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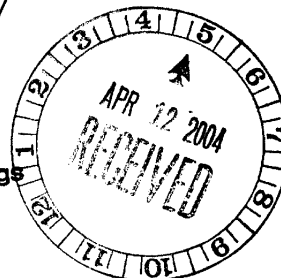
VIA HAND DELIVERY

The Honorable Vernon A. Williams
Secretary
Surface Transportation Board
1925 K Street, N.W.
Washington, D.C. 20423-00001

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Re: STB Finance Docket No 27590 (Sub-No. 3), TTX Company, et al. — Application
for Approval of Pooling of Car Service with Respect to Flatcars

Dear Secretary Williams:

Enclosed please find the original and ten (10) copies of the Comments of Trinity Industries, Inc., and the accompanying Verified Statement of Professor Steven C. Salop, *et al.*, submitted in the above-referenced docket.

We are also submitting three (3) compact disks containing copies of the Verified Statement of Professor Steven C. Salop, *et al.*, in Microsoft Word 98.

Also enclosed is one additional copy of the Comments and accompanying Verified Statement for stamp and return. Please date-stamp the additional copy for return via messenger.

Please do not hesitate to contact me if you have any questions.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Joe Sims'.

Joe Sims
Bevin M.B. Newman

Attorneys for Trinity Industries, Inc.

Enclosures

WAI-2107737v1

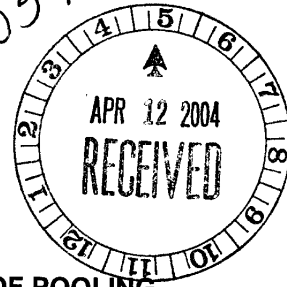
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BEFORE THE
SURFACE TRANSPORTATION BOARD



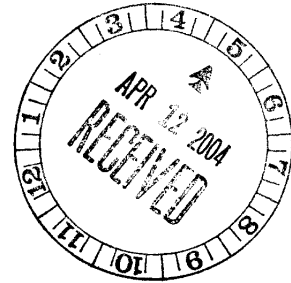
TTX COMPANY — APPLICATION FOR APPROVAL OF POOLING
OF CAR SERVICE WITH RESPECT TO FLATCARS
FINANCE DOCKET NO. 27590 (SUB-NO. 3)

COMMENTS OF TRINITY INDUSTRIES, INC.

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**BEFORE THE
SURFACE TRANSPORTATION BOARD**



**TTX COMPANY — APPLICATION FOR APPROVAL OF POOLING
OF CAR SERVICE WITH RESPECT TO FLATCARS
FINANCE DOCKET NO. 27590 (SUB-NO. 3)**

COMMENTS OF TRINITY INDUSTRIES, INC.

Trinity Industries, Inc. respectfully submits these comments to the Surface Transportation Board pursuant to the notice and request for public comments published at 69 Fed. Reg. 5662 (Feb. 5, 2004). Trinity Industries, Inc. ("Trinity") manufactures a variety of capital goods serving the industrial, construction, transportation, and energy industries. Its subsidiary, Trinity Rail Group, LLC provides a complete array of railcar solutions for its customers around the world producing the broadest product line in the railcar manufacturing industry. Trinity Rail Group North America manufactures a full line of railcars, autoracks and railcar components for the North American market from plants in the United States and Mexico. Another subsidiary of Trinity, Trinity Industries Leasing Company, provides a broad range of leasing, financing and fleet management services for railroads and shippers seeking solutions to their needs for rail equipment and services. Trinity and its various business divisions are both suppliers to and

competitors of TTX. As such, Trinity has a substantial interest in the Board's resolution of the issues relating to competition raised by TTX's Application.

I. Introduction

When TTX Company ("TTX") was formed, the railroad industry was fragmented; there were over 30 Class I railroads, and the logistical challenges of interchanging flatcars were daunting. Intermodal transportation was in its infancy. TTX's operation of the national flatcar fleet has been quite successful, and the efficiencies generated over the years have benefited railroad operators and users. But times have changed, and TTX has changed. Today, there are only four major U.S. railroads, and to a growing extent TTX represents their collective interests in railcar purchasing — a very different role than it played at its creation. Today, intermodal transportation is the largest business segment for these railroads. Finally, TTX's operations encompass other significant portions of the rail transportation industry as well, including boxcar and autorack reload pools. As TTX asks for renewal and extension of its antitrust immunity, it is appropriate to ask how these transformations over the last 30 years have changed the analysis, and to examine carefully whether extension or modification of that antitrust immunity would serve the public interest.

For the reasons discussed below and in the accompanying Verified Statement of Professor Steven C. Salop, Kevin Neels, Larry A. Shughart and Stanley M. Besen of Charles River Associates ("Verified Statement"), Trinity urges the Board to consider carefully these changed circumstances in evaluating TTX's Application.¹ Trinity fully

¹ Application of TTX Company for Approval of Pooling Car Service With Respect to Flatcars, S.T.B. Finance Docket No. 27590 (Sub-No. 3)(filed Jan. 6, 2004) ("Application").

supports efforts by TTX to continue efficiently operating the flatcar pool, and for that reason does not object to the extension of the current antitrust immunity relating to that pool. However, it does believe the Board should recognize the continued significant changes taking place in the railroad industry, and limit any extension to no more than five years. In addition, this ongoing process of change counsels for continued careful Board oversight and thus against granting TTX the authority to adjust the scope of its immunity without prior Board review, as the Application requests.² Finally, the growth of TTX to become the most important single purchaser of railcars suggests that any antitrust immunity to allow the joint purchasing and centralized ownership of cars other than flatcars, including any existing authority, should be carefully examined by the Board, joint purchases of any railcars (other than flatcars) should not be permitted, absent a compelling showing that joint purchasing and centralized ownership by TTX's members is necessary to obtain important efficiencies not achievable in any other way, and centralized ownership is not a requisite for efficient pool operations.

II. Discussion

A. Statement of the Applicable Legal Standard for Granting Antitrust Immunity

In considering TTX's Application, the Board must determine that approval "(1) will be in the interest of better service to the public or of economy of operation; and (2) will not unreasonably restrain competition."³ This requires the Board to balance any potential harm to competition against the efficiencies of the pooling agreement and to

² TTX states that it does not seek reversal of the prohibition on allocation and assignment of cars. Application at 6. We support this position, and ask the Board to maintain the prohibition.

³ 49 U.S.C. §§ 11321-11322 (2000).

determine “whether [the] proposed pooling agreement is as beneficial as alternative mechanisms for achieving the purposes of the pool and whether those purposes could be achieved with less restraint on competition.”⁴

In applying this statute, the Board consistently has espoused a policy that grants of antitrust immunity “are to be narrowly construed.”⁵ The Board has stated that to grant such immunity, it must “closely assess the proposal and its potential service and efficiency benefits.... [and will] approve only the narrowest proposal that is consistent with both the achievement of those benefits and compliance with the statute.”⁶ In keeping with this policy, the Board should undertake a forward looking evaluation taking into account not only TTX’s historical operations, but also evaluating how TTX’s operations are likely to impact suppliers, competitors and shippers in the years ahead.

B. The Board Should Consider All Of TTX’s Activities In Evaluating Whether Expansion Of The Duration And Scope Of Its Antitrust Immunity Is In The Public Interest.

It has been a very long time since the Board or its predecessor has had occasion to analyze carefully the multifaceted and expanding operations of TTX. It has been at least ten years since the Board or its predecessor agency last scrutinized the justification for TTX’s immunity from the antitrust laws for operation of its flatcar pool. With regard to some of TTX’s other activities, such as the National Boxcar pool, the Board never has undertaken a substantive review. Certainly, the Board never has had the opportunity to examine the impact of the entire and ever-increasing scope of TTX’s operations on the rail transportation industry in the context of an antitrust immunity

⁴ Trailer Train Co., 5 I.C.C.2d 552, 559-60 (1989).

⁵ Id. at 560 (citations omitted).

⁶ Id.

application. TTX's current Application provides the opportunity to do just that, and Trinity urges the Board to take this opportunity.

There is no doubt that TTX's operation of the flatcar pool to date has served the public interest, and Trinity enthusiastically supports the continuation of antitrust immunity for pool operations. And while it is less obvious that TTX's centralized purchasing of flatcars is necessary to achieve those efficiencies, Trinity supports TTX's application for continuation of this authority as well. But given the changes in both the industry and TTX over the years, Trinity suggests that the Board carefully consider whether other joint purchasing and centralized ownership activities are appropriate.

In the ten years since the Board last considered TTX's broad antitrust immunity, the railroad transportation industry has changed dramatically. First, TTX is a much more significant purchaser of railcars today than ever before. TTX accounted for a larger share of railcar orders in the most recent two years than at any other time since the Board last considered TTX's antitrust immunity — 29 percent of new freight car orders in 2002 and 39 percent in 2003.⁷ In contrast to the small organization that was created to manage a free-flowing pool of cars for use in interline traffic to supplement the railroads' own fleets, TTX now owns 58 percent of the national flatcar fleet, and TTX's purchases of flatcars are supplanting its member railroads' independent flatcar purchases.⁸ TTX's ownership share is especially large for autorack cars (86 percent),

⁷ Verified Statement at 33.

⁸ Verified Statement at 34.

light intermodal cars (70 percent), and stack cars (66 percent).⁹ By contrast, shippers own only four percent of flatcars while owning about 20 percent of non-flatcars.¹⁰

Today, TTX clearly is the dominant purchaser of flatcars. But TTX also has become a significant purchaser of boxcars and other car types as well. TTX has become the largest purchaser of boxcars since it renewed its purchasing activities for these cars in 2002. TTX's purchases of all non-flatcars comprise nearly 10 percent of total industry purchases in recent years.¹¹

At the same time that TTX's presence and activities have expanded, its membership has consolidated. TTX's owner railroads included 16 major railroads in 1989. Today, 90 percent of TTX's stock and almost 80 percent of its revenues are accounted for by four railroads.¹² Much of this consolidation in the rail industry has occurred since the Board last considered TTX's antitrust immunity in 1994. Burlington Northern and Santa Fe merged in 1995.¹³ Union Pacific and Southern Pacific Railroads merged in 1996.¹⁴ In 1998, CSX and Norfolk Southern completed their acquisition of Conrail.¹⁵ Thus, not only is TTX today a major owner and purchaser of railcars, but it also represents the collective interests of a very small (and diminishing) number of increasingly significant railcar purchasers.

⁹ Id.

¹⁰ Verified Statement at 35.

¹¹ Verified Statement at 30.

¹² These four are Union Pacific, Burlington Northern Santa Fe, CSX, and Norfolk Southern. Canadian National, Canadian Pacific, Florida East Coast, Guilford Rail System, and Kansas City Southern all own small portions of the TTX stock.

¹³ Burlington Northern, Inc. -- Control and Merger -- Santa Fe Pac. Corp., 10 I.C.C.2d 661, 742 (1995).

¹⁴ Union Pac. Corp., Union Pac. R.R. & Missouri Pac. R.R. - - Control & Merger - - Southern Pac. Rail Corp., Southern Pac. Transp. Co., St. Louis Southwestern Ry., SPCSL Corp., & Denver & R.G.W.R.R., Fin. Dkt. No. 32760, 1 S.T.B. 233 (1996).

The substantial efficiencies that undoubtedly have flowed from TTX's operation of the flatcar pool are probably not dependent on its joint purchasing and centralized ownership activities.¹⁶ And the fact of railroad consolidation means that joint purchasing and centralized ownership by the now very small number of potential car purchasers inevitably raises competitive concerns, both with respect to innovation and to the efficient operation of the railcar market. Thus, while Trinity does not oppose TTX's Application insofar as it seeks continued authority for joint purchases of flatcars, we urge the Board to consider carefully whether joint purchasing and centralized ownership by TTX of other types of cars serves the public interest in today's railroad industry. The rail transportation industry today embraces many alternatives to the type of pooling that TTX utilizes to manage the flatcar pool. Many of these could well produce equivalent or greater efficiencies without the competitive risks inherent in joint purchasing and centralized ownership immunity. In fact, TTX itself manages other railcar pools without the benefit of centralized purchasing of the pooled equipment and appears in those circumstances to have also achieved significant efficiencies. For example, the Association of American Railroads (AAR) formed the National Autorack Reload pool in 1981. Under the AAR centralized pool management plan, empty autorack cars were repositioned not to their origins but to the nearest demand location, resulting in a 40 percent reduction in the movement of empty cars and a utilization rate of 97 percent in

(continued...)

¹⁵ CSX Corp. & CSX Transp., Inc., - - Norfolk S. Corp. & Norfolk S. Ry. - - Control & Operating Leases/Agreements - - Conrail, Inc., & Consolidated Rail Corp., Fin. Dkt. No. 33388 (1998).

¹⁶ In fact, other railroad equipment pools achieve the same types of efficiencies as the TTX flatcar pool even while maintaining wide diversity of ownership of the equipment that these pools manage. Moreover, review of other arrangements that have been implemented and used within the railroad industry calls into question the relevance for the future of the view that centralized management is a necessary precondition for achieving efficiencies in utilization. Verified Statement at 10-13.

Railcars represent a flexible capital asset. Cars can be sold by one railroad to another or moved to any point on the North American rail network in response to shifts in demand. Surplus railcars also can be modified to carry different sorts of traffic. This flexibility of railcars enables the railroads to use cars as loan collateral, for example, by having them purchased in an equipment trust. This secured financing also reduces the creditors' risk. This lower risk reduces the rates of return likely to be demanded by investors.

Indeed, this type of flexibility has fostered the entry into the market of third-party lessors for a wide range of transportation equipment. Lessors of railcars include financial institutions, specialized equipment lessors, and the finance arms of diversified manufacturers. Many firms are able and willing to assist railroads in financing the acquisition of new rolling stock, assuming that the railroads are unable to do so themselves. The existence of a broad and diversified railcar leasing industry offers a new alternative to what once was a unique function of TTX.

At the same time, leasing companies do face a competitive disadvantage compared to TTX. Because the flatcar pool is nominally open only to the owner railroads of TTX, leasing companies may be denied the efficiencies of pool management for flatcars. As a result, flatcar investments are currently less attractive to these companies than they otherwise would be. This result is an inevitable effect of the operation of an efficient but closed pool.

As TTX quite accurately notes in its Application, the "pool achieves greater utilization from its flatcar assets and reduces the level of risk associated with investments in new equipment. TTX is thereby able to ... justify greater investment than

railroads acting individually.”²¹ But this logic would apply to any investor that has access to the efficiencies of pooling, not just to TTX. If shippers and leasing companies had access to pooling services on the same terms as the railroad owners of TTX, these companies could and likely would expand their fleets to include more of the types of cars that are used in these pools. If the cars in the pool achieve higher utilization than a fleet operated by an individual railroad, cars in the pooled fleet would be expected to generate greater car hire revenues for any given market setting and rate schedule. For this reason, investments in railcars that are managed by a pool would be expected to generate a larger flow of useful car services than similar investments in railcars controlled by a single railroad or a single lessor. Indeed, this is one of the efficiencies that TTX notes in support of its centralized purchasing and ownership of flatcars.

Thus, while Trinity supports the continuation of TX’s authority to purchase flatcars, we note that it seems likely that the public interest would be served if more car owners were able to benefit from TTX’s efficient operation of the flatcar pool. And the converse also is true; one inevitable impact of the closed nature of the flatcar pool is to increase the competitive disadvantage that other flat car owners face in acquiring and leasing flatcars. Obviously these impacts would be expanded if TTX’s car purchasing authority extends to railcars other than flatcars. Trinity, therefore, urges the Board to not permit joint purchasing and centralized ownership by TTX of railcars other than flatcars, absent a compelling efficiency showing that clearly outweighs these additional competitive risks.

D. Joint purchasing Of Railcars (Other Than Flatcars) Raises Competitive Concerns.

²¹ Application at 33.

TTX's current Application reflects its understandable pride in the countervailing efficiencies it has achieved through its successful operation of the flatcar pool. However, TTX's activities extend well beyond the flatcar pool discussed in the Application

In addition to the national flatcar pool, TTX manages two pools of boxcars, a gondola pool, the national autorack fleet, and a chassis pool. The larger of the two boxcar pools, Railbox, was created in 1974. The Bureau of Enforcement of the ICC recommended at the time that ICC exclude TTX's central purchasing authority from its grant of antitrust immunity for the pool. The ICC rejected this recommendation.²² While TTX's purchases of boxcars in the past have been minimal, it is today the leading purchaser of such equipment. The second pool, the National Boxcar Pool, was created in 1987 and consists of railroad owned boxcars.²³ TTX was designated as the "pool operator" in 2002 responsible for managing the size of the fleet contributed to the pool by the participating railroads, but not for purchasing equipment.

In addition, TTX manages a Gondola Car Pool, which was modeled on the Railbox Boxcar Pool and instituted in 1980. TTX recently has placed orders for gondolas — the first orders in over ten years. There is also the autorack pool; as mentioned above, TTX's involvement began in 1995 when the AAR transferred the responsibility of managing the maintenance and distribution of the autorack pool to TTX.²⁴ TTX owns over 400 Articulated Bi-Level autorack cars and is expanding its

²² American Rail Box Co.—Approval of Pooling, 347 I.C.C. 862, 903-05 (1974).

²³ Railroad Car Service Pooling Application (Boxcars), I.C.C. Fin. Dkt. 30969 (Sept. 30, 1987) (National Boxcar Fleet).

²⁴ TTX Company Annual Report at 10 (1998).

purchases to include traditional, multi-level products.²⁵ Finally, in March 2003, TTX announced the pilot phase of a Chassis Management Project to manage 60,000 domestic (48' and 53') chassis. TTX has indicated that it may expand into managing international chassis in North America.

TTX's sizeable footprint on the rail transportation industry magnifies the potential competitive effects of its purchasing activities.

1. The Competitive Risks Of Joint Railcar Purchases Are Significant.

TTX owns a very large portion of the flatcar fleet and accounts for a very large share of annual additions to that fleet. As a general matter, TTX's share of new car orders has increased since 1994. TTX's intermodal flatcar orders have grown from 85 percent of such orders in 1994 to 95 percent in 2002 and 90 percent in 2003. TTX accounted for almost 75 percent of *all* flatcar purchases in 2003.

TTX is expanding its presence in other car types as well. In 2003, TTX accounted for 10 percent of industry order of non-flatcars. With regard to all freight cars except tank cars, industry data show that TTX accounted for 29 percent of new freight car orders (excluding tank cars) in 2002 and 39 percent of new car orders in 2003.

In past proceedings, the Board's predecessor agency has cited the manufacturing flexibility of railcar builders like Trinity as an effective counter to TTX's ability to exercise market power with respect to railcar purchases.²⁶ However, railcar

²⁵ TTX owns approximately 421 Articulated Bi-Level autorack cars, an integrated autorack car that is managed through the National Autorack Reload Pool. Because the AAR (which is controlled by the same railroads as TTX) has designated these cars as flatcars, TTX could expand its purchasing activities to include this new car type. It is not clear to us on what authority TTX plans to conduct joint purchasing and centralized ownership of traditional, multi-level autoracks.

²⁶ 5 I.C.C. at 578-81. In particular, the ICC noted that several domestic car builders had only recently left the industry, and significant capacity, therefore, remained to be tapped. In addition, foreign producers had a proven track record of filling in demand in times of shortage.

builders have faced limited demand for other types of railcars in recent periods and TTX is becoming a larger factor over time in purchasing these other types of cars. As TTX becomes a more significant purchaser of other types of cars, the specter of monopsony becomes considerably more tangible.

While TTX has not yet achieved monopsony power in a broadly defined market of freight cars, unlimited expansion of TTX's purchases of non-flat cars would have the inevitable longer-term impact of reducing output and railcar builders' incentives to invest in research and development. Additional competitive problems would arise, for example, if TTX were to expand its ownership of railcars in Railbox and the Gondola Car Pool, where it already has the authority to operate pools, or if it were to attempt to develop and operate pools for other types of railcars.

These competitive concerns are not resolved by any competition that TTX currently faces. For example, competition from trucking is limited, and provides effective constraints on pricing versus railroads only for short hauls.²⁷ The competitive success of truck-rail intermodal service relative to truck-only service is driven by the ability of railroads to carry freight at a lower per-mile cost. By combining truck-based pick-up and delivery with rail-based line-haul transportation, truck-rail intermodal service is able to provide the door-to-door convenience of truck transportation at a lower overall cost for certain loads. The fixed costs associated with the need to load containers onto railcars and offload them at their destination have no counterpart in truck-only service. This factor creates a cost disadvantage for truck-rail intermodal service, relative to truck-only service. However, the significance of this cost disadvantage varies with the

²⁷ Verified Statement at 24-27.

length of haul. The longer the length of haul, the greater the significance of the lower line-haul costs of rail transportation. The net result is that truck-only service will tend to offer lower overall costs for short lengths of haul, while truck-rail intermodal service will tend to represent the preferred option for longer lengths of haul, other things being equal. Although truck-only and intermodal service may compete vigorously for hauls of intermediate length, each has substantial advantages over the other for some types of hauls.

In sum, joint car purchasing of non-flat cars by TTX raises serious competitive risks, and does not appear necessary to achieve pool operation efficiencies.

