchandise traffic. That set the tone for my remaining years as I tried to produce a competitive product in “official territory” at the Norfolk & Western Railway.¹

I did not want to start a truck line, although I was asked if I wanted to do that. I wanted to do business with the contractor, the drayage companies that already had the contact with the customer. I had worked in Philly and then Chicago and Pittsburgh with Penn Truck. Knowing the

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¹ Miller, Sidney L., *Inland Transportation: Principles and Policies* (New York, NY: McGraw-Hill, 1933). Official or eastern territory was a classification for rate making that allowed railroads to lump commodities into classes using physical and demand characteristics as well as volume and geographic considerations. The territory ran above from above Norfolk, Virginia, through Lynchburg and Roanoke to Ashland, Kentucky, and then followed the Ohio and Mississippi Rivers through St. Louis, Missouri, and Chicago, Illinois.
atmosphere that we worked in with the Teamsters, I really did not want to have to dedicate the time and effort needed to deal with them. So, we did business strictly with motor carrier contractors within the terminal area and outside the terminal area. It worked fine for us, it worked fine for our customers, and it did what I thought it would do.

Intermodal business became a stepchild at the N&W after a change in presidents. It then became very, very hard to produce a product that was acceptable to our customers and that was also competitive. So, after some long, hard discussions with my people, we decided we were going to try to take step one to remain competitive and that was to beat our competitors in the terminals.

At that time, our evaluation of the eastern railroads was that they did not like containers. Containers caused them problems with the volume they had and with the terminals they had. So, the first thing we did was to hire somebody like Bob Ingram to establish a rapport with the major container lines to let them know our dedication to handling their business, particularly in the terminals. We did not consider containerization and containers and chassis to be a problem. We pledged to make the time and the effort to ensure that our terminal people recognized that containers were going to become an important part of our traffic from then on.

We tried to take other actions that would identify the N&W from an international standpoint. We appointed a person who did nothing but develop domestic loads for the container lines to get their empties back where they wanted them. We were the first railroad to do that. Then, we also put a person in our equipment control department who did the same thing. We initiated the Anchor Program, which attacked the ongoing problem of moving empty containers across the railroad. We worked with what was developed, and I have heard that it was the finest profit and loss statement of any railroad. There was tremendous discipline in it. In short, we addressed issues that impacted the bottom line. Equipment efficiency was a major opportunity.

**Intermodal Business Improvements at the N&W**

Three subsequent developments caused the N&W to make a major improvement in its intermodal business. First, the development of Conrail absorbed our connections over Buffalo with the Lehigh Valley. Second, my friend Gordon Volker cancelled our rates with the Western Maryland when Conrail took over the Western Maryland, effectively taking us out of Baltimore and Philadelphia. Third, Roy Hayes with the magnitude of Conrail took me out of New York and Boston. As a result,
we had to look at something that would assure us longevity within the company as well as bottom line impact.

We had a lad who was very adept at developing computer programs and from these programs we were able to track loaded and empty containers by miles. We were able to show quickly the number of empties being moved across our railroad and the number of miles. Of course, within my profit and loss statement, I was charged for every empty mile a container moved. And the difference between an empty and a load in our profit and loss statement was very small, so it had a major impact. We analyzed the impact of reducing empty miles by 10, 15, 20, and 25 percent. I saw immediately that we had to initiate a program that restricted the empty miles to loaded miles to 25 percent. Using this program, we had information that we could share with the container lines, showing them every month the empty miles and the loaded miles. And, we had information to control the equipment, as we could identify each container line and how many empty miles each was allowed.

Enough of a hue and cry went up within the container steamship industry that it sent a three-man delegation to a meeting with my president to get me fired for initiating this program. Our president, a man of few words, listened and told them that if I could not make a profit, not only would there not be any containers handled on the Norfolk and Western, but there also would not be any intermodal on the Norfolk and Western.

One of the things that I am most proud of is that the steamship container industry finally recognized that it was ignoring the cost of equipment, allowing equipment to sit around for weeks and weeks, not to mention the cost of equipment being moved empty around the railroad. The companies got into the 21st century when they knew that if they were going to make money, they had to do a better job of handling their equipment. And they did. Then, the other railroads, beginning with the western railroads, initiated new programs that addressed the empties issue.

We also tried to do other things that would identify the N&W in this very competitive "official territory." We were the first railroad to order 45-foot trailers, not without some flak from other railroads. They were concerned about their car situation and their present rates. I felt that the 45-foot trailers were here to stay and that we had better address them. So we bought 1500 45-foot trailers and painted them black and orange for pizzazz. They worked out fine.

One of the other programs addressed the international side. We initiated a 90-day training program for a major Japanese container line, one that I thought would be dominant in the Pacific. And, it was. Every 90 days, we would accept a trainee. They were all college graduates, all very smart. For 90 days, we exposed them to intermodal, whether it was on
our railroad or on a competitor's railroad. We would expose them to the motor carriers' way of doing business, terminal operations, particular customers, and third parties. I felt that they would learn from us and that we would learn from them.

As I look back on it, the relationship between the operating and the intermodal departments came down to vindictiveness. From a productivity standpoint, it was a very sad situation because we wound up spending about 50 percent of the time defending ourselves. But, let me leave this with you: submit to pressure from peers, and you move down to their level; speak up for your own beliefs, and you invite them up to your level; if you move with the crowd, then you will get no further than the crowd; when forty million people believe in a dumb idea, it is still a dumb idea; simply swimming with the tide leaves you nowhere, so if you believe in something that is good, honest, and bright, maybe your peers will get smart and drift your way. Thank you for the opportunity.

D. P. (Dave) Valentine
Retired Vice President
RailTex

The business was not called intermodal in the early years. It was called piggyback. At Consolidated Freightways (CF) we would "pig" excess business from St. Louis to Dallas and Cincinnati. We would "pig" to St. Louis and Chicago. We would "pig" to St. Louis, as an example, where there was overflow business. Monday mornings, I would come to work and everything would break loose. Nobody could find the trailers that were "pigged." I would call the different railroads to trace these CF trailers, to see where they were and when we were going to get them. We were all under a quarterly bonus system based on on-time performance. Because the bonuses were sent home detailing the percent of our bonus enclosed due to performance, it was very important that we get these trailers unloaded and breakbulk.

It went on like this for a long time, and it never got any better. Finally, my boss decided to stop "pigging" and just wait until we got a driver and a tractor to run the loads over the road. Then, I moved to the Santa Fe Railway.

Intermodal Business at the Santa Fe Railway

The Santa Fe Railway had just put on what they called the "Super C," an 80 mile-an-hour train from Chicago to Los Angeles that was supposed to be the answer to everything. But, it was too expensive. We would have 15 cars in the train, sometimes 25 cars, and three big SD-45
When I got to the Santa Fe, I realized that we were not like the Southern Pacific (SP) with a lot of chemicals or the Union Pacific (UP), which had a lot of lumber and grain. We were a railroad with a lot of grain seasonally and a lot of merchandise. Chicago to California, Chicago to Texas, this was our mainstay and this is where we made money. The problem was that the business kept declining, and we had to find a solution to keep that business on the railroad and off the highway. The answer was piggyback. If you did not make “Super C” with your trailers, then you went on a merchandise train. We would “double” or break the merchandise train from the boxcar yard over to the piggyback yard and make up the train for Los Angeles and San Francisco. That took time, probably two days longer than it should have for a piggyback train.

Then along came Bob Maisch and Guy Shively from United Parcels Service (UPS). They wanted to move freight or packages by rail from Chicago to Los Angeles. They wanted performance and offered volume. That was the start of running a train strictly for intermodal, and it was trailers really. We put on a train that left Chicago about nine or ten o’clock at night, it arrived at Los Angeles at midnight the second night, and we gave third morning delivery. UPS gave us business and a lot of other people gave us business. That was the first train we had that was strictly trailers and containers.

All these merchandise trains were seven-days-a-week trains. When we first put on this piggyback train, we wanted to run it three-days-a-week so we would arrive Wednesday night for Thursday delivery, Thursday night for Friday delivery, and we would arrive Sunday night for Monday deliveries. So we had a three-day operation and it worked out well.

**Intermodal Improvements at the Santa Fe Railway**

Later on, we were running the train six-or-seven-days-a-week. Sometimes, at the end of the week, we would run two sections. Concurrently, our management saw that we could make some money on this and we could get business back off of the highway. So John Reed, Larry Cena, and others agreed that we should start improving our facilities. Instead of having circus-style ramps, we converted many of the ramps to overhead cranes. That was the first Los Angeles train.

We wanted to run a Chicago-San Francisco train, exclusively piggyback. Our route was longer, mileage-wise, from Chicago to San Francisco than UP, so we did not know whether or not it was going to work. We decided to do it, however, and put the train on two-days-a-week, offering...
fourth morning delivery. I think we beat the UP. However, we had only 12 or 15 cars. I asked for more business for San Francisco and the Bay Area. After two weeks, the trains started having 30 to 35 cars, and we went from two-days-a-week to four-or-five-days-a-week, and it just kept snowballing. This started in about 1973 or 1974. Later on, we had exclusive trains to Houston, Dallas, Phoenix, San Diego, Los Angeles, San Francisco, and Kansas City.

That was the way the Santa Fe Railway started out with serious piggyback trains, and then we got into containers. We also kept improving the terminals until every terminal had overhead cranes. We made a couple of mistakes. One of them was Denver. We probably should not have competed with anybody in Denver. The other one was the Toledo, Peoria & Western, which was not as successful as the others were.

Joe Nash kept working and building it up until everybody got into containers. One thing I have noticed, lately, is that everybody should be concerned about attracting shorter haul intermodal traffic to the rails. I think RoadRailer might be the answer. RoadRailer terminals are cheap. If RoadRailer is not the answer, then somebody should invent a way to attract highway trailers and containers to the rails without having all the iron and steel and wheels and all that you need to haul containers piggyback on conventional railcars.

Robert S. Ingram
Consultant
Retired Vice President of Transportation
C.H. Robinson Company

Intermodal really is a contact sport. To illustrate this, I will go back to 1974 and talk about some of the arm-to-arm combat that took place to make intermodal happen. It was not pretty; it was like making sausage.

I will start with the SL7 class of ships at SeaLand. They were big, modern vessels, extremely fast, state-of-the-art. SeaLand had eight of them. When I left the Norfolk and Western Railway (N&W) in 1974 and went to SeaLand, I was told not to worry about the mini-bridge business concept because the SL7s would be going tri-continent. This meant going from Asia to the West Coast to the East Coast to Europe and back. No mini-bridge. So, I did not worry about it very much and instead I concentrated on some domestic New York, Baltimore to Chicago operations for SeaLand.
Developing the Mini-bridge Business at SeaLand

One day I was called in and told that we were going into the mini-bridge business. The interesting part about this was that we had one extra SL7. We only needed seven to run the service, but we had eight. Nevertheless, we took deployment of three SL7s in the Atlantic, running a route from the East Coast to Northern Europe then to Algeciras, Spain, and back to the US. We deployed five in the Pacific. What was intriguing was our port rotation on the West Coast: Seattle first, then Los Angeles, Oakland, and then out. We elected to drop all of the mini-bridge traffic at Oakland. This was strictly a case of balancing all the containers and matching the inbound mini-bridge traffic with outbound military cargo at Oakland.

We set up a pretty extensive operation at Oakland, where we began operating two and sometimes three trains per week, eastbound and westbound, on the Western Pacific Railroad (WP). During this time, our route from Oakland to the East Coast was as follows: Western Pacific—Salt Lake City; Union Pacific—Kansas City; N&W—Buffalo, Lehigh Valley, Newark. This was the routing that I created until a fateful day in San Francisco. I was probably 29 years old; the future of SeaLand was riding on the success of this mini-bridge business; and I was asked to explain the business to the National Rail Intermodal Association, a rail intermodal group that is now a part of the Intermodal Association of North America (IANA). The person ahead of me from the Union Pacific operating department was to give a report on western operations. I thought this was wonderful until he said what a disaster this mini-bridge business was from an operating standpoint. He called it the worst thing that had ever happened to the Union Pacific operating group.

I left the room and called two people whom I knew and had worked with: Reggie Short at the N&W, who called Charley Groton at the Missouri Pacific (MP) to put something together; and John Gray at the Western Pacific (WP) to ask how to get between the Missouri Pacific and the Western Pacific. John told me he worked very closely with Don Orris at the Denver & Rio Grande Western Railroad. Between Reggie, John, Don, and Charley, I had a route for my traffic. I walked back into the room to give my report and addressed my first comments to the UP person, saying that the UP concern about the mini-bridge had been solved. The next train that week was routed adverse to the Union Pacific. It surely caught attention. Reggie believes people make things happen and this is true. This route stood up for years, and it was very successful. The route handled SeaLand trains, eastbound and westbound, every week, going over Tennessee Pass in Colorado, which is now out of commission.
Developing the Doublestack

Dave DeBoer said Don Orris and I were very eager users of doublestack equipment. I want to go back further and explain my side of this story. SeaLand operated about two or three trains a week, eastbound. When you run a liner service, you cannot exactly predict that every ship will have 120 containers come off at Oakland to go to New York or to Boston or any combination. We always had this problem of having either too few or too many and never exactly the right number of containers.

SeaLand wound up exceeding some of the train length restrictions on the WP. The WP route was through the Feather River Canyon, which had very sharp curves. All of the sudden, we had a couple of trains upside down in the Feather River Canyon. There is nothing like that to make your creative juices flow. The WP also put a 50-car restriction on eastbound intermodal trains for SeaLand. We had a disaster on our hands, as the mini-bridge business grew, because we simply could not handle the freight that was coming from Oakland and heading east. Out of desperation, I started playing around with the concept for a doublestack car in 1975. I had an asymmetrical car design, which had two containers high on one end and one container at the other end. I was working with the America Car & Foundry (ACF) to develop this concept, when Tom Fante, who headed Southern Pacific’s (SP) intermodal group, invited me to meet his engineers, who also had an idea for an intermodal doublestack car. It was a stand-alone car, two containers high. I liked it and suggested we move forward.

Three years passed. I went to Europe and to South America. When I came back nothing had happened except that the SP had built the first car, the original car, and then a three-unit car. Norm Kirsch from SP and I created a commercial agreement to run 43 doublestack cars, which SeaLand would buy, between Oakland and Los Angeles and then Houston and New Orleans. There was one final caveat; I wanted my own terminal. The SP vice president of traffic told me I could not have it. It was out of the question until an operating vice president at the SP named Rob Krebs intervened, offering me an agreement for the terminal. Rob Krebs, Norm Kirsch, and Tom Fante were the men who made it happen.

By 1988, Don Orris, who was with American President Lines (APL), had overtaken SeaLand from an intermodal perspective. My mandate was to get ahead of APL. Unfortunately, in the East, Conrail was the sole operating entity and it was not really cooperative in terms of revenue and terminal requirements. Gordon Fuller had an idea. Walter Rich and Mac Sanders at CSX and we at SeaLand put together, literally, a plan to build an intermodal terminal at Little Ferry, New Jersey, and to rebuild...
the Susquehanna Railway (New York, Susquehanna & Western Railroad), opening a line that had been shut down for 25 years. We created an intermodal service from Little Ferry via the Susquehanna and its trackage rights, over Conrail to Binghamton, and eventually to Buffalo to connect with CSX. We literally ran around Conrail and avoided the commercial constraints that we faced in dealing with Conrail at the time. The second train through derailed, but we cleaned that up. This intermodal service put SeaLand back into the business.

Brooks A. Bentz
Senior Manager
Andersen Consulting*

It is 1999 and intermodal is a major force in the rail industry, and when I got into the business in the late 1960s and early 1970s, it was looked on, at best, as a fad, and at worst, as a perversion of the sacred carload business. I will examine what made a difference in the evolution of the intermodal business.

My first experience was on the second shift at Cedar Hill Yard in New Haven, Connecticut, as a rookie brakeman. We were setting up the ramp for the pig train. The New Haven, at that time, was being merged reluctantly into the Penn Central. Piggyback, as it was called, certainly was not new then and was scarcely prominent when the Pennsylvania Railroad (PRR) introduced TruckTrain. Some say it was new when the Long Island Railroad moved farmers' wagons on flatcars in the late 1800s. What I think really counts is not newness, but what works well.

Improving with Technology

Intermodal in the 1950s and 1960s, and even into the early 1970s, really did not work well. There were a lot of wagons on flatcars and doublestack. There were some major improvements that helped, such as the collapsible hitch, which reduced the use of chains and binders, and the longer flatcar, which accommodated more than one trailer. But the really big leap, the one that had the greatest impact, was the birth of the mechanized loader, whether you call it a packer or a crane.

The Boston & Maine Railroad (B&M) had the first overhead crane in about 1960. We had our first side loader, a PC-70 or P-70 about 1970, and that is really what helped make intermodal work well. It made mass production economically feasible for the first time and it provided the ability to absorb the coming growth in volume.

The next big leap was the doublestack technology that we know of today. The doublestack gave us a big productivity boost. Even more importantly, the doublestack allowed us to handle the technology changes in trailer equipment, which always seemed to happen more quickly than car technology, without having to re-equip the entire fleet. I also think that RoadRailer is going to be looked upon as a breakthrough technology. These, generally speaking, are some of the technological changes that moved the intermodal industry forward.

**Increasing the Commercial Appeal**

I want to describe some of the operating efforts made at B&M, at AmeriTrans, and then later at the Burlington Northern Railroad (BN) in an effort to increase the commercial appeal of intermodal. When I took over the operating responsibility for intermodal at B&M in 1978, we were almost out of business. And I do not mean just intermodal. The railroad had been in bankruptcy since 1970, and the once successful Apollo dedicated train service between New England and Chicago was a memory. When I took over, we were offering seventh morning service and we were not doing it consistently, and this was at a time when Conrail had second morning service. It is not surprising that our volume was dreadful.

We did three things that got us back into the game. First, we made a deal with Conrail, called “Cooperative Competition,” to try and revive this dedicated train service. We suggested to Conrail that three terminals were at least one too many for the Boston area. We felt Conrail should get rid of one of its terminals and we would handle the overflow business. Conrail had Beacon Park and Readville, and we had East Cambridge. The suggestion turned out to be something Conrail thought was appealing. In return, we got dedicated train service. We ran our own to the interchange point and Conrail took it from there. This got us back into the service game.

The second thing we did was to start our own truck line, the Boston Maine Express (BMX). We got the support of our CEO and then we had to go to our trustees because we were in bankruptcy. The trustees basically authorized us to start a motor carrier subsidiary, provided we did not spend any money or hire any people. My secretary dispatched trucks, and with the brother-in-law of our ramp contractor, who had a single-axle tractor, we ran the cross-town drayage to Castle Island for Sealand. We were in business.

And the last thing we did was to implement a network of short-haul, reduced-crew, dedicated trains. Essentially we ran two sets: a train that went from Boston to Montreal to St. Albans, Vermont, and back, and a train that went from Bangor to New Haven and back. The trains had
single locomotives, typically, and two-man crews that met in the middle of our railroad and swapped around so we could serve all points with all trains. It was an interesting exercise that worked reasonably well. As a result, our truck line was able to expand the markets so that we went from being a Maine, New Hampshire, Vermont, and Massachusetts railroad (even though we were a class one railroad at that time) to serving 16 states. We ran as far down as the connections at Alexandria, Virginia, and Pot Yard and up to the Canadian border.

The motor carrier subsidiary was also a major vehicle in getting us into the more entrepreneurial side of the business. The whole philosophy was to take the high-cost labor, which we had with the railroad clerks and teamsters, and shift over to the lower-cost, non-union people. Our terminal operations did contract carriage for the railroad and some administrative functions like billing.

Then we branched into new businesses, a less-than-truckload (LTL) consolidation for Clipper in East Cambridge and a container freight station in our East Cambridge freight house to strip and stuff SeaLand boxes, taking the business away from the local International Longshoremen’s Association (ILA).

The next thing was moving into transcontinental service. John Gray in California and I set up a transcontinental service using WPX and WP to pick up loads and B&M and BMX to deliver loads, and we were able to offer this on a single bill. We did this partly because we felt we needed to get closer to our customers and partly because we were offering a third morning service to Chicago, a day slower than Conrail’s second morning, and we needed some way to go after the business that we could not get from our third party folks. We did both successfully.

In addition, just as I was leaving B&M in 1984, we established a terminal and local trucking in Chicago, to do the same thing that we were doing in New England. We later did the same thing when I went to AmeriTrans. We started our own local trucking operations to haul not only our own freight but also the freight for other third parties.

At B&M I worked for two really good leaders, Alan Dustin and Mike Smith. I was 27 years old and they basically handed me the keys to the department with their best wishes to have a good time. I think that really helped us bring the intermodal business at B&M back from the brink, but it was not an easy task. The railroad had basically broken down. In fact, the nickname for B&M was “Broken and Mangled.”

**Integrating Customer Service**

The other problem that B&M had was a very conventional organization for selling. We had a pricing department and we had a field sales
organization. When Mike became vice president of marketing in 1977, he set up a marketing and sales group and I was tasked with setting up the intermodal business unit. The carload types felt we were going to divert traffic from boxcars to this low margin trailer business. My view, at the time, was that if I could get customers out of boxcars with my service and my trailers, then anybody could, so why not try to keep it in the family. This was not an easy sell. We set out to demonstrate to our customers that we could provide a truck-like service and, therefore, be truly competitive.

This was really the genesis of the business model that was used at Burlington Northern (BN) when Bob Ingram and Bill Greenwood asked me to start a doublestack business, which I later called BN AMERICA and which was supposed to look like a motor carrier operation. The basic idea was that we could provide a service that did not look like railroad service but, instead, looked like motor carrier service. We wanted to have the best equipment and, what I called, integrated customer service, which meant you called one place and got all of the information you needed to make intelligent decisions. We could couple that with stack-train economics to provide unbeatable pricing. The economics always drive the equation.