2. Joint Car Purchasing Threatens Continued High Levels Of Innovation.

Since TTX's main purpose is to efficiently operate the flatcar pool (and the other pools it operates), it is not surprising that it would strive for standardization. Standardization may well lower short term costs for TTX and its member railroads. But over the long term, costs are best driven down by innovation; standardization, carried too far, may well be inconsistent with continued high levels of innovation. TTX appears to recognize this axiom, and describes in its Application what it sees as its contributions to innovation. But it seems clear that there has been more innovation outside TTX than by it over the years. Indeed, it would be perfectly logical to expect that TTX's focus on efficient pool management may well have retarded innovation in some respects.

Some examples are useful.²⁸ In 1977, the Southern Pacific Railroad designed and tested the first doublestack container technology. However, TTX did not acquire its first doublestack equipment until 1985. Here, TTX clearly followed rather than led the

²⁸ These examples are discussed in the Verified Statement at 18-22.

development and introduction of a new technology. Trinity/Thrall was responsible for reintroducing the Roadrailer® concept in modern times and licensed the technology to Wabash National Corporation, which began manufacturing the trailers in 1987. Norfolk Southern Railroad (NS) was primarily responsible for investing and promoting widespread use of RoadRailer® technology. Because the innovative RoadRailer® technology does not require flatcars, it is not surprising that TTX did not participate in the research and development efforts or promote RoadRailer® use as an alternative standard. New York Air Brake and CSX Intermodal developed the prototype for Iron Highway in the early 1990s. In 2000, CP changed the name to Expressway. CP has invested \$50 million in the project and traffic has grown from 25,000 trailers in 2000 to 85,000 in 2002. CP has extended service to Chicago. Since July of 2002, CNR has operated a daily service between Toronto and Montreal using Intermodal Express, which employs an "intermodal ramp car" developed by Wabtec and Trinity Industries. TTX neither promoted nor contributed to the Iron Highway or Intermodal Express designs.

TTX, as a pool operator and joint purchaser for the bulk of the railroad industry in the areas that it operates, would logically pursue innovation only to the extent that it increases demand for flatcars over the entire industry. But those innovations, such as the Railroader® technology that would provide an alternative standard to flatcars in intermodal transportation, are not easily assimilated into the TTX pool operation and would not logically be encouraged.

In fact they have not been. Consider, for example, the evolution of cars designed to carry finished lumber.²⁹ In recent years the railroad industry has moved away from bulkhead flatcars and toward the standard 73-foot center beam design. However, BNSF, in an effort to reap the efficiencies generated by a higher gross-to-tare weight ratio, has adopted an 80-foot centerbeam design, different from the industry standard. Similarly, CP has recently begun to acquire 73-foot drop-deck centerbeam cars that increase capacity through the addition of a depressed well between the trucks of the car. Both types of cars can increase capacity, or lower costs, for some types of shipments. BNSF and CP can, therefore, reap the benefits of using these cars despite the fact that they represent deviations from the industry standard.

By contrast, TTX is less likely to purchase non-standard cars because of the competition that would pose to the very large number of conventional centerbeam cars in its fleet. A pool operator has a natural preference for standardized equipment. Because it is essentially a pool operator, TTX does not have the same competitive motivations that an individual railroad would have to innovate and thus potentially to capture a competitive advantage relative to other railroads. As long as the member railroads rely on TTX for essentially all of their flatcar purchases, no individual railroad will have the same incentive to invest in improving the speed and effectiveness of research and development to bring innovations to market ahead of its competitors. This is, unfortunately, the inevitable result of a dominant joint purchaser — a likely reduction in innovation.

²⁹ Verified Statement at 23-24.

This is not the result of evil motives or misconduct, but rather simply the logical perspective of an entity whose focus is efficient pool operations, not individual competitive advantage. But this focus, completely appropriate given TTX's primary mission, may not serve the public interest in encouraging innovation in railcar design.

E. The Removal Of The Board From Direct Oversight Of TTX's Authority Would Not Serve The Public Interest.

No one can predict what the railroad industry will be like in fifteen years. The change over the last fifteen years has been impressive, in no small part due to TTX's success. The only appropriate reaction to this rapid change is more, not less, frequent substantive reviews by the Board of this extraordinary antitrust immunity, and even greater oversight of unilateral decisions by TTX that could affect the efficiency and vitality of the United States railroad system.

TTX's Application takes the opposite tack and asks the Board essentially to delegate the Board's authority to TTX, and to allow it to alter its operating agreements completely independent of the Board's supervision. While this might be innocuous if no changes are ever made, it certainly is possible that a grant of such sweeping authority could allow TTX to make fundamental changes impacting competition with no oversight by the Board. Given the dynamic nature of the railroad industry, and the critical role of Board oversight over a broad grant of antitrust immunity, this would not serve the public interest.

Antitrust immunity is a powerful competitive weapon. It should be granted only after the most searching of administrative reviews, to ensure that it will actually advance the public interest, and the Board should engage in thorough and regular oversight to ensure that the public interest actually is being served.

III. Conclusions and Recommendations

In 1994, when the Board last renewed TTX's pooling authority, it limited that authority to ten years and provided for continued monitoring of TTX's operations based on "TTX's large market presence in a market and regulatory climate that are still, as they were 5 years ago, dynamic and changing."³⁰ Trinity respectfully suggests that the circumstances today call for even more caution, especially considering the rapid growth and diversification of TTX in the last decade, and the significant consolidation that has taken place among its members.

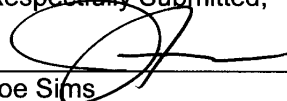
First, the Board should limit to five years any extension granted for the operation of the flatcar pool. And any further extension should require the same substantive evaluation that must take place with respect to this Application; automatic extensions of such an extreme measure as antitrust immunity should be strongly disfavored, and there is no justification for such an approach here.

Second, for the same reasons, the Board should deny TTX's request for the expanded ability to make changes to its pooling agreement without notification and Board review.

³⁰ TTX Company, et al., Application for Approval of the Pooling of Car Service with Respect to Flatcars, S.T.B. Fin. Dkt. 27590 (Sub-No. 2) (Aug. 19, 1994) 1994 WL 467250, at *4 (I.C.C.).

Finally, the Board should not continue TTX's antitrust immunity with respect to any joint purchasing and centralized ownership of car types other than flatcars. Such activities are not necessary to the accomplishment of any pooling efficiencies and raise competitive concerns.

Respectfully Submitted,



Joe Sims

Bevin M.B. Newman

JONES DAY

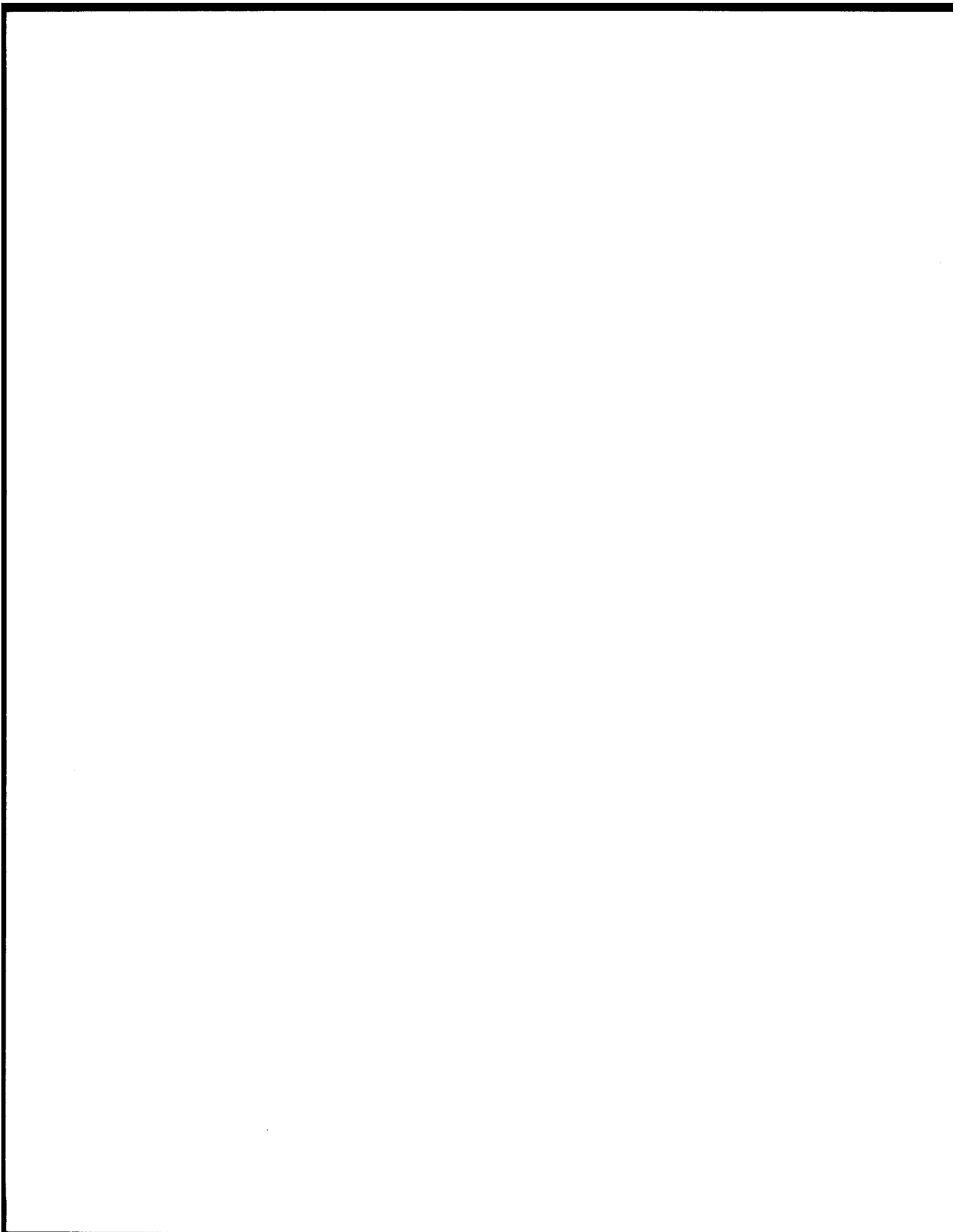
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Counsel for Trinity Industries, Inc.

April 12, 2004



CERTIFICATE OF SERVICE

I certify that on April 12, 2004, I served copies of the foregoing Comments of Trinity Industries, Inc. and accompanying Verified Statement of Professor Steven Salop, et al. by the means indicated on the parties listed below.

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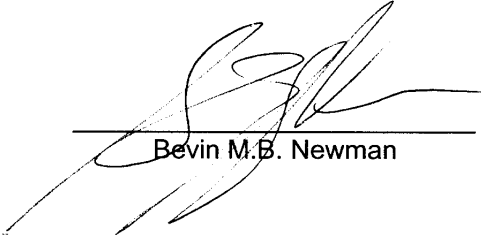
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Bevin M.B. Newman



**BEFORE THE
SURFACE TRANSPORTATION BOARD**

TTX COMPANY --- APPLICATION	)	
FOR APPROVAL OF POOLING OF	)	DOCKET NO. 27590 (Sub-No. 3)
CAR SERVICE WITH RESPECT TO	)	
FLATCARS	)	

**VERIFIED STATEMENT
OF
STEVEN C. SALOP
KEVIN NEELS
LARRY A. SHUGHART
STANLEY M. BESEN**

on behalf of

TRINITY INDUSTRIES

Charles River Associates, Inc.
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April 12, 2004

I. QUALIFICATIONS¹

Steven C. Salop is Professor of Economics and Law at the Georgetown University Law Center where he teaches antitrust law and economics and economic reasoning and the law. Before joining the law school faculty in 1981, Professor Salop was an Associate Director in the Bureau of Economics at the Federal Trade Commission and an economist at the Civil Aeronautics Board. His research and consulting focuses on microeconomics, antitrust, competition, and regulation. He has written numerous articles in various areas of antitrust economics and law, including exclusionary conduct in network markets, mergers, joint ventures, and tacit coordination. He also served as a consultant to the Federal Trade Commission in the preparation of the *Antitrust Guidelines for Collaborations Among Competitors* and submitted an affidavit on behalf of Sabre in the recent Department of Transportation computer reservation system rulemaking. He holds a Ph.D. in Economics from Yale University (1972).

Kevin Neels is a Vice President and Director of Charles River Associates' Transportation Practice. For more than 25 years, he has led consulting and research projects covering many segments of the transportation industry, including railroads, aviation, highways, pipelines, and public transport. He has directed many significant engagements relating to competition and market structure, pricing and revenue management, distribution strategy, e-commerce, and public policy. His work has also addressed issues relating to privatization, system planning, and congestion management. Prior to joining CRA, he served on the staffs of the Rand Corporation, the Urban Institute, the consulting firm of Putnam, Hayes & Bartlett, and the accounting firm

¹ The resumes of the authors are attached as an Appendix.

now known as KPMG. He holds a Ph.D. in Urban and Regional Theory from Cornell University (1981).

Larry A. Shughart is a Principal at Charles River Associates who specializes in performance management, financial management, and network operations engineering, and consults mainly to the railroad and trucking industries. Since joining CRA, he has coauthored expert testimony in support of a national railroad labor arbitration hearing, managed a litigation project involving National Steel Car and Canadian Pacific Railroad, and served as the lead advisor to the Province of British Columbia on matters related to the restructuring and privatization of BC Rail. Prior to joining CRA, he was employed by the CSX Corporation, in Jacksonville, Florida, where he worked in a variety of areas, including intermodal, performance improvement, locomotive operations, strategic planning, service design, finance, operations research, and engineering. His positions at CSX included Assistant Vice President, Performance Improvement; General Director, Locomotives; Director, Network Operations; Manager, Strategic Planning; and Manager, Service Design. His academic experience includes providing research support for the Massachusetts Institute of Technology (M.I.T.) Center for Transportation Studies and serving as a professor of economics at the University of North Florida. He holds an M.S. in Transportation from M.I.T. (1989).

Stanley M. Besen has been a Vice President at CRA since 1992. He previously served as a Brookings Economic Policy Fellow, Office of Telecommunications Policy, Executive Office of the President (1971–1972); Co-Director, Network Inquiry Special Staff, Federal Communications Commission (1978–1980); Coeditor, *RAND Journal of Economics* (1985–1988); Senior Economist, RAND Corporation (1980–1992); and a member of the Office of Technology Assessment Advisory Panels on Communications Systems for an Information Age

(1986-88) and Intellectual Property Rights in an Age of Electronics and Information (1984–1985). He currently serves as a member of the editorial boards of *Economics of Innovation and New Technology* and *Information Economics and Policy* and as a member of the Committee on Licensing Geographic Data and Services, National Research Council Board on Earth Sciences and Resources, Division on Earth and Life Studies, and the Committee on Internet Searching and the Domain Name System, The National Academies Computer Science and Telecommunications Board. He has published widely on telecommunications economics and policy, intellectual property, and the economics of network industries. He has taught at Rice University (1965–1980), where he was the Allyn R. and Gladys M. Cline Professor of Economics and Finance (1979–1980); Columbia University (1988–89), where he was the Visiting Henley Professor of Law and Business; and the Georgetown University Law Center (1990–91), where he was Visiting Professor of Law and Economics. He holds a Ph.D. in Economics from Yale University (1964).

II. SUMMARY AND CONCLUSIONS

Trinity Industries has asked us to respond to the analysis that has been presented in support of the Application of TTX Company for Approval of Pooling of Car Service With Respect to Flatcars, Surface Transportation Board Docket No. 27590 (Sub-No. 3), January 6, 2004 (hereafter “Application”). In the Application, TTX requests a 15-year extension of its authority to operate a flatcar pool as well as a “modest” clarification that it may, without advance notice to the Board, “make changes in the car contracts and other policies that embody its day-to-day pooling activities, as long as those changes fall within the scope of the Board-approved

Pooling Agreement and the explicit limitation on TTX's 'assignment' and 'allocation' of cars imposed in 1989."²

We recognize the value of TTX's contributions to the railroad industry. We believe, nonetheless, that TTX's request merits careful and critical economic analysis. TTX is, after all, requesting a grant of antitrust immunity. As a matter of general policy, such requests should be granted cautiously and, when granted, should be as limited in scope as possible. It is worth noting in this connection that the current industry environment is far different from the one that existed when TTX was first established, or even from the environment in which TTX operated when it last requested reauthorization from the Board. In 1974, there were 31 major railroads, some in bankruptcy. In 1988, there were 16 major railroads. Now there are only four major U.S. railroads. Because of its success, TTX has become a larger and more dominant player. New practices and institutions that are evolving have the potential for achieving many of the efficiencies claimed by TTX, a process that is likely to continue. These developments justify a thorough analysis of TTX's conduct and structure in evaluating its Application.

TTX and its experts discuss TTX's role in stimulating the development of intermodal rail service through its investments in flatcars and its efficient operation of the flatcar pool. However, although TTX may have produced substantial efficiencies in *railcar operations*, we believe that few, if any, additional efficiency benefits result from TTX *railcar ownership*. In particular, we find that the benefits that TTX claims result from its operation *and* ownership of flatcars would be obtained even if its activities were limited solely to the operation of the flatcar pool. Moreover, these benefits would be even greater if they were extended beyond the owners of TTX to other railcar owners.

² Application, pp. 8–9.

The remainder of this statement is organized as follows. Section III describes and evaluates TTX's claim that its operation of the flatcar pool increases flatcar utilization. We explain why these same efficiencies could be obtained even if TTX were limited to the management of the pool. We also explain why the fact that TTX currently is free to decline to manage cars that are owned by other entities limits the competition that its owners face from rival car owners. In this section, we describe the operations of a number of other railcar pools, in which the operator manages cars that are owned by others. The operation of these pools provides evidence that the efficiencies of pool operation are *not* dependent on railcar ownership by the pool operator.

Section IV examines the linkage between financing and innovation efficiencies and the ownership of railcars. We believe that the main source of the financing advantage flows from the higher railcar utilization that TTX is able to achieve through the operation of its pool, not from its ownership of the railcars in the pool. We also examine the nexus between flatcar ownership and increased innovation in railcar design and operation. Although important innovations clearly have occurred during the period in which TTX has been in operation, we believe that many of these developments would have occurred even in the absence of flatcar ownership by TTX, in part because the owners of TTX or railcar manufacturers would have undertaken these developments instead. Moreover, innovation incentives would likely be higher if the markets for railcar purchases were more competitive.

Section V addresses the claim made by TTX and its experts that TTX does not have market power in the supply of flatcar services because railroads compete with trucks. Implicit in TTX's argument is an assumption that even a small increase in the hire rate for flatcars would result in such a large loss of business to trucks that such an increase would be unprofitable.

However, for customers who wish to ship certain types of commodities, or to ship commodities over very long distances, trucks are a poor substitute for rail. Competition among railroads, not competition between railroads and trucks, determines the prices for these customers. As a result, railroad profits may rise if TTX restricts the supply of railcars because that will tend to increase the prices that railroads as a group can profitably charge, even if they lose some movements to truck-only transportation as a result. The fact that railroad pricing is not completely constrained by competition from trucks is one reason that the Board retains residual regulatory authority over the railroad industry.

Section VI discusses the potential for TTX to exercise market power as a purchaser of railcars, through the use of both classical monopsony power and other forms of buyer market power. Although TTX railroad-owners and others are free to own and operate flatcars outside the TTX pool, TTX continues to own a very large portion of the flatcar fleet and accounts for a very large share of annual additions to that fleet. We understand that the ICC and the Board previously have dismissed the claim that TTX has monopsony power, that is, market power in the *purchase* of flatcars, on the grounds that manufacturers could shift their production to other types of cars if TTX were to attempt to force down the price it is willing to pay for flatcars. We re-examine this monopsony analysis.

In particular, car manufacturers may face limited demand for other types of railcars and TTX is becoming a larger factor over time in purchasing these other types of cars. These facts increase the risk of monopsony conduct. In addition, in the long run, low prices resulting from the market power of a dominant purchaser could tend to reduce the speed of innovation and lead to higher costs for manufacturing cars as manufacturers reduce their investments. Moreover, rather than acting as a classic monopsonist, a dominant purchaser potentially could exercise

buyer-side market power by forcing manufacturers to discriminate against its rivals in the supply of railcar services. Finally, other buyers would be unable to replace completely the purchases that TTX would otherwise have made because they may find that they lack access to the pool and its efficiencies.

III. THE OPERATIONAL EFFICIENCIES OF TRANSPORTATION EQUIPMENT POOLS

The Application, and the Verified Statements that accompany it, describe several types of efficiencies that can result from the operation of rail transportation equipment pools. These claimed efficiencies involve increased railcar utilization, reduced capital costs, and increased innovation. TTX maintains that achieving these efficiency benefits requires that it own the railcars in the pool as well as manage the pool itself. In our view, railcar ownership is not necessary to achieve these benefits.

TTX has correctly identified some of the benefits achieved through its pooling activities.