We also wanted to build a commercial capability that encompassed not only the intermodal marketing companies (IMCs) but also direct sales. What puzzles me most about railroading in the 1990s is that the railroads seem to be largely content being train runners and not creators of transportation service, providing value to the customer. They seem to be content to hand that role over to the IMCs and the steamship lines and the truckers. I have always seen this as a flawed strategy for several reasons: first, customer equity equals market power; second, the margins in a thin margin business get even thinner the more you cut the pie; and third, the vast majority of the invested capital in the business is railroad capital.

I do not think that third parties have to go away. I think that their role will continue to evolve and change as carriers consolidate, and as large shippers look for better deals by going directly to the carriers. I think that if the railroads are ever successful at seamless transportation or integrated service management, or whatever else they decide to call it, then this will move the business along a little bit further. I do not think third parties are necessarily going to go away, but I think that their role is going to change.

One of the companies that figured out how to do all this was American President Lines (APL). APL actually became the first transcontinental railroad. Don Orris built it a few years ago with a national network of stacktrains. J.B. Hunt and Donald Schneider followed suit. They provided door-to-door service to the customer and they used rail, typically
stacktrain, for the line haul. And, the railroads continue to get castigated for poor earnings performance, for not making their cost of capital, for not being close to their customers, and for providing a second tier service.

**Standardizing and Simplifying**

One thing that we should talk about in our business is standardization and simplification. Too many customers view our business as simply too arcane, too complex, and too difficult. The railroads really need to take charge of their business more than they have. They need to make it user friendly and service desirable. Railroads need to stop being interested in big volume and big trains. When you hear people talk about intermodal growth, they do not talk about profit and they do not talk about revenue. What they talk about is handling x hundred thousand more loads this year than last year.

My advice is to concentrate on being creative and delivering value. Will things change? Yes, they always do. Things just do not always change to suit your business or to your advantage, unless you find the right path and do your utmost to ensure that things go your way.
IV. A PHOTOGRAPHIC SLICE OF INTERMODAL FREIGHT TRANSPORTATION HISTORY

Collected by Gordon C. Miller

"Intermodal has become the world standard for the transportation of merchandise freight. It is a technology built around the container, the equipment to haul it, and the devices to transload it. Intermodal is revolutionary. It is changing the nature of goods production and distribution." – Gilbert E. Carmichael

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Intermodal Beginnings

The famous “Farmers Train,” taking goods loaded in wagons on flatcars to Gotham City, operated by Long Island Railroad in the 1890s.

Ground breaking at the South Kearny Rail Yard in New Jersey for the Pennsylvania Railroad, taken 1 January 1955 looking eastward.
Above: Radical 75-foot car, the X15972, built by General Motors Electro-Motive Division in 1953, sits in the snow on a yard track. The car is equipped with non-rotating roller bearings, fixed stanchion end-of-car trailer hitches (see inset to the left), and raised center section. Note the "disaster chains" mid-car that were required to be attached to the rear of the trailer. Below: Oops! Even bad things happened to good trailers in the early days.
Charlie Groton, president of the Missouri Pacific Truck Lines, St. Louis, Missouri (left), was an early believer in piggyback and a founder of the National Railroad Piggyback Association, which honors intermodal innovators with the Silver Kingpin Award.

Jack Lanigan, Sr. (center), and his sons, Mike (left) and Bill Lanigan, pioneers in straddle cranes for the intermodal industry.
Palmer Bayer (left), Realco's first president, presenting one of the first trailers to Dave Jones of the Louisville and Nashville Railroad. Realco was one of the promoters of the piggyback trailer business. Inset: Bob Budorick, president of Realco, accepting the delivery of their 25,000th trailer from Great Dane in Savannah, Georgia, in 1972.
Intermodal Trailers & Containers

Was the early piggyback business coming or going? This mural trailer for Realco depicted the interface with truckers.

Tying down trailers on the Pennsylvania Railroad in Chicago, using a “Kingpin grabber.” Chains hooked directly to the grabber so that no eyes needed to be welded on the trailer.
Smooth riding—a china table setting inside an American President Lines container shipped from coast to coast—without a broken dish or glass.

Expandable flatbed trailer 40- to 60-feet.

Chassis for transporting 20- and 24-foot containers.

Early vintage Realco mobile repair trucks, like the one above, were sent out to repair broken down trailers.
Intermodal Loading

Wabash Railroad taking delivery of its first new 35-foot vans in St. Louis, Missouri, over a portable ramp. Inset: Portable ramp, St. Louis, Missouri.

No special equipment or ramp is necessary as shown by this Flexi-Van load of freight coming off a railcar in Bozeman, Montana.
Intermodal – Air, Sea, Land

"Intermodalism is one of the top three achievements in the 20\textsuperscript{th} century, second only to the invention of the airplanes and the diesel engine. Now, intermodalism is entering the 21\textsuperscript{st} century by pulling the world's continents into one global transport network." – Theodore Prince

Photographic essay resource: Piggyback and Containers (1992), by David DeBoer.
V. PANEL PRESENTATIONS

Motor Carrier Panel

Craig E. Philip, Moderator

I am with a barge company, and most of what barge lines do is actually intermodal. Of the 50-million tons that my company handles every year, nearly two-thirds of it starts or ends with a rail move. However, I began my career as an intermodal opponent, trying to save boxcar service on Conrail. I am now a convert, and certainly all of these panelists have always been intermodal proponents. They will discuss what is probably the least glamorous aspect of the intermodal business, the participation of the motor carriers. Motor carriers have had a complicated relationship with intermodal. At various times they have been customer, partner, and competitor. Yet, some of the greatest intermodal success stories involve the willingness of some motor carriers to use rail intermodal service, proving that the two modes could work together to benefit customers.

PANELISTS
Charles T. Connors, James G. Cunningham,
J. B. Hunt, Robert H. Maisch, Sr.

(Left to right) Klaus Nielsen, J.B. Hunt, James Cunningham, Charles Connors, and Craig Philip.
Charles T. Connors  
President and Chief Operating Officer  
H&M International Transportation, Inc

Trucking companies are not mentioned as much as we would like, but in order to have intermodal, you have to have trucking companies. In order to talk about containerization in intermodalism, I have to talk about my past in the steamship business. After leaving military service in 1962, I returned to Maersk Line, a company that was prominent in the field of ocean transportation. I was assigned to assist the port captain in the daily operations of a breakbulk ocean terminal and was quickly promoted to assistant pier superintendent, responsible for many of the daily operations of the terminal. The breakbulk pier was in Brooklyn, New York. I was involved with one of the first mixed container breakbulk piers in the New York area. Containerization and intermodalism entered my life in the mid-1960s or 1970s.

**Breakbulk Ships**

During this time, Maersk operated breakbulk ships. Maersk introduced side-port ships and flush-deck vessels, which introduced palletization to the industry. At the same time, SeaLand was getting involved with containerization. Maersk, Barber Line, US Lines, and Myer Line were all involved in a group called the Unit Load Council. They looked upon containerization as something they did not want to be involved with, saying it would have to be the number one method of transportation. For a number of years Maersk stayed with the side-port ships because it felt the financial investment and the marketplace favored side-port ships not containers. To think of containerization, you really have to think of the ultimate consignee.

In the early days, prior to consolidation, the real benefit of containerization was not realized. The movement of goods was basically vessel to vessel or port to port. Ninety percent of the containers loaded in the Far East had to be stripped and delivered less-than-truckload (LTL) to the common carrier on the pier. The investment in container vessels and equipment seemed more costly than the pallet concept. Our first 20-foot containers had to be loaded on flat bed trucks. They had no corner locks that would allow attachment to a chassis. In fact, our first 20-foot containers could not handle the weight of being stacked. The first containers Maersk used were 8-by-8 foot containers, and we loaded the vessels with 1,000 to 2,000 of them. The early ones were basically CONEX boxes loaded for a ship’s convenience, which means they were loaded on the pier and discharged on the pier for delivery to a customer.
Early Container Challenges

Chassis were quite different in those days. When we finally started to get into the container market, we married two 22-foot chassis using “bullets” to accommodate two 20-foot containers on one 40-foot container. Bullets were a foot and a half long and three inches in circumference. The problem was that the trucking companies did not know what to do with them or how to reattach them. When they did take them apart, they would discard the bullets, eliminating the benefit of marrying the two 20s and making the process very costly.

If Maersk Line was cautious in reacting to containerization, so was the trucking industry. The trucking industry had thousands of trailers in its system, a considerable investment. Truckers were accustomed to picking up LTL and to charging by the carton or by the hundredweight. How could they venture into a container market and what would they charge for the container movement? They were told that they would have to pick a container up, bring it to the customer, and bring the empty container back. They did not even have the advantage of using the container to load domestic freight because, until a couple of years ago, US Customs would not allow the trucking company to load domestic freight. So it was basically a one-way move.

The railroads were also slow to accept the intermodal story. Historically TIRs (identification documents) did not show chassis numbers. Intermodal containers remained at the terminal too long. Matching correct chassis with the proper steamship company was difficult. Weather conditions, the markings, night, and the responsibility for damages always were problems and still are problems for the railroad.

There was not enough space at the terminals to handle the movement of containers and chassis. The railroads were trying to catch up with intermodalism. At the time, the railroads required trucking companies and steamship companies to pick up their containers within 24- to 48-hours. When the container was emptied, steamship companies would have to pick up the chassis and take it off-dock. When the chassis was needed for an incoming train, steamship companies had to bring the chassis back. They were not accustomed to freight release and US Customs release. Imagine the additional cost to the steamship companies for all this additional trucking.

One other item that was often overlooked was US Customs penalties. The steamship companies did not have the wherewithal or the electronic data interchange (EDI) to know if a container had a freight release or a US Customs release. If a container is released prior to the freight being paid, the ultimate consignee does not have to pay the freight.
American President Lines (APL) is credited with the first stacktrain. H&M was fortunate enough to be involved with APL’s decision to be the first ocean carrier to discontinue their all-water service to the East Coast. We opened up a container freight station (CFS) to handle APL containers. In those days there were house-to-house classifications, which meant that a container was loaded in the Far East and delivered directly to the ultimate consignee. There were house-to-pier classifications, which meant that the container was picked up from a vendor in the Far East and then stripped at the pier or CFS. And, there were pier-to-pier classifications, which meant that a container was loaded loose at the pier in the Far East or Europe and then unloaded in the US.

Intermodalism came about because of containerization and because the vendors and the importers were becoming educated in their buying and distributing needs. For example, a Macys, a Home Depot, or a K-Mart buys products from various vendors in the Far East. Prior to containers, all these products were shipped loose. For every different vendor, a different US Customs entry had to be made and every different entry had to be examined. With containerization came consolidation. I would say that consolidation is an outgrowth of containerization and vice versa.

The Far East started consolidation terminals, allowing the Macys of the world to be off-dock consolidators. The trucking companies moved the full containers off the railroad facilities, bringing them to a neutral terminal, and performed all of the functions necessary to deliver the freight. Trucking companies basically became an all-water facility without the vessel. It was a part of the business that did not involve the railroads. So, when consolidation started, the trucking companies started a new business.

There was another new business that started, the non-vessel operator (NVO) market. The NVO market allowed the beginning of freight-all-class (FAK) rates. So the small importers, the people who import twenty cartons, or fifty cartons, or seventy-five cartons per vessel, could get involved with containerization. FAK rates allowed more shipments to be containerized and more shipments to go intermodal.

One big barrier to overcome was bridging, which port to go to. Whether you call it mini-bridge, landbridge, rail-bridge, or any other bridge, it was essential for the intermodal team approach among ocean carriers, railroads, and trucking companies. In the early 1960s and 1970s, the innovations were containers, container ships, terminals, and the supporting equipment. However, most of the steamship companies were basically tackle vessels. They had to continue going to the same ports. The
port authorities basically pushed this issue also. If the freight was coming through Charleston, Norfolk, Baltimore, or Miami, then the port authorities wanted that freight to come off their docks. The port authority of each area frowned upon freight leaving their port.

**Containerization and Labor**

During the times of labor crisis, philosophies change. One particular incident was during the International Longshoremen’s Association (ILA) strike of 1971, one of eight different ILA strikes that I was involved with. Several ocean carriers served all the points in the US. At this particular strike, the vessels were diverted to Montreal, and our vessels were half container and half breakbulk. The containers, whether they were 8-foot, 12-foot, 20-foot, or 40-foot, were loaded with a ship’s boom. There were no container cranes. Most containers were stowed in the “‘tween deck” or “upper ‘tween decks” on the center of the vessel. During this strike, we were involved with the transportation of the goods from Montreal for four and a half months, both breakbulk and containers.

At this time we opened up a substantial container freight station (CFS). As each longshoremen strike occurred, more and more containers were going through the intermodal process, whether it was from Canada or from the West Coast, even during the Tugboat Strike of 1979. Remember, most of the containers had to be drayed from Philadelphia. The ultimate consignee had no idea, so the intermodal part of the business was being done without the customer’s knowledge. This started to open the doors and the minds of the steamship companies. The customer started to realize that there were benefits. Should we continue shipping to the East Coast? Should we ship to the West Coast? From these humble beginnings we accepted the theory of bridging. Not only are fewer and fewer ports being used, but there are also fewer and fewer steamship companies. We have moved from the consolidation of freight to the consolidation of steamship companies and to the consolidation of ports.

The US Customs also contributed greatly to containerization, which enhanced intermodalism. It was very difficult for US Customs to get past the idea that it no longer could examine a particular carton at will. In the past, the terminal was wide open to the wishes and to the examinations of the US Customs agents. The freight that the agents wanted to examine was in the nose, or front, of the container. So the consolidators in the Far East got smart and put a sample of each type of commodity in the tail of the container. It was very difficult for US Customs to accept this manner of transportation. US Customs was not sure if there was collusion, if
there were drugs in the containers, and if there was quota freight that should not be in the containers.

**H&M International Transportation, Inc.**

H&M International Transportation, Inc., is very fortunate to be operating one of the largest CY/CFS facilities on the East Coast. We handle such companies as NYK, Mitsui, Evergreen, and Yang-Ming. We truck the intermodal containers from the railroad to our off-dock facility. We went to Conrail, and as an added value to the intermodal part of the business, we suggested that Conrail leave the containers at the rail terminal. We would do the customer service, the stripping, the stuffing, the preparing the freight for US Customs inspection, maintenance, and prepare the empty containers for pickup by the Duponts or the GEs of the world. We convinced Conrail that a partnership should be made between Conrail and H&M. The first reaction of the steamship companies was that this was really the way to go. It is not that we were the first. We were the first multi-user facility that allowed the steamship companies to keep the equipment at the terminal longer than the 24-hours to perform all of the necessary procedures to receive and deliver the international freight. The railroads, historically, do not appreciate international containers staying five and six days nor do they appreciate empty equipment taking up too much space in their yards. The railroads do not appreciate the gate activities needed to bring empty chassis in or out of the terminal. The H&M facility can provide these functions and services.

**The Future**

To go forward, we have to improve technology in order to reduce costs. A large percentage of the freight is controlled by many mid-size and often tightly held small businesses that do not or cannot adapt to the value of technology or they just do not have the resources to implement technology. Technology resources must be integrated among the shipping partners, rail, ocean, trucking, and the customer, in order to appreciate its full value and to benefit from the savings. Better equipment must be interchanged between the different modes, water, rail, ocean, and motor carrier, to enhance the safe, efficient, and seamless movement of freight from the origin to the ultimate customer. We must see to it that every chassis is certified FHWA, inspected, and roadworthy before it is offered to the trucking company. The real dilemma is the interchange of the equipment. Moving the equipment involves the railroads, the steamship company lines, the contractor who runs the terminal, and the motor carriers who use the equipment.

There must be a standard of service with agreements between the principals and the terminal operators who unload and/or load to and/or
from a vessel or to and/or from a train. There is a responsibility to have the chassis in good and roadworthy condition. Unfortunately, if the equipment is not roadworthy, it is up to the motor carrier to get the equipment changed or fixed, whether it is at a rail or ocean terminal. Unfortunately, it is the driver who is required to do this. He knows that he is not being paid for this. So, he will go out of the terminal with some minor damages. It could be a brake adjustment, it could be a cracked drum, or it could be a bad spot on the tires. Within fifteen minutes, he will receive a ticket from the US Department of Transportation (USDOT), since the USDOT is right outside of the ocean and rail terminals.

Labor has always been an issue, and it is now time for labor groups to come together, not to discuss protecting or preserving jobs, but to assist in the development of new ideas. Local and inland infrastructures have to be improved—the bridges, the tunnels, the interstate highways; and the federal government, the state government, and the local communities have to be involved. We still have a long way to go.

James G. Cunningham
President and Chief Executive Officer
PTL Trucking

J.B. Hunt and United Parcel Service (UPS) represent the motor carrier as customers of intermodal. Our company, PTL Trucking, a former trucking subsidiary of the Pennsylvania Railroad (PRR) and later the Penn Central and Conrail, is in a quite different relationship as an associate. We like to think of ourselves as partners of the rails, or the vessel operators, or the intermodal marketing companies (IMCs). We are the drayage carriers, or as some people have characterized us, the weak link in intermodal with high costs and poor service. We have been called the Rodney Dangerfield of intermodal. This is where cost and service barriers to intermodal growth remain. There are, however, solutions to these problems.

I first got involved with intermodal problem solving in the 1970s. I was with Consolidated Freightways and on the Equipment Interchange Association (EIA) Committee of the American Trucking Associations (ATA). The ATA staff had decided that it was about time that we got together to work out interchange rules for conflicts between the modes. The ATA and the Association of American Railroads (AAR) staffers organized a meeting. EIA and the Interchange Rules people from the railroads got together in Chicago. At that time, truckers really did not like railroaders, and the feeling was probably a little bit mutual. But we began the dialogue, and that was important.
I also had the opportunity, later in the 1970s, to participate in the formation of the Intermodal Transportation Association (ITA). We felt very strongly that the key to solving equipment interchange problems was to get the modes together. That resulted, in the late 1970s, in the birth of the Intermodal Transportation Association, which has evolved with the inclusion of the intermodal marketing companies into the Intermodal Association of North America (IANA). I think it is fair to say that interchange is hardly an issue today.

**Drayage Costs**

Drayage costs, however, can be a major impediment to the development of a more competitive and profitable intermodal service. I think it is time our industry addressed this area. The major causes of high intermodal drayage costs are imbalanced operations, gate and yard delays, connectivity, erratic train performance, load bunching, and carrier selection practices. I was taught thirty-five years ago as a management trainee that the three commandments of the trucking industry are balance, balance, and balance. Imbalanced operations are the primary cause of high drayage costs, whether your load is moving across the street from the railhead or across the country. The trucking industry’s solution to balance is to manage the area closely. The number of empty miles is reduced by intense management of dispatch operations and directional selling techniques. Often this involves incentive compensation programs for the sales force. Obviously, the fragmentation of responsibility for providing service in intermodal significantly complicates the problem solving. It does not get any easier when a shipper or a consignee insists that its “house carrier” be used for the intermodal dray. One major IMC has begun to centralize carrier selection to concentrate volume and create balance opportunities, therefore reducing dray costs. These programs seem to be having limited success, however, because of field office reluctance in the IMCs to surrender carrier selection responsibility.

**Gate and Yard Delays**

It is apparent that while the cost of operating a truck is proportional to distance, commercial zone drayage cost is a function of elapsed time. Terminal delay, to an ever-increasing extent, must be reflected in pricing. Independent contractors and owner-operators just cannot afford delays. Company drivers see delay time in their paychecks, which adds to drayage costs. A case in point was the disruption of operations at an East Coast port by striking independent truckers protesting loading delays at the piers. A primary reason for the formation of the Bi-State Carrier Conference, now part of the New Jersey Motor Truck Association, was to
present an organized approach to confronting this problem at the Port of New York.

The causes of delays are obvious: congestion, inadequate staffing, budget, and pier labor work practices. The gate and yard delay problem that rail facilities face is not much different. I recently saw a long queue of trucks awaiting inbound inspection at a small volume and state-of-the-art Midwestern terminal. This was a midday non-rush hour backup that was caused by inadequate staffing, thus pushing the cost/delay factor onto the drayage side of the total intermodal cost equation. That is almost good news. The bad news is that, at the typical large rail facility that is older, less efficiently designed, and usually in a congested urban location, gate and yard delays are worse.

**Driver Retention**

While drayage costs are a major concern, retaining competent drivers in this environment is a challenge to intermodal growth. Our company continually faces a driver retention problem, resulting from excessive waiting at the piers. The truck drivers just cannot afford to wait. It is interesting to me, as an engineer, that the management at a large New York marine terminal has stated that its facility is capable of handling 20 to 25 percent more containers than at present, as a result of improved throughput. At a time when rail terminal capacity constraints are beginning to inhibit rail intermodal growth, some basic industrial engineering surveys of a classic queuing problem could show how to increase throughput with little or no capital investment.

The outlook on connectivity is more positive. One of the key issues that was addressed in the recent federal transportation legislation, the Intermodal Surface Transportation Efficiency Act (ISTEA) and its successor, the 1998 Transportation Equity Act (TEA-21), is connectivity. Lack of efficient connectors between the highway system and the port and the rail terminals increase drayage costs and, therefore, the overall cost of intermodal transport. Connectors are short segments of road, but they cannot properly accommodate large trucks because of lower engineering standards. Many of these roads are either locally owned with municipalities or local governments unable to finance improvements. We all need to participate in this planning process, and we can influence the selection of projects to improve freight flows. All Metropolitan Planning Organizations (MPOs) have a mechanism, such as Philadelphia’s Freight Advisory Committee, for seeking industry input, and industry input is welcome. We can influence the decision making and through this process, lower our costs.
Erratic Train Performance

A regular customer of PTL has a consistent movement of containers from the Far East to Cleveland via the Chicago Gateway. This customer is on line with the railroad's computer system and can follow the shipment's progress from the West Coast, projecting an accurate time of arrival at the Chicago rail yard. We, therefore, can dispatch drivers into Chicago to meet the consignee's tight transit-time requirements to Cleveland. This is where the system comes unglued. The train arrives from the West Coast as advertised, but it does not get placed for unloading or grounding. Our PTL drivers wait perhaps six to eight hours, and the delivery schedules have to be revised by an unhappy consignee. From the driver's perspective, he could be almost back to Cleveland if he did not have to sit there for that period of time. He has lost the trip, and is wondering why he works in the intermodal area.

Erratic train performance undoubtedly is the root cause of the standard railroad practice of not providing notification of equipment arrival until after grounding. This practice virtually guarantees adding a full day to the transit time service performance of intermodal, as well as adding a full day to equipment turn cycle time. When notification takes place after the day's truck dispatch operation has been planned, the load then becomes part of the next day's operations. When railroads provide advanced, reliable inbound-loaded equipment availability information, more efficient appointment scheduling and dispatch planning is possible.

Load Bunching

PTL's North New Jersey terminal facility has been serving as a test bed or a data site for evaluating ways of improving the efficiency and the service quality of drayage operations. The objective of this study is to identify and evaluate ways in which a trucking company can improve efficiency and reduce the costs of the highway portion of trailer movements. This study focuses on changes in drayage operations, including centralized dispatching of tractors and trailers, computer model and information system decision aids, and related changes in terminal operations. It was funded by the US Department of Transportation (USDOT) and undertaken by the New Jersey Institute of Technology. We expect to identify practical alternatives for improving terminal and drayage operations.

The result has been the identification of significant trailer dwell time, which we found surprising in the absence of any complaints from consignees. The trailers were arriving ten at a time, but they were set up for delivery to the consignee at the rate of two per day. Equipment utilization is poor. Without having the full background, the drayman's delivery performance is horrible, but the customer does not seem to mind. Mer-
Management, in a preliminary report on intermodal equipment utilization, said that it is quite possible that customer dwell time is the last black hole in intermodal. Our experience in North Jersey confirms that this is true. We must, as intermodal managers, address with the shipper community why long-haul truckers appear to receive prompt unloading and scheduling of consignees and why intermodal equipment seems to have a lower priority.

**Carrier Selection Practices**

Previously, in discussing lack of balance as the primary cause of high drayage costs, I mentioned fragmentation of responsibility. There needs to be a coordinated approach among the IMCs, the railroads, and the draymen to deliver a product that is both cost and service effective. Such an approach to the delivery of the product is an exception rather than a rule. We see little of this philosophy in the decentralized, uncoordinated, transactional-based, daily carrier selection process. In conclusion, there is a very large opportunity to reduce intermodal drayage costs while also providing a quality product. I would hope that this group could be the focus for a coordinated industry review of the interrelated pieces of our intermodal supply chain.

**J. B. Hunt**

Founder and Senior Chairman
J. B. Hunt Transport Services, Inc.

Mike Haverty put me on a train with the red carpet out. Not far down the road, I reached over and shook hands with Mike saying we had a deal. He asked what we were going to do and I told him we were going to haul some freight. It was kind of tough trying to grow back in those days. Then deregulation came along. With Haverty, it was kind of like a new venture. We ran a full year without a contract. I guess the contract is still in effect, but I do not even know what it says. Sometimes I think about this, and I think personalities cause things to happen.

**Railroad Ambivalence**

The intermodal business did not fit like a glove when we first started. In fact, the intermodal business and the railroads remind me of when I used to drive a truck from Little Rock, Arkansas, up to St. Louis, Missouri. I would go on a little turtleback road in Missouri. It would be iced over, and I would try to figure out whether I wanted to put my foot on the brake or the accelerator, because the road was slick. The railroads
were in a similar predicament. They did not know whether they wanted to haul intermodal freight or haul something else.

But I know Mike Haverty. I have been on the train with him. He would be sitting there and one of those big coal trains would go by, and he smiles. Then he sees that interstate highway and all that freight out there. Now, how is he going to get the trucks? Then he gets the trucks and he does not know which train he is going to run first. This is not just Mike Haverty; it is this way on every railroad. The problem is that everybody wants service, and everybody wants it cheap. That is the way my customers are. I heard someone say the other day that his customers wanted barge rates and air service.

Waste

Waste is something that no one wants. The shipper loses, the railroad loses, the customer loses, and we lose. This is waste. What makes this country great is how we do things better and cheaper to be competitive with the world. I understand that we get about four turns per month with a container. I understand that the railroads get one and a half to two turns per month. That means that their trailer costs are twice our container and trailer costs. We are smarter than we were a few years ago. Now our maintenance costs on our trailers are less than half of what the railroads are, because we are in that business.

There is still a lot of slack in the chain here. For example, we do not take our equipment from the rail yard to the shop for minor repairs. We move all our small trucks with mechanics out on the yards, fix all the lights, fix all the tires, and do all the maintenance work there. I am sure that this has saved us a fortune. If we are all going to pull together, do the job most economically, get all the waste out of it, then I think that the railroads should run the trains, take care of the cars, and let the IMCs and the truckers do all the trailers.

But I have mixed emotions about this. I bought $400 M worth of trailers one time. For someone like me, that is a pretty good purchase. If the cheapest way to move across this great North America is by container, then we sure do not need to be buying trailers. I hear that the railroad is buying trailers and buying containers. J.B. Hunt is doing the same thing. What is really sad is that if there is waste here, we will just keep wasting the money. I do not know what is going to happen in the intermodal business in the next 10 years, but I think that we do need to get the waste out.
Robert H. Maisch, Sr.
Retired Vice President of Operations
United Parcel Service

I am not Bob Maisch, nor will I attempt, in any way, to fill his shoes. Both within UPS and on the intermodal scene, he was a visionary. In addition to his prepared remarks, which I am honored to deliver for him, he sends the following a personal note. “To my friends, peers, and colleagues, I am so very disappointed to cancel attending this conference, but I am recovering from pneumonia and my doctors feel that I could not handle the Colorado altitude. However, following are my thoughts about UPS and the railroad-intermodal operation from 1966, when I became involved, until my retirement in 1984.” Klaus W. Nielsen, PhD, ITI Board of Directors, Retired Manager of Simulation and Modeling, United Parcel Service

In 1983, UPS shipped over 100,000 trailer loads per railroad. Each one of these trailers contained on average about 2,000 parcels. So our promised service was at great risk when any or all trailers did not reach their destination on time. At this time, not only was UPS the largest user of intermodal shipping service, but UPS had grown to be the largest small-parcel company serving all forty-eight states. How did we get there, and how did we use the intermodal movement to do so?

The Beginning of UPS

UPS started in Seattle in 1907, and by 1956, we were operating in eighteen of the largest cities in the United States, delivering parcels for the local department stores. However, this type of delivery was on the decline due to the proliferation of shopping centers, to customers changing their shopping habits and driving to the stores, and, most of all, to customers taking their own parcels home. At this point, UPS turned to a new business mode of delivering for manufacturers, wholesalers, and distributors, covering both short and long distances. This required UPS to obtain authorization to move within and across state lines. Over the next eighteen years, UPS obtained both inter- and intrastate authorization, so that by 1974, UPS could serve all forty-eight states.

Since it took many years to reach our goal of all-points delivery in the forty-eight states, we had time to plan well ahead of our actual expansion activities, to plan how to move parcels over long distances, faster, safer, and less expensively than any carrier could by surface transportation. Our system concept called for 150 sorting hubs across the country, laid out in a grid pattern. This system has evolved over time so that we can now serve all points with the planned service. The hubs were con-
nected by truck, and we sorted moving parcels to their final destination or into the day-sorting hubs for local delivery.

Intermodal Moves at UPS

Intermodal means were used from the early days to move loads to our hubs, where we had volume to make the right loads. In 1969, we developed a UPS intermodal train with the Erie Lackawanna Railroad from Croxton, New Jersey, to Chicago. At Port Jervis, New York, westbound trains picked up westbound loads that had been trucked in from New England. Some westbound sets of trailers were dropped off at Marion, Ohio, where UPS employees operated a circus ramp, while the train went on to Chicago with loads for the Chicago sort as well as trailers going farther west.

The reverse, the eastbound trains going from Chicago to New Jersey, made a pick up in Marion for the eastbound loads and included a drop at Port Jervis to be trucked to Worcester, Massachusetts, for sorting. The train then moved on to Croxton, and loads were sorted in New Jersey. This train operated very well for UPS until Conrail took over.

UPS Business with Conrail

At first we received poor service from Conrail. When Conrail took over, it used the old New York Central route, and westbound loads were sent off at Toledo directly into Chicago. New England loads were sent directly out of Worcester to Chicago. After Conrail finally got its act together, we received grade A service.

By 1974, we were covering all forty-eight states, operating with dedicated trains to the New York City and New Jersey area highway, Potomac yards, Virginia, on the Seaboard to Florida; Chicago to Jackson, Mississippi, on the Illinois Central; Philadelphia to Chicago on Conrail; Worcester to Chicago on Conrail; Chicago to Dallas on the Missouri Pacific; Chicago to Los Angeles and San Francisco on the Santa Fe Railway; Chicago to Denver on the Burlington Northern; Chicago to Spokane on the Burlington Northern; Los Angeles to Portland on the Southern Pacific; and Los Angeles to Memphis on the Southern Pacific.

Basically, we found that intermodal movement by rail did not meet our time needs under 600 miles, on the average, although there were some exceptional shorter runs that were successful, such as Jacksonville to Miami with the Florida East Coast Railway, Chicago to Minneapolis on the Chicago Northwestern, and Chicago to St. Louis with the Illinois Central.

UPS always felt that moving by intermodal means offered great advantages over other surface transportation modes, except water, which
was, of course, too slow for the UPS mode of business. As fuel costs increased, movements by railroad became more efficient than movements by truck. Also, with changes in work rules, crew sizes, and cut backs on the numbers employed and acquired, railroads combined with new technology to offer significant advantages. Today, computers provide detailed operating information and billing data that had been managed with armies of clerks. These are, indeed, big changes since I worked with the railroads 15 or 20 years ago.

**UPS Intermodal Innovations**

UPS did many things to make intermodal work better. We decided to highway trailers from the Northeast to the Potomac yards to get the needed service to Florida. In the same manner, we used the highways from Memphis, Tennessee, to and from the Southeast hubs to get needed service from California. We maintained a large fleet of intermodal trailers to balance movements. We positioned containers from New Jersey to the Midwest cities and used water carriers to move a lot of containers to Houston. We also leased a fleet of specially equipped trailers to handle paper rolls for Boise Cascade. We loaded northbound from Los Angeles to Portland, and Boise Cascade shipped paper back to the Los Angeles area.

We also started a specialty company, called Martrax, with a fleet of 1,500 refrigerated trailers. We loaded regular parcels in them, destined for California, and Martrax loaded produce for the return trip to the New York area, where the containers were cleaned up and filled for the return to California. This system was started in 1980 and is still working very well for us.

We also put UPS supervisors at each ramp to work with railroad ramp staff, unloading and loading our own shipments. Our drivers delivered trailers directly to assigned cars for loading and picked up incoming trailers, as they were unloaded. We held daily morning report meetings on all intermodal movements and policed our shipments very closely on almost an hour-to-hour basis. We had UPS teams on the East Coast working closely with the railroads on service, and one in Chicago working with the western railroads. We held monthly meetings with each railroad on its service record.

**The Future of Intermodal**

I believe that intermodal has much to offer in providing reliable transportation over long distances. Shippers and receivers are located all over the country, not just in and around large cities. Intermodal service provides efficient trailer delivery and pick up and does not depend solely
upon truck movements. A lot of UPS's success came because we could serve customers wherever they were located.

I thought that rail mergers would be good for intermodal movement, and we saw it work well for Conrail. Some recent rail mergers have not been as successful, and some of our customers have lost considerable faith with intermodal service capabilities. Timely service was and remains a big problem and is the key to intermodal efficiency. UPS has always been on its service providers' backs about it. I know from personal experience that if top management gets behind it, service can and will happen. Among the best leaders that I have seen, in my seventeen years of working with railroad management, were Stanley Crane from Conrail, Larry Cena from the Santa Fe Railway, Bill Greenwood from the Burlington Northern, and Prime Osborn with Seaboard. They helped make this concept work.
Early Developers Panel

Joanne F. Casey, Moderator

The word vision is the operative description of the beginnings of the intermodal industry. The early developers represented on this panel are visionaries, pure and simple. Without the activities, creativity, and innovations generated by them and their respective companies and organizations, a lot of intermodal initiatives would not have been possible. It is the foresight and the contributions of these early developers, through their service offerings, their contribution to equipment innovation, and their dedication to regulatory reform, that really set the wheels in motion for what we are now seeing in the intermodal industry. They will share their views on the risks and the rewards of breaking the mold from traditional transportation beliefs.

PANELISTS

A. Daniel O’Neal, Phillip C. Yeager, George Lowman

(Left to right) Phil Yeager, George Lowman, Dan O’Neal, and Joni Casey.
Phillip Yeager, founder and chairman of the Hub Group, Inc., gives a lot of credit to the railroads for making this intermodal industry successful. I have, however, been in the third-party business; I owned a business for a time; and I know that this is a very difficult business. We know what it takes to run a third-party company in the intermodal business; for almost every load, we are dealing with six different enterprises. Somebody has to manage this, and it is the intermodal third-party companies on the domestic side that manage this. Phil has been doing this since 1971, and he is the premier provider of that service in this country.

The Beginning of Deregulation

My experience in the early development of the intermodal industry is totally different from Phil Yeager's. In 1969, at about the time that Yeager was considering going into his own business, I became the counsel to the US Senate Surface Transportation Subcommittee as part of an effort by the chief counsel of the committee to rejuvenate the staff. The chairman of the committee, Senator Warren Magnuson, had had some difficulties in his re-election in the State of Washington in the past. The chief counsel thought that the senator needed to bring in some new people out of the University of Washington Law School. One of the first things that I remember was being introduced to a new subcommittee chairman, Vance Hartke of Indiana, just after a train derailed in his state, spilling chemicals, and causing big fires and explosions. He did not want this subcommittee; he wanted to have aviation. But Senator Magnuson did not want him to have aviation, and so we tried to make him happy on this Senate Surface Transportation Subcommittee. Fortuitously, the railroads helped us. We had hearings on railroad safety, and passed a rail safety act that eventually became law.

The next year was even more exciting. We took up rail passenger service, which was a big expense to the railroads, and we did pass the Amtrak Act during this period. I can still remember one of the hearings when Chairman of the Board of the Penn Central Railroad Stuart Saunders expounded on how important it was for the railroads to get rid of this rail passenger service that was costing them lots of money. And then, when a lot of the senators raised skeptical questions, he leaned back and he said: "Gentlemen, I'm telling you, the house is on fire! The house is on fire!" We did not know really what he meant. But, six or seven months later we did when the Penn Central went bankrupt. At the time, the bankruptcy of the Penn Central was the largest failure of a corpora-
tion in the history of the United States. It was losing about $450 M a year, which was a lot of money in those days. At this point, I probably had not heard of intermodal.

Deregulating the Trucking Industry

Subsequent to this, I ended up at the Interstate Commerce Commission (ICC), and in 1977, I became its chairman. I had learned a lot, at least about the government and about what I thought was wrong with the way the ICC was regulating. I decided that we should initiate some major reforms in regulation. I was not sure how to do this. I went to the staff of the agency, and it was amazing. Out of the bowels of the bureaucracy of this organization, probably one of the most staid, archaic, entrenched organizations in town, came some of the greatest ideas ever.

We started deregulating the trucking industry within a few weeks of my becoming chairman. This was not because of my great ideas, but because of the ideas coming out of this agency. We initiated several rule-making proceedings. As any trucker who was around at the time will tell you, it was extremely expensive and costly not only to obtain initial authority from the ICC to operate but also to expand your authority to do more than what you were doing. You had to prove that you were not going to be too competitive with anybody else. Part of the problem was that no individual carrier could reduce its rates—reducing its rates was a very bad thing. We began to change all that, and initiated some major deregulation of the motor carrier industry.

Things were also happening in the railroad industry. By this time, there were seven bankrupt railroads in the Northeast. The question was what do you do about all these railroads that were in deep trouble? The idea had been formulated, sometime earlier, to create a quasi-government organization to take them over and for the government to fund the development of some railroad in the Northeast, consolidating what was there and getting rid of what was not necessary. In the process, the US Congress approved something that we called the Four-R Act, which was the Rail Revitalization and Regulatory Reform Act. The act gave the ICC some discretion in deregulating certain elements of the railroad industry.

Deregulating the Railroad Industry

We had a lot more authority on the trucking side because a lot of the regulation depended upon interpretation of the act. It was tighter on the railroad side. But, we were focused on truckers. We held a conference in one of the Senate hearing rooms with a lot of people in government and industry about what was going on. I can still remember Ben Biaggini of
the Southern Pacific saying that the ICC was doing all this deregulation of the trucking industry, but not doing anything with the railroad industry. He felt that the ICC was tougher on railroads than it had been previously.

I began to think about this and I thought that he was probably right. We did have some authority over the railroads. In 1979 we used this authority to deregulate the movement of fresh fruits and vegetables by railroads, which I think, was pretty much of a surprise. Dave DeBoer was in the room when I made this announcement in California to the Grape and Tree Fruit League, which was very much opposed to the whole idea of deregulation of the railroad industry. It was silly to regulate an industry that only had 8 percent of the market, which is what the railroads had, and not regulate the trucking side, and agricultural trucking was not regulated by the ICC at the time. I do not know if this made a big difference in the traffic that the railroads picked up. But, it did relieve the Interstate Commerce Commission of some pretty ridiculous regulations.

In 1979, we also thought intermodal would be a good area to deregulate. We had gone through about two and a half years of reducing restraints on the trucking industry, creating more competition in the industry. At the time, we had 18,000 regulated truckers, and I had never heard of J.B. Hunt. Somebody gained from this deregulation process, and J.B. Hunt is certainly one of those who took off after deregulation. It was obvious that it did not make a lot of sense to keep restraints on the railroad industry in the intermodal field—the one area where they competed with trucks—while we were eliminating restraints on trucking. So we initiated a rule-making proceeding.

About this time I invited the Chairman of the Senate Commerce Committee Howard Cannon to make a speech to a gathering of state regulatory officials from around the country. He began his speech by saying that Congress had been watching what the Interstate Commerce Commission was doing and was concerned that the agency might be going too far in deregulating the trucking industry and making other changes in regulatory reforms because it was really the responsibility of the Congress to make the statutory changes. He said that he spoke for not only himself but also for the chairmen of the House committees as well, those who had jurisdiction over transportation.

This was a pretty significant message to an agency that was supposedly an arm of Congress. So, we stopped. In the same speech Cannon said that he guaranteed that Congress would pass, and have on the President's desk, a trucking-deregulation bill by the first of June 1980. It was there by the first of July 1980. That same year, the Staggers Rail Act was passed, which had its own regulatory reform provisions and which permit-
ted the ICC to continue to deregulate and to take action in intermodal, which it later did.

One of the interesting things that Congress put in that act, which was very key to what followed in intermodal, especially in stacktrain development, was the right of the railroads to contract. It was a question that had come before the ICC a few times. We had looked at it in 1978 and 1979, and our general counsel said this is one area where the ICC had no discretion. We could not allow the railroads to enter into contracts. Of course, we knew they were entering into all sorts of quasi-contracts on the side, which nobody could really prove. But, in terms of real, written contracts that had the real force of law, they were not able to do it. When Congress made this possible, it was one of the keys to making the stacktrain possible in the United States. And, of course, American President Lines took advantage of that in 1984.

Finally, I have been asked what I would have done differently. One thing I wish I had done, when I was in the business, is to go into trucking earlier. It is hard to exist without a truck component; it allows a lot more options. But, I really think the key to whether or not intermodal takes a big share of the intercity market is the quality of railroad performance.

**Phillip C. Yeager**  
Founder and Chairman  
Hub Group, Inc.

I recently read a wonderful article by Gil Carmichael in the 26 April 1999 issue of *TrafficWORLD* where Gil states that he has heard it said that “the 20th century’s three most important transportation innovations are the airplane, the diesel engine, and intermodal service.” I would have put intermodal service first, followed by the airplane and the diesel engine. I have put forty years in intermodalism. It does not seem possible, but it happened. In 1959, when I started, the railroads handled less than a million trailers and containers. And now in 1999, they carry more than nine million. We have had some tremendous progress but not as much as we would like. I was actually converted to intermodalism in 1954, when the New Haven Case came out and four or five of the US railroads started intermodal.¹ I thought this was the railroad of the future, and I still believe that. Nevertheless, we have not done as much as we should to make intermodalism important to the railroads.

¹ On 15 September 1953 the New Haven Line filed its “20 Questions Case” (Movement of Trailers by Rail, 293ICC93) with the Interstate Commerce Commission. This case provided the framework for the growth of the intermodal industry. David J. DeBoer, *Piggyback and Containers: A History of Rail Intermodal on America's Steel Highway* (San Marino, California: Golden West Books, 1992), pp. 35-41.
Several dates and events are important in the development of intermodalism. The rulings by the ICC in the New Haven Case set the stage for intermodal growth. In 1955, the first intermodal train was shipped by the Pennsylvania Railroad out of Chicago, and I was about thirty miles east of there watching for that train to go through. Also in 1955, TTX was started. In 1971, I left the Penn Central Railroad. The bankruptcy affected me since I had been promised a scholarship to Harvard University for at least a summer. Of course, all of these programs were eliminated. But the key factor was that I was always number two. I was the assistant director of Truck Train and I was the assistant of the Trail Van. I decided that I really wanted to try it on my own. I knew a little bit about the shipper-agent industry. In fact, I had dealt with most of the shipper agents, and there were not many at this time.

The Early Years of Hub Group, Inc.

It was a tough, tough situation for a number of years, but eventually in 1975 we started to expand. We opened up a hub in Detroit with a young man and his wife, and it succeeded. So we opened up in Milwaukee. But each of these early starts was done with very little money. The original hub had about ten thousand dollars—all that I had. It was a situation where we had to expand but not pick up debt because I am scared to death of debt. We would bring in the person that we were hiring as president, and he would invest in the company—very similar to a McDonald's franchise. And, that is how we built the company. It took seventeen years to complete the network, but Hub is in practically every major city. These are actually operational companies, not a salesman with a telephone. We feel that this is the best way to differentiate our services from our competitors.