For example, as the Application states,

The TTX fleet avoids empty miles through rules that allow participating railroads to direct TTX flatcars ... to any point on their system for loading, and thence as a loaded car to any destination on any road. TTX achieves additional efficiencies by directing the redistribution of cars when appropriate.³

Similarly, Professor Kalt observes,

By reallocating cars from low-demand to high-demand railroads quickly and efficiently, TTX is able to pool risks and reduce the individual railroads' needs to hold "extra" cars in order to meet demand peaks, and to suffer greater numbers of idle cars in low demand times.⁴

³ Application, p. 21.

⁴ Verified Statement of Joseph P. Kalt, p. 8.

Finally, Mr. Wise notes that pooling reduces the incentives of railroads to “stockpile” equipment when demand is high because the pool manager can issue directives to reposition cars to enforce entitlements and ensure that demand is met.⁵ He also observes that pooling gives railroads the incentive to move empty cars to the nearest point of demand rather than returning them to more distant owners, thus reducing the amount of time that cars are unused.

Although higher utilization rates are not necessarily synonymous with increased economic efficiency—indeed they could reflect inadequate capacity—there are obvious benefits from avoiding situations in which some railcars remain unused while, at the same time, demands for railcar services remain unmet. Similarly, efficiency in railcar maintenance and repair is undoubtedly facilitated when a facility that can make needed repairs is located close to a car that needs maintenance.

Centralized pool management can contribute to achieving these efficiencies. However, none of the discussions of the value of equipment pooling in the Application support the view that achieving these efficiencies requires the pool manager, or any single entity, to own the equipment that the pool manages.⁶ The benefits of pooling mainly result from *central management* of the assets in the pool, not the *ownership* of the assets themselves. Thus, using the terminology of the Federal Trade Commission and the U.S. Department of Justice *Antitrust Guidelines for Collaborations Among Competitors*, car ownership may not be “reasonably necessary” to achieve the claimed efficiencies.⁷

⁵ Verified Statement of Dean H. Wise, pp. 5–6.

⁶ For example, in his analysis, Mr. Wise does not distinguish the effect of TTX pool *management* from the effect of TTX *ownership* of the flatcars.

⁷ The *Antitrust Guidelines for Collaborations Among Competitors*, Issued by the Federal Trade Commission and the U.S. Department of Justice, April 2000, Sec. 3.2, notes, “...if the participants could achieve an equivalent or

In fact, other railroad equipment pools achieve the same types of efficiencies as the TTX flatcar pool even while maintaining wide diversity of ownership of the equipment that these pools manage. Moreover, TTX itself has described the efficiencies from its management of national pools of equipment that it does *not* own. As stated by TTX, “as the manager of a national pool of *railroad-owned* boxcars ... TTX will apply the experience gained in managing the national autorack fleet to provide a boxcar management system that will optimize the utilization of these assets, resulting in fewer empty miles and increased velocity.”⁸ The remainder of this section describes a number of examples of efficient pool management that do not involve equipment ownership by the pool manager.

A. The Multi-Level Autorack Pool

An autorack is an appurtenance that is attached to a railroad flatcar for the conveyance of cars, light trucks, and vans from auto manufacturing facilities to distribution centers, from which the vehicles are then trucked to dealership lots. Although the vast majority of autoracks are used to carry new vehicles, autoracks are sometimes employed to transport used vehicles and to reposition rental car fleets. Although TTX generally owns the underlying flatcars, individual railroad companies now own the vast majority of the autoracks that ride on these cars. Prior to the formation of the national autorack pool, cars with shipper-owned autoracks would deliver their loads and return to their origins empty, resulting in a large number of empty movements. The resulting cost was so great that Conrail even considered exiting the business of transporting automobiles. In response, a national autorack pool, managed by the National Reload Center

comparable efficiency-enhancing integration through practical, significantly less restrictive means, then the Agencies conclude that the agreement is not reasonably necessary.”

⁸ TTX Company, *Annual Report*, 2002, p. 9, emphasis added. The *Annual Report* also notes (p. 5) that TTX “has been developing a new information tracking and reporting system for TTX’s management of *railroad-owned* domestic chassis...” (emphasis added).

under the auspices of the Association of American Railroads (AAR), was formed in 1981.

Under the AAR centralized pool management plan, empty autorack cars were repositioned not to their origins but to the nearest demand location, resulting in a 40 percent reduction in the movement of empty cars and a utilization rate of 97 percent in 1991.^{9,10} “At the root of these gains are the efficiencies of pooling”, said Mr. Ralph Von dem Hagen, a Conrail Assistant Vice President.¹¹

In the 1990s, AAR transferred the responsibility of managing the distribution of the autorack car pool to TTX.¹² TTX uses fleet management models to maximize autorack efficiencies.¹³ TTX owns less than 1 percent of the autoracks in the pool,¹⁴ and yet the autorack car pool still achieves remarkable efficiency.

B. Intermodal Container Highway Chassis Pools

An intermodal container highway chassis is a licensed truck trailer that consists of the steel frame, wheels, brakes, and lights. Shipping containers are locked onto the chassis for transport by semi-tractors. There are a number of different pooling arrangements for managing chassis.

Ocean carriers own about 350,000 intermodal chassis in the United States.¹⁵ Although their owners manage some of these chassis, pool operators manage others. Interpool, Inc., whose

⁹ Gus Welty. “How TTX tracks quality,” *Railway Age*, April 1992.

¹⁰ Howard S. Abramson. “Railcar Pools Boost Equipment Utilization,” *Journal of Commerce*, April 13, 1989.

¹¹ *Ibid.*

¹² TTX Company, *Annual Report*, 1998, p.10.

¹³ *Progressive Railroading*, March 2002, p. T-13.

¹⁴ Universal Machine Language Equipment Register (UMLER), Railinc, January 1, 2004.

¹⁵ Joseph Bonney. “Carriers seek new model,” *The Journal of Commerce*, December 22, 2003—January 4, 2004.

subsidiary Trac Lease, has one of the largest chassis fleets in the United States,^{16,17} and Maher Chassis Management, LLC (an independent affiliate of Maher Terminals), have a joint venture to market their management services nationwide. The joint venture seeks to market services in the areas of cooperative management, maintenance, and interchange of chassis among different owners, such as steamship lines, railroads, and trucking companies.¹⁸ Our understanding is that each line contributes a number of chassis to the pool. If a pool member uses more than its allocation of chassis, it pays fees to the pool.

In a recent development, the Port of Hampton Roads, Virginia is mandating a *port wide* chassis pool. Steamship lines will participate by contributing their chassis to the pool.¹⁹ It is estimated that the Port will be able reduce its current fleet of 24,000 units by 5,000 units, free up 75–100 acres for port development, and reduce maintenance costs by \$5.5 million each year.²⁰ Virginia International Terminals, the operator of the Port of Hampton Roads, will establish a new subsidiary to manage the chassis pools. This development is being eagerly watched by the industry to determine if the expected efficiencies actually materialize.²¹ However, these efficiency gains are expected even though the chassis will continue to be owned by the steamship lines. In addition, in March 2003, TTX announced that it was in the pilot phase of a Chassis Management Project that would manage 60,000 domestic (48-foot and 53-foot) chassis. If the

¹⁶ [Http://www.interpool.com/finance.shtml](http://www.interpool.com/finance.shtml).

¹⁷ [Http://www.hoovers.com/interpool/--ID__16082--/free-co-factsheet.xhtml](http://www.hoovers.com/interpool/--ID__16082--/free-co-factsheet.xhtml).

¹⁸ [Http://www.interpool.com/pr/pr_11-20-01.shtml](http://www.interpool.com/pr/pr_11-20-01.shtml).

¹⁹ Steamship lines can continue to use their own chassis, but they cannot be stored at the Port.

²⁰ Christopher Dinsmore, "Program will help ease port congestion," *The Virginian-Pilot*, March 5, 2004.

²¹ *Ibid.*

tests and operations go well, TTX might expand into managing international chassis in North America.²²

IV. THE LINKAGE BETWEEN OWNERSHIP AND FINANCING AND INNOVATION BENEFITS

Today there are many alternative ways to finance railcar purchases that do not require collective purchases through TTX. Moreover, many major innovations have been carried out by entities other than TTX and allowing any single firm to dominate R&D in railcar design could lead to reduced innovation.

A. The Capital Constraints Facing the Railroad Industry

There are alternative ways to finance the purchase of railcars efficiently that do not require joint purchasing of railcars by TTX. As a result, TTX may simply be a vehicle for obtaining capital that, in the absence of car purchases by TTX, would be obtained directly by the railroads themselves or by leasing companies.

The capital programs of the railroad industry cover a wide range of different projects, including the acquisition of locomotives and railcars, maintenance and upgrading of tracks, roadbed and structures, investments in information technology, and so on. Investments by railroads in track, roadbed and structures are costly, long-lived, and once made, highly inflexible. These factors increase the risk associated with these investments, leading investors willing to commit capital to such projects to demand higher rates of return.

In contrast, railcars represent a far more flexible capital asset. They can be sold by one railroad to another or moved to any point on the North American rail network in response to shifts in demand. Surplus railcars can also often be modified to allow them to carry different

²² "Technology to the X Power" Special Supplement to Progressive Railroading, March 2003, p. T-22.

sorts of traffic. This flexibility makes investments in them less risky. In addition, the flexibility of railcars permits the cars themselves to be used by the railroads as loan collateral, for example, by having them purchased in an equipment trust. This secured financing also reduces the creditors' risk. This lower risk reduces the rates of return likely to be demanded by investors. Indeed, it is just this type of flexibility that has fostered the entry into the market of third-party lessors for a wide range of transportation equipment.

We believe that TTX's Application does not provide sufficient recognition of the importance of equipment leasing to the railroad industry. Leasing of railcars, in particular, has become widespread. Lessors of railcars include financial institutions, specialized equipment lessors, and the finance arms of diversified manufacturers. Many firms are able and willing to assist railroads in financing the acquisition of new rolling stock, assuming that the railroads are unable to do so themselves. The existence of such a broad and diversified railcar leasing industry is an important factor in the evaluation of the TTX Application. Figure 1 describes briefly the operations of some of the major railcar financing and leasing companies.

Figure 1. Major Railcar Financing and Leasing Companies

Railcar Financing and Leasing Companies	Summary [1]	Owned Cars [2]	
		Flatcars	Non-Tank Cars & Non-Flatcars
ACF Acceptance, LLC	"Offers innovative and competitive financing options for all of your capital equipment asset needs."	0	13,384
CIT Rail Resources	"Provides a wide array of equipment leasing and financial products to the rail industry and owns and manages a fleet in excess of 54,000 railcars"	2,886	37,935
David J. Joseph Companies	"Full service transportation company providing a broad range of services throughout North America."	1,055	9,660
Bombardier Capital Rail	"Provides a full line of railcar leasing services for new and pre-owned equipment. We also offer fleet maintenance and management services"	3,668	14,024
First Union Rail	"both short and long term lease financing; full service and net lease; complete car management services; portfolio acquisition; sale and lease back transactions"	6,366	34,828
GATX Rail	"Global financing, valuation, structuring, leasebacks, joint ventures and partnerships"	1,136	6,663
Helm Financial	"utilizes its extensive financial experience and expert equipment knowledge to structure transactions that meet the goals of its customers"	575	19,272
Johnstown America Corporation	"Provides freight car rebuilding, railcar kits, and railcar components. . . Offers railcar operating leases, full service or not, railcar like kind exchanges, railcar trade-ins and railcar sale/leasebacks."	256	1,641
Progress Rail Services	"Offers significant additional value to its railcar and locomotive leasing. Planned, or unexpected, repair and maintenance can be performed at one of our many strategically located. . . facilities."	621	3,641
Trinity Industries Leasing Company	"Providing full service and net operating leases of railroad tank and freight cars to industrial shippers and railroads throughout North America. . . . Also a leading provider of railcar management services"	411	15,253
Other Leasing/Finance Companies		16,565	239,688
Subtotal: Leasing/Finance Companies		33,539	395,989
Subtotal: All Other Owners		174,117	699,807
TOTAL		207,656	1,095,796

Sources:

[1] *Railway Age*, October 2003.

[2] Universal Machine Language Equipment Register (UMLER), Railinc, January 1, 2004.

Leasing companies can be expected to be a potent force in easing any capital constraints that may currently inhibit purchases of railcars by individual railroads. However, TTX policies currently place railroad equipment leasing companies at a competitive disadvantage. Because leasing companies may be denied the efficiencies of pool management for flatcars, flatcar investments are currently less attractive to these companies than they otherwise would be. This competitive disadvantage would be magnified if TTX were to expand its pooling operations into

other types of railcars but deny leasing companies the benefits of pool management. As the Application notes: “the TTX pool achieves greater utilization from its flatcar assets and reduces the level of risk associated with investments in new equipment. TTX is thereby able to ... justify greater investment than railroads acting individually.”²³ This logic applies to any investor that has access to the efficiencies of pooling, not just to TTX. There is no reason to believe that leasing companies could not expand their fleets to include more of the types of cars that are dominated by TTX, assuming that TTX provides access to its pooling services.

We conclude that a major advantage in financing currently enjoyed by TTX relative to other railcar lessors arises from its the higher railcar utilization. If the cars in the TTX pool achieve higher utilization than a fleet operated by an individual railroad, cars in the pooled fleet would be expected to generate greater car hire revenues for any given market setting and rate schedule. For this reason, investments in railcars that are managed by a pool would be expected to generate a larger flow of useful car services than similar investments in railcars controlled by a single railroad or a single lessor. However, opening the pool to more participants would increase the benefits to the railroad industry from these efficiencies.

B. Innovation in Railcar Design

In its Application, TTX describes the innovations in railcar design that have taken place during the period since it was first formed. For example, the Application states, “TTX plays an important role in the development and ongoing improvement of the flatcars used by North America’s railroads.”²⁴ Although we acknowledge the fact that TTX has played an important

²³ Application, p. 33.

²⁴ Application, p.26. Many of TTX’s claims about its role in innovation actually are quite modest. For example, it claims that it “works closely” with car builders and component suppliers (Application, p. 27), that it was “closely

role in innovation, the proper focus is whether innovation would be slowed absent the ability of TTX to purchase and own cars, or whether R&D efforts by others would take up any slack.

TTX's joint purchasing of railcars on behalf of its owners can lead directly to reduced innovation by the owners of TTX themselves. To the extent that these owners choose to delegate their innovative activities to TTX, the contributions that they make to technical advances in railcar design will be reduced. What is relevant in judging the contribution of joint purchasing by TTX to innovation, therefore, is not the amount of innovation contributed by TTX itself, but the amount contributed by TTX *and* its owners, as compared to the amount that would have been contributed by these owners if TTX did not engage in joint purchasing. TTX's contributions to advances in railcar design may thus overstate the *net* impact on innovation of its ownership of railcars.

A variety of entities other than TTX are involved in the design, production, and deployment of railcars and these entities would continue to have significant economic incentives to invest in R&D. Moreover, there are reasons to believe that, in the more competitive environment that would be created by a curtailment of TTX's ability to purchase railcars, investments in improved railcar design might even increase.

1. Other Entities are Capable of Innovation

The North American rail industry has undergone significant consolidation in recent years, reaching a point at which four firms dominate the U.S. rail network.²⁵ The railcar

involved" in the Doublestack Derailment Task Force (Verified Statement of Robert S. Hulick, p. 17), and that it "did not itself develop the double-stack car..." (Verified Statement of Thomas R. Brown, p. 17).

²⁵ Similarly, the number of railroad owners of TTX has declined. As DOJ noted in 1988, "...the 32 railroads that were participants in Trailer Train in 1974 have, through a series of mergers and bankruptcies, evolved into only 16 railroad systems." [Post-Hearing Brief of the United States Department of Justice Before the Interstate Commerce

manufacturing industry has undergone similar consolidation. If TTX were to stop purchasing and owning railcars, innovation would not be left in the hands of a fragmented industry in which the individual players were too small to carry it out effectively. Instead, R&D would be carried out by a small number of large and capable firms. This suggests that limiting TTX's role to pool management would not adversely affect the size or effectiveness of the rail industry's overall railcar R&D effort.

TTX also states that because of its "unique perspective as a steward of a fleet of railcars shared by all of North America's major railroads," it has a special interest in "ensuring that the overall cost of those cars—including both the cost of maintaining them over their entire life and the costs their operation imposes on the rail infrastructure and railroad operations—is no greater than necessary."²⁶ However, when railroads or lessors purchase railcars, those railcars typically remain in the purchasing railroad's fleets for decades. Over these long periods of time, any excess railcar maintenance caused by the purchaser's failure to acquire appropriately designed rolling stock would be borne by the purchaser. In addition, railroads are likely to have a strong motivation to take infrastructure maintenance and railroad operation costs into account. Under these circumstances, the purchasing railroad has similar incentives to acquire efficiently designed railcars and to communicate these needs to manufacturers. There is no reason to believe that TTX would be more concerned about such long-run costs than would the railroads and lessors.

2. Major Innovations in Intermodal Railcar Design Have Not Involved TTX

It is also important to recognize that some of the most important innovations in intermodal railcar design did not depend on TTX.

Commission (Finance Docket No. 27590 Sub-No. 1, Trailer Train Company et al – For Approval of the Pooling of Car Service with Respect to Flat Cars), 1988, p. 14.] Today, only nine railroads have ownership interests in TTX.

a. Double Stack Cars

TTX did not participate in the research or development of double-stack intermodal flatcars, one of the major breakthroughs in railcar design. In 1984, there was only one doublestack train per week, originating on the West coast and serving just one inland market. By 2002, there were more than 241 doublestack trains per week originating on the West coast, serving all major long-haul U.S. markets.²⁷

In 1977, the Southern Pacific Railroad designed and tested the first doublestack container technology.²⁸ APL put the first doublestack train in service in 1984. However, TTX did not acquire its first doublestack equipment until 1985.²⁹ Even after the technology was a proven economic success, TTX did not actively encourage its use until the 1990's. Here, while TTX clearly played a key role in developing the intermodal market, it followed rather than led the development and introduction of a new technology.

b. RoadRailer® Technology

RoadRailer® technology enables truck trailers to travel directly on railroad tracks without the need for a flatcar. Specially reinforced trailers use rubber wheels on highways and steel wheels on rails.³⁰ The trailers use on-board air systems to raise and lower the trailers on and off bogies.³¹ The specially designed suspension system provides a smooth ride on both highway and

²⁶ Verified Statement of Robert S. Hulick, p. 4.

²⁷ "Intermodal set to become railroads' biggest source of revenue growth," *U.S. Rail News*, October 9, 2002.

²⁸ [Http://www.uprr.com/aboutup/history/uprr-chr.shtml](http://www.uprr.com/aboutup/history/uprr-chr.shtml).

²⁹ Gus Welty, "How TTX tracks quality," *Railway Age*, April 1992.

³⁰ Ken Mark, "Riding the Rails, Canada's railways prepare for the new millennium," *Materials Management and Distribution*, January 2000.

³¹ A bogey is an assembly of two or more axles, usually a pair in tandem. (http://www.twna.org/trucking_terms.htm)

rail. The benefits of the technology include “lower transportation costs, less damage to merchandise, speed, inexpensive transfer facilities and trains with two-men crews.”³²

Kenneth A. Brown of the Chesapeake and Ohio Railroad originally conceived the Roadrailer[®] idea in 1952. Use of the service was started in 1955 between Detroit and Grand Rapids with trailers attached to passenger trains to carry mail and express freight.³³ Trinity/Thrall was responsible for reintroducing the Roadrailer[®] concept in modern times and licensed the technology to Wabash National Corporation, which began manufacturing the trailers in 1987 and later purchased the related patents.³⁴ CSX bought several RoadRailer[®] sets in the late 1980s, but it was the Norfolk Southern Railroad (NS) through Triple Crown (originally a joint venture with Conrail, now a wholly owned subsidiary of NS) that was primarily responsible for investing and promoting widespread use of RoadRailer[®] technology.³⁵ Amtrak, Canadian Pacific, and BNSF are other railroads that have embraced RoadRailer[®] technology.

Over the years, Wabash has produced several models, continuously adapting the design to customer needs and market conditions. The Mark V model included completely detachable train wheel bogies, dramatically reducing the net-to-tare weight ratio of the vehicle.³⁶ In addition, Wabash now produces trailers especially modified for perishable foods, heavy freight, mail freight, and autos. Because the innovative RoadRailer[®] technology does not require flatcars, TTX did not participate in the research and development efforts, or promote RoadRailer[®] use as an alternative standard.

³² Carl Cahill, “Road-Railers offer Big Benefits,” *Journal of Commerce*, September 22, 1986.

³³ [Http://www.trainweb.org/roadrailer/TCBPHist.htm](http://www.trainweb.org/roadrailer/TCBPHist.htm).

³⁴ [Http://www.wabashnational.com/about/history.htm](http://www.wabashnational.com/about/history.htm).

³⁵ [Http://www.trainweb.org/roadrailer/TCBPHist.htm](http://www.trainweb.org/roadrailer/TCBPHist.htm).