The Growth and Diversification of Hub

Another very important factor was deregulation in 1980. Deregulation was very important to the intermodal industry and it was important to Hub because we could only provide origin terminal service. We went out and sold the service, and we provided the pick up at the origin, the rail transportation, but we could not do anything about the destination. And this ICC restriction was removed with deregulation. With deregulation intermodalism really blossomed, and certainly our company did too. At that time, most of the Fortune 500 companies would not use intermodal because there were a lot of restrictions that kept them from using it.
Also, by this time, the shipper-agent industry was starting to develop. We were certainly not well liked by the railroads because we came in the back door and took advantage of rates that were established for the freight forwarder industry. Another important date was 1984, when the stacktrain started.

But in 1990, something happened to our industry. Many people thought it was going to collapse. Then, J.B. Hunt came into intermodal. There were a lot of surprised people, very scared people, and I was one of them. It was a time when our industry could have collapsed. Tom Finkbiner told the *Journal of Commerce* that the intermodal marketing industry would be dead in five years. We are still doing pretty well. Like a lot of people, I was asked what we were going to do. I said we were going to get better. And that is what we did. We changed the way we operated our company dramatically in the next few years. We knew we had to or what Tom said would come true.

We diversified because we were 100 percent intermodal. We got into the brokerage business, but from 1991 to 1995 we were not doing much. There was only one problem: we were trying to run a trucking business with intermodal people, and it did not work. So we brought in Dick Rogan, who had been president of Burlington Truck Lines and had been with Schneider, and he built an organization for us. The first year he was there, we did 26,000 trailers. The next year we did 55,000. The next year we did over 100,000, and in 1999 we will do over 180,000 trailers. It is a big business for us, a profitable one, and one that we should have been in much earlier.

In addition, we realized that logistics was becoming more and more important. We decided that we had to get ready for this, and we started a logistics/distribution company that has been very successful. As recently as four or five years ago, it was doing five to eight million dollars a year in business. In 1999 it will more than one hundred million dollars. It can do anything. At least that is what the people running it tell me. And I believe them.

In 1996, we went public. I was against going public because I knew about the regulations and all the emphasis on growth versus the actual needs of the company. I also knew about the pressure that would be there. I delegated this to my son David, and he handles all these things. Going public, however, has actually been great for our company because it improved our image. The national accounts, the Fortune 500 companies, they want to know what businesses like ours are doing; they want to see the balance sheet.
The Rewards of Developing Hub Group, Inc.

There are many rewards from working in this business, including developing a successful company. In addition, working in this business included a great relationship with my wife. I worked with her for more than 21 years. I have two sons and a son-in-law in the business. Also, I have wonderful associates at Hub. Tom Hardin is my number-one guy, and he has been with me nearly since we started the company. I have also great friends who are also big competitors, like R.C. Matney, who was also suppose to be on this panel and who, I wish, would have attended this conference.

Hub has 1,300 people now. We have been doing some interesting things: we have been bringing in a lot of young people. Originally, we started with just experienced people. That is all I would hire. But, we ran out of experienced people, and so we have been bringing in a lot of young, just out of college, logistics people. I am so pleased that the University of Denver is offering a graduate degree in intermodal transportation because I think it is very necessary and very important that young college students understand that there are some great rewards possible in intermodal.

The Challenges of an Intermodal Business

There were many challenges over these twenty-eight years. Certainly, opening up an office was a real challenge. I had two card tables, one chair, and one little box—this was our opening office. We did not think about what we were going to accomplish; we thought about surviving; and that is all that we thought about. We survived, and grew, and were able to build the company. During the period of time that I came into the industry, the shipper-agent industry did not have a good reputation. Many of the people who came into the industry early on were after a fast buck. They did not have a very good feeling toward the railroads, and as a result, the railroads did not have very good feelings toward them. We had to improve our image. I think IANA and the pervious associations really gave us a tremendous opportunity to improve the image of the business. I think that our industry is very professional now and that we really provide a service for the railroads and certainly for the shippers of the railroads.

Stacktrain came in December of 1972. We were a very small shipper-agent in Chicago, but we recognized the potential. We had to come up with the 60 trailers on a single night. We actually started the train twice a week, and at that time we were probably handling between 20 and 30 trailers and containers a month between Chicago and New York. But I knew this could work. I just had that feeling. I knew the volume poten-
tial was there because of my experience on the railroad. On the first train, we had 55 trailers and containers. The break-even-point was 53, so we made a little money. On the second train, we had 23, and we lost about $15,000 at a time when we did not even have $15,000. But the trains caught on. They expanded when competition came in. But we were really the only game in town. The other railroads, the Erie Lackawanna Railroad and the Chesapeake & Ohio Railway, competed with us by putting in 10-trailer rates at the same prices. So, we not only had to compete, but we also had to think about what we could do to develop this whole market. In talking to the Pennsylvania Railroad, we found that it was willing to go into Boston, Philadelphia, and Baltimore; the Norfolk & Western (N&W) went into Norfolk; and so we started trains to all these areas. From handling about 3,000-4,000 trailers a year, we grew in four years to be the largest shipper-agent in the country, mostly on the basis of these trains. In fact, about 75 percent of our business went east. We had very little business going west. But this built our reputation. It gave us a good image, not only to the railroads but also to the big shippers and the small shippers as well.

In 1980 when deregulation occurred, we had to change our whole way of tracking trailers. We also had to come up with contracts for the companies and the destination, and we had to monitor and actually provide better service to our customers. We were able to overcome whatever problems we had, and we became more and more service-conscious during this period.

In the early 1990s logistics was the magic word, and we all became logisticians, even though we could not spell the word. I felt from the beginning that Hub had a place in this logistics market, but we were not sure what it was. Initially we went after the big accounts—the fifty- and sixty-million-dollar logistics accounts. We did not get any of these accounts because we did not really have the number of people that were required nor the skills. We have basically changed our attitude and provide help to the small to mid-size shipper. We seek the large logistical people as partners on the big contracts. No one can provide all of the services; it is a partnership package. The companies trying to do it all themselves are not going to do a good job. They have to pick the best people in the individual services: trucking, intermodal, warehousing, air, all of the facets that go into transportation. We have been very successful lately. Our logistics sales are going up dramatically. Our initial successes usually wound up with a loss on the bottom line. I think the whole logistics industry right now is suffering from a bad bottom line, and it is a very difficult thing because there are so many companies involved.

In hindsight, I think that we failed to move forward with better equipment utilization and management because of the lack of financial
structure. We frankly could not buy trailers. When the Burlington Northern Santa Fe and Hub finally got together, we both did very well. It is a big job to manage equipment, but it is a job that only the third-party providers, the IMCs, can really do effectively. I think this is certainly something that is going to grow, and companies that cannot grow are going to be hurt.

George Lowman
Managing Director of Communications
GATX Corporation

One of my goals is to change your perception of GATX. GATX has interests in about 10 percent of all the rolling stock in North America. GATX is, by far, the largest bulk-liquid terminal company in North America. GATX is the third largest aircraft lessor in the world, is a top-tier logistics company, and has the largest fleet of vessels on the Great Lakes. In the hundred years that GATX has existed, the company has been involved with many components of intermodal.

GATX and Early Intermodalism

Looking through the GATX archives, I found the first known photo of a railroad tank car. It is, to some degree, an intermodal shot because we were putting pickle-barrels onto a flatcar. That was in the 1890s. GATX was, indeed, a very early developer of this industry. In the 1930s, GATX had about two hundred railroad tank cars that moved wine. Though none of the vineyards allowed us to use their names, we ran a series of ads showing our intermodal capabilities from a tank to a tank car. We had vertical integration in all kinds of process industries to build fans and blowers for cooling the reefers. We actually got into buses for a while and then into all other kinds of rail equipment. We have come a long way since 1931.

In 1954 GATX had a young visionary engineer working in the company whose name was Deodat Clejan. He put together this concept of taking trailers, putting them onto railcars, and we were, in fact, the innovators in this field. People from TTX recounted to me that when they visited our manufacturing site in east Chicago at that time, they never thought that intermodal cars would be a major industry. The TTX employees were wrong in their prediction about the future of the industry, for today they are dominant in the field. We were wrong in making the GATX car 85-feet in length rather than the 89-foot length that became the industry standard. This is one of the reasons that GATX is not in the business now.
Nevertheless, we did have many different products that we introduced to support the growing intermodal business. I think the great marketing name we had for much of this equipment, the "General American Pig," probably accounts for some of the reason that we were not successful at marketing it. However, liquid containers built by GATX turned that into a marginally successful product line over time.

In the early 1960s we ran an ad titled "Some nut in New York wants 10,000 gallons of isopropyl alcohol," describing GATX's ability to use intermodal means to get the product to the customer in short order. In 1970, we acquired an ocean-shipping fleet, the Marine Transport Lines. The TankTainer™ system was a very good product. We marketed it for a number of years. Eventually it went to the Union Pacific (UP), they renamed it Bulktainer™, and I believe that it still exists.

In 1973, GATX acquired the American Steamship Company, which runs fleets of vessels on the Great Lakes. Actually, these are just giant, intermodal vessels. The inside is hoppered and there is a conveyor belt that runs the length of the vessel. The current generation of vessels, which go up to 1,000 feet, can carry enough iron ore to make 63,000 automobiles in one load. Other interesting applications include a product line called the TankTrain™ system, introduced in 1974. It allows a string of about one hundred tank cars to be loaded in through one central position. A string can be loaded or unloaded in about four-and-a-half hours, as opposed to forty-five-minutes-per-tank-car. This system has many applications in the United States and is finding a number of new applications throughout the world. It was very successful in the 1970s and the 1980s, had a hiatus in the late 1980s and early 1990s, and now is having a resurgence of demand. We are introducing a new TankTrain™ system in Australia.

**GATX New Product Development**

More than ever, GATX views intermodal as the common way of moving products. It is our job to determine how we can best serve the needs of a customer. We know that we are not going to be dedicated to rail, to truck, or to barge, but to use the transportation means that serve the needs of the customer the best.

We just opened a distribution center in Mexico City, which integrates many parts of GATX. We are in partnership with Bulkmatic Corporation to encourage the movement of rail traffic going into Mexico City. There are very few rail spurs going to industry there, so we put up a transportation hub that will take rail equipment and put it onto the appropriate mode to be delivered in Mexico City. We are doing a lot in freight management, cross-dock management, and yard management, without being
mode-specific. GATX interfaces with pipelines in several ways. We own three pipeline systems, and we are an interface, through our terminal subsidiary, with all the major clean-product pipelines in the US. There are lots of opportunities as product comes in and out of big petroleum distribution centers. We have approximately $500 million invested in ships and barges in the company.

Currently, GATX is involved in chemical and petroleum distribution across the entire supply chain. This business requires trucks, railcars, barges, ships, and combines them in the best ways possible. We are finding that many of our customers want to be out of the asset management business. As a result, we must have more information at their disposal and that means getting very close to the customer. One example of this is remote tank monitoring. When a gas station wants to know how much gasoline is in its tank, it takes a wooden pole, sticks it down into the tank and extrapolates off of that. This is pretty much the state of the art for the industry. We now have a little electronic box that can go on a tank anywhere. With this product, we can read out on the website, put the output through some logistics software, and automate re-order points. We save the customers the costs of owning inventory and provide knowledge of their product status. We have been a big factor in the development of intermodal products for asset management, and we plan to continue to develop intermodal products for the future.
Terminals Panel

Michael R. Haverty, Moderator

Since I have been in the management side of the railroad business, I have always been told that the way you make money is to fill up capacity on the railroad. I certainly understand this because there is not a continuous movement of trains on most main line tracks and, therefore, there is additional capacity. But, the real constraints on a railroad are at the terminals, both in the switching yards and in the intermodal yards. In the intermodal yards over the years, railroads have been dragged kicking and screaming into the intermodal business. We took weed-infested yards and paved over them, put rock over them, sometimes mud. We used these as the intermodal facilities to start a business that was supposed to be competitive with trucks. We have come a long way since then. Here are the men who have really lived through the transition period of intermodal terminal operations.

PANELISTS

Raymond F. Ascencio, Fredrick E. Boone, John J. Gray, John J. (Jack) Lanigan, Sr.

(Left to right) Ray Ascencio, Mike Haverty, Jack Lanigan, Fred Boone, John Gray, Ted Prince, and Gil Carmichael.
My 40 years in the intermodal industry can be broken into four phases. The first phase was my years at Forty-Seventh Street in Chicago, where I started on the old Pennsylvania Railroad as a clerk and worked my way up to terminal manager. The second phase was my years on the East Coast—the years during the major snowstorms and the ILA strikes in the East when Roy Hayes sent me to the East Coast for two weeks. I spent 17 years there, until 1977 or 1978. During that time, I went on to become the general manager of intermodal terminals for the Pennsylvania Truck Line, which was the manager of Conrail’s terminals. The third phase was my years with K Line and establishing its Rail-Bridge Corporation, which became, at one point, the largest, privately owned doublestack operation. We had our own facility on the East Coast at Port Elizabeth, which was billed as the only privately owned facility that was able to handle 44 doublestack cars at one setting. The last phase was my years in Mexico. While still employed with K Line, I was asked to consult and assist the Mexican railroads in establishing intermodal. Over the last 10 years, I have devoted my energies and my expertise trying to establish intermodalism in Mexico at the request of the Mexican Government and the Mexican railroads, which were one and the same at that time. There were no recognizable intermodal terminals in Mexico of any shape or form.

**Terminal Operations**

To me, terminal operations probably have been the most neglected part of intermodal over the past 40 years. You can move the train from one point to another. You can add all the traffic that you want. You can doublestack it, single stack it, but if you can not get it off the car or if you can not get it out of the gate, then you have failed in offering your customer the complete service. I believe that every terminal manager and the work force, from the clerk on up, should be trained in how a terminal should be run. I believe that when you become a terminal manager, there should be no job that you could not do in the terminal, including working with the trainmasters, working with the operating people, driving the trucks, and operating the cranes. All of these things are basic points that, somehow, we have forgotten. These are basics that we have to return to if we are ever going to get beyond 10 million units and handle the business effectively.

Infrastructure is the single most important element of good terminal operations. At every position that I have had, in every terminal that I
have been in, I have found that a strong management force that understood what the common goal was, and how it should be attained, had a higher ratio of success than the ones that did not.

Good terminal operations start with management. I believe that the old adage, “too many chefs spoil the soup,” applies also. One terminal manager, whether he works for the railroad, a rail subsidiary, or a subcontractor, must be responsible for the entire terminal operation. It should be his responsibility to coordinate with the rail operating department and the lift contractors to see that the loading and unloading schedules are maintained. Additionally, his responsibilities should include the knowledge of any terminal failure that adversely affects a customer's shipment. Terminals with more than one manager, with managers having overlapping responsibilities, end up finger pointing when things go wrong. Communication becomes nonexistent, and the results are readily visible in the lifts-per-man-hour, which is how we measure terminals.

In 1959, when I started in this business, the terminal lift operator was either a subcontractor or a subsidiary. Both had union workers. The one constant was that the terminals generally had a railroad terminal manager. The terminal manager was not always a railroad employee. The office employees were either union or non-union, Teamster or BRAC (Brotherhood of Railway & Airline Clerks, now the Transportation Communications Union International). Consequently, the job of the terminal manager—keeping a labor force operating as a team—is a real challenge. I have always found when dealing with labor—and I have dealt with BRAC’s top management and the Teamster’s top management in every Eastern state in the United States as well as Washington DC—that if you could speak to all of the issues of terminal operations with a basic knowledge and a voice of authority, that you were able to accomplish a lot more.

The railroad still selects the terminal operator through the bid process and defines the terms of the bid. One thing that has not changed is that some railroads still think that the lift contractors are nonprofit organizations who charge too much for their services and who should be available 24-hours-a-day, seven-days-a-week. Some terminals have no railroad representation, which leads to the railroad abdicating its responsibility to the lift operator. I do not think that this is in the best interest of the carrier or the customers.

**Obstacles to Good Terminal Operations**

There are obstacles to good terminal operations today that we did not have in the early years. The railroad tops the list. The very entity that should be mandating and dictating policy is the very same entity that
creates many of the problems that exist in a terminal today. In talking
with some of the contractors, I have found that, in general, terminal opера-
tions have not changed much in the last 10 years. The one thing that I
got from all of them was that they felt the railroads constantly make
changes without a thought as to how the changes will affect the lift con-
tractor’s operation or cost. At the terminal level, rail managers offer very
little support to reduce costs, and, in fact, frequently request additional
manpower without any compensation. In the past, a five-minute delay to
a train departing from any facility in the system meant that you had to
call the power desk in Philadelphia and get permission for the extension.
I do not believe that exists today.

I do not know how many times and how many countless calls that I
got over the years at night or in the middle of the night about a train or a
problem that existed in a facility. In fact, anyone who is in this industry
and is senior management knows that you did not want to call the top
railroad operating people in the morning and explain why you were fif-
teen minutes late with a train and that included calling any customer re-
graying a shipment that was left on the ground. I can remember Phil
Yeager calling many times in the early years saying, “Ray give me the car
numbers for my trailers leaving last night.” Phil was personally calling
about the movement of all of his traffic.

Likewise, there was a gentleman who I think needs to be mentioned
for his contribution to our industry, John Allen, Sr. He was the former
assistant postmaster general of the United States and one of the modern
innovators of intermodal, heading up a company called ITOFCA, Indus-
trial Trailers on Flat Cars Association. As president of one of the largest
shippers of intermodal freight in the late 1950s and 60s, it was not uncom-
mon for Allen to get on the phone and call us tracing his shipments. He
expected good service and gave his customers the same. It was men like
John Allen who made this industry what it is today. When he called you,
he gave a straight and truthful answer good or bad. He had an inside to
the top people in our railroad, and you certainly did not want him calling
up the president of the railroad.

Schedules are absolutely paramount for a terminal operator. Wages,
benefits, and general liability insurance comprise more than 60 percent of
a contractor’s overall costs. Understandably, wages are the first thing he
tries to reduce. Today’s contractors generally have a non-union or union
employee working at wages substantially less than the national truck rate.
With the nationwide shortage of drivers, ramp operations are at the bot-
tom of the list for employment. When you add in absenteeism, illegal
substance abuse, accidents, past practices, and a revolving work force,
you can see the obstacles to maintaining a 3.0 lift-per-man hour. The
railroads have finally begun to budget for the needed expansion of their
terminals to allow for increased efficiency in the loading and unloading of trains. But, I question the wisdom of circumventing this by leasing out much needed parking areas to outside companies for the storage of their empty equipment.

Priorities for Good Terminal Operations

I think the priorities for terminals should be the same today, as they were 20 or 40 years ago. The private customer wants his trailer loaded on the first available train, and he wants his draymen to get in and out of the terminal with his trailer in the least amount of time. The railroad-operating partner wants the trains loaded and released on time so that they can depart on time and maintain the schedule. The contractor wants the trains to arrive on schedule, and he wants the trains to be switched onto the working tracks in a timely fashion. Everyone is conscious of safety—this must be paramount in each of our operations. The common need of all is to work as a team to service the customer. I cannot stress enough how important it is to a terminal operation that communication be maintained among all parties. It does not take long to see which terminals have a good relationship with the work force. This was a big factor in New Jersey when I went there in 1977. It was not just the snowstorm. We had 5,000 trailers, containers, and boxes stuck in New Jersey and 250 cars stuck in Harrisburg, and we were not able to move. When we got down to the bottom of it, it was not just the weather. The management force that we had in our terminals had forgotten the basics.

I think that it is important to get the information to the customer. If something has happened with a shipment, it should not be necessary, with the Internet and email, for a customer to call to find out that his trailers are sitting on the ground for two weeks, or that they have not moved, or that there is something wrong.

We have come a long way. We clearly understand the problems, but we do not seem to be doing enough with the problems that we understand. The problems that we are experiencing in terminal operations today are the same ones that we had 20 or 30 years ago. We have studied terminals to death. There is no need to study them anymore. We already know that there are not enough gates. We already know that you cannot get in and out of a facility. We already know that every facility needs to be expanded and that parking is essential. Those things are common knowledge. We need to get on with it.
Heavy Machines, Inc., is a distributor of lift machinery, principally to the railroad industry. Our marketing program in the railroad industry began in 1974, when our company was LeTourneau Railroad Services. This name came from an exclusive association with this manufacturer. Richard O. Wilson was the founder of our company, a visionary who foresaw what the intermodal industry could be and would be. With this vision, he was able to convince the manufacturer that it needed a marketing program that was unified in its national perspective and dedicated to the intermodal industry. While our principal focus has been the rail industry, we have from time to time been somewhat involved in the maritime industry.

The lift equipment that we have represented throughout the years is the LeTourneau line, including side porters or side lifts and rubber tire gantry cranes. Because the company name linked us to a single manufacturer, we began to look at diversification and representing other manufacturers and products. The LeTourneau name became a hindrance, so we decided to select the most generic name that we could find for heavy lift machinery, Heavy Machines, Inc.

In addition to the LeTourneau product line, we have also represented Shuttlelift. Shuttlelift, a division of Marine Travelift, is a manufacturer of boat hoists and industrial-style cranes. In 1990 we were able to convince them to enter the intermodal industry with a crane for handling containers primarily. We looked at some of the smaller rail container yards that were growing, as a special marketing niche, which, quite frankly, never developed. But one thing that came out of the association with Shuttlelift was an opportunity to explore the feature of an elevating operator cab. In about 1993 when the approach to doublestack containerization was to have a low cab and a separate high cab, there was a lot of discussion about an elevating cab, which would allow an operator to have complete flexibility and position himself to see his work at different heights. The first operational elevating cab is on a Shuttlelift crane that is in the Burlington Northern Santa Fe (BNSF) system.

We also associated with the ELME Manufacturing Company when the J.B. Hunt program began. We represented the company in its after market sales, which meant that we were responsible for the selling, installing, and servicing the ELME Pin Lifts on machines that were already in the industry and had to have the J.B. Hunt capability. This continues to have some significant activity.
We also distribute container-handling equipment from Kalmar, a Swedish manufacturing company. This line of equipment includes reach-stackers, straddle carriers, rubber tire gantry cranes, conventional container handlers and lift trucks, and the whole line of intermodal lift equipment that might be required in intermodal terminals. The Kalmar association has been rather interesting, as we have found that some European manufacturers design to very definite specifications. When they brought their machines to the United States, there were some that just would not hold up with the severity of the duty cycle in rail terminals. Their equipment has now gone through a succession of re-designs and modifications. I think that we will begin to see much better performance from the new innovations in this equipment.

Cranes and Side Porters

I have been with Heavy Machines for 25 years. In thinking back over the years, learning the design and performance specifications and the requirements of loading and unloading rail cars has been a real education for me. For example, the rubber tire gantry crane is, by any measurement, the most efficient lifting device that takes trailers or containers on and off railcars. It is the most productive crane, particularly if, when the train is spotted in the yard, you want to strip it in sequence, box after box after box. On the other hand, the side porter, the lift truck-type machine, has the flexibility to load and unload selectively—lift, carry, and ground stack boxes. I know how much the railroads do not like to ground stack boxes.

As the industry has evolved and containerization has driven things, there has been a natural evolution of equipment in order to satisfy these needs. Those of us on the equipment side of the table are often confronted with the problems of reliability, availability, and maintenance. Things of this sort impact productivity. If we look at the inventories of equipment in the rail industry today, there are machines out there still performing as front-line production machines that are more than 25 years old. Early predictions were that these machines would have a 7-to-10-year life span. It turns out these predictions were so far off, it is incredible. The replacement market in lift equipment has virtually been non-existent until the last three to five years, when the railroads began to retire equipment.

Terminal Equipment Improvements and Trends

I think that we will continue to see improvements, notably in lift machine control systems. The control systems in machines today allow an operator greater safety, greater precision, and greater proficiency. I think
that we can be pleased that the manufacturers have responded to the
need for this type of improvement. On the other hand, there have been
some structural improvements. Many of the cranes are heavier, stronger,
and more durable today. We have seen machines that often perform as
much as 100,000 lifts per year.

When I first started, the railroads wanted to buy a machine that was
universal in capability, that could lift trailers of any length, that could
adjust to containers, and that could just do everything. As double-stack
technology evolved, containers grew to 50 to 60 percent of the intermodal
movements as opposed to trailers. As containers continue to grow in vol-
ume, we will see greater use of reach-stackers, for example. These are lift
truck-type machines with an extendable boom that allows an operator to
extend the boom over a chassis to the railcar and, in some cases, to the
second rail. These features have tremendous potential in improved pro-
ductivity by simply allowing a chassis to be staged alongside a track.
When the train comes in, operators can simply unload containers by
reaching over the chassis. This eliminates waiting for a chassis to be posi-
tioned by a driver. I think that we will continue to see more and more of
this type of machine as a replacement for the more conventional, straight,
mass-lift machines.

It is interesting to look at the trends in mechanization in the rail
industry and in the numbers of terminals. In 1975, there were about 1,500
piggyback terminals, circus ramps were the majority. Of that number,
about 110 were mechanized terminals. Some records indicate that there
could have been as many as 170, but even that number represents a very
small proportion of the total number of terminals. In 1999, we have 246
mechanized terminals. In 1975, there were about 200 machines in rail-
road terminals. According to the most recent edition of the IANA Direc-
tory, there are now about 787 lift machines in rail intermodal terminals.
The breakdown of the equipment is generally about 445 side porters and
342 cranes.

This certainly makes clear the growth of intermodal transportation in
the rail industry. The industry, in 1998, handled 8 million loads. It takes
16 million lifts to get them up and down, and with the growing volume of
containers, you can add another 30 to 40 percent in total lifts, just for the
grounding, internal transfer, and handling of containers.

John J. Gray
President
Rail Management Services

I started in the railroad business in 1972. I went to Notre Dame as
an undergraduate and then to Stanford Business School with a one-year
stint in between with Boise Cascade Transportation Department. In 1972 I went to work for Western Pacific Railroad (WP). Western Pacific hired Burt Cardwell, a former trucking executive, to start a trucking company and then put me in right behind him as general manager because Cardwell had a bad heart. He had a major heart attack within six months of taking the job, and so, at twenty-six, I was president of a non-existent trucking line.

**Learning the Business**

We started a less-than-truckload (LTL) and truckload operation between the Bay Area in California and Salt Lake City, Utah, and went on into Denver, Colorado, in conjunction with the Denver & Rio Grande Western Railroad (D&RGW), which is where I met Don Orris. We ran a piggyback train every night, hauling LTL and truckload. We must have had about an 80 percent market share, by our measure. We purchased a fleet of pickup and delivery trucks, straight trucks, and heavy tractors. We built terminals in Salt Lake City, in Denver, and in Stockton, Oakland, and San Jose in California. We did very well.

This was the age before deregulation of the motor carrier industry because we were operating under motor carrier rates and the Rocky Mountain Motor Tariff Bureau. There was a nice, fat margin in those rates, based on over the highway economics, so we made a lot of money with our lower cost rail transportation. Terminal operations were a sideline. We, of course, inherited the terminals from the WP and had the Teamsters in Oakland, which was always a curse. It was a struggle to get traffic in and out of the Oakland terminal, and a big month was about 7,000 lifts. But Oakland had a great view of San Francisco and the waterfront. This is where I learned the business.

As things progressed and deregulation started in the trucking business, the cost of the Teamsters became even more expensive. I went through a whole series of maneuvers to separate the truck line into a terminal operating company, wholly owned by the railroad, and then separate the LTL and truckload operations. Then, I peddled the terminal operating company to Chico Clark for a dollar. We entered into a new contract at a much lower cost. That was our first entrance into the sub-contracting of intermodal terminals. The driving force was the need to reduce terminal operating costs. It is the same mantra that we recite today: reduce man-count and improve throughput in the facility with the same capital investment. It worked pretty well. Then came the deregulation of the railroad industry in 1980. When that occurred, the WP merged with the Union Pacific (UP).
I did not want to go to Omaha, Nebraska, with the Union Pacific, but I had to do something. I thought I would start a terminal operating company. If that did not work, I could always go out and get a job. My first contract was with a little terminal in Auburn, Washington, on the Burlington Northern Railroad, handling empty containers. It was a hands-on operation. I rented a lift truck, and I was it. My office was a Denny's phone booth down the street. This is how I started.

I added terminals. I made a deal with Stevedoring Services of America (SSA), which is the largest marine terminal operator in the US, headquartered in Seattle. It was a fifty-fifty partnership, and then I just went out and started peddling my wares and bidding for terminals. We run, now in 1999, about 50 terminals, which changes every day. We do about 6-to-7 million lifts per year, and we try to run the business as much as possible on a formula basis.

As Ray Ascencio stated, the challenge for terminal operators is to improve labor productivity. In fact, about 80 to 90 percent of our costs are labor, fringe, and labor-related expenses, including management. We are always working schemes to try to reduce costs and improve labor productivity; however, there is no consistency in labor productivity throughout our operations. We operate terminals from something short of dirt lots to major facilities that look like airports. We are between two opposing forces: the cost of finding decent people to do a good job who will not get into a lot of accidents and who can pass a drug test, which is the hard part, and the need to reduce costs or maintain costs and provide a level of service for our customer, the railroad. This is our role in life.

There are bright spots on our horizon. Some of our terminals are huge success stories. Willow Springs on the Burlington Northern Santa Fe (BNSF) is one of them. Its volume is huge, 50,000 to 60,000 lifts per month; its on time performance is 100 percent, at least, for our side of the operation. It is a good operation with good people, modern equipment, and a good facility design that is matched to the type of business that goes in and out of there. Seattle International Gateway, a BNSF facility, is another success. It is an all-container operation, matched to the kind of business that it has. It, too, has modern equipment, good management, and good people. South Kearny is one of the best facilities that we have. It is being renovated and expanded by CSX. It, too, is matched very well to the kind of business that it handles. These terminal facilities also have very good train service. All of these elements combine to make a successful terminal operation.
Addressing the Challenges of the Future

In terms of the intermodal food chain, the terminal operating companies are down at the bottom, doing the best that they can. However, where do we go from here? I think that labor, as an issue, is not a short-term problem. To find good quality, skilled, manual labor that can make a decent wage in high-cost urban areas, in a full-employment economy is a real challenge. Mechanics are another concern. This is another group of people who are even more skilled than the ramp people are. The challenge is always going to be to find these people, to hire them, to train them, and to maintain them. They all have to be drug-free. Sixty percent of the people that we run through a drug screen flunk. It makes no difference what city or region you are in. At any given moment, we are probably dropping a container or a trailer somewhere. And, it is not always the fault of the crane.

Currently, we have been running at a rate of 12 to 13 accidents-per-month system-wide, compared to 30 accidents-per-month last year. This improvement is because we are up on the learning curve and because the quality of people who are available is better. In the future, we have to continue to improve labor productivity. We cannot get the increases that we would like from our customers, because our customers are not in a position to give us the increases. We must look for ways to improve the way that we manage the facilities, the way that we operate them, and the kinds of equipment that we use to improve labor productivity. We would love to build terminals; we would love to finance terminals; but the margins are so thin that there is not a decent rate of return on intermodal traffic, making it very difficult to provide the expansion capacity that is needed. We have to work with the facilities that are available to us today.

Within the existing infrastructure of today, we have to come up with new ways to improve the capacity, improve the throughput, and reduce the costs. All of these things must be done at the same time, in the face of rising labor costs. This is the challenge; it will separate the winners from the losers in our industry. The other big challenge is the continuing trend toward containerization. Containers are generally labor and land intensive in a terminal, when compared to trailers. The future challenges are huge. Hopefully, our operations are so transparent that the customers are not even aware that we exist. That is the way it should be.
The introduction of lift equipment, whether it is a side loader or a rubber tire gantry crane, took the piggyback industry from the Dark Ages into the 20th century. Prior to lift equipment, trailers were loaded and unloaded by “circus ramps”— backing a trailer on a ramp onto a flatcar and backing the trailer up to 1000 feet up to 8 flatcars. This usually took between 35 and 90 minutes per trailer. Stanchions had to be raised and lowered; bridge plates had to be installed and removed. All railroad cars had to be facing the same way coming into the terminal, which required many switches, depending on how many cars were coming into the terminal. And, it was very dangerous for a tractor-trailer to be backed up or removed from a flatcar, because sometimes the load would shift and the trailer would fall off the flatcar or the ramp.

Today, we load and unload trailers with our translift cranes every minute and a half, working cranes at some terminals 24-hours-a-day, 7-days-a-week, without failure. We use operating divisions (ITS) as an outdoor testing laboratory for R&D. Our operating people continuously give the engineers who design the translift cranes suggestions to improve our product for maximum reliability. In our opinion, no crane has a higher reliability than the Mi-Jack Translift.

The reason that the crane is what it is to the intermodal industry today is because we worked very closely in the early 1960s with the Santa Fe Railroad on a mission from Drott Crane Manufacturing Company. About five years earlier, the Pennsylvania Railroad sold a second-hand machine to the Chicago & Eastern Illinois Railroad (C&EI) for light duty. This was an old Drott crane that lifted boats out of the water at a marina and was converted to a trailer-on-flat-car (TOFC) lift crane. However, this machine was unsuccessful as it was continuously breaking down with structural, pumps, and cylinder failures. It was constantly being repaired and finally put out of service. However, the concept was ideal for loading and removing trailers, and the Santa Fe recognized this.

We designed a new crane just for the intermodal industry, and with the patience of the Santa Fe and with the help of Drott, it worked. We kept improving the design of every machine that the Santa Fe bought. Everybody wanted to cooperate with the Santa Fe to make piggyback a success.

The early railroaders who started intermodal, with whom I worked, had everybody “shooting” at them, even their peers. If they made a mistake, it was exaggerated. It was not the competitors who were giving them a hard time; it was their own people. I think that the pioneers of
intermodal were like the Dirty Dozen. In spite of everybody and all of the obstacles they had to overcome, they made it work.

We all had problems. I had a problem with the manufacturer. I kept going back to Drott with more recommendations and Drott was spending a lot of money on R&D and a new design in engineering. We were convinced that next year we were going to sell four or five cranes. The only railroad that was buying cranes at that time was the Santa Fe. Then the Union Pacific (UP) and the Southern Pacific (SP) began buying cranes. By 1976 or 1977 business was improving, but Drott was getting impatient.

Starting Mi-Jack

In 1978, Drott called and asked me for a realistic sales forecast for Drott cranes. I had been telling Drott for five years that someday I would sell at least 10 cranes a year. Drott decided that if we did not sell 10 cranes a year by 1980 that it would get out of the business. Fortunately, I sold about 9 cranes that year. However, in 1980 Drott decided to get out of the business, as it needed 20 to 25 cranes a year to justify expenses and to maintain a production line.

I realized that I was in a good position in a new industry. I was working with people who were all entrepreneurs. I knew that intermodal was a new form of transportation and that someday it would be the envy of the world. So, I went out and talked to some of my railroad friends and asked for letters from various railroad presidents. I received letters from the Santa Fe, the Union Pacific, the Southern Pacific, and the Pennsylvania Truck Line, all pointing out that intermodal is the future for transportation. I obtained a loan from the bank, re-designed the Drott machine, and called it the Mi-Jack Translift. But, I had a lot of help. I saw a lot of men work hard to make this industry work and I am very proud to be a member of this group.

Again, working with Santa Fe, I had a new concept to try called the two-for-one concept—have one track instead of two and unload from one side, leaving the trailers there. An inbound train would come in and there would be no place to put the unloaded trailers, which increased terminal congestion and increased operating costs. The less a trailer or a container is handled, the less it will cost. The two-for-one concept worked such that when a train comes in, you unload the trailers and leave them to one side of the track. Then, you pull the trailers from the storage area and load them on the other side, creating empty slots, and then move the unloaded trailers at trackside to the empty slots. Ed Frey with the Santa Fe told me that if I thought the two-for-one concept would work, the Santa Fe would let Mi-Jack operate the terminal. That is what we did and that was the beginning of Mi-Jack operating terminals. Today, we are op-
Operating over 70 terminals in the US, and we are also operating terminals in Argentina and Mexico.

**Designing the Intermodal Terminal of the Future**

The way we handle piggyback today must change. If we can anticipate a growth of "50 percent intermodal and 50 percent highway," what are we going to do with all of the intermodal traffic? We have to have new ways. We must stop moving trailers and boxes in the terminal. We must design the terminal to allow the trucker to be in and out of the terminal in the shortest period of time. We must have a terminal control tower, much like at the airports. The dispatcher must "walk" the driver through the terminal, getting him in and out in less than 10 minutes. This can be done.

We must have all of the operations alongside the trackside. We should consider a four-to-one. When I say a four-to-one or a two-to-one, the first number is the operating space on the track and the next number is the track. If, for example, you have an eight-to-two, that means eight storage areas are operating spaces for two tracks. We must have a new type of equipment that will pick up not one box but three or four boxes, hold three and drop the one needed, with immediate selectivity.

The train must come into the terminal and leave within two hours, and the crew must stay with the train. In the future, there can be no more going across town to meet connections. We must have a true port terminal and the railroads must realize that they have to work together. Three or four railroads will come into a terminal and a crane will pick up the box and just switch it to different cars. When we can do this, we will be ready for the 50 percent increase in traffic that we are going to get.

We cannot keep operating the same way. Every time we have an influx of traffic, things back up on us. I can remember when we built a new terminal and within 18 months to 2 years, the terminal was beginning to be congested. We must think big and think 15 years ahead. It is a great, beautiful industry. It is very exciting and there are so many changes that can be made. All eyes are going to be on the young men and women coming up in this industry.

When I began in this industry, nobody was really watching us. Maybe that is why we succeeded. Now, everyone will be watching, including the government. The government will be watching to see if these mergers will improve the delivery time of shipping the product to destination. So, we must be ahead of the game. The young generation must have the same attitude as the pioneers of intermodal had when the rubber tire side-loader and gantry crane were introduced to the piggyback industry in the early 1960s. This equipment drastically reduced the cost of operation and improved productivity. The safety factor was an added bonus.

Railroad Commercial Panel

Thomas L. Finkbiner, Moderator

The intermodal business is quite an unusual food chain—equipment thinks it is on the bottom, IMCs think they are on the bottom, and terminals are sure that they are on the bottom—but it is really the railroads that are on the bottom of the food chain. The railroad business has fundamentally changed—it is a business that is not incremental anymore. Intermodal revenue will pass coal as the leading revenue in the railroad industry for 1999; however, railroads need to provide better intermodal service to their customers. In order for the railroad business and the intermodal business to get to the next level, we are going to have to be smarter about the way we do business as well as more sophisticated, more disciplined, and more receptive to technology and science. This panel explores past commercial issues and identifies future needs.

PANELISTS

Roy L. Hayes, Ronald E. Lawless, Gordon A. Volkers, Richard H. Steiner, William E. Greenwood

(Left to right) Ted Prince, William Greenwood, Richard Steiner, Tom Finkbiner, Gordon Volkers, Roy Hayes, Ronald Lawless, and Gil Carmichael.
Sixty-three years ago I started working for the old Pennsylvania Railroad (PRR) in a freight station in East St. Louis, Illinois. After working a number of assignments in the station department of the Pennsylvania Railroad, I was selected to become involved in the startup of trailer-on-flat-car (TOFC) service by establishing a piggyback terminal in Rose Lake Yard, a suburb of East St. Louis. After many and varied assignments in the TOFC operation, I eventually was appointed assistant vice president of the Intermodal Division of what became Penn Central. I served in this capacity from 1972 to 1978.

When the Penn Central was first formed, it put together a piggyback or intermodal operation. The operation was made up of a combination of New York Central and Penn Central Railroad people, but, basically, it followed the organizational arrangement that had been in effect on the New York Central. This was the TOFC operation, and it functioned under this arrangement for a time. In the interim, I had become the executive vice-president and general manager of a company known as Excelsior Truck Leasing Company. Penn Central owned the company at this time. The company was formed by the old Pennsylvania Railroad shortly after World War II, and its purpose was to supply automotive equipment to the Pennsylvania Railroad. Even though I was working for the leasing company, I was still involved in the development of intermodal.

For whatever reason, top management decided to reorganize the intermodal department, and they brought me back in 1972, as assistant vice president intermodal, to head up this new organization. The organization was to function as a separate business and be a separate profit center. This meant that we would buy our transportation needs and wants from the railroad, and all our other expenses would be handled by us in the negotiation of contracts. At the end of a month, we would pull a profit and loss statement to determine whether or not the business was profitable or unprofitable.

After the first year of the reorganization of the intermodal operation in 1972, we had achieved a 23 percent increase in our volume. Modern Railroads thought this was a pretty good thing and awarded Conrail the so-called “Golden Freight Car” Award. This gave us the incentive to do better. Our senior trustee, Jervis Langdon, who was a supporter of intermodal, suggested that we set up a presentation in every major city on our system, which we did.

I served in this capacity until 1978, when I was fifty-nine years old and eleven months. At this point, the railroad, which had become Conrail,
rail, decided to reorganize again. Richard Steiner was given the responsibility of reorganizing and I was out. This was a bruise to my ego, but I found that my retirement-take-home pay was equal to my work-take-home pay. So, I had no complaints.

The Beginning of TOFC Service

TOFC service started on the Pennsylvania Railroad in 1955, and as best I can determine from the historical record, this was the first movement of traffic in TOFC on any railroad in the United States or the world. In the early 1950s, Gene Ryan was working for General Motors and General Motors produced a railroad car that Gene was attempting to sell to the railroads. The car was designed to haul trailers and to be loaded from a depressed track with a side-load operation. Gene approached the New York Central Railroad and put together a contract in which New York Central was going to work with Gene Ryan to start a TOFC operation. After some investigation, it was found that the New York Central had clearance problems that would prevent it from moving trailers on flatcars. After that, Gene came to the Pennsylvania Railroad with the same idea and tried to sell it.

J.P. Newell, vice president operations, encouraged PRR President James Symes to take this opportunity. This was the beginning! Gene Ryan promoted this idea with the motor carriers. He signed up 150 motor carriers who indicated that they would use this type of service, at least to some degree, probably in overflow or balancing of equipment. We started our operation in 1955, with a dedicated train between Chicago, Illinois, and the New York City area. Then, we put together a similar train that operated between East St. Louis and the New York City area. In time we added extra terminals between these two destinations. We started with dedicated train service—a train operating in each direction on a daily basis.

Gene, through his motor carrier connections, assured us that we had enough business to support the operation of dedicated trains. The 150 motor carriers were providing 90 percent of the traffic that we were moving. From then, until the time that I retired, our business grew until we had a fleet of over 13,000 of our own trailers on line. We operated 4,800 railcars on line on a daily basis and 46 daily-dedicated trains, handling nothing but piggyback. The annual revenue had increased to $300 M approximately, and we were operating on a $100 M budget.

The Beginning of Trailer Train

One other area was extremely important in getting this piggyback movement off the ground. Every railroad, from the time we started, tried
to become a part of the TOFC operation, and every one of these railroads had a different idea about the car equipment that should be used, like the method of tie-downs, etc. It became very evident that if we were ever going to develop anything, we had to develop a standardized car and standardized tie-downs that would allow us free interchange with other railroads. This became the idea for what is now Trailer Train. J.P. Newell, our foresighted vice president, came up with the Trailer Train concept. I did not have a big part in the planning of Trailer Train, but I sat in meetings where the company was formed and incorporated. We bought 200 railcars, financed by the Hanover Bank and Trust. Gene Ryan owned 100 railcars, and the PRR owned another 100. This was the beginning of Trailer Train (now TTX Company).

We ran Trailer Train for about four years in our TrucTrain office in Philadelphia. During this time, PRR people ran the company and J.P. Newell was the president. In addition, the Pennsylvania Railroad (PRR) owned the Norfolk & Western Railroad, Wabash Railroad, Lehigh Valley Railroad and a number of other shortline railroads. Therefore, we had the opportunity, in a sense, to influence these railroads to become members of the Trailer Train Company. We then offered other railroads an opportunity to become members of Trailer Train. Eventually it became obvious that we had to put together an organization for Trailer Train so that it could function on its own. Newell was already president, and Jack Wightman from the PRR became the general manager. Some things that happened in the early Trailer Train years would have been frowned upon, particularly by the Interstate Commerce Commission. On several occasions Trailer Train has attempted to put together its history, but the records of what happened during the first three or four years cannot be found because the files were destroyed.