³⁶ [Http://www.qstation.org/BNSF_Triple_Crown/](http://www.qstation.org/BNSF_Triple_Crown/).

c. Iron Highway/Intermodal Express Platforms

Iron Highway uses a continuous platform 1,200 feet long to carry up to 40 trailers of varying lengths.³⁷ The trailers are loaded onto the platform using a simple ramp, rather than relatively expensive and complex lift equipment. Since 85 to 90 percent of trailers are not strong enough to be lifted by intermodal cranes, a ramp loading system enables railroads to market intermodal services to the *entire* trailer market.³⁸ Many experts believe this technology may enable the railroads to be more competitive with trucks in shorter hauls between 300 and 700 miles.³⁹

New York Air Brake and CSX Intermodal developed the prototype in the early 1990s as part of a joint venture. In 1994, CSX purchased New York Air Brake's interest. In 1996, CP leased the Iron Highway equipment from CSX for service between Montreal and Toronto.⁴⁰ In 2000, CP changed the name to Expressway and replaced the original test equipment with five-platform sets. The new sets use multiple cuts resulting in faster loading times of less than one hour. CP has invested \$50 million in the project and traffic has grown from 25,000 trailers in 2000 to 85,000 in 2002.⁴¹ CP now owns 310 platform sets and has extended service to Chicago.^{42,43}

³⁷ CSX Transportation, "CSX and the Iron Highway," accessible at <http://members.aol.com/jsundin357/ironhwy.html>.

³⁸ John Gallagher, "Cracking the 750 Mile Zone," *Traffic World*, August 18, 2003.

³⁹ CSX Transportation, "CSX and the Iron Highway," accessible at <http://members.aol.com/jsundin357/ironhwy.html>.

⁴⁰ "CP expands Expressway Service," *Railway Age*, January 1, 2003.

⁴¹ *Ibid.*

⁴² *Ibid.*

⁴³ Allan Swift, "CPR moving eastern unit out west: President resigns," *National Post* (Canada), June 1, 2001.

Since July of 2002, CNR has operated a daily service between Toronto and Montreal using Intermodal Express.⁴⁴ Intermodal Express employs an “intermodal ramp car” developed by Wabtec and Trinity Industries.⁴⁵ The car features a “pneumatically operated folding ramp that allows drive-on, drive-off loading of highway trailers from any grade-level surface.”⁴⁶ Unlike the Iron Highway design, the ramps move with the cars, enabling any location that can be accessed by a highway tractor to serve as a terminal. TTX neither promoted nor contributed to the Iron Highway or Intermodal Express designs.

3. Ownership Concentration and Innovation

Potential innovation benefits from having a single, large car purchaser must also be weighed against potential competitive harms in the development and deployment of innovative car designs. R&D can best be analyzed in economic terms as investments whose costs are recouped from the future revenue increases and/or cost savings generated by the application and use of the fruits of the R&D effort. From this perspective, it is clear that the greater the expected future benefits from the application of R&D activities, the greater the R&D investment that a firm is likely to make, other things equal.

The R&D decision calculus for an entity that purchases and owns a large share of the industry’s railcars differs from that of an individual railroad or railcar manufacturer. Because it purchases railcars for the industry as a whole, it benefits from improvements in railcar design only to the extent that the innovation increases overall industry- wide flatcar demand. A similar innovation developed by an individual railroad or railcar manufacturer can also generate similar

⁴⁴ John Gallagher, *op. cit.*

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

industry-wide benefits. However, a single railroad or railcar manufacturer that develops an innovation also has the potential to achieve a competitive advantage relative to other railroads or railcar manufacturers and to earn additional profits at the expense of its competitors. Under these circumstances, a competitive innovator can be expected to invest more in R&D, and bring innovations to market faster. Thus, innovation competition can increase the speed and effectiveness of innovation.⁴⁷ For this reason, allowing TTX to dominate railcar purchases may retard innovation, not enhance it.

In its Application, TTX has emphasized its role in fostering standardization of railcar design.⁴⁸ Although standardization may promote some forms of innovation,⁴⁹ that is clearly not true for all innovations. Consider, for example, the evolution of cars designed to carry finished lumber. In recent years the railroad industry has moved away from bulkhead flatcars and toward the standard 73-foot center beam design. However, BNSF, in an effort to reap the efficiencies generated by a higher gross-to-tare weight ratio, has adopted an 80-foot centerbeam design, different from the industry standard. Similarly, CP has recently begun to acquire 73-foot drop-deck centerbeam cars that increase capacity through the addition of a depressed well between the trucks of the car. Both types of cars can increase capacity, or lower costs, for some types of shipments. BNSF and CP can, therefore, reap the benefits of using these cars despite the fact

⁴⁷ F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, Third Edition, Boston: Houghton Mifflin, 1990, p. 660, note: "A bit of monopoly power in the form of structural concentration is conducive to innovation, particularly when advances in the relevant knowledge base occur slowly. But very high concentration has a positive effect only in rare cases, and more often is apt to retard progress by restricting the number of independent sources of initiative and by dampening firms' incentive to gain market position through accelerated R&D."

⁴⁸ See, e.g., Verified Statement of Thomas R. Brown, p. 19.

⁴⁹ Even if standardization were necessary, TTX has neither argued, nor established, that it is uniquely suited to develop industry standards. Indeed, there are circumstances in which control of a standard might be used by a dominant entity like TTX to disadvantage its rivals. For examples of cases in which this can occur see, S.M. Besen and J. Farrell, "Choosing How to Compete: Strategies and Tactics in Standardization," *Journal of Economic Perspectives*, 1994.

that they represent deviations from the industry standard. By contrast, TTX is less likely to purchase non-standard cars because of the competition that would pose to the very large number of conventional centerbeam cars in its fleet. Finally, to the extent that innovation requires collective activities, those activities can continue even if TTX does not purchase railcars. There is nothing to prevent railroads and other entities—including manufacturers and lessors—from engaging in cooperative R&D ventures to develop new and better railcars.

* * * *

This analysis suggests that there are few if any financing or innovation efficiencies to be gained by having TTX purchase cars for the pool that it manages. Lessors and railroads themselves can efficiently obtain financing for new cars and they would not be at a financing disadvantage if they could obtain the efficiency benefits of pooling. Moreover, innovation does not require joint purchasing, and innovation might well increase if there were greater competition among car purchasers. This competition would increase if all car owners had better, more certain access to the efficiencies of the TTX flatcar pool.

V. THE IMPACT OF COMPETITION BETWEEN TRUCK-ONLY AND TRUCK-RAIL INTERMODAL SERVICE

TTX states that “[r]ailroads could not afford to use TTX as a means of restricting output without sacrificing traffic, and profits, to trucks and other modes.”⁵⁰ Although it may be broadly true that trucks and railroads compete vigorously for certain traffic, one cannot conclude from this fact that competition between trucks and railroads is equally intense for all commodities and all traffic lanes. Within the broader freight market, there clearly are particular movements for which rail possesses such a significant competitive advantage that truck service fails to constrain

⁵⁰ Application, p. 55, footnote omitted.

the prices that railroads can charge.⁵¹ For example, rail transportation dominates the movement of coal in hopper cars and the movement of chemicals in tank cars. In these segments, it is competition between and among railroads that determines the prices charged to shippers.

A similar analysis applies to segments of the intermodal market. Over the past several decades, railroads have enjoyed brisk growth in their intermodal flatcar business. As the various submissions by TTX indicate, this segment of the rail market has grown to the point where it has become the largest single line of business for the railroad industry. The competitive success of truck-rail intermodal service relative to truck-only service is driven by the ability of railroads to carry freight at a lower per-mile cost. By combining truck-based pick-up and delivery with rail-based line-haul transportation, truck-rail intermodal service is able to provide the door-to-door convenience of truck transportation at a lower overall cost for certain loads.

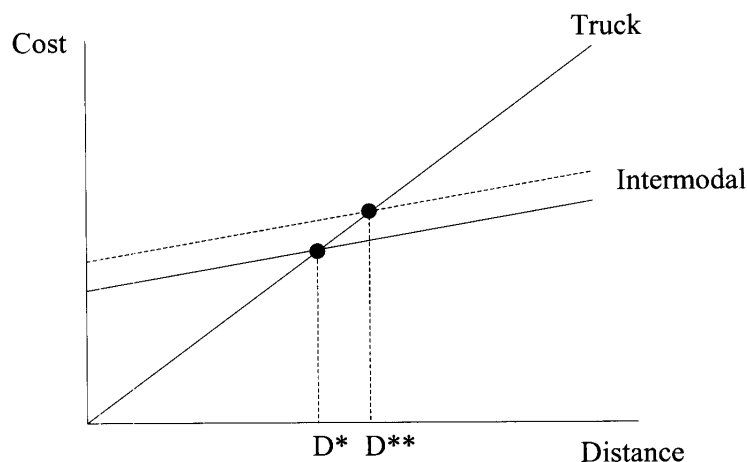
The fixed costs associated with the need to load containers onto railcars and offload them at their destination have no counterpart in truck-only service. This factor is a source of cost disadvantage for truck-rail intermodal service, relative to truck-only service. However, the significance of this cost disadvantage varies with the length of haul. The longer the length of haul, the greater the significance of the lower line-haul costs of rail transportation. The net result is that truck-only service will tend to offer lower overall costs for short lengths of haul, while truck-rail intermodal service will tend to represent the preferred option for longer lengths of haul, other things equal.⁵² Although truck-only and intermodal service may compete vigorously for

⁵¹ The very fact that the Surface Transportation Board retains a degree of regulatory authority over the rail industry reflects a belief on the part of policymakers that there are at least some shippers and traffic movements for which truck service does not constitute a sufficient competitive alternative.

⁵² Edward K. Morlok, John P. Sammon, Lazar N. Spasovic and Linda K. Nozick, "Improving Productivity in Intermodal Rail-Truck Transportation," *The Service Productivity and Quality Challenge*, The Netherlands: Kluwer Academic Publishers, 1995, p. 416.

hauls of intermediate length, each has substantial advantages over the other for some types of hauls.

Figure 2. Cost as a Function of Distance for Truck and Intermodal Services



As shown in Figure 2, drawn from Morlok *et al*, the cost structures of truck-only service and truck-rail intermodal services are such that there will be a critical distance, D^* , at which the two alternatives have the same costs. Trucks will have a cost advantage over truck-rail intermodal service for the shortest hauls. At the crossover point and beyond, however, truck competition places a ceiling on intermodal service prices but does not otherwise limit the prices that railroads can charge. On these routes, competition among railroads will be the principal determinant of the prices that are paid by shippers.⁵³

To the extent that competition among railroads is constrained on these routes, for example, as a result of higher costs, rates will rise toward the ceiling created by higher costs for

⁵³ See Interstate Commerce Commission Reports, Finance Docket No. 27590 (Sub-No. 1), Trailer Train Company, et al – Pooling of Car Service with Respect to Flatcars, Decided June 14, 1989, p. 583, footnote 23, for a similar argument.

truck-only service. This is shown in Figure 2 with the dotted line; an increase in the cost of truck-rail intermodal service will increase the critical distance where the costs of the two types of services are equal to D^{**} . At the same time, however, truck-rail intermodal service will continue to enjoy a competitive advantage for the (inframarginal) longer haul shipments.⁵⁴

This analysis implies that, even in the face of competition from trucks, TTX could cause rates for rail services charged to shippers to rise by restricting the supply of railcars. A restriction in the supply of railcars would lead to an increase in the railroads' opportunity costs. An increase in cost, including opportunity cost, can be expected to shift the location of this critical distance, moving traffic from rail to truck. With fewer cars, each railroad would have reduced incentives to lower prices because it would be less able to serve any additional customers that it might attract from other railroads. Because all railroads face similar constraints, prices to shippers would rise. Sales would be lost mainly on the least profitable routes. Thus, this supply restriction would tend to increase the profits of TTX's owners.

VI. TTX'S MARKET POWER AS A BUYER OF RAILCARS

Concerns have been raised in the past regarding TTX's market power as a buyer of flatcars.⁵⁵ This concern is relevant because TTX is the dominant purchaser of flatcars and in recent years also is becoming a significant purchaser of certain other types of railcars. In this section, we address the issue of TTX's market power as a purchaser of railcars.. First, we note that the demand for other types of cars may be limited and that TTX is a growing purchaser of other types of railcars. At the same time, other flatcar buyers would be unable to replace

⁵⁴ We recognize that quality of service is another important factor in determining competitive outcomes in these markets. However, the existence of this dimension of competition does not alter the basic economic analysis.

⁵⁵ See, e.g., Interstate Commerce Commission Reports, Finance Docket No. 27590 (Sub-No. 1), Trailer Train Company, et al—Pooling of Car Service with Respect to Flatcars, Decided June 14, 1989, pp. 573–582.

completely the purchases that TTX would otherwise have made because they may find that they lack access to the pool and its efficiencies. Second, in the long-run, lower purchase prices may reduce the incentives of railcar manufacturers to invest and innovate. Finally, TTX has the potential to exercise its buyer power by forcing railcar manufacturers to discriminate against competing railcar buyers. We begin by reviewing the data on TTX's share of purchasing and ownership. We then turn to the analysis of the various buyer power concerns.

A. TTX's Shares of Railcar Purchases and Ownership

1. TTX Share of Railcar Purchases is Not Decreasing

TTX's Application states that TTX's share of flatcar purchases (or deliveries) in 1994 was 85 percent and that this share has experienced a "modest decline" in recent years.⁵⁶ The TTX Application also provides a table claiming to show "TTX's share of all new freight car acquisitions."⁵⁷ The table appears to show that TTX's share of all freight car purchases (or deliveries) increased generally between the late 1980s and early 1990s and thereafter decreased, with a four-year average of 17.0 percent for the years 1999–2002.⁵⁸ However, the source data for the table, as provided in Figure 5 of Professor Kalt's Verified Statement, confirm that the data presented actually represent TTX's *flatcar* purchases as a percentage of all railcar purchases, *not* TTX's *freight car* purchases as a percentage of all railcar purchases. Because the purchases of non-flatcars are excluded, the percentage reported in the application understates TTX's share of all freight car purchases. Professor Kalt does not provide detailed delivery data for TTX non-flatcar purchases to permit us to properly recalculate the data in Kalt's Figure 5.

⁵⁶ Application, p. 53.

⁵⁷ Application, pp. 53–54.

⁵⁸ Application, p. 54.

Using data supplied to us by Trinity, we have analyzed the trends in estimated TTX orders of both flatcars and *all* nontank railcars for the period 1994–2003.⁵⁹ These estimates are conservative in that they do not cover the entire universe of TTX orders for the period. This is because the data do not include all of the cars ordered by TTX through extensions to existing contracts or through noncompetitive contract awards. Data for industry-wide orders were obtained from The American Railway Car Institute (ARCI).⁶⁰

Our examination of car order data shows that, although TTX's share of all freight car orders fluctuates from year to year, its share has recently been increasing, not decreasing, with significantly higher TTX shares of orders in 2002 and 2003 than in any year since 1994. Figures 4, 5, and 6 show TTX's shares of flatcar orders, non-flatcar (excluding tank car) orders, and all railcar (excluding tank car) orders, respectively.

It is not surprising that TTX's share of all railcar purchases is increasing. First, the railroad industry continues to see significant shifts in their customer base away from traditional commodities towards intermodal. Figure 3 shows that since 2000, the intermodal traffic for the four largest U.S. railroads has *increased* by 3 percent per year while traffic for the commodities that use other car types has *decreased* by 0.5 percent per year. Consequently, flatcars are becoming an increasingly dominant car type in the national fleet. Because TTX dominates this growing segment, its share of total railcar purchases tends to increase. Figure 3 outlines these intermodal and non-intermodal traffic changes in more detail.

⁵⁹ The data representing TTX orders were compiled by Trinity and represent requests for quotes (RFQs) for railcars issued by TTX to the major North American railcar manufacturers for competitive bidding supplemented by some information gathered outside the RFQ process. In cases where Trinity was the selected bidder, data for the quantities requested were replaced by data for the quantities ordered by contract between Trinity and TTX.

⁶⁰ The American Railway Car Institute (ARCI) is a committee of the Railway Supply Institute (RSI). ARCI membership consists of the major North American freight car manufacturers, lease car owners, and car component manufacturers. ARCI prepares data on orders, deliveries, and backlogs on a quarterly basis. See <http://www.rsiweb.org/committees/arci.htm>.

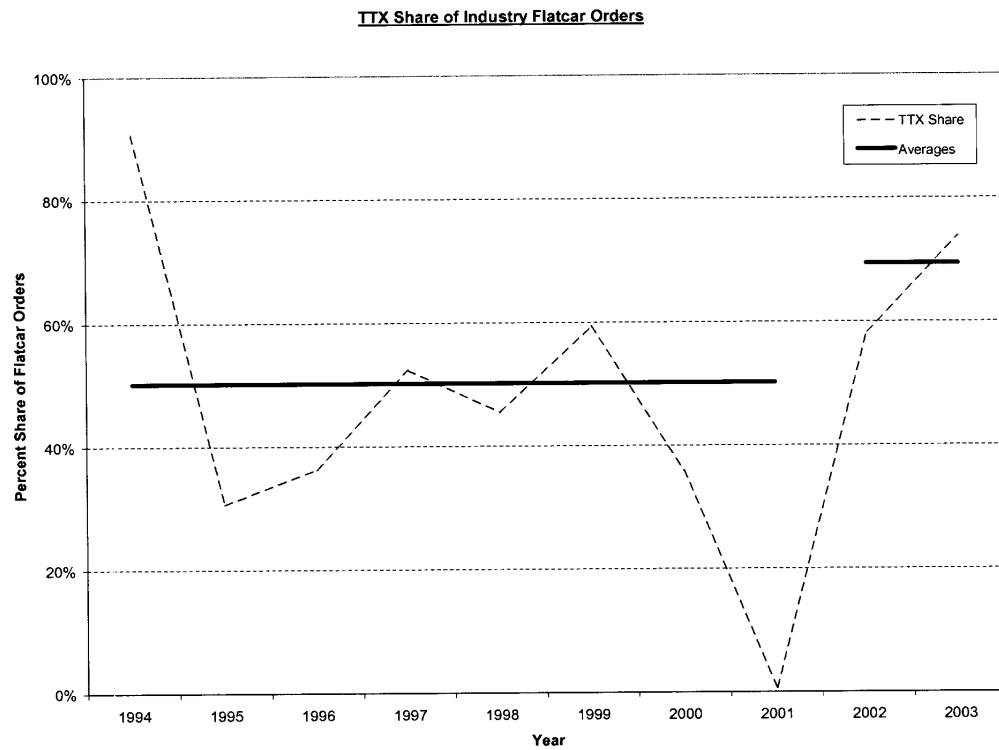
Figure 3. Major U.S. Class I Railroad Annual Carloads (in thousands)

Traffic Type	2000 [1]					2003 [2]					Total 2000-2003 % Compounded Annual Growth Rate
	BNSF	CSXT	NS	UP	TOTAL	BNSF	CSXT	NS	UP	TOTAL	
Auto Carloads	249	592	689	579	2,109	151	531	641	615	1,938	(2.8%)
Coal Carloads	2,016	1,677	1,563	1,883	7,140	2,050	1,509	1,510	2,136	7,205	0.3%
Merchandise Carloads	2,340	3,039	2,347	3,220	10,946	2,262	3,049	2,230	3,215	10,755	(0.6%)
Total Non-Intermodal Carloads	4,605	5,308	4,600	5,682	20,195	4,462	5,089	4,381	5,966	19,898	(0.5%)
Intermodal Units	3,570	1,964	2,238	3,201	10,973	4,145	2,135	2,458	3,238	11,977	3.0%

Source: AAR Annual Summaries of Weekly Traffic Reports.
Note: CAGR ('00-'03) = $(([2] / [1]) ^ { (1 / 3) } - 1)$.

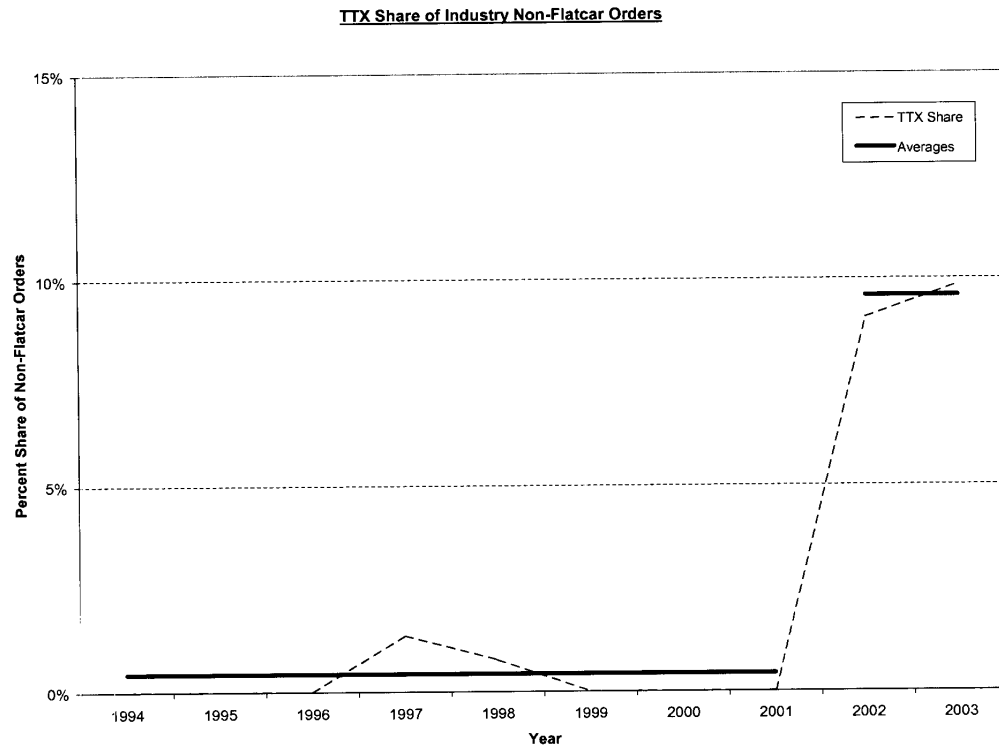
Second, TTX is becoming a larger factor in the purchase of non-flatcars. Although TTX historically purchased an inconsequential number of non-flatcars, its recent purchases of non-flatcars are nearly 10 percent of purchases of the entire industry. TTX's growing share of purchases of non-flatcars also tends to increase its share of overall railcar purchases. Thus, the growing importance of flatcars, together with TTX's significant move into the purchase of non-flatcars, invalidates TTX's claims that it is a shrinking part of the market for new railcars.