Standardizing the Equipment

When we started in the TOFC business, we had a combination of chains, bolsters, jacks, wheel chocks, and everything else to secure a trailer onto a railcar. This continued to exist even after we started Trailer Train. This situation was extremely time consuming and labor intensive. We had a terrible time keeping track of equipment—chains were stolen, for example. Les Robinson, an engineer working for Gene Ryan, designed and built a working model of what became known as the ACF Trailer Hitch. This was a revolution in the handling of trailers. Gene Ryan patented this particular piece of equipment, but he gave it to American Car & Foundry (ACF) for one dollar. Several years later, Gene realized that he had given up a patent that was worth a considerable amount of money, so he sued ACF for a lot of money.
In addition, Newell was attending an Association of American Railroads (AAR) equipment demonstration in Chicago, and a company known as Travelift was participating. It had developed a crane for launching and removing boats from the water. To influence the railroads to consider using this crane, Travelift used its crane to pick up a Greyhound bus and moved it on the city street. When he saw this demonstration, Newell immediately associated the idea with picking up trailers and putting them on flatcars. He encouraged Travelift to send one of its units to our South Kearny, New Jersey, terminal. He also agreed that our engineers would work with Travelift engineers to develop a lifting mechanism that would lift trailers to and from a railcar.

I was sent to South Kearny to help develop this crane. The crane had lifting arms and other features. We put one of these machines in service in South Kearny, and this was the first crane that ever lifted a trailer on any railroad in the United States. After a few years, Travelift Company was sold to Drott Crane Company. However, the crane originated with Butch Baudwin of Sturgeon Bay, Wisconsin, who owned the Travelift Company.

Ronald E. Lawless
Retired President and CEO
Canadian National Railways and VIA Rail Canada

As we were transitioning through this process to get to intermodal, none of us ever thought of ourselves as founding fathers or early pioneers. For my part, the most significant thing that I was trying to do was to figure out how we were going to work around the hard-headed railroaders, who were married to boxcars, tonnage trains, hump yards, and commodity rates, and try to get them thinking about customers and why these customers wanted us to do something different. The truckers were having a field day as the railroads continued to provide what they produced and hoped that they could sell, and the customers were really moving away in droves. It was not easy internally, it was not pleasant, and it got downright ugly before we were able to make some fundamental changes and get everybody listening to the customers.

This conference can provide insight into future opportunities for intermodal cooperation, perhaps can break barriers to international trade, or can identify solutions to perceived problems. I think that is the essence of intermodalism. It is about optimism. It was before and it is still about thinking outside of the box, before that became a phrase for innovative leadership development and team-building exercises. It is about the big picture—the ability to imagine the whole picture rather than just a jumble of individual jigsaw pieces.
Looking back, it is really not surprising that people used rivers where they could to avoid hauling freight piece-by-piece over land. It required less blood, less sweat, and less tears. The ability to see the water as a means to an end rather than as a barrier involved a leap of faith and the development of appropriate technology.

The Vision of Intermodal

In looking back, roads, rails, and shipping lines were all built as separate modes of transportation. They were developed to serve specific needs, and frequently these were very local needs. The vision involved may have been great, but it was usually limited to as far as the eye could see and to what was needed then and what was needed where. In Canada, the early examples of intermodal in 1953 involved individuals and organizations trying to bridge transportation gaps in what they knew and understood. One was on the West Coast and the other, on the East Coast. Both involved narrow-gauge railways, one in Newfoundland and the other in the British Columbia jump-off to the White Pass and Yukon Railway.

Both railways had been designed and built to serve purely local needs. Those needs expanded as countries and commerce grew and as trade patterns shifted. The effort to change was focused on overcoming the barriers created by operating main line and narrow-gauge links with a body of water between the railheads. Since they could not afford to have standard-gauge track everywhere, people looked for its equivalent. These barriers were measured in time and money—usually lost time and lost money—in all their forms. The traffic that was operating there had to be unloaded from large freight cars and reloaded into smaller freight cars on the other side of the water. In both instances most of the traffic was inbound to remote locations with little or no backhaul.

The solution, almost a half-century ago, was to streamline the breakbulk operation and force out the costs associated with manually handling the traffic piece-by-piece. The pieces were effectively made larger. In some cases, they involved small main-line freight cars whose body could be transferred to and from a narrow-gauge wheel assembly at Newfoundland. Other solutions involved containers and the necessary equipment to move them between two very different railways.

In 1957, some of us were watching SeaLand as it commenced US coastal operations to Puerto Rico to streamline traffic handling. SeaLand used 35-foot containers, which was the maximum road transport length permitted there at that time. And in 1958, Matson Navigation Company started service between the US West Coast and Hawaii, using 24-foot containers, the maximum road transport length that was permitted. What,
at first glance, appeared to be local needs and local problems were, in fact, part of a broader traffic flow that cost much more than was necessary. Technology formed part of the solution as a means to an end, not the end itself.

The Impact of Containers

In Canada, in the late 1950s, we had a company called Steadman Industries Ltd. in Toronto, which provided 18-foot-truck-type containers with portable legs for domestic service and hydraulic lift capabilities for transfer of containers between road and rail. At that time, I was in charge of Canadian National Express. We began experimenting with these units in southwestern Ontario. We were very fortunate because we had tracks on all the ports, such as at Montreal, Vancouver, and Halifax, and that turned out to be a major plus, even though they were used to feed time-sensitive, labor-intensive, cross-Canada, cross-Pacific breakbulk shipping lines. Because of ice, the Port of Montreal actually hibernated every year between December and April.

During that time, Canadian-bound freight was off-loaded at the ice-free ports of Halifax and Saint John. The seasonal step-up in traffic was known as winter port operations. That changed with the arrival of the ice-strengthened ships and the ice breaking on the St. Lawrence River, which was officially for flood control but facilitated year-round port operations. During this period, Robby Stoker, chairman of Manchester Liners, was a true visionary. Manchester had served Canada with conventional ships, but he really saw the world changing. Although he had no idea how he was going to get the container beyond the waterfront, he did envision them being loaded into railcars, since we had a long history of handling highway trailers on piggyback on railway flatcars. Others just could not imagine the boxes traveling without their wheels. Nevertheless, this was the impetus for change, and the need for railways to serve their customers had finally won the day at Canadian National (CN).

The push clearly came from the customers. In this case the customers were the international shipping lines, who were struggling with their own demons of unproductive time and vast amounts of money spent on maintaining past processes. Ships were either at sea most of their productive life with the same cargo on board, which adds nothing to either the top or bottom line, or they were tied up at the dock, waiting for traffic to be unloaded or loaded one piece at a time. Containerization changed all that. Faster, specialized ships with smaller crews could be loaded and unloaded quicker. Even Japanese shipping lines came to Canada, and they came to Canada's East Coast initially. Because they did not trust the
railways to deliver traffic for them on the long haul, or cart it away so far out of their sight, they came to the East Coast, and Halifax was their port of call. Containers could be loaded directly onto container cars and dedicated trains, and we were able to move that traffic fast to its final destination. Ships, all of a sudden, were in port very briefly, and sailors, all of a sudden, had neither time nor opportunity for the traditional “woman in every port.”

The Environmental Benefits

Doublestack container trains improved productivity a great deal, and this is a cost and a benefit for customers that the railway industry paid for itself. Similar increases in truck sizes and weights, which heavily impacted the maintenance cost of roads and bridges, have been seen as an economic benefit to be paid for at the expense of other motorists and taxpayers through increased road congestion, pollution, and fuel consumption. The good news is that the fiscal pressure to balance government budgets and to reduce debt has made railway environmental benefits more valuable to society in the future than simple market forces ever did.

Public interest forces have made transportation a timely topic for North American politicians and public policy planners. They really have been slow to show their interest, unlike the Europeans, where transportation policy has been shaped by limited space, relatively short distances, and population density. The environmental benefits of the railways are quite impressive, and they are not probably given enough attention. Canadian railways, for example, get 375 miles to a gallon, with at least three times more fuel efficiency than big trucks. Simply put, rail freight in Canada accounts for less than 4 percent of greenhouse gas emissions in the transportation sector, while commercial trucks account for 23 percent. Canadian railways have reduced their greenhouse gas emissions of carbon dioxide by more than one-percent-per-year since 1990.

Increase Productivity and Reduce Costs

Freight customers follow the dollar. The railways have had to initiate projects that allow them to increase their productivity and reduce their costs. Excellent examples are the doublestack clearance projects financed by the Canadian railways through the Rockies, under the St. Clair River at Pointe Huron and under the Detroit River at Detroit-Windsor. These initiatives helped the Canadian railways become serious players in the continental and international markets for intermodal traffic. CN examined its whole rail system from coast to coast, and we either lowered
the track or raised bridge clearances to permit doublestack container train operations systemwide.

Perhaps not enough attention has been paid to the role of Customs. Once the responsibility of shipping lines to resolve with government agencies, Customs clearance has played a key role in speeding trans-border traffic trade between Canada and the United States. Canadian railroads have been the leaders in this, and we now are moving some million cars a year across the Canada-US border, and that number is growing. I think the US federal and state governments, in particular, are recognizing the potential for greater use of rail service to ease border congestion and to ease congestion well down the road from the international gateways.

It has been demonstrated that visionary companies do not always remain visionary. SeaLand held on to its 35-foot unit for far too long in noncompliance with the International Standards Organization (ISO) 40-foot standard. There was a reason for that, but those of us who have to move these containers felt that they were behind the times. We learned that the fundamental business issues associated with containerization went far beyond the ship-rail interchange.

Without intermodalism, rail would have been confined to hauling bulk commodities. I am more convinced that rail can, and should, get more of the domestic business that is available. The potential to achieve more still lies ahead. The key to success will be a better product delivered with better reliability that satisfies the customer. I challenge those who want to achieve success. Are your customers happy with the service that they are getting? Ask yourself this question. Then ask your customers. Are you hearing the same answer? North American railroads have made gains, the US more so than Canada in recent years.

Changes Needed

Unfortunately, many of Canada's public policies must change to improve modal competition. We have a problem with tax and transportation policies in Canada. We have a situation where split jurisdictions between federal and provincial governments contribute to a Canadian railway cost structure that is much higher than the competitors in North American trucking and in the US railroads.

CN and Canadian Pacific (CP) are both testing systems between Toronto and Montreal. CN has adopted the RoadRailer technology in its highly competitive, road-congested Montreal-Toronto corridor. The strengths and weaknesses of each mode will be put to the test. This balancing act is going to require greater public policy buy-in as road conges-
tion worsens, as pollution builds, as fuel increases in cost, and as fuel decreases in availability.

Perhaps public pressures will force bureaucrats and politicians to recognize that any additional money that they pour into roads and bridges to accommodate bigger and heavier trucks is money that cannot be spent in such areas as healthcare and education to benefit the public-at-large. Perhaps, too, there can be a greater exchange of knowledgeable and experienced leaders between government and industry so that each can better understand the abilities and limitations of the other's field and recognize the potential for quantum leaps by pooling their resources. The need to inform, to educate, to conduct needed research, and to facilitate discussions and decisions for the future is very real. We know how much the world has changed in the last forty years. Just imagine, for one moment, where transportation can take the world and how it can contribute to an improved standard of living for society in the next century.

Gordon A. Volkers
Consultant
Greenbrier Intermodal

I have certain credos. Number one is being a people person. I enjoy people, I enjoy what they can do, and I enjoy seeing people realize that they can do more than they thought they could do. Number two is that I accept change, and I sometimes glory it. I am not saying that I have never been frustrated by change, but I accept that change is a something that you should have to do and that you should want to do if you want to see change come about. I picked up two other credos a long time ago. One is Harrison's postulate, which says that for every action, there is at least one equal and opposite criticism. My final credo is Stuart's Law of Retroaction, which states that it is easier to get forgiveness than to ask permission.

The Baltimore and Ohio Railroad

I retired after thirty-four years of railroad service. I came up from the ground. I was going to the University of Toledo while crew calling and crew dispatching. I was always curious, so I began to find out where the crews were going. When they went to Cincinnati, I would hop the old steam engines on a day off and ride to see what Cincinnati was about. The crews enjoyed that because here was a crew dispatcher who woke them up and even rode with them on a road train operation. Nobody did that. I wanted to know what was going on in Cincinnati, why we ran the way we did, and where we were going with the freight. From that point
on, I worked like the devil. I spent five years in the railroad terminal operations, yard mastering and working as dock agent with the bulk operation. Management determined from an old accounting statement that I was the highest overtime man in the western region of the railroad.

Shortly after that I started working on the first installation of the Baltimore and Ohio Railroad (B&O) Datamatic 1000, the first computer system. I got to see all of the divisions of the B&O, but I was never attached to a division or terminal. Things happened quickly then. I went to Baltimore in 1959 and commuted between Baltimore and Toledo for three years. I got to run the Capital Limited—taking a jump seat and riding with the crew across the Alleghenies. They trusted me, and I trusted them, so they would let me take the train out of Martinsburg. This was against all kinds of rules, of course, but everybody in the railroad winks at the rules now and then. This added to my experience. Little did I know how much it was going to help.

Since I was the one who did some of the design work for car accounting on the computer, I helped implement the system. I went from that position to Jervis Langdon’s staff with three other guys. Langdon was the last president of the B&O Railroad and he wanted people from the B&O to help him. I helped form an industrial engineering department. We had a project that needed funding, so we decided to get funding from the Chesapeake and Ohio Railway (C&O), which was capital rich while the B&O was capital poor. We needed capital to get rid of 19 Civil War tunnels on the railroad between Cumberland, Maryland, and Cincinnati, Ohio. We were doing this because Langdon wanted to start running piggyback into St. Louis. He was fed up with Chicago.

I then went back into the operating department as superintendent of yard and train terminals. I had a “barrel of fun” deciding how we were going to operate when we closed down the railroad from Cumberland to Cincinnati for three months. We did it.

**Trailer Jets**

In 1960, we received the first delivery of our GP30 locomotives, the first of the new generation locomotives. The old B&O could run a train from Chicago with GP30 power without refueling, all the way to Jersey City by a torturous route. However, we were in competition with Roy Hayes. We had to do something to show that we were competitors, so I got the new locomotives assigned to these piggyback trains, because these trains seemed to be important. We did that, and to make the point, since I had the responsibility for trains and classifications of blocking, I submitted some changes to the train designation. Instead of calling the eastbound train even numbers and the westbound odd numbers, we called...
the fleet that we started the New York Trailer-Jet Eastbound and the Chicago Trailer-Jet Westbound. The crews all liked this because they felt that they were now as good as the passenger trains, because only passenger trains had names.

About 1963, I went to the C&O to put computers in the terminal operations. I spent three years putting in the first system in Chicago—the 360/30 IBM computer with Random Access. It had 64K. We air-conditioned the entire first floor because the computer needed it, and I decided to air-condition the whole yard office. People, as well as the computer, needed it. This was not on the “authorization for expenditure” (AFE). Remember, I said that one of my credos is do it first, then get permission. I was in “hot water” again by 1968 because again the “old guard” just was not accepting this kind of thing. I was banished to the position of assistant director of corporate planning for operational projects for the combined C&O/B&O. This was my first experience with MBAs. They were a great bunch of young men and women from the Wharton Finance School. We got involved in analysis of the railroad. In 1970, I went back to operations as director of operations for Chassis/C&O/B&O trailer service. And, this is where I received my first exposure into what railroad costs really were.

The Importance of Pricing

From my perspective, trailer service in intermodal is still, for the most part, a business within a business. I sat down with people in the research cost area because I wanted to find out more about trailer service costs. I learned the cost of trailer service, cars, trailers, ramping, and the cross-lake ferry. They told me what the costs were to handle a trailer or two trailers on a car from Milwaukee. All of the costs of that eastbound load were loaded up on the empty westbound move. The simple answer to this problem was to eliminate the westbound move. So, I called my good friend on the Milwaukee Railroad and asked what his balances were on trailers. They were not good, so I offered to take the empty trailers, load them with beer, and move them eastward. So we started out, and I went back to the cost man and asked how much it would cost for that route. He said that I could not do that. You can draw your own conclusion.

Another example involves Roy Hayes at Conrail. Because the Penn Central pricing and marketing people had put in some fantastic rates of 3-trailer and 10-trailer volume shipments at the Port of Baltimore, we did too. Then, in addition to that, Conrail and Roy told us they were going dock-on-rail in seventy-four hours. I knew we had to as well. But, we were on the west side of Baltimore, we had an old circus-style ramp, and
we would cross-town dray. We had a contract carrier giving us a pretty
good price on the ramp, the de-ramp, and the cross-town dray. If we
wanted to go into the terminal-rail-switching mode from the west side to
the east side of Baltimore, it was only three more days on the car to go to
a nine-car spot. Roy had 42 cars a day or something like that. I had
about 20 to 25 export cars. We flipped for the spot. I got it first and we
alternated after that, sharing that nine-car spot. He took a drenching on
his cost, and so did I. In addition to the little ramp and de-ramp crews
that we had, we now had an ILA crew of nine men and a chief clerk being
paid $100,000. The point is that the price never changed to the customer.

When I left the B&O in 1984, I was general manager of intermodal
marketing. I had worked that position for four years, reporting to Jerry
Krassenstein for three of those years. In the very first customer meeting
that we had after deregulation, he wowed customers by telling them
Chassis was going to go retail and that all the third-party guys would be
out of business in two or three years. He added that we were forming our
own truck line too. I signed an agreement with the Southern Pacific (SP)
for the B&O and we became a volume shipper on the SP for a minimum
yearly quota. I came back and gave it to Jerry and retired in 1984.

**Richard H. Steiner**

Transportation Management Consultant
Formerly Vice President, Executive Department, CSX Corporation

Intermodal is like the Brazilian economy, which has been predicted
to be the next great economy. But this never seems to happen. I have
heard similar predictions for intermodal over the last twenty years. Yes,
intermodal has experienced significant growth and service improvement.
But, intermodal still is not the dominant force that has been predicted.
For one thing, the competitive bar has just gotten a little higher. But this
is also a result of the railroad industry culture and environment. I will
discuss the cultural and environmental factors that have limited the
growth of intermodal, some of my experiences in intermodal, as well as
what we might expect to see in the future for intermodal.

**The Impact of the Railroad Industry Culture**

I would attribute the slowness of the railroads to grasp and capitalize
fully on intermodal technology to three fundamental factors. The first is
institutional constraints. Almost everybody thinks railroad management
is very rigid and very narrow in its thinking. This is true. However, there
are contributing factors that helped shape the culture. Railroad manage-
ment has evolved in an environment that conditions the way that it thinks
and the way that it views the world. First, until recently, the railroads were heavily regulated. Regulation had a lot to do with the mindset, the way management saw its business and its role. This has been further influenced by very rigid, unionized labor. In fact, labor relations have always had the helping hand of the US Congress. Labor agreements have locked in much of the methods of operation. It is a high-capital industry. The railroads turn capital at a rate of 0.6, which means that every dollar of revenue requires $1.66 of investment. In contrast, truckers have a capital ratio of about 2 to 1. They get double the revenue per year compared to what they have in assets. That makes a big difference in how fast direction can be changed. Finally, the underlying management culture has been militaristic, because the management system evolved when the industry reached its heyday after the Civil War and the major source of managers were former US Army officers.

The second factor is the changing marketplace in which the railroads have operated over the last fifty years. The fixed-asset base of the railroad industry makes dramatic change very difficult and has been a major contributor to the long-term decline in the railroad share of the total transportation market. This is a result of the continual change and accelerating pace of new technology. For example, much of the current growth in the economy is in information-based technology. How many carloads of bits and bytes have you seen?

Manufacturing has also undergone considerable change that affects required transportation services. This is also technology driven. Products are lighter, cheaper, and have less volume. We do not make steel now the way we did. Our cars are smaller and made with lighter weight materials. Look at the mix of goods we consumers buy. The goods are entirely different than they were fifty years ago. They tend to be higher-valued and we expect a higher level of customer service. The point is that the market has changed—bulk commodities and heavy industry, so important to the railroads, have become relatively less important in the economy.

Historically, the United States industrial base was heavily concentrated in the urban areas, while the hinterlands were basically agrarian. This has changed, as we are now more dispersed and more diversified. The newer products and new technologies do not require the scale of economies that the basic industries of the industrial revolution enjoyed. New communications and transportation technologies have facilitated this dispersed economic activity. Additionally, the highway system has aided this trend. These new patterns and economic trends no longer find traditional railroad shipment volumes and service levels meeting their needs.

Finally, in capital-intensive industries and mature manufacturing firms, management tends to be dominated by an operating focus. The
following two examples illustrate this observation. Xerox in the early 1980s had a think-tank in Silicon Valley developing new technology. It came up with a computer-operating system using a graphic interface that would be very easy to use. The system was designed to be intuitive. The system used little pictures (icons), which could be selected with a "mouse." The Xerox management committee, which was made up of the operating heads of the business units, approved all new capital expenditures. When the scientist from Silicon Valley requested funding to bring this new technology to market, he was told that "they were a Xerography company" and would not divert resources to this toy. Also, they were losing photocopier market-share to the Japanese and this took priority. Steve Jobs of Apple took the idea and look what happened—Macintosh, which set the stage for the mass market for personal computers (PCs). Xerox struggles today as PC technology is displacing the use of photocopiers.

In 1975, while I was with Flying Tigers, there was a new, upstart carrier, Federal Express. We started to see this carrier around a little. At that time, Tigers was the largest all-cargo carrier in the world. It did a competitive analysis. It was very simple. Federal Express flew Falcons, and the Tigers flew stretch DC-8s, which carried twenty-two times the amount of freight that could be put on a Falcon. The Tigers had a crew of three; Federal Express had a crew of two. Our Tiger crew was paid more, but with fuel efficiency and total payload, our costs were lower. In fact, the Federal Express unit costs were about $1.20 per pound and the Tigers were about $0.12 per pound. The point is that management decisions need to be evaluated in the context of the market and not on the supply side of the equation. This bias of looking primarily at operating characteristics is typical of the railroad industry. Flying Tigers has subsequently been absorbed into Federal Express.