Figure 4. TTX Share of Industry Flatcar Orders



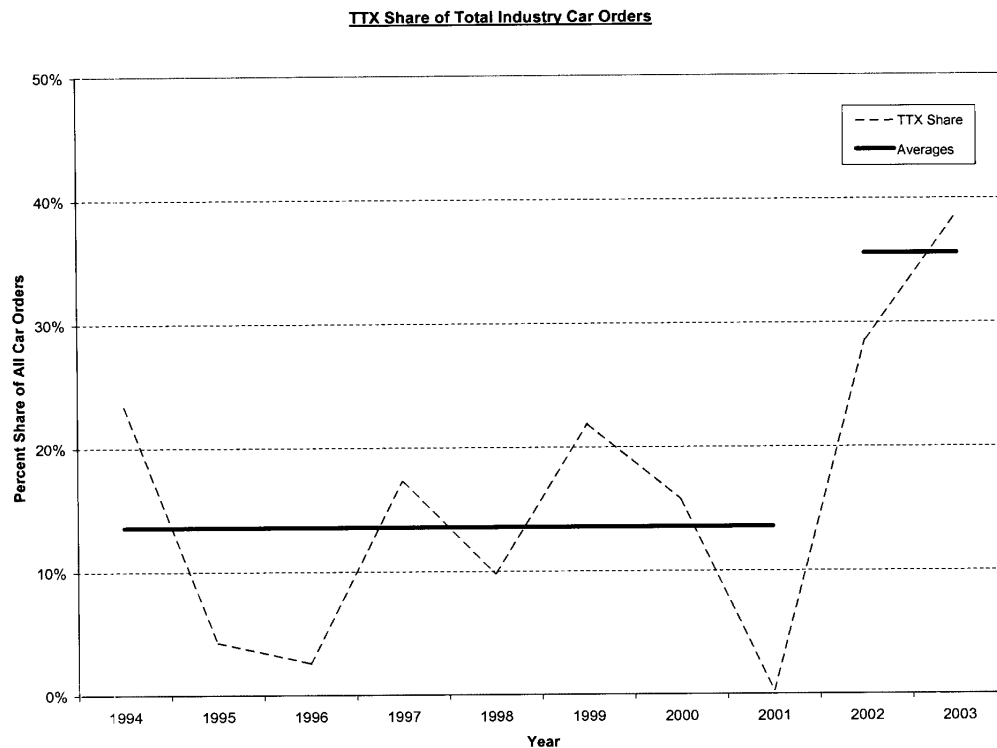
Sources: TTX RFQs.
Trinity orders from TTX.
American Railway Car Institute.

Figure 5. TTX Share of Industry Non-Flatcar Orders (excluding tank cars)



Sources: TTX RFQs.
Trinity orders from TTX.
American Railway Car Institute.

Figure 6. TTX Share of Total Industry Car Orders (excluding tank cars)



Sources: TTX RFQs.
Trinity orders from TTX.
American Railway Car Institute.

Finally, although ARCI data for the first quarter of 2004 are not available, Trinity officials have provided us with additional information about the continuing expansion of TTX into the purchases of railcars other than flatcars.⁶¹ In early 2004, TTX awarded additional boxcar orders to National Steel Car, making TTX the leading customer for boxcars since it began

⁶¹ Trinity, as a potential bidder for sales to TTX, obtained this information.

to acquire such cars in 2002. We also understand that TTX recently has been pursuing acquisitions of insulated boxcars, autoracks, truck carriers, and millgons.⁶²

Thus, the data show that TTX's share of railcar purchases has not decreased in recent years. In addition, the data show that TTX has recently expanded its purchases of car types for which it had previously not been a significant buyer.

2. TTX Owns a High Proportion of Flatcars

In addition to our analysis of railcar *purchases*, we also examined changes in railcar *ownership* using Universal Machine Language Equipment Register (UMLER) data for the years 1997 and 2004.⁶³ Using the UMLER ownership field, one of the mandatory data elements, we grouped each North American railcar owner into one of the following categories:

- Class I railroads
- Class II and III railroads
- TTX
- Leasing/financing companies
- Shippers⁶⁴

Figure 7 indicates that TTX currently owns 58 percent of all flatcars. Moreover, contrary to the suggestion in the Application, TTX's ownership share of all flatcars, which was 55 percent in 1997, has not decreased in recent years. Figure 7 also shows that there are several types of flatcars for which TTX's ownership share is especially large. For example, TTX currently owns 86 percent of all autorack cars, 70 percent of all light intermodal cars, and 66 percent of stack

⁶² BNSF and the Union Pacific currently dominate ownership of insulated or refrigerated cars, often used to carry fresh vegetables, frozen food, beer, and other chilled commodities. However, TTX, which does not currently own such cars, is now involved in talks to purchase insulated boxcars. TTX's role as an owner of railcars would increase further if its purchases of these types of cars were to displace purchases by its owners, BNSF and the Union Pacific.

⁶³ 1997 was the earliest available year for which Railinc could provide UMLER data.

⁶⁴ This includes brokers, consolidators, governments, and maintenance-of-way contractors.

cars.⁶⁵ Shippers own only four percent of flatcars, but they own about 20 percent of non-flatcars.⁶⁶ Finally, Figure 7 shows that TTX has significantly increased its ownership shares of unequipped boxcars. From 1997 to 2004, TTX's ownership share of these cars has nearly doubled from 25 percent to 47 percent.

⁶⁵ TTX's ownership shares of several other types of flatcars are also substantial. For example, it owns 38 percent of Conventional Intermodal cars and 29% of Above Deck Centerbeam cars.

⁶⁶ Universal Machine Language Equipment Register (UMLER), Railinc, January 1, 2004.

Figure 7. Ownership Shares by Type of Car—Flatcars and Unequipped Boxcars

Car Type	AAR Equipment Type Code	Owner Type	1997	2004	% of Industry Fleet 1997	% of Industry Fleet 2004
All Flatcars		Class I Railroads	45,547	38,681	26%	19%
		Class II and III Railroads	5,853	5,441	3%	3%
		Leasing, Finance, Banks	24,822	32,918	14%	17%
		Shippers	4,436	7,026	2%	4%
		TTX	97,631	115,378	55%	58%
		Subtotal	178,289	199,444	100%	100%
Car Type	AAR Equipment Type Code	Owner Type	1997	2004	% of Industry Fleet 1997	% of Industry Fleet 2004
Autorack	V - - -	Class I Railroads	6,611	5,926	13%	10%
		Leasing, Finance, Banks	568	1,862	1%	3%
		Shippers	90	11	0%	0%
		TTX	42,002	48,998	85%	86%
		Subtotal	49,271	56,797	100%	100%
Light Intermodal	Q - - -	Class I Railroads	2,509	3,672	16%	22%
		Class II and III Railroads	158	236	1%	1%
		Leasing, Finance, Banks	208	870	1%	5%
		Shippers	18	197	0%	1%
		TTX	12,411	11,667	81%	70%
		Subtotal	15,304	16,642	100%	100%
Stack	S - - -	Class I Railroads	1,402	2,340	8%	8%
		Class II and III Railroads	100	104	1%	0%
		Leasing, Finance, Banks	5,087	6,218	29%	21%
		Shippers	529	1,610	3%	5%
		TTX	10,338	19,622	58%	66%
		Subtotal	17,456	29,894	100%	100%
All Other	F - - - (excl. F-0-, F-4-, F-7-, F-8-)	Class I Railroads	13,873	10,501	42%	28%
		Class II and III Railroads	1,246	1,426	4%	4%
		Leasing, Finance, Banks	2,769	3,420	8%	9%
		Shippers	2,155	3,426	6%	9%
		TTX	13,306	18,381	40%	49%
	Other	Subtotal	33,349	37,154	100%	100%
Conventional Intermodal	P - - -	Class I Railroads	6,805	3,674	29%	26%
		Class II and III Railroads	1,470	1,153	6%	8%
		Leasing, Finance, Banks	3,388	3,294	15%	23%
		Shippers	330	704	1%	5%
		TTX	11,177	5,414	48%	38%
		Subtotal	23,170	14,239	100%	100%
Above Deck Centerbeam	F - 8 -	Class I Railroads	4,268	6,874	17%	21%
		Class II and III Railroads	659	480	3%	1%
		Leasing, Finance, Banks	11,415	15,523	47%	47%
		Shippers	496	481	2%	1%
		TTX	7,577	9,529	31%	29%
		Subtotal	24,415	32,887	100%	100%
Bulkhead	F - 4 -	Class I Railroads	7,692	4,730	68%	51%
		Class II and III Railroads	1,073	1,075	9%	12%
		Leasing, Finance, Banks	1,156	1,522	10%	17%
		Shippers	725	432	6%	5%
		TTX	717	1,454	6%	16%
		Subtotal	11,363	9,213	100%	100%
Ordinary	F - 0 -	Class I Railroads	2,387	964	60%	37%
		Class II and III Railroads	1,147	967	29%	37%
		Leasing, Finance, Banks	231	209	6%	8%
		Shippers	93	165	2%	6%
		TTX	103	313	3%	12%
		Subtotal	3,961	2,618	100%	100%
Car Type	AAR Equipment Type Code	Owner Type	1997	2004	% of Industry Fleet 1997	% of Industry Fleet 2004
Unequipped Boxcars	B - - -	Class I Railroads	8,078	1,919	15%	6%
		Class II and III Railroads	18,062	7,285	33%	25%
		Leasing, Finance, Banks	14,262	6,306	26%	21%
		Shippers	751	321	1%	1%
		TTX	13,414	13,782	25%	47%
		Subtotal	54,567	29,613	100%	100%

Source: Universal Machine Language Equipment Register (UMLER), Railinc, July 1, 1997, and January 1, 2004.

Note: "All Flatcars" includes all flatcar types listed in the figure.

"All Other Flatcars" exclude logging cars (TTX does not own any) and maintenance-of-way cars.

B. Analysis of Buyer Power

TTX says that it has no monopsony power to reduce the price it pays for railcars by limiting its purchases. As stated by Professor Joseph Kalt in his Verified Statement,

Railcar manufacturers demonstrate the ability to readily switch among the production of flatcars and other railcars, save perhaps tank cars... The ability to switch among different types of railcars (and/or other products) implies that any attempt to limit flatcar purchases as a mechanism for driving down the price of flatcars would be thwarted, as the railcar manufacturer will simply build other types of railcars (or other fabricated steel products) if the price it would receive for flatcars is unacceptable.⁶⁷

There are, however, several problems with this analysis. First, Professor Kalt assumes that, if TTX were to reduce its purchases of flatcars, manufacturers could simply switch to making other types of cars and selling them to others without affecting the prices of those cars. If that were the case, these prices would set a floor to the price of flatcars because sales of other types of cars to other buyers would easily absorb the capacity that would be freed up if TTX reduced its orders for flatcars. However, this analysis makes the unreasonable assumption that an increase in sales of other types of cars to other purchasers could be made at a constant price.⁶⁸ Under the more reasonable assumption that the prices of other types of railcars must be reduced in order to sell more of them, TTX could obtain a lower price of flatcars by restricting its orders. This tendency is reinforced by the presence of fixed costs and downtime associated with redesigning and retooling a production line in order to produce a different car type. For these reasons, Professor Kalt's analysis does not reflect the potential for TTX to behave monopsonistically with respect to flatcar purchases.

⁶⁷ Verified Statement of Joseph P. Kalt, p. 14, citations omitted.

⁶⁸ In technical economic terms, Professor Kalt is assuming that the demand for other types of railcars is perfectly elastic.

Second, Professor Kalt's analysis implicitly assumes that TTX does not purchase other types of railcars. However, if TTX becomes a major purchaser and owner of other types of cars, such as gondolas and boxcars, Professor Kalt's analysis would no longer apply. This is because TTX then could exercise monopsony power across-the-board and reduce its demand for all types of cars. In that case, a manufacturer that attempted to switch production from one type of car to another in the face of a reduction in demand would find that the demand for other types of cars had also decreased. In light of TTX's growing presence in other types of cars, this monopsony concern may become more relevant over time.

Third, at the same time, other potential purchasers of flatcars would not fully take up the slack left by reduced TTX purchases for two reasons. First, non-TTX owners are not guaranteed access to the pool, which could limit their incentives to purchase flatcars. Second, if the owners of TTX have a joint interest in limiting the number of flatcars, then TTX could enforce this desire by denying access to the pool to cars owned by deviating TTX owners, which, in turn, would reduce their incentives to purchase additional flatcars.

Fourth, Professor Kalt's classical monopsony analysis is focused on the short run and solely on prices, not on innovation or product quality. However, in the long run, railcar manufacturers may anticipate that a dominant buyer would have the ability to negotiate a very low price of cars in the future, one that covers the manufacturer's short-run but not its long-run costs. In this situation, manufacturers will not have the incentive to replace their capacity or engage in R&D to improve car designs. Indeed, some manufacturers may exit altogether and the amount of innovative activity undertaken by all manufacturers may decline. As a result, in the long run, railcar prices may be higher and the speed of innovation may decline. These reductions in investment would tend to lead to less R&D, lower quality or higher cost cars, which could

reduce efficiency and harm shippers. However, this may be an acceptable outcome for the buyer if it is able to negotiate a sufficiently large price reduction in the short-run. In addition, as described earlier, TTX's owners can benefit from the supply restrictions.

Finally, rather than engaging in classical monopsony conduct, it is possible that in the future TTX might attempt to force manufacturers to discriminate against other buyers. Such discrimination could involve charging TTX's rivals higher prices or providing inferior delivery schedules. It also could involve giving TTX orders priority when manufacturing capacity is tight. This conduct, in turn, would benefit TTX and its railroad owners.

Although the ICC and the Board may have dismissed these various buyer power concerns in the past, that position is not appropriate today. TTX has a strong position in flatcars and a growing role in the purchase of other types of cars. In addition, as discussed above, today TTX does not achieve superior efficiency benefits with respect to financing or innovation.

VII. CONCLUSIONS

Although we recognize the significant contributions made by TTX, we believe, nonetheless, that its Application deserves careful and critical economic analysis. Railcar ownership is not necessary to achieve the benefits of pooling and opening the pool to a larger number of participants could increase the benefits of the flatcar pool. Moreover, there are other ways to finance railcars efficiently that do not require joint purchases by TTX and many major innovations in railcar design have been carried out by entities other than TTX. At the same time, joint purchasing by TTX could lead to higher rates to shippers, in part because competition from trucks cannot completely constrain railroad rates. It also could lead to the exercise of market power by TTX as a purchaser. For these reasons, the Board should carefully evaluate TTX's Application.

VERIFICATION

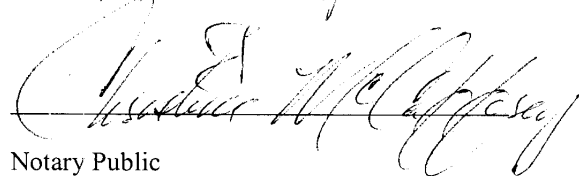
TTX COMPANY --- APPLICATION	)	
FOR APPROVAL OF POOLING OF	)	DOCKET NO. 27590 (Sub-No. 3)
CAR SERVICE WITH RESPECT TO	)	
FLATCARS	)	

CITY OF WASHINGTON	)	
	)	
DISTRICT OF COLUMBIA	)	ss
	)	

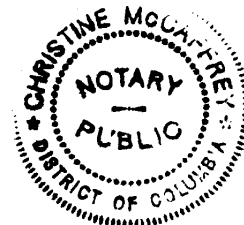
STEVEN C. SALOP, Professor of Economics and Law at Georgetown University Law Center, being duly sworn, deposes and says that he has read the foregoing statement, knows the contents thereof and that the same are true as stated.


STEVEN C. SALOP

Sworn to and subscribed before me
This 12th day of April, 2004.


Notary Public

My Commission expires _____
CHRISTINE McCAFFREY
Notary Public of District of Columbia
My Commission Expires October 14, 2007



VERIFICATION

TTX COMPANY --- APPLICATION)
FOR APPROVAL OF POOLING OF)
CAR SERVICE WITH RESPECT TO)
FLATCARS)

DOCKET NO. 27590 (Sub-No. 3)

COMMONWEALTH OF)

MASSACHUSETTS)

ss

KEVIN NEELS, Vice President at Charles River Associates, Inc., being duly sworn, deposes and says that he has read the foregoing statement, knows the contents thereof and that the same are true as stated.



KEVIN NEELS

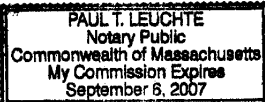
Sworn to and subscribed before me

This 12th day of April, 2004.



Notary Public

My Commission expires September 6, 2007



VERIFICATION

TTX COMPANY --- APPLICATION)
FOR APPROVAL OF POOLING OF)
CAR SERVICE WITH RESPECT TO)
FLATCARS)

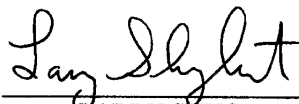
DOCKET NO. 27590 (Sub-No. 3)

COMMONWEALTH OF)

MASSACHUSETTS)

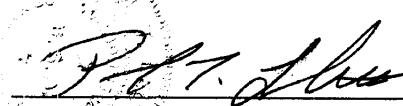
ss)

LARRY SHUGHART, Principal at Charles River Associates, Inc., being duly sworn, deposes and says that he has read the foregoing statement, knows the contents thereof and that the same are true as stated.

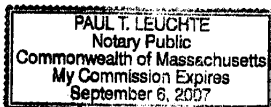

LARRY SHUGHART

Sworn to and subscribed before me

This 22th day of April, 2007.


Notary Public

My Commission expires September 6, 2007

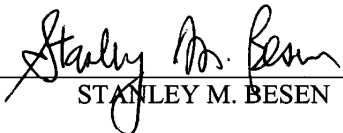


VERIFICATION

TTX COMPANY --- APPLICATION	)	
FOR APPROVAL OF POOLING OF	)	DOCKET NO. 27590 (Sub-No. 3)
CAR SERVICE WITH RESPECT TO	)	
FLATCARS	)	

CITY OF WASHINGTON	)	
	)	
DISTRICT OF COLUMBIA	)	ss
	)	

STANLEY M. BESEN, Vice President at Charles River Associates, Inc., being duly sworn, deposes and says that he has read the foregoing statement, knows the contents thereof and that the same are true as stated.


STANLEY M. BESEN

Sworn to and subscribed before me
This 9th day of April, 2004.



Notary Public

My Commission expires January 1, 2008

Karyn Joelle Walz
Notary Public, District of Columbia
My Commission Expires 1-1-2008

APPENDIX

STEVEN C. SALOP—Senior Consultant

Ph.D. Economics, Yale University
M.Phil. Economics, Yale University
B.A. Economics, University of Pennsylvania

FIELDS OF SPECIALIZATION

Industrial Organization
Competition and Antitrust Policy
Economics of Information
Law and Economics

EMPLOYMENT EXPERIENCE

***Current Position:* Professor of Economics and Law, Georgetown University Law Center
(at GULC since August 1981).**

Guest Scholar, Brookings Institution, 1990–1991.

Visiting Professor, Massachusetts Institute of Technology, Spring 1986.

Visiting Interdisciplinary Professor, Georgetown University Law Center, July 1981–June 1982.

Associate Director for Special Projects, Bureau of Economics, Federal Trade Commission, January 1980–June 1981.

Assistant Director for Industry Analysis, Bureau of Economics, Federal Trade Commission, September 1979–January 1980.

Deputy Assistant Director for Consumer Protection, Bureau of Economics, Federal Trade Commission, December 1978–September 1979.

Economist, Division of Consumer Protection, Bureau of Economics, Federal Trade Commission, July 1978–December 1978.

Economist, Office of Economic Analysis, Civil Aeronautics Board, September 1977–July 1978.

Economist, Federal Reserve Board, July 1972–September 1977.

Adjunct Professor, Department of Economics, University of Pennsylvania, September 1977–June 1978.



STEVEN C. SALOP—Page 2

Adjunct Professor, Department of Economics, George Washington University, September 1975–January 1978.

SELECTED PROFESSIONAL ACTIVITIES

Consultant, FTC Joint Venture Project (1999).

Advisory Committee, FTC Hearings on Global and Innovation-Based Competition (1996).

Associate Editor (Industrial Organization), *Journal of Economic Perspectives* (1987–1993).

American Bar Association Antitrust Task Force on Second Requests (1990).

Advisory Board, Georgetown Project on Treble Damages (1986–1987).

Associate Editor, *Journal of Industrial Economics* (1983–1988).

Associate Editor, *International Journal of Industrial Organization* (1984–1989).

Secretary, Antitrust Section, American Association of Law Schools (1983–1984).

Memberships: American Economic Association, American Bar Association, Phi Beta Kappa.

Nominating Committee: American Economic Association, 1982.

Economics Editorial Advisor, *Journal of Consumer Research*, 1982.

OTHER ACTIVITIES

Board of Directors, Charles River Associates Incorporated.

Management Advisory Committee, La Leche League International (1994–1999).

Board of Trustees, The Lowell School (1989–1995).

HONORS AND AWARDS

NSF Graduate Fellowship, 1968–1972.

Graduated *summa cum laude*, with Honors in Economics, from the University of Pennsylvania, 1968.

Schoenbaum Prize in Economics, University of Pennsylvania, 1968.



STEVEN C. SALOP—Page 3

Phi Beta Kappa, 1968.

PUBLICATIONS

BOOKS AND REPORTS

Strategy, Predation, and Antitrust Analysis. (Editor.) Federal Trade Commission, 1981.

Consumer Post-Purchase Remedies. With J. Howard Beales et al. Federal Trade Commission Staff Report, 1980.

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“Ricardian Equilibrium with Stochastic Free Entry.” With Serge Moresi.

“Efficiency Benefits in Dynamic Merger Analysis.” With Gary Roberts.

“The Economic Consequences of Informality.” With Peter Reuter.

RECENT SEMINARS, SPEECHES, AND PANELS

“Remedies in the Microsoft Case,” Brookings/AEI Symposium, April 2002.

“Bundled Rebates and LaPages’ Case,” ABA Section 2 Brown Bag, April 2002.

“Efficiencies and Economics in Mergers,” Conference Board, March 2002.

Lectures in the Economics of Antitrust, Federal Communications Commission, January–February 2002.

“Partial Ownership in Antitrust,” Kaye Scholer Law Firm, November 2001.

“Efficiencies in Merger Analysis,” ABA Fall Forum, November 2001.

“Raising Rivals’ Costs and Foreclosure,” New York City Bar Association, April 2001.

“Economic Analysis in Antitrust,” Conference Board, March 2001.

“Access Restraints and Foreclosure,” Hogan & Hartson Law Firm, February 2001.

“Economics of B2B Networks,” New York Bar Association, January 2001.

“The New EC Vertical Restraints Guidelines,” Fordham International Antitrust Conference, October 2000.



STEVEN C. SALOP—Page 9

“Roundtable on the Role of Economics in Merger Regulation,” Charles River Associates Conference, November 2000.

“First Principles, *Kodak* and Antitrust at the Millennium,” ABA/American University Law School Symposium on Antitrust at the Millennium, September 2000.

“Economics, Law and Remedy in the Microsoft Case,” Georgetown University Law Center, August 2000.

“The Economics of the Microsoft Case,” National Economists Club (Washington, DC.), July 2000.

Workshop on Antitrust Issues in B2B Networks, Federal Trade Commission, June 2000.

“Exclusion Issues Raised by Slotting Fees,” Federal Trade Commission, Slotting Fee Workshop, May 2000.

“Structuring Structural Remedies in the Microsoft Case,” Charles River Associates Conference, April 2000.

“Remedies in the Microsoft Case,” Progress and Freedom Foundation, February 2000.

“The Urge to Merge: Consumer Impacts and Antitrust Remedies,” Consumer Federation of America, March, 2000.

“The Microsoft Case,” Georgetown Law Alumni Committee, January, 2000.

“Competitor Collaboration Guidelines,” American Bar Association, November 1999.

“Roundtable on Cutting-Edge Issues in Mergers and Joint Ventures,” Charles River Associates Conference, November 1999.

“Monopolization and Microsoft,” Federal Reserve Bank of New York, May 1999.

“Potential Structural Remedies for Microsoft,” Consumer Project for Technology, April 1999.

“Remedies in Section 2 Cases,” Charles River Associates Conference, April 1999.

“Preserving Monopoly: the Microsoft Case,” Harvard Law School, April 1999.

Antitrust in Today’s Economy, Challenges to Dominant Firm Conduct, Conference Board, March 1999.

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STEVEN C. SALOP—Page 10

“Preserving Monopoly: The Microsoft Case,” University of Toronto Law School, December 1998.

“Gauging Cross-Ownership: The Role of Financial Interest and Management Control in Competitive Effects Analysis,” Charles River Associates, December 1998.

“Preserving Monopoly,” George Mason University Law School Symposium on Network Economics, October 1998.

“The Microsoft Case: Exclusionary Conduct and Leverage,” Golden State Antitrust and Regulation Institute, October 1998.

“Trust and Antitrust: Microsoft and Beyond,” Business Week Executive Summit, September 1998.

“Vertical Integration and Leverage,” Canadian Bar Association, October 1998.

“Antitrust Merger Analysis: A Guide for Investors and Analysts,” Institutional Investor Forum Investors Capital Forum, September 1998.

“Section 2: Conduct, Standards and Remedies,” Charles River Associates Conference, April 1998.

“Antitrust in Today’s Economy,” Conference Board Antitrust Conference, March 1998.

“Economic Analysis of Exclusionary Conduct,” Federal Trade Commission Bureau of Economics, February 1998.

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Panel on Market Power in Joint Ventures, Federal Trade Commission, November 1997.

Federal Trade Commission Hearings on Joint Ventures, June 1997.

“Vertical Foreclosure in Hospital Mergers,” Health Care Antitrust Forum, May 1997.

“Charging Twice: Economic Analysis of Installed Base Opportunism,” Charles River Associates Conference, April 1997.

“Antitrust in Today’s Economy,” Conference Board Antitrust Conference, March 1997.

“Cutting Edge Issues in Network Economies,” American Bar Association, Antitrust Section, May 1996.

“Lectures in Antitrust Economics and Law,” Jones, Day, Reavis & Pogue, May/June 1996.

“Economic Analysis of Most-Favored-Nations Clauses,” Health Care Antitrust Forum, May 1996.



STEVEN C. SALOP—Page 11

“Economics of Cable TV Mergers,” Charles River Associates Conference, April 1996.

Economic Experts in Antitrust Litigation: Trial Practice,” American Bar Association, Antitrust Section, “March 1996.

“Antitrust in Today’s Economy: The Role of Economics in Antitrust,” Conference Board, March 1996.

“Antitrust 1996: Presenting a Merger to the Government Agencies,” Business Development Associates, September 1995.

“Evaluating Restrictions on Joint Venture Access Rules,” Charles River Associates, April 1995.

“Access to Network Joint Ventures,” FTC Hearings on Global and Innovation-Based Competition, December 1995.

“Dynamic Efficiency Analysis in Mergers,” FTC Hearings on Global and Innovation-Based Competition, November 1995.

“Antitrust in Today’s Economy: New Issues in Antitrust,” Conference Board, March 1995.

“Tying Law After *Kodak*,” ABA, Antitrust Section, March 1995

SELECTED CONSULTING EXPERIENCE

PROPOSED OR CONSUMMATED MERGERS

Heinz/Beech-Nut

CBS/Viacom

Concord/EPS

Koch/Entergy

PRIMESTAR/NewsCorp-MCI DBS Slot

AOL/Netscape

Phoenix/Award

Daimler Benz/Chrysler

SBC/Ameritech



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Procter & Gamble/Tambrands

Ernst & Young/KPMG

Time Warner/Turner Broadcasting

CBS/Infinity Broadcasting

Lockheed-Martin/Grumman

Intermountain Health Care/Budge Clinic

Federated Department Stores/Macy's

GM-Toyota Joint Venture (Saturn)

Various mergers and joint ventures in retailing, telecommunications, food, chemicals, financial services, packaging, high-tech, and other sectors.

NON-MERGER ANTITRUST AND COMPETITION

Corrugated Sheet/Box Price-Fixing Litigation

PepsiCo v. Coca Cola (exclusionary conduct)

FTC v. Intel (exclusionary conduct)

FTC v. VISX (patent pooling)

Sun v. Microsoft (exclusionary conduct, infringement)

Walmart v. Visa and Mastercard (tying)

U.S. v. Microsoft (per-processor litigation)

FTC Investigation of AHP (RPM)

Fox v. Time Warner (exclusionary conduct)

FTC v. Capitol Cites and CFA (joint pricing)

SCLC v. Visa (collusive exclusionary conduct)

UPS Antitrust Litigation (exclusionary conduct)



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Chromalloy v. Pratt & Whitney (IBO tying)

ITS v. Kodak (IBO tying)

U.S. v. Delta Dental (MFN; collusive pricing)

Pulse Antitrust Arbitration (collective price-setting)

Town Sound v. Chrysler (tying)

Viacom v. TCI (exclusionary conduct)

Treadco v. Bandag (exclusionary conduct)

Atari Games v. Nintendo (exclusionary conduct)

Reazin v. Blue Cross/Blue Shield of Kansas (exclusionary conduct)

TransAlaskan Pipeline System (joint venture rules and pricing regulation)

Various non-public government investigations involving collusive conduct, monopolization, and exclusion.



Kevin Neels—Vice President

Ph.D. Cornell University
B.A. Cornell University

Kevin Neels has more than 25 years of economic research and consulting experience. He has worked on behalf of numerous public and private sector clients in a wide range of industries. A skilled econometrician, he specializes in the use of quantitative techniques to resolve practical business, legal and regulatory problems. His extensive practical experience in the use of economic analysis to inform business decision making and win the support of legislative, legal and regulatory authorities has taught him how to effectively communicate analytical results in laymen's terms.

Dr. Neels has offered expert testimony on a number of occasions, either in the form of an expert report, in deposition or orally. He has also supported leading academic expert witnesses. Dr. Neels has played a key role in legal and regulatory proceedings for which the financial stakes have often run into tens or hundreds of millions of dollars. His work in support of counsel has touched all phases of the legal process, including discovery, development of theory, preparation of expert testimony, examination of opposing witnesses, preparation of trial exhibits and development of cross-examination strategy.

A frequent focus of Dr. Neels' work has been estimation of economic damages. He directed the team of economists working for the Plaintiff in the trial that resulted in the largest damage judgment ever awarded in a patent infringement lawsuit. On many occasions he has developed econometric models to support economic damage claims and testimony in antitrust litigation. He has also frequently been responsible for review and analysis of damage estimates put into evidence by opposing experts and for development of strategies for refuting these claims.

Dr. Neels has extensive experience in the areas of antitrust economics and damage estimation. He has been designated as an expert witness and has offered deposition testimony in a number of antitrust disputes. His work has addressed issues of both geographic and product market definition, as well measurement of antitrust damages. His work in support of clients involved in antitrust litigation has touched all phases of the process, from earliest discovery through closing arguments at trial.

Dr. Neels possesses particular expertise in the analysis of spatial economic relationships. His work has addressed questions of geographic market definition, intraurban and interurban travel behavior, relationships between freight transportation costs and product prices, determinants of location decisions and relationships among spatially differentiated products. His work has assisted clients in diverse sections of both the passenger and freight transportation industries.

Among the projects Dr. Neels has successfully concluded are:

- For an operator of vehicle and passenger ferry services to offshore islands, Dr. Neels conducted a detailed analysis of fares, costs, market structure, the extent to which particular services are subsidized, the structure of the market for ferry services, and the likely effects of changes in conditions of entry.



KEVIN NEELS—Page 2

- For a major U.S. manufacturer that had been the target of industrial espionage and the organized theft of technology and other trade secrets, he offered testimony involving the stolen technology and, using a reasonable royalties approach, the damages suffered by the U.S. manufacturer as a result of the theft. At the conclusion of a jury trial in the United States, the manufacturer received a substantial damage award.
- For a group of automobile dealers he conducted an econometric analysis to quantify the extent to which these dealers had suffered economic injury as a result of a scheme in which executives of the auto manufacturer accepted bribes from a subset of dealers in exchange for providing them with extra allotments of highly profitable car models. The settlement of this litigation awarded a payment of several hundred million dollars to the non-bribe paying dealers.
- For an express package delivery carrier intervening in a rate case before the U.S. Postal Rate Commission he conducted a critical review of econometric studies of cost variability introduced into evidence by a witness testifying on behalf of the U.S. Postal Service. He identified a number of serious conceptual and methodological flaws in this analysis, and demonstrated that the substantive conclusions of the analysis were sensitive to relatively minor change in its design. On the basis of his testimony the Commission rejected the arguments of the Postal Service in the Commission's final ruling.
- For a major international air carrier accused of monopoly leveraging and attempted monopolization of a key market he prepared a report analyzing the carrier's use of corporate discounts and travel agent override commissions to help rebut arguments that these agreements constituted exclusive dealings.
- He played a major role in the preparation of expert testimony on behalf of a group of major domestic oil companies accused of conspiring to depress the prices paid to producers of a major input to tertiary oil recovery projects. This testimony focused on an examination of purchase contracts involving the defendants to establish market prices for the input in question over the alleged damage period.
- For the International Air Transport Association he conducted an analysis and critique of a proposed change in the structure of air traffic control user charges levied on foreign carriers entering the U.S. and overflying its territory. He pointed out a number of serious flaws in the empirical analysis that formed the basis for the new system of charges. Implementation of the new charges was halted by a federal judge.
- For a manufacturer of class III medical devices he conducted a series of statistical analyses of turnover in the population of patients using a number of



the company's key products. This analysis produced a profile of how patients clinical situation and needs evolved over time. These results provided the basis for a redirection of the company's product development strategy.

- Working for plaintiffs in an antitrust lawsuit involving the petroleum industry, he prepared an expert report criticizing analyses and testimony of defendants' experts. This report reviewed flaws in defendants' geographic market definition and rebutted criticisms made by defendant experts of plaintiffs' damage calculations.
- In support of a key economic witness in a hearing regarding refined petroleum product pipeline rates before the Federal Energy Regulatory Commission, he conducted an analysis the relationship between product prices in the different geographic areas linked by the pipeline system. He also examined alternative transportation modes and concentration in the pipeline's origin markets.
- For a major international oil company, he offered advice on econometric issues raised by an empirical study of the determinants of fair market value for a specific grade of crude oil.
- For the U.S. Department of Energy, he conducted an extensive investigation of the technological, institutional and economic factors influencing the demand for residential heating fuels.
- For a Gas Research Institute study of natural gas usage in the steel industry, he provided consultation on statistical issues and worked closely with a team of analysts examining the economics of fuel substitution.
- For a small package express company, he conducted a detailed analysis of the economic incentives created by alternative regulatory frameworks. This effort focused on the effects of proposed regulatory changes on entry by new firms, on the competitive structure of the market and on the potential for cross-subsidy by multi-product firms with diverse offerings.
- He played a critical role in a project for the Air Transport Association (ATA) of the United States to evaluate proposals for reforming the nation's air traffic control (ATC) system and to develop an effective financial and organizational structure for a reformed ATC. The plan, developed under extremely tight deadlines, required an assessment of ATC technological capabilities, estimation of the cost effects of ATC on the airline industry, an economic analysis of current and proposed ATC organizational forms and detailed financial assessment of proposed ATC entities. Dr. Neels presented his analysis and proposal to airline chief executive officers at a meeting of the ATA board.



KEVIN NEELS—Page 4

- Working on behalf of a major air carrier in an antitrust case involving allegations of predatory pricing, he worked directly with the lead litigation to develop a strategy to guide the discovery portion of the case. Subsequently, he conducted a variety of econometric analyses measuring the extent to which plaintiffs were harmed by the alleged predation.
- For a consortium of major U.S. air carriers accused of engaging in collusion and price fixing, he directed a major economic analysis of industry pricing strategy and dynamics. Drawing upon detailed data on daily fare changes, he prepared testimony and exhibits demonstrating the difficulty of engaging in coordinated pricing behavior.
- For a major U.S. air carrier, he conducted an extensive empirical investigation of the responses of travel agents to carriers' incentive and override programs. Using the results of this investigation, he evaluated his client's sales force management and travel agent incentive strategies to identify specific ways in which redesign and or retargeting could increase their net revenue yields.
- He assisted in the preparation of statistical exhibits and an expert affidavit for submission by a major U.S. carrier in a rulemaking proceeding regarding airline computerized reservation systems conducted by the U.S. Department of Transportation.
- He provided expert deposition testimony on geographic market definition in an antitrust lawsuit between a regional medical center and a physician-owned health clinic. To support his opinions he analyzed the structure of competition between alternative hospitals within the area and conducted an empirical analysis of patient decisions regarding choice of hospital for the service in question.
- For a biotechnology company involved in a trade secret misappropriation dispute with a competitor, he offered expert deposition testimony on potential fields of application for the technology in question and on the factors that influenced customer decisions to incorporate the new technology in their products. As part of this case he also conducted an empirical investigation in the role that technology licensing deals play in the financing of biotechnology start-up companies.
- To support expert testimony in an antitrust case between two major U.S. air carriers he developed and estimated a set of statistical models for estimating the effects of CRS display bias on the booking patterns and revenues of the affected airlines. As part of this effort he conducted an extensive analysis of the histories of the carriers in questions and of the development of computerized reservation systems as the primary channel of distribution for airline tickets. He also



KEVIN NEELS—Page 5

prepared damage estimates, assisted in the deposition of opposing expert witness, prepared trial exhibits and advised counsel on cross-examination strategy during the course of the trial.

- He directed the team of economists responsible for conduct of the damages study for plaintiff in a major patent infringement lawsuit in the consumer products industry. His work included development of econometric models to forecast product sales in eight major world markets, analysis of the effects of incremental changes in sales volumes on company profits, review of historical pricing strategies and calculation of economic damages for a wide range of “but-for” pricing and product introduction strategies. He and his team also played a key role in the analysis of the case put forth by the opposing side and in the development of cross-examination strategies for opposing expert witnesses. He was designated as an expert witness in this matter, but was not called upon to testify.
- For the public authority responsible for the operation of one of the largest international gateway airports in the country, he conducted a comprehensive review of sources of information on air cargo movements. Based upon the results of this review, he worked with authority staff to devise a strategy for monitoring trends in shipments by ultimate origin and destination, commodity, carrier and type of service, and for factoring this information into an improved process for planning and executing air cargo facility improvements.
- Working under extreme deadline pressure for a European pharmaceutical company, he estimated savings in total medical costs from pharmacological therapy for chronic occlusive arterial disease in order to provide input to a key regulatory dossier. Results were subsequently published in a peer-reviewed journal.
- To support the development of an airport system plan for a major metropolitan area, he prepared long-range activity forecasts for air carriers, regional airlines and general aviation.
- For the developer of a medical device-based pain management therapy, he conducted a cost-effectiveness analysis for internal use. He built upon this work to develop a reimbursement and marketing strategy for the product.
- For the top management of an emerging health care company, he prepared an analysis and briefing to review the market implications of health care reform and the strategies adopted by competing firms in response.
- For a regional air carrier accused of engaging in predatory pricing, he assisted counsel in defining the relevant product and geographic markets and in



KEVIN NEELS—Page 6

developing estimates of the short-run marginal costs of serving those markets. He also prepared evidence on the ease of entry and on the likely behavior and strategies of potential entrants.

- For the operator of a system of outpatient medical clinics, he conducted an analysis of the economic incentives created by investments by referring physicians. His conclusions were summarized in a written report, along with discussion of their implications for policy regarding regulation of such investments by the federal government.
- For a major manufacturer contemplating litigation over an alleged theft of trade secrets, he developed a system of economic forecasting models to calculate the effects of the theft of sales of the company's products in a number of major international markets. Results of this confidential investigation played a key role in the company's subsequent decision to seek redress through the courts.
- For a group of physicians involved in a health insurance-related private antitrust lawsuit he conducted a critical review and analysis of damage models prepared by opposing experts. His findings provided the basis for expert testimony by a leading university-based economist. In addition, he provided assistance to counsel in the deposition of opposing economic experts.
- For the plaintiff in an antitrust suit involving an important line of biotechnology products, he conducted an analysis of therapeutic substitution possibilities to support development of testimony regarding product market definition.
- As leader of a project funded jointly by the Ford Foundation, the U.S. Department of Housing and Urban Development and a consortium of local corporations, he directed a year-long study by the Rand Corporation of strategies for privatizing municipal services in Saint Paul, Minnesota. A major component of this project was a detailed analysis of the incentives created by different financing mechanisms, organizational structures and personnel management systems. Findings of the study were published in a major report entitled *The Entrepreneurial City*.
- For the developer of a new cardiac diagnostic imaging agent, he used meta-analysis and receiver operating characteristic curve techniques to measure the accuracy of procedures using the agent relative to competing diagnostic techniques.
- For an arm of the National Academy of Sciences, he conducted an investigation of the innovation process in medical technology and analyzed how that process has been effected over time by changes in the institutional and economic environment.