**Flexi-Van**

In 1960, when I started with the New York Central (NYC), it offered Flexi-Van rather than TOFC intermodal service. Flexi-Van did not use conventional highway trailers but used specialized containers with an integrated chassis and a detachable bogie. These were carried on a center beam car with two turntables for side loading and unloading. With low wind resistance and a low center of gravity, Flexi-Van operated at passenger train speeds with seventeen-hour service between Chicago and New York. At the time, the most significant advantage, as perceived by New York Central management, was the limited interchange. The NYC did not have to be a member of Trailer Train, which was controlled by the
Pennsylvania Railroad. This was my first experience with intermodal. One of the more novel NYC Flexi-Van service offerings was a service from Rochester, New York, to New York City, interchanging freight with Flying Tigers for air distribution across the United States. As I recall, they had only one such shipment. But that was how Flying Tigers became associated with NYC and indirectly led to my eventual employment with Flying Tigers.

I left Flying Tigers and joined Conrail, coming back to the railroad industry and intermodal. Conrail was losing $1M per day. The charge of management was to become profitable and return to private-sector ownership. Intermodal was part of the solution because it had some unique characteristics. First, it was a growth business. Second, even though it was low margin business, the ratio of capital to revenue was better than traditional carload business, by two to one. Ten percent of our revenue was from intermodal, but only five percent of identifiable assets were attributed to intermodal. The ability to turn the equipment faster and better utilize assets gave intermodal significant economic advantages over carload service. The service characteristics were more in tune with the changes in the economy.

We organized to manage intermodal and boxcar business together. We were very interested in using intermodal as a substitution of service for carload movements that had low margins and traffic that was on the light density branch line. We used it as a tool. We saw intermodal as a way to improve total margin and also to continue to grow the revenue.

**SeaLand Acquisition**

After my next foray in the airfreight business with Emery, I joined CSX in September 1985 as senior vice president of sales and marketing. This assignment encompassed sales and marketing for merchandise traffic and included intermodal and motor-carrier operations. The day after Thanksgiving in 1985, I was the senior member of the CSX management team that met with a SeaLand delegation and started the discussion that lead to the acquisition by CSX of SeaLand. The opportunity was to leverage the stacktrain capability and volume of SeaLand to build, what we hoped would be, a national intermodal service network. More importantly, we wanted to build a separate, stand-alone business with intermodal. This is how CSX Intermodal came about. The SeaLand acquisition was a strategic decision, which never achieved its intended goal.
The Future of Intermodal

In thinking about the future, intermodal has been perceived to be a low-margin business relative to the more traditional rail traffics. It has been considered by the industry to be a marginal business to add revenue and use capacity. The airline passenger business may provide a good model as to where intermodal may evolve.

In the early days of its development, the passenger airlines needed more revenue and had excess capacity resulting from the rapid increase in aircraft speed and size. The answer was coach fares at lower prices to stimulate a broader market. The result was tremendous growth in the business. The investment decisions in capacity, configuration of aircraft, and routes became effectively driven by, what had once been considered, incremental business priced at less than full cost. The marginal became the core of the business. I think that intermodal is at the stage of becoming a core business and will do so in the future. Within the next year, intermodal will exceed coal in total revenue for the rail industry.

Another airline analogy, which may foretell future developments in intermodal, is the current approach that the airlines are taking toward travel agents. Commissions now have been cut so low that customers, who use travel agents, pay a surcharge because travel agents cannot generate adequate revenue on the commissions alone. Additionally, the air carriers are doing more direct marketing, especially via the Internet, to increase margins in this highly competitive market. What could this mean for intermodal marketing companies (IMCs)?

The development of supply chain management, another change caused by technology, adds another set of variables to the equation. The role of third-party logistics providers tends to reduce the identity of the carriers and also modal choice. Potentially, the service characteristics and service levels possible with intermodal could greatly enhance the fortunes of the railroads in the future. One of the important elements of intermodal is that the modal distinctions are put aside because intermodal is a process or system. We are talking basically about door-to-door service, and what happens in between really is not that relevant to the customer. We need to continue to think of intermodal development more along these terms.

Transcontinental rail mergers are just a question of time. This development will result in technological competition and head-to-head market pair competition. Think about an operation where you never interchange, can have unique equipment, unique handling, and unique services versus your competitor. With such a closed system, the rate of innovation will be determined by market demand and carrier ingenuity and not limited by the need to have uniformity and industry consensus.
In addition, I think that intermodal will become the dominant traffic for the remaining transcontinental carriers. The trend of bought-to-order goods will continue to increase the demand for higher transportation service levels. How many people now are ordering products by phone or over the Internet and having them delivered in one or two days by a parcel service? This same type of responsiveness is also becoming the norm in business-to-business transactions. We are going to have fewer steps in distribution, which says that the amount of scheduled, high-service package movements by intermodal will become in vogue. That will be a growing business.

I have one, final prediction through analogy. At Flying Tigers, UPS was 25 percent of our business. At Conrail and at CSX, UPS was about 25 percent of the intermodal business. UPS is now one of the largest air carriers in the world. Could this be an indication that UPS might one day vertically integrate into the railroad industry? It could be.

William E. Greenwood
President
The Zephyr Group

In late 1980, I successfully led a resistance among Burlington Northern (BN) operating people against having one of those low margin, unprofitable, lousy piggyback trains running across my division. Then, about a month later I was asked to head up a new business unit—managing the piggyback business. This was a nice promotion, and I very quickly accepted the challenge. I learned very early on, however, that this was a very risky business, full of obstacles. I also learned that no major railroad was managing piggyback as a business. There were just functional departments doing their “own piggyback thing.” The only people involved in a business unit approach were Peter Novas on the Illinois Central and John Gray at Western Pacific. I talked to them, and I also talked to Reggie Short at Norfolk Southern (NS). All three warned me to watch out for the people in my company who would aggressively resist the TOFC product and organization.

In February 1981, TOFC was deregulated, which meant that we had the opportunity for a real paradigm shift with dramatic opportunities for growth not only for the railroads but also for those providing services to the railroads as part of the intermodal chain. But, a lot of pain had to be encountered to make the right changes happen. It is possible that if the right things had not been done in the early 1980s, we might not have caught that wave and intermodal would still be a stepchild business.

Why is this important to understand, and why is it important to understand and talk about the changes that had to take place, the obstacles
encountered, and how we got here? It is important because we are, once again, at the same place we were in February 1981. The e-commerce applications to business-to-business and to everything that is going on now is about to strike transportation. E-commerce and technology will, again, change the whole way of thinking about this intermodal business and what it means for us. If we do not catch this wave, we will not be celebrating the success of intermodal twenty years from now. In order to catch this wave, however, we must have the right systems in place, the right people with the right skills, the right processes, the right strategies, the ability to execute these strategies, and the right kind of structure. All of this must be derived from understanding the market and understanding the customers today. At BN in 1981, we were very lucky and very fortunate to have a few things that came together, not by design, but by accident, so we were in a position to take advantage of this wave.

The Intermodal Beginnings at BN

Booz-Allen had done an organizational study about how to organize the railroad more effectively. The study included the recommendation that we create business units, and particularly one to manage the TOFC business. This proposal was approved by Richard Bressler, a new, non-railroad CEO who had just come into the company. It would probably not have been adopted by a traditional railroad CEO at the time. This was luck. It was also luck that I got the call, because I did not know anything about this business. I brought in a team of people who also did not know anything about this business—Mark Cane, Ken Hoepner, Bill DeWitt, Bill Berry, and Dave Burns, and they were all from operations. They were outstanding “out-of-the-box” thinkers.

This team saw intermodal as a truck; it did not see it as a railroad. This one single mindset made a huge difference in the way we behaved from then on. Because we thought that we were a truck business, we made a lot of different kinds of decisions. This team also saw intermodal, or TOFC, as a process of managing a large number of pieces that had to come together to provide seamless transportation for the customer. Truck is dock to dock. Truck is a lot simpler than these TOFC pieces. One of the very first things this team did was to ask what TOFC, or trailer-on-flat-car, meant to a customer. This question resulted in significant changes in our thinking about the business, and we dropped the terms TOFC and piggyback. Someone in the team came up with the term intermodal, adopting the term from somewhere I am sure. So we renamed our product intermodal. I remember one of the first speeches that I gave about this intermodal product at BN and where it was going. I said that I felt real good about it. At the end of the talk, someone at the back of the room raised his hand and said, “I’d like to ask a question.
Could you tell me just exactly what are these intermodals anyway?” So intermodal was an unfamiliar term. However, we called our product intermodal and we developed three strategies.

The Three Strategies of Intermodal

The three strategies that we developed for intermodal sustained themselves through the whole decade and guided everything that we did. The first strategy was to develop a network of high-volume intermodal hubs. At the time, we had 160 ramps. I think the whole country had about 1,700 ramps and only a few of them were mechanized. We reduced our ramps to 22 mechanized hubs, and we did it over the course of just a few years.

In addition, we recognized that these hubs were trucking terminals, not rail terminals. As such, we hired 22 people from the trucking industry to manage the terminals, and we also managed them with a profit and loss budget similar to what the trucking industry used. We recognized that we were partners with the trucking industry, creating a whole different kind of environment as a result. The result of these consolidated and professionally managed hubs was reduced costs, improved service, and improved relationships, which helped us execute all of our strategies successfully.

The second strategy was to develop a network of cost-effective equipment and dedicated intermodal trains that were market driven. When it came to trailers, we designed for highway compatibility so that customers would not have to plan their loads differently for intermodal trailers. For example, at this time everybody was still ordering 40-foot long, 8-foot wide trailers. Some were ordering 45-foot long trailers. Our first order was for 500 45-foot long, 8½-foot wide trailers because that was what the truckers were ordering. We took delivery on those trailers six months before they became legal. We never got a ticket, but these were the kinds of risks that we were willing to take. These trailers had Burlington Northern Innovative Intermodal Service on the side, they were green, and some are still in use.

In addition, there were many different kinds of flatcars from which to choose, but there was no data on any of them. We could not tell what a particular railcar would do for efficiency, for cost effectiveness, or for ride quality to reduce damage. So, we tested them ourselves at the Pueblo test track facility and in our northern corridor. We paid for the testing ourselves, and we really found out what kind of railcar equipment met our strategy of being highway compatible in terms of ride quality and rolling resistance.
Incidentally, out of this testing project came RoadRailer, and because we were dedicated to making RoadRailer work, we rescued RoadRailer out of the North American bankruptcy in Los Angeles and began operating RoadRailer trains. The first RoadRailer operations were between Detroit and St. Louis. We utilized the Grand Trunk to Chicago and then BN down to St. Louis. It was a very circuitous route and produced second-morning delivery. We eventually turned the operation over to Norfolk Southern because their shorter route provided for first-morning delivery.

A part of the second strategy was to have a system of dedicated intermodal trains. At this time there were only a couple of dedicated intermodal trains on BN. We knew that to achieve a smooth, damage-free ride and good service, we had to keep the intermodal cars with their trailers out of classification yards. The only way to do this was to have dedicated intermodal trains that operated in a way that did not allow them to mix with coal, grains, etc.

Our third strategy was to develop customized marketing packages. This was the driver for our other two strategies. We recognized that there were multiple segments in this intermodal business. We started with just 2 segments that we marketed to, domestic and international. We wound up with about 22 segments. We marketed to each one of these 22 segments differently and went after business in each one. We focused on streamlining and simplifying everything that we did.

When I first went into intermodal, I could not understand what the pricing people were telling me. They were talking about mixing and matching, geographic territories, ten-trailer rates and two-trailer rates. It just did not make sense to me. The first customer I called on after being in the business two weeks was R. C. Matney, and I asked him how he understood what rate we charged. He told me that his business exists because the railroads were so complicated. He suggested that I give a single-trailer, roundtrip rate for a few lanes, and he would bring on all the business in the world. One week later we put this simple, single-trailer rate into place, it created quite a stir, but it really worked.

This strategy of simplifying and streamlining everything was something that we wanted to do to make it easier for our customers to do business with us. We focused on how to channel ourselves into the marketplace. The key was to learn how to be a partner with the people who already controlled the business. There were shippers' agents, freight forwarders, freight traffic associations, and trucking companies. We did not want to take control away from them; we wanted to be a partner so that we could learn everything about that channel and market to it better. Our issue was whether we wanted to be more of a variable cost or a fixed-cost structure. We did not want to take on all kinds of additional fixed
cost. We felt that we could get to the issue by working with our customers as partners. We did a lot of market research early on. We did focus groups and market surveys. The research showed us what we had to do to develop the right kind of product to be successful. We went from margin pricing to value-based pricing and to balance pricing, which is a combination of the two. This made a huge difference.

These strategies lasted for over a decade. One of the things that helped make them work was a pervasive and successful communication effort. Every morning, we spent about twenty or thirty minutes meeting to discuss how we were moving the business forward and whether we were in line with the strategy. We had certain things that we reported on. For example, one morning the equipment person reported that his flow had shifted and he was running 10 empties a day from Memphis, Tennessee, to Fargo, North Dakota. The market manager explained that he had a price at Fargo for 10 trailers a day of loaded material going to Seattle, Washington, but the price was based on utilizing the excess capacity that we had at Fargo. If that excess capacity disappeared, he could not support the cost of moving the empties. The empty move order was immediately cancelled. We focused on these kinds of things constantly. We communicated the strategies all the time inside the organization.

We grew the business from $200 M in 1980 to $550 M in 1985. We went from being number eight in the industry in volume to number one by the end of the decade. This should not have happened. We did not have the production base or the consumption base in the BN franchise to do that well. I think we did well because of the strategies that were in place and the ability to execute them. If the organizational structure that I described had not been in place, we never would have been able to carry it off. That was a very, very important piece of our success.

The Obstacles to Intermodal

The obstacles that we encountered are still present today, and they have to be watched in case changes need to be made. The obstacles that we had were all internal. When you change structure, when you change systems, when you change skills, and when you change people in one part of a company, there tends to be nothing but open hostility from the rest of the organization. Most of the railroads were still protective of their functions.

The operating departments wanted the hub terminals under their control and saw hub terminals as a place where flatcars got switched. But, we saw hub terminals as a place where the highway met the railroad, as a trucking operation not a rail operation. The operating department did not like dedicated trains because they took away a lot of their ability.
and flexibility to fill trains with merchandise, grain, and some other things.

The purchasing department was furious about the fact that we opened ourselves up to all the vendors. We invited all the vendors, the car builders and the trailer builders, to talk to us. We wanted to learn what they knew, and we wanted them to know where we were going so that they could start designing equipment to meet our requirements. It was a great relationship, but they had to meet us in secret because our purchasing department would punish them if they knew that they were going to meet with us.

Measurements were inappropriate for the business that we were in. The cost system was based on complicated algorithms derived from ICC Form A. It had nothing to do with our activity of trying to run our intermodal trains and our whole intermodal system. The systems related to the railcars but not to the trailers. The information systems could tell us everything we wanted to know about the flatcar but nothing about the trailer. We solved these issues because we had "out-of-the-box" thinkers who were risk takers. The company had a policy prohibiting personal computers (PCs) outside the information systems department. We bought 12 PCs out of the trunk of a car on the black market in Dallas, Texas. We paid for these IBM clones by creating an invoice for drayage from the Minneapolis, Minnesota, hub. While we were trying to grow an intermodal organization and adding people, Burlington Northern was downsizing from 60,000 to 30,000 people. Imagine the hostility that was created when we would successfully make an argument for adding people or for sometimes getting people without authority.

My superiors were, at best, skeptical, but, for the most part, they were hostile to what we were trying to do. One time my boss gathered some of the intermodal people together and told them that they had to help him stop me from going too far, too fast, and getting us all fired! He felt that intermodal was not supposed to take business away from everybody else. Intermodal was not taking business away from everybody else, but that is the way he saw it.

We survived these internal obstacles because we had great teamwork in the organization, because we had great strategies that we were all commonly working toward, because we had a vision, because we were willing risk takers, and because we were getting performance results from our vendors, from our customers, and from the press. We were continuing to innovate because we were continually learning from people. We would talk to outsiders, like the Phil Yeagers and the R.C. Matneys of the world, about what was going on in the marketplace. We learned from them. We would talk to Jim Jimenez about how to do creative financing to get more equipment, because the railroad could not give us capital. We talked to
John Gray about terminals, and he would give us all kinds of ideas on terminal operations.

**E-Commerce and Intermodalism**

I tell this story about the early 1980s obstacles to intermodal—about what had to be done, about what had to be changed, and about how the paradigm had to shift—because we are again at the same place today. There are software companies and some transportation companies that are designing e-commerce transportation exchanges. The subscribers to these e-commerce exchanges will be able to have a shipper post their demand for loads between point A and point B. Transportation companies will post their available capacity and price. In this exchange, we will be able to tell the credit worthiness of both parties, their history of damage, and their history of paying claims. We will be able to track immediately a carrier's history on service performance in that particular corridor. The exchanges will do the invoicing and the collection by electronic funds transfer. The list goes on and on and on.

The trucking companies and the railroads that embrace these technological changes and try to be leaders will have a profitable role for the future. The ones that do not are going to be reduced to being a commodity that can only compete with price. The only question is who is going to capture the value from what will be created. The business-to-business structure in transportation will bring a tremendous cost reduction in the administrative processes along with service improvements. Someone will be extracting a lot of value for providing this new efficiency.

In 2020, what industry will the new intermodal founding fathers come from? Will they be from software companies, will they be from 3PLs, will they be from railroads, or will they be from trucking companies? I do not know the answer. The challenge, as well as the dilemma, for the people who are now in railroad intermodal departments is whether or not to lead the way by making the necessary changes inside their companies. Just like in the early 1980s, they will run a risk either way. Doing the right things exposes intermodal officers to internal risks and doing nothing exposes them and their companies to being out performed in the market place. It seems that once again history is repeating itself.
Concluding Remarks

Thomas L. Finkbiner

The intermodal business is at an inflection point. The Intermodal Founding Fathers of North America Conference presentations have been about the transportation heroes who have overcome a lot of difficulty to get the intermodal industry to where it is today, in 1999. Intermodal is an incredible accomplishment. As we have learned, intermodal will surpass coal as the leading revenue generator in the railroad industry in 1999.

When I say that the intermodal industry is at an inflection point, I will also tell you that the skills, the heroism, the tenacity, and the awkwardness that got the business to this level in 1999 will not take it to the next level. *It will not take it to the next level.* You will not drive it beyond where it is now. Intermodal service needs to be better. The railroads need to provide service. And, there is no excess capacity.

The railroad business has fundamentally changed. So, we find ourselves in a business that is not incremental anymore. In order to use the capacity that we have wisely, we are going to have to be smarter. Hard work, which is always of value, is a good thing, and hard work is what all of the Founding Fathers did, but all of the work and all of the long hours will not produce results anymore.

We are going to have to be smarter about the way that we do things. We are going to have to be more sophisticated. In order to get the railroad business to the next level and the intermodal business to the next level, we are going to have to use discipline and to use science, and, I think, that is what ITI is all about and that is why I am proud to be part of ITI. For those who are just starting in ITI, the future is yours, and I think what has been said at this conference is that intermodal is still teetering. Intermodal could go either way, and it is up to you, the next generation of transportation leaders, to see which way it goes. Thank you.
VI. INTERMODAL FOUNDING FATHERS ORAL HISTORY PROGRAM

The Intermodal Founding Fathers Oral History Program preserves the rich history of the intermodal freight transportation industry for posterity, research, and educational purposes. During the last 40 years, revolutionary changes have impacted the movement of freight and precipitated a restructuring of North America’s freight transportation system.

The University of Denver Intermodal Transportation Institute (ITI) and the ITI Board of Directors hosted the Intermodal Founding Fathers of North America Conference on 27-29 July 1999. This historic conference provided the backdrop for more than 40 industry pioneers to be interviewed as a part of this important oral history program. In all likelihood, there will never be another opportunity like this event to record the history of the intermodal freight movement in the words of those who created it.

The Intermodal Founding Fathers Oral History Program will create a unique record of the legacy of these trailblazing industry leaders who had such a significant impact on the transportation system of today. The project has lasting value to the transportation industry, students, and scholars by providing the opportunity to view and read about the wisdom and vision of those early pioneers, stated in their own words. The timeliness of this project highlights the importance of preserving historical records and materials to ensure that those who wish to may study history and hopefully not “be doomed to repeat it.”

The Intermodal Founding Fathers Oral History Program began with the Intermodal Founding Fathers of North America Conference. However, ITI is taking the lead on this project to record and preserve the history of this industry for three main reasons.

First, ITI was established in order to educate the next generations of transportation leaders. To that end, it has developed an innovative, Master of Science in Intermodal Transportation Systems program. This graduate program is unique and focuses on developing and operating intermodal systems, including e-commerce and global business applications. It is truly an interdisciplinary program with a broader focus than the traditional fields of logistics, business, or engineering. This rigorous grad-
graduate program requires commensurate educational materials. Since there are few materials available, ITI seeks to collect the primary source material directly from the founders of the industry. Second, several intermodal pioneers have already passed on. Others cannot remember their experiences as well as they might have even a few years ago. Literally every day, the rich and unique heritage of this industry is being lost. And finally, ITI seeks to preserve this historical record because there is no other effort underway.

ITI is committed to promoting an intermodal transportation system through its education programs and research projects. In addition to recognizing the necessity to gather and preserve the historical record of the intermodal founding fathers, ITI, in collaboration with the National Freight Transportation Library, Inc., is already preserving historically significant transportation collections, such as the 60,000-volume historical library of the former Interstate Commerce Commission and the 3,500-volume US Railway Association Collection.

The oral history project recorded, in video- and audiotaped interviews, the more than 40 individuals at the conference who have contributed to the development of the intermodal freight system. Currently, the interviews are being transcribed and edited, and they will be deposited in the ITI Transportation Library Collections, which are managed and maintained by Penrose Library at the University of Denver. Transcriptions will also be available on the ITI Website: www.du.edu/transportation.