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- Working under a federally funded research grant, he served as a key staff member of a Rand Corporation study of the equity implications of substituting user charges for tax funding of public services.
- For the developer of a new orphan drug, he conducted a cost-benefit analysis, a review of political and legislative trends and a hedonic analysis of existing orphan drug prices to support development of a defensible pricing strategy.
- For a medical device company, he prepared a payor education brochure describing the results of a cost-effectiveness study of a new therapy, which allows payors to calculate the savings they could realize by granting coverage of the therapy.

Before returning to Charles River Associates to lead our Transportation Practice, Dr. Neels held a variety of responsible positions within the research and consulting industry. He was a vice president at PHB Hagler Bailly, Inc., and the vice president for Health Economics and managing director of the Cambridge office of Quintiles Inc., where he directed a team of economists serving a worldwide clientele of pharmaceutical and biotechnology, and medical device companies. Previously, he was vice president in charge of the pharmaceutical consulting practice at Charles River Associates. He has also served on the research staffs of the Rand Corporation, the Urban Institute and Abt Associates.

PROFESSIONAL AFFILIATIONS

American Economic Association

American Law and Economics Association

PUBLICATIONS AND TESTIMONY

ARTICLES

“Pricing-Based Solutions to the Problem of Weather-Related Airport and Airway System Delay.” *Air Traffic Control Quarterly*, Vol 10(3) 261–284 (2002).

“Congestion, Pricing and the Economic Regulation of Airports.” Transportation Research Board, The Federal Aviation Administration, Conference on Airports in the 21st Century (April 20, 2000).

“Estimating the Effects of Display Bias in Computer Reservation Systems.” With Franklin Fisher, In *Microeconomics Essays in Theory and Applications*. Ed. Maarten-Pieter Schinkel. Cambridge University Press, 1999.



KEVIN NEELS—Page 8

“Insurance Issues and New Treatments.” *Journal of the American Dental Association*, 125 (January 1994): 45S-53S.

“Medical Cost Savings from Pentoxifylline Therapy in Chronic Occlusive Arterial Disease.” *Pharmacoeconomics* 4, No. 2, (February 1994): 130-140.

“Analyzing Rent Control: The Case of Los Angeles.” With M. P. Murray, C. P. Rydell, C. L. Barnett, and C. E. Hillestad. *Economic Inquiry* 29, No. 4 (October 1991): 601-625.

“Forecasting Intermodal Competition in a Multimodal Environment.” With Joseph Mather. *Transportation Research Record* 1139 (1987).

“Modeling Mode Choice in New Jersey.” With Joseph Mather. *Transportation Research Record* 1139 (1987).

“Direct Effects of Undermaintenance and Deterioration.” With C. Peter Rydell. In *The Rent Control Debate*. Ed. Paul L. Niebanck. Chapel Hill, NC: University of North Carolina Press, 1985.

“Energy and the Existing Stock of Housing.” With M. P. Murray. In *Energy Costs, Urban Development, and Housing*. Ed. Anthony Downs and Katherine L. Bradbury. Washington, D.C.: The Brookings Institution, 1984.

“Reducing Energy Consumption in Housing: An Assessment of Alternatives.” *International Regional Science Review* 7, 1 (May 1982).

“Production Functions for Housing Services.” *Papers of the Regional Science Association* 48 (1981).

TESTIMONY

Before JAMS Arbitration, Expert Report in the matter of Transcore Holdings, Inc. v. Rocky Mountain Mezzanine Funding II, L.P.; Hanifen Imhoff Mezzanine Fund, L.P.; Moramerica Capital Corporation; and NDSBIC, L.P., and W. Trent Ates and Fred H. Rayner, September 12, 2003.

Before the U.S. District Court Southern District of Ohio Western Division (Cincinnati), Expert Report in the matter of Gooby Industries Corp., Century Box Division, and David S. Kagan vs. Frank J. Veneziano, and Weltman, Weinberg & Reis Co., L.P.A., September 4, 2003.

Before the U.S. District Court Central District of California Western Division, Expert Report in the matter of Winn Incorporated and Ben Huang vs. Eaton Corporation, July 10, 2003.



KEVIN NEELS—Page 9

Before the Superior Court of New Jersey, Law Division Docket No. CAM-L-6235-00, Certification in the matter of Bruce Zakheim, M.D. on behalf of himself and all others similarly situated v. AmeriHealth HMO, Inc., October 2002.

Before the U.S. District Court for the District of New Hampshire, Affidavit in the matter of George Lussier Enterprises, Inc., d/b/a Lussier Subaru, et al. vs. Subaru of New England, Inc., Ernest J. Boch, and Joseph A. Appelbe, June 2002.

Before the U.S. District Court for the District of Massachusetts, Expert Report in the matter of City of New Bedford, and New Bedford Harbor Development vs. Woods Hole, Martha's Vineyard & Nantucket Steamship Authority, May 2002.

Before the Court of Common Pleas, Cuyahola County, Ohio, Affidavit in the matter of KeyBank National Association vs. Corrillian Corporation, et al, April 2002.

Before the U.S. District Court for the District of New Hampshire, Affidavit in the matter of George Lussier Enterprises, Inc., d/b/a Lussier Subaru, et al., vs. Subaru of New England, Inc., Ernest J. Boch, and Joseph A. Appelbe, February 2002.

Before the Court of Common Pleas, Cuyahola County, Ohio, Expert Report in the matter of KeyBank National Association vs. Corrillian Corporation, et al, January 2002.

Before the District Court of the Fourth Judicial District of the State of Idaho, in and for the County of Ada, Testimony in the matter of Dirk Dunham Construction, Inc. vs. Ada County Highway District, Case No. CV OC 0005122D, June 2001.

Before the Federal Court of Australia, Queensland District Registry, Expert Report in the matter of State of Queensland vs. Pioneer Construction Materials Pty. Limited, Boral Resources (QLD) Pty. Limited, CSR Limited, Hymix Industries Pty. Limited, Goodmix Concrete Pty. Limited, Amatek Limited (trading as Rocla Concrete), and Excel Concrete Pty. Ltd., January 2001.

Before the U.S. District Court, District of Massachusetts, Expert Report in the matter of J.E. Pierce Apothecary, Inc., Sutherland Pharmacy Inc., Meetinghouse Community Pharmacy Inc., and Medfield Pharmacy, Inc., on behalf of themselves and a class of similarly situated entities v. Harvard Pilgrim Health Care, Inc., Health New England, Inc., CVS Corporation, and Pharmacare Management Services, Inc., January 2001.

Before the U.S. Postal Rate Commission, Postal Rate and Fee Changes, Docket R2000-1. Expert Report and Live Testimony, May 2000.

Before the U.S. District Court, Northern District of Ohio, Eastern Division, Testimony in the matter of Avery Dennison Corporation vs. Four Pillars Enterprise Co., Ltd., P.Y. Young, Huen-Chan (Sally) Yang and Tenhuong (Victor) Lee, Case No. 1:97 CV. 2282, September 1999.



KEVIN NEELS—Page 10

Before the American Arbitration Association, Testimony in the matter of Westerbeke Corporation vs. Daihatsu Motor Co., Ltd., Arbitration No. 13 T 153 01057 97, August 1999.

Before the Commonwealth of Massachusetts, Superior Court Department of the Trial Court, Worcester Division, Testimony in the matter of Performance Polymers, Inc. vs. Mohawk Plastics, Inc. and Dimeling Schreiber & Park, Civil Action No. 98-0230A (Mass./Worcester), July 1999.

Before the American Arbitration Association, Testimony in the matter of GCC Technologies Inc. vs. Toshiba TEC Corporation, American Arbitration Number 50 T1815897, March 1999.

Before the U.S. District Court, District of Maryland, Testimony in the matter of Borman Motor Company Limited Liability Co., et al. vs. American Honda Motor Company Inc., et al. Civil Action MDL-1069, August 1998.

Before the U.S. Postal Rate Commission, Postal Rate and Fee Changes, Docket R97-1. Expert Report and Live Testimony, February 1998.

Before the U.S. District Court, District of Kansas, Testimony in the matter of Timothy Mellon vs. The Cessna Aircraft Company. Civil Action 96-1454-JTM, Expert Report, November 1997.

Before the U.S. District Court, Southern District of New York, Testimony in the matter of Virgin Atlantic Airways Limited vs. British Airways PLC. Civil Action No. 93-7270 (MGC). Affidavit, August 1997.

Before the U.S. District Court, Western District of Pennsylvania, Testimony in the matter of Lazy Oil Co., John B. Andreassi and Thomas A. Miller Oil Co. vs. WITCO Corporation; Quaker State Corporation; Quaker State Oil Refining Corp.; Pennzoil Company; and Pennzoil Products Company. Civil Action No. 94-110E, Class Action. Expert Report, March 1996; live testimony April 28, 1997.

Before the U.S. District Court, Eastern District of Pennsylvania, Testimony in the matter of Stephen M. Clifton and Stephen M. Clifton Ultra Sonoco vs. Sun Refining & Marketing Company. Civil No. 95-CV-7694. Expert Report, February 1997.

Before the U.S. District Court, Northern District of Georgia, Testimony in the matter of ValuJet Airlines, Inc., vs. Trans World Airlines, Inc., and Delta Air Lines, Inc. Civil Action No. 1:95-cv-2896-GET. Expert Report, June 1996.

Before the State of Michigan, Testimony in the matter of Wayne State University, Lumigen, Inc. and A. Paul Schaap vs. Irena Bronstein and Tropix. Circuit Court Case No. 88-804-627CK, Court of Claims Case No. 88-11871CM. December 13, 1994.



KEVIN NEELS—Page 11

Before the U.S. District Court, Central District of California, Testimony in the matter of Blecher & Collins vs. Northwest Airlines. Case No. 92-7073-RG (SHx). November 15, 1993.

Before the U.S. District Court, District of Maine, Testimony in the matter of Penobscot Bay Women's Health Center vs. Penobscot Bay Medical Center. Civil Action No. 86-0110-8. July 19, 1990.



LARRY A. SHUGHART—Principal

M.S. Transportation, Massachusetts Institute of Technology
B.S. Chemistry, University of Pittsburgh
B.S. Business, University of Pittsburgh

Mr. Shughart specializes in performance management, financial analysis, network operations, and engineering economics, and consults mainly to the transportation industry. Mr. Shughart regularly draws on his operations experience when offering advice and recommendations related to scheduling, management, finance, and strategy. At CRA, he has been engaged on a variety of projects for industry, governments and law firms.

Prior to joining CRA, he utilized this expertise for 14 years at CSX Corporation, in Jacksonville, Florida, where he worked in a variety of positions, including performance improvement, locomotive operations, strategic planning, service design, finance, operations research, intermodal, and engineering. Prior to CSX, Mr. Shughart worked in the shortline industry. His academic experience includes membership on the engineering department advisory board at the University of Florida and research support for the M.I.T. Center for Transportation Studies. Mr. Shughart also served as a professor of economics at the University of North Florida.

PROFESSIONAL EXPERIENCE

2002–present Principal, Charles River Associates

- Co-authored expert testimony in support of a national railroad labor arbitration hearing.
- Managed a litigation project involving economic damages related to a patent dispute between a major rail car manufacturer and Class I railroad.
- Managed project and served as financial advisor to Province of British Columbia on matters related to the restructuring and privatization of BC Rail.
- Assisted in developing the Federal Motor Carrier Safety Administration deployment plan to entice the marketplace to expedite the implementation of the Rollover Advisor and Controller Technology, a truck safety device.
- Assisted in analysis and recommendations related to Amtrak passenger train scheduling and operations, supporting the U.S. DOT Office of Inspector General.
- Designed and implemented a \$500,000 marketing campaign.



LARRY A. SHUGHART—Page 2

2000–2002 AVP, Managing Director, Performance Improvement, *CSX Corporation*

- Led the process improvement (PIT) process, which is projected to reduce costs by \$300 million per year.
- Authored Commercial Organization Assessment Study.
- Developed integrated measurements to provide a comprehensive and balanced view of PIT activity.
- Managed the linkage of PIT goals to a 3-year business plan and annual budget.

1998–2000 *General Director, Locomotive Operations, CSX Corporation*

- Responsible for the productivity of \$3 billion of assets.
- Led the development and implementation of the first full-scale application of GPS Satellite tracking in the railroad industry, reducing annual costs by \$6 million. Nearly 3,000 locomotives were equipped with a real-time tracking system providing information on location, engine status, and fuel levels.
- Completed Like Kind Exchange of 156 locomotives with NPV value of \$115 million.
- Managed \$1 million IT support budget.
- Prepared and presented 5-year plan for locomotive capital, leases, and retirements.
- Developed CR acquisition strategy for operations, organization, and systems.
- Assisted in design and implementation of the postmerger integration service plan, responsible for estimating crew and locomotive resources.
- Participated in negotiation of detailed operating plans for the Conrail New Jersey Shared Area.
- Implemented CSX business processes at former Conrail terminals.
- Participated on the infrastructure negotiating team responsible for evaluating and dividing Conrail's assets between CSX and NS.

1994–1998 Director, Network Operations Reengineering Team, *CSX Corporation*

- Supported High Performance Organization initiative at 54 terminals.
- Led a review of best practices at six other companies.



LARRY A. SHUGHART—Page 3

- Implemented reengineered processes as part of the Chicago-Nashville Corridor Team.
- Developed a system to assist service planners in building feasible train schedules.

1990–1993 Manager, *Strategic Planning, Service Design, CSX Corporation*

- Received “Award of Excellence” for leading interdepartmental review of local service.
- Designed a Sales/Marketing system to support the Yield Management Committee.
- Prepared a monthly IT work plan for 10 programmers.
- Developed and managed a Student Intern/Co-Op program that included students from eight schools.
- Developed and analyzed alternative operating strategies.
- Applied Optimization, Simulation, and GIS tools to resource scheduling problems.
- Led interdepartmental Heavy Axle Load Study Team.

1989–1990 Assistant Manager Cost & Economics, *Finance, CSX Corporation*

- Implemented, calibrated and applied AAR engineering economics models.
- Analyzed requests for capital projects.

1988 Assistant Manager Operations Research, *CSX/Sea-Land Intermodal*

- Employed the AAR Service Planning Model to simulate and evaluate proposed operating scenarios that resulted in the wholesale redesign of the CSX Intermodal network.
- Supported implementation of a new strategy that resulted in closing 12 ramp facilities.
- Designed and implemented a back-haul pricing model.
- Applied game theory techniques to evaluate marketing strategies for the intermodal business.



LARRY A. SHUGHART—Page 4

- 1987 Engineering Administrator, *Winchester & Western RR, Bridgeton NJ*
- Designed and implemented an engineering cost accounting system.
 - Managed the finances and accounting associated with a \$4 million public/private partnership railroad infrastructure rehabilitation project in New Jersey

ACADEMIC EXPERIENCE

2001–present Engineering Department Advisory Board Member, *University of Florida*

1991–1994 Adjunct Professor of Economics, *University of North Florida*

1987–1989 Research Assistant, *M.I.T. Center for Transportation Studies*

PUBLICATIONS

“A Railroad Terminal Cost Model to Support Network Management Strategy.” With M.B. Lawrence. Journal of the Transportation Research Forum, Volume XXXIII No.1, 1993, pp.54–69.

“Evaluating Marketing Strategies for the Intermodal Firm.” With M.B. Lawrence. Transportation Research Forum, Proceedings of the Annual Conference, 1993.

“Strategies for Improving Rail Service Reliability.” With M.B. Lawrence. Transportation Research Forum, Proceedings of the Annual Conference, 1994.

“Redesigning the Commercial Organization of CSX: An Organizational Portfolio Analysis.” With Lex Donaldson. Journal of the Transportation Research Forum, submitted for publication, 2002.

“Solving Real Life Locomotive Scheduling Problems.” With R. Ahuja, J.B. Orlin, et. al. Transportation Science, submitted for publication, 2002.

“CRA’s Role in Rail Labor Arbitration.” CRA Insights, Spring/Summer, 2003.



PRESENTATIONS

Speaker, "Production Implementation of Asset Tracking, Remote Monitoring and Diagnosis (RM&D)—5-Year Retrospective." European Railroad Institute (ERRI) Interactive Conference, Satellite-Based Applications For Railways, January 2004, Paris, France. Presented status of CSX GPS Locomotive tracking system and lessons learned from production implementation of the new technology.

Panel Chair, "Yield Management in the Rail Industry," INFORMS Annual Meeting, 2001, Miami, FL. Reviewed a comprehensive inventory of issues related to yield management at a North American Class I railroad. Discussed potential challenges to implementing a yield management strategy, including organization, market expectations, IT systems, and product knowledge. Facilitated panel presentations and dialog from Amtrak, PROS, and Kingsley Group.

Panel Participant, "Planning for Conrail Integration, the Role of Models," INFORMS Annual Meeting, 1999, Cincinnati, OH. Presented methods used to develop resource requirements and deployment plans for locomotives, rail cars, track, and crews. Review the linkage of these resource plans to the proposed service design and integrated operating plan that was developed in support of the CSXT/Conrail Day One Scenario.

Speaker, "Improving Locomotive Productivity with Satellite Tracking," GE-Harris International Users Conference, 1999, Orlando, FL. Presented results of field pilot test of a global positioning tracking system for locomotives. CSXT used six-sigma techniques to document a six percent efficiency improvement resulting from the integration of the technology into tactical decision support systems.



STANLEY M. BESEN—Vice President

Ph.D. Economics, Yale University
M.A. Economics, Yale University

B.B.A. Economics, City College of New York

Dr. Besen is a Vice President in CRA's Economic Litigation Program.

PROFESSIONAL EXPERIENCE

1992–present *Vice President, Charles River Associates, Washington, DC.*

1980–1992 *Senior Economist, The RAND Corporation, Washington, DC.*

1990–1991 *Visiting Professor of Law and Economics, Georgetown University Law Center.*

1988–1989 *Visiting Henley Professor of Law and Business, Columbia University.*

1985–1988 *Co-editor, RAND Journal of Economics.*

1978–1980 *Co-director, Network Inquiry Special Staff, Federal Communications Commission.*

1971–1972 *Brookings Economic Policy Fellow, Office of Telecommunications Policy, Executive Office of the President.*

1965–1980 *Assistant Professor, Associate Professor, Professor of Economics, Allyn R. and Gladys M. Cline Professor of Economics and Finance, Rice University.*

1963–1965 *Economist, Institute for Defense Analyses.*

1962–1963 *Acting Assistant Professor of Economics, University of California, Santa Barbara.*

CONSULTANCIES

1972–1978 The RAND Corporation
1972–1977 Office of Telecommunications Policy, Executive Office of the President



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1972–1977	Office of Telecommunications Policy, Executive Office of the President
1975	Texoma Regional Planning Commission
1967	Department of Defense

PROFESSIONAL ACTIVITIES/HONORS

Member, National Research Council Board on Earth Sciences and Resources, Division on Earth and Life Studies, Committee on Licensing Geographic Data and Services, 2002–present

Member, The National Academies Computer Science and Telecommunications Board Committee on Internet Searching and the Domain Name System, 2001–present

Member, Editorial Board, Information Economics and Policy, 1992–present

Member, Editorial Board, Economics of Innovation and New Technology, 1989–present

Member, U.S. National Committee on Data for Science and Technology (CODATA), National Academy of Sciences/National Research Council, 1993–1996

Member, Office of Technology Assessment Advisory Panel on Communications Systems for an Information Age, 1986–1988

Member, Regional Telecommunications Planning Advisory Committee, City of Cincinnati, 1985

Member, Office of Technology Assessment Advisory Panel on Intellectual Property Rights in an Age of Electronics and Information, 1984–1985

Expert, World Intellectual Property Organization/UNESCO Meeting on Unauthorized Private Copying of Recordings, Broadcasts and Printed Matter, 1984

Listed in Who's Who in America, 1982–1983, 1984–1985, 1986–1987, 1988–1989, 1990–1991, 1992–1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004

Member, Editorial Board, Southern Economic Journal, 1979–1981

Member, Task Force on National Telecommunications Policy Making, Aspen Institute Program on Communications and Society, 1977

Brookings Economic Policy Fellow, 1971–1972

Member, Technical Advisory Committee on Business Development, Model City Program, City of Houston, 1969–1971

Wilson University Fellow, 1959–1961



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Overbrook Fellow, 1958-1959

Beta Gamma Sigma, 1958

PUBLICATIONS

BOOKS AND REPORTS

Telecommunications and Information Technology Standardization in Japan: A Preliminary Survey. The RAND Corporation, N-3204-CUSJR, 1991.

Compensating Creators of Intellectual Property: Collectives that Collect. With S. Kirby. The RAND Corporation, R-3751-MF, 1989.

New Technologies and Intellectual Property: An Economic Analysis. The RAND Corporation, N-2601-NSF, 1987.

Compatibility Standards, Competition, and Innovation in the Broadcasting Industry. With L. Johnson. The RAND Corporation, R-3453-NSF, 1986.

The Economics of Bulk Power Exchanges. With J. Acton. The RAND Corporation, N-2277-DOE, 1985.

Misregulating Television: Network Dominance and the FCC. With T. Krattenmaker, A. Metzger, and J. Woodbury. Chicago: University of Chicago Press, 1984.

An Analysis of the Federal Communication Commission's Group Ownership Rules. With L. Johnson. The RAND Corporation, N-2097-MF, 1984.