Subsequent phases of this project will expand the scope of oral history interviews. In addition, the information in this collection will be used to develop educational materials for the classroom and will provide resources and data for research projects. The collection will be available to other researchers and scholars with legitimate historical or educational objectives as well as to the industry.
INTERMODAL FOUNDING FATHERS

ORAL HISTORY PROGRAM

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VII. INTERMODAL FOUNDING FATHERS CLASS OF 1999

The following distinguished intermodal freight industry leaders are Honorary Fellows of the Intermodal Transportation Institute (ITI). They accepted the invitation to become ITI Honorary Fellows and to participate in the Intermodal Founding Fathers Oral History Program, which began with the Intermodal Founding Fathers of North America Conference on 27-29 July 1999 in Snowmass Village at Aspen. Most were able to attend the conference and be interviewed. The oral history interviews conducted are currently being transcribed and will be available to the public to read on the ITI Website: www.du.edu/transportation. The audio- and videotapes of these intermodal industry pioneers are on deposit in the ITI Intermodal Oral History Program Collection at Penrose Library at the University of Denver.

**John C. Allen** is president of Allen Associates, a consulting firm that specializes in general management, transportation, and distribution in the field of intermodal. Previously, he was president of Trail-er-Train, Inc., one of the industry’s oldest shippers’ agents and consolidators. Allen is a past officer and director of the Traffic Club of Chicago and past director and chairman of the Intermodal Transportation Committee for the National Industrial Transportation League.

![John C. Allen](image)

**Raymond F. Ascencio** is president of TransMex/USA, Inc. He began his career in the transportation industry as a clerk for the Pennsylvania Railroad. Later, he held positions as president of Land & Rail and executive vice president and chief operating officer at Railbridge Corporation. Ascencio worked with the National Mexican Railroad to locate and build its first intermodal terminals and run the first double-stack train into Mexico. He was awarded the Silver King Pin in 1978.

![Raymond F. Ascencio](image)
Brooks A. Bentz is a senior manager at Andersen Consulting, where he has worked since 1993. Bentz has a long history in intermodal transportation, beginning as a brakeman with Penn Central in 1969. He subsequently held a wide range of positions, including vice president and chief executive officer with companies such as Boston & Maine, Burlington Northern, and Trans-Star Trucking. His varied accomplishments include conceiving and developing a new design for the domestic container business at BN America.

Fredrick E. Boone is vice president of Heavy Machines, Inc., where he oversees intermodal sales and marketing. Prior to joining Heavy Machines in 1974, he worked for Federal Compress and Warehouse in national sales. Boone was on the board of directors of the Intermodal Association of North America from 1992 to 1994. He served in the United States Marine Corps from 1949 to 1970, where he was involved in communications and intelligence, retiring with the rank of major.

Michael J. Bruns is the founder and president of Comtrak Logistics in Memphis, Tennessee. Prior to establishing Comtrak Logistics in 1983, Bruns worked for Spector Freight System and was vice president of operations at Intermodal Transportation. He is currently chairman of the board of the Intermodal Association of North America, and he is former chairman of the board of the American Trucking Association Intermodal Council.
Curtis D. Buford retired in 1983 as chairman of the board of Trailer Train Company, now known as TTX Company. In addition, he served as president, director, and CEO of Trailer Train from 1969 to 1982. His career in transportation began in 1946 with the New York Central Railroad where he worked in various operating, marketing, and management positions until 1959. He also served as vice president of operations and maintenance of the Association of American Railroads from 1959 to 1964.

Charles T. Connors is president and chief operating officer of H&M International Transportation, Inc., an intermodal transportation company providing a network of services throughout the United States. Prior to H&M, he was with Maersk Lines from 1959 to 1970 in various positions, including assistant superintendent at Pier 11 in Brooklyn. From 1970 to 1976, he was with Peak Transportation as an owner and vice president of operations and sales, where he was responsible for trucking, distribution, and sales.

James G. Cunningham is president and chief executive officer of PTL Trucking in Conshohocken, Pennsylvania, where he oversees all intermodal trucking operations. He has been instrumental in the development and emergence of intermodalism, specifically in the area of rail/truck transport, through his work at the Pennsylvania Railroad, Erie-Lackwanna Railroad, Consolidated Freightways, REA Express, Conrail, and Gateway Transportation. Cunningham is also recognized as one of the three founders of the Intermodal Transportation Association and was its first president.
David J. DeBoer is president of Greenbrier Intermodal. Previously, he held positions with New York Central Railroad, Trans World Airlines, and the Office of Policy and Economics of the Federal Railroad Administration in Washington, DC, where he spent six years as director. After serving in the Rail Service Planning Office, he joined Southern Pacific Railroad, advancing to assistant vice president of intermodal operations before leaving the company to help establish Greenbrier Intermodal in 1984.

Edward W. Frey retired from his position as assistant to the vice president of operations/intermodal at the Atchison, Topeka and Santa Fe Railroad Company (AT&SF) in 1985, after forty-four years with the Santa Fe. He contributed to the growth of the piggyback traffic on the Santa Fe as the superintendent of the Santa Fe Trail Transportation Company, the truck subsidiary. He can recall that the first purchase of overhead cranes was in 1965. Frey received the Silver King Pin Award in 1985.

Aaron J. Gellman is director of the Transportation Center at Northwestern University. He is also a professor in the School of Management at Northwestern. Gellman is the founder and former president of Gellman Research Associates, Inc. (GRA). Before founding GRA, Gellman was a vice president of the Budd Company, where he was responsible for Budd's planning activities. Prior to joining Budd, he was vice president for planning at North American Car Corporation. Gellman received the 1995 Salzberg Honorary Medallion for Outstanding Achievement in the Field of Transportation.
Nolan R. Gimpel is vice president and general manager of Stevedoring Services of America. Previously, Gimpel was chief executive officer of the Port of Oakland, where he managed port and airport operations. Gimpel began his career as a ships officer for various companies in the late 1960s. From 1971 to 1978, Gimpel held positions as storage supervisor, port manager, and vice president of operations at SeaTrain. Between 1978 and 1989, Gimpel held various senior management positions at American President Lines, including president of American President Intermodal.

John J. Gray is president of Rail Management Services. From 1983 to 1997, he was president of Pacific Rail Services. Gray was a senior vice president at Western Pacific Railroad from 1979 to 1983, prior to which he was president of Western Pacific Transport. Gray is currently the mayor of Ross, California.

William E. Greenwood is president of The Zephyr Group, a Texas-based consulting and investment firm. From 1963 to 1994, he worked at Burlington Northern Railroad, retiring as chief operating officer after serving as executive vice president of marketing and sales and vice president of intermodal transportation. Greenwood received the Silver King Pin award in 1992 and was named "Person of the Year" by Transportation Clubs International in 1994.
Michael R. Haverty, president and chief executive officer of the Kansas City Southern Railway Company, has been a brakeman for the Missouri Pacific Railroad Company, president and chief operating officer of the Atchison, Topeka and Santa Fe Railway, and chairman and chief executive officer of the Haverty Corporation. His achievements include development of a partnership between railroad and truckload carriers, creation of an intermodal corridor between Dallas, Texas, and Meridian, Mississippi, and development of the primary intermodal route linking the United States and Mexico.

Roy L. Hayes retired as president of the Roy L. Hayes Company, a transportation consulting firm, in 1984. Previously, he held positions as assistant vice president of the intermodal division at Conrail, assistant vice president of the intermodal division at Penn Central Railroad, and executive vice president and general manager of Excelsior Truck Leasing Company. Hayes received the Silver King Pin award from the National Railroad Piggyback Association in 1979.

E.H. Howard has over 40 years of experience in the intermodal transportation industry. In 1958 he was project manager for General Motors Diesel Limited on the "Portager" advanced container/piggyback car. In 1971 he served as president of Halterm Limited, a container terminal operator in Halifax, Nova Scotia, and in 1985, president of Alberta Intermodal Services Limited, a third-party operator. In 1994 he was a Containerization member of the World Bank/China team and in 1998, the CIDA/Transmode Sinotrans Shandong team.
William B. Hubbard graduated from the US Merchant Marine Academy in 1950 and served in the US Navy before becoming a management trainee with McLean Trucking Company. From 1955 to 1976 he was with Sea Land Service in various capacities from salesman to vice president for Europe and was present when the first container vessel arrived in Houston, Texas, in 1956. He is presently developing and promoting an Efficient Marine/Rail Intermodal Interface System, known as an Agile Port System.


Robert S. Ingram is currently serving as a consultant to C.H. Robinson Company, after recently retiring from his position as vice president of transportation of C.H. Robinson in Eden Prairie, Minnesota. He spent the early part of his career (1962-1969) in the U.S. Air Force, after which he held numerous positions in the transportation industry with Penn Central Transportation Company, the Norfolk and Western Railroad, Sea Land Service, the Soo Line Railroad, and Burlington Northern Railroad.
| Charles F. Kaye | is chairman of Transportation Investments, Inc., a Boston-based investment and asset management firm. Kaye started his career at the Massachusetts Institute of Technology, working on a system to track enemy aircraft and missiles. He went on to become chairman, president, and chief executive officer of XTRA Corporation, the world's largest owner/lessor of truck trailers and containers. In 1981, Kaye received the Association of American Railroads Silver King Pin Award for his many contributions to the intermodal industry. |
| Peter I. Keller | is chief executive officer of Automated Terminal Systems in Washington, DC, a principal at Pik & Associates in Montreal, Canada, and a senior advisor and consultant on international containership management for R.K. Johns & Associates in New York. Previously, Keller served as chief executive officer of The Cast Group Limited, a transatlantic intermodal container carrier, which he led from near collapse in 1993 to a successful turnaround and sale to Canadian Pacific Limited in 1995. |
| Tim Lake, Sr. | is an intermodal transportation consultant and currently president of Intermodal Support Services in Deland, Florida. He started in transportation with a small, local trucking firm as an office assistant and warehouseman and continued with large LTL motor carriers in middle management operations. In the early 1960s, he became associated with Rail Trailer, Inc., and listened to Eugene Ryan, the owner of Rail Trailer and co-founder of Trailer Train, tell of his visions for the future of rail intermodal. |
John J. (Jack) Lanigan, Sr., is chairman of Mi-Jack Products, Inc. He worked as an electrician, foreman of electricians, electrical engineer, and superintendent of electrical engineers prior to founding Mi-Jack Products in 1955. His major contribution to the intermodal freight industry has been designing and manufacturing intermodal equipment, such as the 360° revolving crane and the improved overhead Rubber Tire Gantry crane. Mi-Jack Products also designs and operates intermodal terminals throughout the world.

Ronald E. Lawless is president of Bishop’s University in Lennoxville, Quebec and a governor of Concordia University in Montreal, Quebec. He is retired from his dual positions as president and chief executive officer of Canadian National Railways (CN) and VIA Rail Canada. Lawless began his career in transportation as a junior clerk with CN’s express department in 1941. Lawless received Canada’s “Transportation Man of the Year” award in 1986 and the National Transportation Week Quebec Chapter Achievement Award in 1990.

Henry V. (Hank) Logan is senior vice president of fleet management with TTX Company. He spent much of his career in the financial department, progressing through the corporate accounting and tax areas to become controller, director of financial planning and, in 1985, vice president and chief financial officer. During the past several years, Logan has managed a spending program of more than $3 billion to expand and reconfigure TTX’s car fleets to meet the changing requirements of the intermodal marketplace.
George Lowman is the managing director of communications for Chicago-based GATX Corporation. Since joining GATX in 1973, he has served variously as manager of strategic planning, manager of public relations, and director of communications. Prior to his tenure at GATX, Lowman held positions as a corporate planning analyst at USG Corporation, a chemist for United Technologies, and a research associate at Yale University. GATX is a $6 billion service-based asset company focusing on transportation and distribution equipment.

Robert H. Maisch, Sr. retired as vice president of operations from United Parcel Service, where he worked from 1949 to 1984. He describes his major contributions as working with Seaboard Coastline in developing the use of road-railer trailers on trains and working with Berwick Car Manufacturing to build six dolly-type cars with 18” rail wheels. Maisch received the Silver King Pin award from the National Piggyback Association in 1984.

R. C. Matney is chairman and chief executive officer of Mark VII, Inc. Founded in 1989, Mark VII specializes in global transportation and logistics solutions, providing domestic and international transportation services via truck, rail, air, and ocean. Previously, Matney was president of American President Domestic, where he was in charge of the North American retail business unit.
Gordon C. Miller was chairman of Star Transportation Services, Inc., and currently works as a consultant for the transportation industry. Among his many innovations within the intermodal industry, he is known for developing the first circus-style piggyback ramp with catwalks, as well as pioneering the international intermodal industry in Central and South America, the Caribbean, Saudi Arabia, Alaska, Puerto Rico, Cuba, and Venezuela. The Illinois Transportation Association recently recognized him as one of the “Millennium’s Top 100 Influential Executives of the Trucking Industry.”

Stephen C. Nieman is a partner in The Tioga Group, a management consulting firm for the intermodal industry. He started his intermodal career in 1963 as director of transportation for Consolidated Freightways. Recent positions have included group vice president at Burlington Northern (BN) and vice president of planning and marketing at American President. While at BN, Nieman was the first “trucker” to head up an intermodal unit at a railroad, and he created three new domestic intermodal services for the company.

A. Daniel O’Neal is chairman of PowerTech Toolworks, Inc., a specialized computer consulting and training company. He is a board member of The Greenbrier Companies and chairman of Autostack, a Greenbrier product enabling the transport of several automobiles in one container. O’Neal was chairman of the Interstate Commerce Commission (ICC) in Washington, DC from 1977 to 1980, during which time the ICC initiated the federal government’s deregulation of motor carriers and railroads.
Donald C. Orris is chairman and chief executive officer of Pacer International, Inc. Orris has 25 years of senior management experience in rail, ocean, and truck transportation and has made several key contributions to the development of intermodalism. As president of Southern Pacific Railroad from 1995 to 1996, Orris helped expand the company's intermodal terminal capabilities. As president and chief executive officer of American President Domestic Company from 1987 to 1990, Orris was instrumental in turning it into the largest intermodal operator in North America.

Lester M. Passa is president and chief executive officer of CSX Intermodal. He left Conrail and joined CSX Transportation in July 1997 and served as vice president-commerical integration until November 1997, when he was named to his current position. During his nearly 20 years with Conrail, he held a series of increasingly important planning, logistics, and commercial positions, serving as assistant vice president-strategic planning, vice president-logistics and corporate strategy, and senior vice president-automotive service group.

Hugh L. Randall is vice president and a member of the board of directors of Mercer Management Consulting. As such, he is responsible for the firm's worldwide consulting activities with railways, intermodal operations, airlines, trucking companies, maritime shipping companies, and freight forwarders. Prior to joining Mercer in 1991, Randall's positions included senior vice president and managing director of CSX/Sea-Land Logistics, vice president of Booz Allen & Hamilton, and executive vice president of Ryder/PIE Nationwide.
Frank Richter has lived railroad transportation intensively since the end of World War II and has enthusiastically reported the remarkable course of the railroads as they pursued in developing the unique technologies that are intermodal. He started *Modern Railroads* with David R. Watson and then became publisher of *Progressive Railroading* until selling the company in 1991. He received the 1994 Silver Kingpin Award for "Excellence in Intermodalism" and continues to write his monthly "Comment" in *Progressive Railroading*.

Charles L. (Chuck) Schultz is executive vice president and chief marketing officer of Burlington Northern Santa Fe Corporation. Joining the Santa Fe Railway in 1970, he worked in various industrial engineering and mechanical positions, moving to vice president of management information systems in 1989 and to vice president of intermodal in 1994. He was appointed to the same position for the Burlington Northern Santa Fe Corporation in 1995. He also serves as vice chairman of the board of the Intermodal Association of North America.

J. Paul Seehaver is executive director of Logistics Programs, where he oversees a network of 22 mail transport-equipment processing and redistribution facilities throughout the nation. Seehaver joined the U.S. Postal Service in 1973. By the late 1980s, he was supervising an overhaul of the agency's intermodal service, which resulted in dramatic changes such as run-through intermodal service between Conrail and the Santa Fe line in Chicago. In 1990, Seehaver was named "Intermodalist of the Year" by Intermodal Age International.
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<th>Name</th>
<th>Position and Career History</th>
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<tbody>
<tr>
<td>Jim Shattuck</td>
<td>Vice chairman of Union Pacific Railroad, held positions as executive vice president of marketing and sales, president of Union Pacific Distribution Services. Began his career in 1963 with Southern Pacific Railroad, moved to Missouri Pacific Railroad in 1970, where he was responsible for the development and implementation of the Transportation Control System. Elected president and chief executive officer of Union Pacific Technologies in 1987.</td>
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<tr>
<td>Walter Shea</td>
<td>Associated with International Brotherhood of Teamsters (IBT) for 38 years, retiring in 1997 as an international vice president. Served under five Teamster presidents, from James R. Hoffa to William McCarthy. Served on the National Master Freight Union Negotiating Committee. Also served on the Board of Directors of the Panama Canal Commission for 9 years in the Reagan, Bush, and Clinton Administrations.</td>
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<tr>
<td>Maury S. Sheer</td>
<td>Chairman of the board of Fort Pitt Consolidators, Inc., which he founded in 1964. Began his career as a yard clerk at the Pennsylvania Railroad in 1939. From 1946 to 1964, was president of Sheer Cartage Company, a trucking and warehousing firm. Founded the National Association of Shippers' Agents.</td>
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</tbody>
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Reginald B. Short retired in 1990 from his position as regional sales manager/Western Region of Norfolk Southern Railroad in San Francisco. He worked in the railroad industry for 45 years and is considered one of the original pioneers of piggyback transportation. Short has been credited with many advances in the intermodal industry, and he foresaw intermodal trends toward containerization, interchange with motor carriers, 45-foot trailers, and dedicated trains. In 1983, Short received the Silver King Pin award of the National Railroad Intermodal Association.

John W. Snow is chairman, president, and chief executive officer of CSX Corporation in Richmond, Virginia. In the mid-1970s, he held positions as assistant secretary for governmental affairs and deputy undersecretary at the U.S. Department of Transportation. Snow received the Secretary’s Outstanding Achievement Award from the U.S. Department of Transportation, was a member of President Ford’s Domestic Policy Review Group, and served as vice chairman of the Transportation Transition Team appointed by President-elect Reagan.

Richard H. Steiner is a Richmond, Virginia-based management consultant specializing in transportation-related activities. His previous positions include vice president of the executive department at CSX Corporation in Richmond, president and general manager of CSX Commercial Services in Jacksonville, Florida, and senior vice president of CSX Transportation in Baltimore, Maryland. Steiner was also senior vice president of marketing and service at Emery Air Freight and vice president of marketing at Consolidated Rail Corporation in Philadelphia, Pennsylvania.
Andy Hok Fan Sze is president and chief executive officer of Clipper Exxpress Company, an intermodal marketing firm that is a leader in combining truck, rail, and marine transport to lower shipping costs. In 1983, Clipper Exxpress pioneered a low-cost intermodal transport service to ship frozen products to the Midwest and the East Coast. Sze is a certified member and past director of the American Society of Transportation & Logistics and was a licensed practitioner before the Interstate Commerce Commission.

Marty Tendler is vice president and director of transportation for the Ralston Purina Company in St. Louis, Missouri. He joined Ralston Purina in 1974 and has worked for the company in Davenport, Iowa, Oklahoma City, Oklahoma, and Memphis, Tennessee. Tendler is a member of the National Industrial Transportation League, where he is on the board of directors and is chairman of the Highway Committee. He is also a member of the National Freight Transportation Association.

Martin Tuchman is the co-founder, chairman and chief executive officer of Interpool, Inc., one of the world’s top three international container and leasing companies. Tuchman began work at Railway Express Agency in 1962 as an automotive engineer. While there, he worked for the American National Standards Institute, where he helped develop the current standard for intermodal containers and chassis. In 1987, he formed Trac Lease and developed it into the second-largest chassis-leasing company in the United States.
D. P. (Dave) Valentine was vice president of Rail-Tex from 1987 to 1998. During his tenure there, he headed up the acquisition group and assisted the company in becoming a leading U.S. short-line operator, growing from one short-line in 1984 to more than 25 by 1996. Valentine spent 22 years with the Milwaukee Railroad as general superintendent-transportation, six years with Consolidated Freightways as vice president and general manager, and 16 years with the Santa Fe Railway as general manager.

Gordon A. Volkers is a consultant for Greenbrier Intermodal in the area of double-stack car technology. He was previously vice president of Aries Intermodal, Inc. and general manager of intermodal marketing for CSX Corporation, where he worked for 20 years. Volkers received the Silver King Pin award from the National Railroad Intermodal Association in 1984 and is currently a member of the A2M03 Committee on Intermodal Freight Terminal Design and Operations for the Transportation Research Board.

Nat Welch founded the International Intermodal Expo in 1984 and served as its chairman. A former vice president of the Georgia Freight Bureau, Welch served as the first federal representative to the Southern Interstate Nuclear Board under Presidents Kennedy and Johnson. President Carter appointed Welch as the small shipper representative on the board of directors of the U.S. Railway Association. Welch has received numerous awards for his significant contributions to the international intermodal industry. He is now retired.
Kenneth R. Wykle is the Federal Highway Administrator in the U.S. Department of Transportation. Previously, he served as deputy commander-in-chief of the U.S. Transportation Command, which is the military's unified management group for the Army Military Traffic Management Command, the Navy Military Sealift Command, and the Air Force Air Mobility Command. During his Army career, Wykle commanded a medium truck company in Vietnam and later taught military logistics doctrine and operations as college president of the U.S. Transportation Center.

Phillip C. Yeager is the founder and chairman of Hub Group, Inc., the largest intermodal marketing company in North America. Yeager became involved in intermodal transportation in 1959 and is considered to be a pioneer in the freight transportation industry. His numerous awards include “Man of the Year” by the Intermodal Transportation Association (1991), the Salzburg Practitioners Award (1995), the Silver King Pin by the Intermodal Association of North America (1998), and “Transportation Man of the Year” by the New York Traffic Club (1999).

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