Regulation of Media Ownership by the Federal Communications Commission: An Assessment. With L. Johnson. The RAND Corporation, R-3206-MF, 1984.

Issues in the Design of a Market Experiment for Bulk Electrical Power. With J. Acton. The RAND Corporation, N-2029-DOE, 1983.

An Economic Analysis of Mandatory Leased Channel Access for Cable Television. With L. Johnson. The RAND Corporation, R-2989-MF, 1982.

After Energy Price Decontrol: The Role of Government Conservation Programs. With L. Johnson. The RAND Corporation, N-1903-DOE, 1982.

Cable Copyright and Consumer Welfare: The Hidden Cost of the Compulsory License. With H. Shooshan, C. Jackson, and J. Wilson. Shooshan and Jackson, 1981.



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New Television Networks: Entry, Jurisdiction, Ownership, and Regulation. With T. Krattenmaker et al. Final Report, Network Inquiry Special Staff, Federal Communications Commission, 1980.

Economic Policy Research on Cable Television: Assessing the Costs and Benefits of Cable Deregulation. With B.M. Mitchell, R.G. Noll, B.M. Owen, R.E. Park, and J.N. Rosse. Prepared for the Office of Telecommunications Policy, Executive Office of the President, December 1976. Reprinted in P. MacAvoy (ed.), *Deregulation of Cable Television*, American Enterprise Institute, 1977.

On Measuring the Gain in Economic Welfare from Marginal Cost Pricing when a Related Market Is of Importance: The Case of Electricity and Natural Gas. With B. Mitchell. The RAND Corporation, P-5755, 1977.

"A Simultaneous Equations Model of Television Station Revenue and Expenditure." Appendix F to R. Park, L. Johnson, and B. Fishman, *Projecting the Growth of Television Broadcasting: Implications for Spectrum Use*. The RAND Corporation, R-1841-FCC, 1976.

Introduction to Monetary Economics. Harper and Row, 1975.

An Economic Evaluation of an Alternative Method of Funding Public Broadcasting. Broadcasting Institute of North America, 1973.

Evaluating the Returns to Regional Economic Development Programs. Institute for Defense Analyses, B-272, 1966.

Internal Prices as an Administrative Tool: An Application to the Military Air Transport Service. With M. Bailey, J. Cross, and W. Sewell. Institute for Defense Analyses, S-200, 1965.

ARTICLES AND BOOK CHAPTERS

"Evaluating the Competitive Effects of Mergers of Internet Backbone Providers." *ACM Transactions on Internet Technology*, (with J.S. Spigel and P. Srinagesh), 2002.

"Advances in Routing Technologies and Internet Peering Agreements." *American Economic Association Papers and Proceedings*, (with P. Milgrom, B.M. Mitchell, and P. Srinagesh), 2001.

"Intellectual Property." In *The New Palgrave Dictionary of Economics and the Law*, The Macmillan Press, 1998. Reprinted in R. Towse and R.W. Holzhauser (eds.), *The Economics of Intellectual Property*, Edward Elgar, 2001.

"Analyzing Vertical and Horizontal Cross Ownership in Cable Television: the Time Warner-Turner Merger (1996)." In J.E. Kwoka and L.J. White, *The Antitrust Revolution: Economics*,



Competition, and Policy, Third Edition, Scott, Foresman, (with E. Murdoch, D. O'Brien, S. Salop and J. Woodbury), 1998.

"Telecommunications in the U.S.A: Evolution to Pluralism." In B. Lange (ed.), *ISDN: An International Comparison of Trends in the USA, Japan, Singapore and Europe*, Final Report to the ISDN Commission of North Rhine-Westphalia, (with S.R. Brenner and J.R. Woodbury), 1996.

"The Standards Processes in Telecommunications and Information Technology." In R. Hawkins, R. Mansell and J. Skea (eds.), *Standards, Innovation, and Competitiveness: The Politics and Economics of Standards in Natural and Technical Environments*, Edward Elgar, 1995.

"Rate Regulation, Effective Competition, and the Cable Act of 1992." *Hastings Communications and Entertainment Law Journal*, (with J.R. Woodbury), 1994.

"Choosing How to Compete: Strategies and Tactics in Standardization." *Journal of Economic Perspectives*, (with J. Farrell), 1994.

"AM v. FM: The Battle of the Bands." *Industrial and Corporate Change*, 1992.

"An Economic Analysis of Copyright Collectives." *Virginia Law Review*, (with S. Kirby and S. Salop), 1992.

"The Role of the ITU in Telecommunications Standardization: Pre-Eminence, Impotence, or Rubber Stamp?" *Telecommunications Policy*, (with J. Farrell), 1991. Reprinted as The RAND Corporation, RP-100, 1992.

"An Introduction to the Law and Economics of Intellectual Property." *Journal of Economic Perspectives*, (with L. Raskind), 1991. Translated and reprinted as "Introduzione agli Aspetti Legislativi ed Economici della Proprieta Intellettuale," in G. Goisis (ed.), *Efficienza Produttiva: Alcuni Contributi Su Noti (E Meno Noti) Argomenti*, CEDAM, 1994.

"The European Telecommunications Standards Institute: A Preliminary Analysis." *Telecommunications Policy*, 1990. Reprinted as The RAND Corporation, N-3320-NSF, 1991.

"Separate Satellite Systems and INTELSAT: An American View." *Revue de Droit de l'Informatique et des Telecoms*, 1989.

"The Economics of Telecommunications Standards." In R. Crandall and K. Flamm (eds.), *Changing the Rules: Technological Change, International Competition, and Regulation in Communications*, Brookings Institution, (with G. Saloner), 1989. Reprinted as "Compatibility Standards and the Market for Telecommunications Services," in T.J. Allen and M.S. Scott Morton (eds.), *Information Technology and the Corporation of the 1990s*, Oxford University Press, 1994.



“Private Copying, Appropriability, and Optimal Copying Royalties.” *Journal of Law and Economics*, (with S. Kirby), October 1989. An earlier version appeared as The RAND Corporation, R-3546-NSF, 1987.

“Assessing the Effects of Bulk Power Rate Regulation: Results from a Market Experiment.” *Applied Economics* (with J. Acton), May 1987. Reprinted in J. Plummer and S. Troopman (eds.), *Competition in Electricity: New Markets and New Structures* (Public Utilities Reports and QED Research, 1990). An earlier and more extended version appeared as *Regulation, Efficiency, and Competition in the Exchange of Electricity: First-Year Results from the FERC Bulk Power Market Experiment* (The RAND Corporation, R-3301-DOE, 1985).

“Discussion of Michael A. Tyler, ‘The Extent of Software Piracy.’” In F. Huband and R. Shelton (eds.), *Protection of Computer Systems and Software*. Clifton, NJ: Law & Business, Inc., 1986.

“Private Copying, Reproduction Costs, and the Supply of Intellectual Property.” *Information Economics and Policy*, 1986. Reprinted in D. Lamberton (ed.), *The Economics of Communication and Information*, Edward Elgar, 1996. An earlier version appeared as The RAND Corporation, N-2207-NSF, 1984.

“Copying Costs and the Costs of Copying.” In M. Greenberger (ed.), *Electronic Publishing Plus: Media for a Technological Future*. Knowledge Industries, 1985.

“Regulation of Broadcast Station Ownership: Evidence and Theory.” in E. Noam (ed.), *Video Media Competition: Regulation, Economics, and Technology*, Columbia University Press, (with L. Johnson), 1985.

“The Regulation of Telecommunications Networks.” *Information Society*, 1984.

“The Determinants of Network Television Program Prices: Implicit Contracts, Regulation, and Bargaining Power.” *The Bell Journal of Economics*, (with J. Woodbury and G. Fournier), 1983.

“Regulation, Deregulation, and Antitrust in the Telecommunications Industry.” *The Antitrust Bulletin*, (with J. Woodbury), 1983.

Summary Comments in E. Noam (ed.), *Telecommunications Regulation Today and Tomorrow*. Law & Business, Inc./Harcourt Brace Jovanovich, 1983.

“Economic Implications of Mandated Efficiency Standards for Household Appliances: Comment.” *The Energy Journal*, (with L. Johnson), 1982.

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"The Deregulation of Cable Television." *Law and Contemporary Problems*, (with R. Crandall), 1981.

"An Analysis of the Network-Affiliate Relationship in Television." Network Inquiry Special Staff, Federal Communications Commission, (with S. Preskill), 1980.

"The Value of Television Time: Some Problems and Attempted Solutions: Reply." *Southern Economic Journal*, 1978.

"Copyright Liability for Cable Television: Compulsory Licensing and the Coase Theorem." *Journal of Law and Economics*, (with W. Manning and B. Mitchell), April 1978. Reprinted in R. Towse and R.W. Holzhauser (eds.), *The Economics of Intellectual Property*, Edward Elgar, 2001. An earlier version appeared as "Copyright Liability for Cable Television: Is Compulsory Licensing the Solution?" The RAND Corporation, R-2023-MF, 1977.

"Deregulating Telecommunications — Sorting Out Mixed Signals." *Regulation*, 1978.

"The Value of Television Time." *Southern Economic Journal*, January 1976. An earlier version appeared as "The Value of Television Time and the Prospects for New Stations," The RAND Corporation, R-1328-MF, 1973.

"Watergate and Television: An Economic Analysis." *Communications Research*, July 1976. An earlier version appeared as The RAND Corporation, R-1712-MF, 1975.

"Market Size, VHF Allocations, and the Viability of Television Stations." *Journal of Industrial Economics*, (with P. Hanley), 1975.

"The Economics of the Network-Affiliate Relationship: Reply." *American Economic Review*, (with R. Soligo), 1975.

"The Economics of the Cable Television 'Consensus.'" *Journal of Law and Economics*, 1974.

"Education and Productivity in United States Manufacturing: Some Cross-Section Evidence." *Journal of Political Economy*, 1973.

"The Economics of the Network-Affiliate Relationship in the Television Broadcasting Industry." *American Economic Review*, (with R. Soligo), 1973.

"Elasticities of Substitution and Returns to Scale in United States Manufacturing: Some Additional Evidence." *Southern Economic Journal*, 1967.

"Cost Effectiveness Analysis for the 'War on Poverty.'" in T. Goldman (ed.), *Cost-Effectiveness Analysis: New Approaches in Decision-Making*. New York: Praeger, (with A. Fechter and A. Fisher), 1967.



“An Empirical Analysis of Commercial Bank Lending Behavior.” *Yale Economic Essays*, 1965.

CONGRESSIONAL TESTIMONY

Witness, Subcommittee on Intellectual Property and Judicial Administration, Committee on the Judiciary, US House of Representatives, 1991. Prepared statement and testimony appear in *Intellectual Property and International Issues*, 102nd Congress, 1st Session.

Witness, Subcommittee on Telecommunications and Finance, Committee on Energy and Commerce, US House of Representatives, 1990. Prepared statement and testimony appear in *Cable Television Regulation (Part 2)*, 101st Congress, 2nd Session.

Witness, Subcommittee on Telecommunications, Consumer Protection, and Finance, Committee on Energy and Commerce, US House of Representatives, 1983. Prepared statement and testimony appear in *Options for Cable Legislation*, 98th Congress, 1st Session.

Witness, Subcommittee on Communications, Committee on Commerce, Science, and Transportation, US Senate, 1982. Prepared statement and testimony appear in *Cable Television Regulation*, 97th Congress, 2nd Session.

Witness, Subcommittee on Telecommunications, Consumer Protection, and Finance, Committee on Energy and Commerce, US House of Representatives, 1981. Prepared statement and testimony appear in *Status of Competition and Deregulation in the Telecommunications Industry*, 97th Congress, 1st Session.

Witness, Subcommittee on General Oversight and Minority Enterprise, Committee on Small Business, US House of Representatives, 1980. Prepared statement and testimony appear in *Media Concentration (Part 1)*, 96th Congress, 2nd Session.

Witness, Subcommittee on Communications, Committee on Commerce, Science, and Transportation, US Senate, 1977. Prepared statement and testimony appear in *Cable Television*, 95th Congress, 1st Session.

Witness, Subcommittee on Communications, Committee on Interstate and Foreign Commerce, US House of Representatives, 1976. Prepared statement and testimony appear in *Cable Television Regulation Oversight (Part 1)*, 94th Congress, 2nd Session.

OTHER PRESENTATIONS

Panelist, DOJ/FTC Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, Session on Licensing Terms in Standards Activities, April 18, 2002.



STANLEY M. BESEN—Page 9

Panelist, Federal Communications Commission Roundtable on Media Ownership Policies, Session on Ownership Policies and Competition, October 29, 2001.

Panelist, Federal Trade Commission Hearings on Global and Innovation-Based Competition, November 30, 1995.

Panelist, Session on "The Role of Competition in the Electronic Media," Federal Trade Commission Symposium on Media Concentration, 1978. Comments reprinted in Federal Trade Commission, Bureau of Competition, **Proceedings of the Symposium on Media Concentration**, Volume I.

EXPERT WITNESS ACTIVITIES

Expert Report of Stanley M. Besen, filed before Minnesota Arbitration Panel in the Arbitration Proceeding, and testimony, April 18, 2001. *In the Matter of Hubbard Broadcasting, Inc. vs. CBS Broadcasting Inc. and Multimedia Holdings Corporation.*

Supplemental Expert Report of Stanley M. Besen filed before the United States District Court Southern District of New York on behalf of the American Society of Composers, Authors and Publishers, December 16, 1999. *United States v. ASCAP: In the Matter of the Application of Turner Broadcasting System, Inc., et al, Civ. No. 13-95 (WCC).*

Expert Report of Stanley M. Besen filed before the United States District Court Southern District of New York on behalf of the American Society of Composers, Authors and Publishers, April 16, 1999. *United States v. ASCAP: In the Matter of the Application of Turner Broadcasting System, Inc., et al, Civ. No. 13-95 (WCC).*

Affidavit of Stanley M. Besen filed before the U.S. District Court, Middle District of Florida, Tampa Division on behalf of Comcast Cablevision of West Florida, Inc., February 14, 1998. *DeSoto Broadcasting, Inc. as the General Partner of and on behalf of DeSoto-Channel 62 Associates, Ltd. v. Comcast Cablevision of West Florida, Inc., Case No. 96-1581-CIV-T-24A.*

Preliminary Expert Report of Stanley M. Besen filed before the U.S. District Court, Middle District of Florida, Tampa Division on behalf of Comcast Cablevision of West Florida, Inc., February 5, 1998. *DeSoto Broadcasting, Inc. as the General Partner of and on behalf of DeSoto-Channel 62 Associates, Ltd. v. Comcast Cablevision of West Florida, Inc., Case No. 96-1581-CIV-T-24A*

Testimony of Stanley M. Besen before the Library of Congress, Copyright Arbitration Royalty Panel on behalf of the Motion Picture Association of America, August 15, 1995. *In the Matter of Distribution of 1990, 1991, and 1992 Cable Royalty Funds.*



STANLEY M. BESEN—Page 10

Third Declaration of Stanley M. Besen filed on behalf of Turner Broadcasting System, Inc., et al, June 25, 1995. *Turner Broadcasting System, Inc., et al v. FCC. Civil Action No. 92-2247 (and Consolidated Civil Action Nos. 92-2292, 92-2492, 92-2495, 92-2558) (SFW, TPJ, SS).*

Second Declaration of Stanley M. Besen filed on behalf of Turner Broadcasting System, Inc., et al, June 15, 1995. *Turner Broadcasting System, Inc., et al v. FCC. Civil Action No. 92-2247 (and Consolidated Civil Action Nos. 92-2292, 92-2492, 92-2495, 92-2558) (SFW, TPJ, SS).*

Declaration of Stanley M. Besen filed on behalf of Turner Broadcasting System, Inc., et al, May 24, 1995. *Turner Broadcasting System, Inc., et al v. FCC. Civil Action No. 92-2247 (and Consolidated Civil Action Nos. 92-2292, 92-2492, 92-2495, 92-2558) (SFW, TPJ, SS).*

Expert Report of Stanley M. Besen filed on behalf of Plaintiffs Turner Broadcasting System, Inc., et al., April 21, 1995. *Turner Broadcasting System, Inc., et al v. FCC. Civil Action No. 92-2247 (and Consolidated Civil Action Nos. 92-2292, 92-2492, 92-2495, 92-2558) (SFW, TPJ, SS).*

Report of Stanley M. Besen and Testimony on behalf of McCaw Cellular Communications, Inc., February 7, 1995. *Donald W. DePreist, et al v. McCaw Cellular Communications, Inc., et al.*

Affidavit of Stanley M. Besen filed before the United States District Court, Southern District of Indiana, Indianapolis Division on behalf of TCI of Indiana, Inc., August 2, 1994. *Reporter Times, Inc., Plaintiff, vs. TCI of Indiana, Inc. and Tele-Communications, Inc., Defendants, Cause No. IP 93-1287 C.*

Testimony on Behalf of the Motion Picture Association of America *et al*, Copyright Royalty Tribunal 1990 Cable Royalty Distribution Proceeding, August 16, 1993.

Declaration of Stanley M. Besen In Opposition to Plaintiff's Motion for Preliminary Injunction, April 23, 1985, and testimony on behalf of the City of Sacramento, *Pacific West Cable Company v. City of Sacramento*, In the United States District Court in and for the Eastern District of California, 1987.

Testimony of Stanley M. Besen on behalf of Program Suppliers before the Copyright Royalty Tribunal, *1983 Cable Royalty Distribution Proceeding*, November 4, 1985.

OTHER SELECTED CONSULTING ACTIVITIES

"An Economic Analysis of NOAA's Draft Report *Fair Market Value Analysis for a Submarine Cable Permit in National Marine Sanctuaries* (August 2001). With P.J. DeGraba filed on behalf of Global Crossing Ltd., October 15, 2001. *In the Matter of Fair Market Value Analysis for A Submarine Cable Permit in National Marine Sanctuaries*, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Docket No. 010712175-1175-01.



“The Incentives of Cable Operators to Carry Multiple ISPs.” With P. J. DeGraba and J. R. Woodbury. December 1, 2000, To the Federal Communications Commission on behalf of The National Cable Television Association, *In the Matter of Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*, GN Docket No. 00-185.

Declaration of Stanley M. Besen, Steven R. Brenner, and Christopher L. Cavanagh filed before the Federal Communications Commission on behalf of Sprint Corporation, June 21, 2000. *In re Applications of Sprint Corporation, Transferor, and MCI WorldCom, Inc., Transferee, for Consent to Transfer Control of Corporations Holding Commission Licenses and Authorizations Pursuant to Sections 214 and 310 (d) of the Communications Act and Parts 1, 21, 24, 25, 63, 73, 78, 90, and 101, FCC, CC Docket No. 99-333.*

Declaration of Stanley M. Besen and Steven R. Brenner filed before the Federal Communications Commission on behalf of Sprint Corporation, March 20, 2000. *In re Applications of Sprint Corporation, Transferor, and MCI WorldCom, Inc., Transferee, for Consent to Transfer Control of Corporations Holding Commission Licenses and Authorizations Pursuant to Sections 214 and 310 (d) of the Communications Act and Parts 1, 21, 24, 25, 63, 73, 78, 90, and 101, FCC, CC Docket No. 99-333.*

Declaration of Stanley M. Besen and Steven R. Brenner filed before the Federal Communications Commission on behalf of Sprint Corporation, November 17, 1999. *In re Applications of Sprint Corporation, Transferor, and MCI WorldCom, Inc., Transferee, for Consent to Transfer Control of Corporations Holding Commission Licenses and Authorizations Pursuant to Sections 214 and 310 (d) of the Communications Act and Parts 1, 21, 24, 25, 63, 73, 78, 90, and 101, FCC, CC Docket No. 99-333.*

“An Economic Analysis of CLEC Access Pricing,” With J. P. Acton. Filed on behalf of Sprint Communications, October 28, 1999. *Reply Comments of Sprint Corporation In the Matter of Provision of Directory Listing Information Under the Telecommunications Act of 1994, As Amended, CC Docket No. 99-273.*

“An Economic Analysis of the Effects of the AT&T-MediaOne Merger on Competition in the Supply and Distribution of Video Program Services: Response to the Critics.” September 17, 1999. With S. X. Moresi and J. R. Woodbury to the Federal Communications Commission on behalf of AT&T Corp. *In the Matter of Applications for Transfer of Control of Licenses, MediaOne Group, Inc., Transferor To AT&T Corp., Transferee, CS Docket No. 99-251.*

“An Economic Analysis of Regulatory Takings and Just Compensation With an Application to Mobile Satellite Services,” With J. P. Acton. Filed on behalf of ICO Global Communications Services before the Federal Communications Commission, June 16, 1999. *In the Matter of the FCC’s Proposed Policy for Compensating Parties Displaced by the Entry of Mobile Satellite Services.*



“A Competitive Analysis of the Japan-U.S. Cable Network.” With S. R. Brenner. To the Federal Communications Commission on behalf of Japan-US Cable Network, March 8, 1999. *In the Matter of AT&T Corp., et al, Joint Application for a License to Land and Operate a Submarine Cable Network Between the United States and Japan, File No. SCL-LIC-19981117-00025.*

“An Economic Analysis of the Proposed Bell Atlantic/GTE Merger.” With J. R. Woodbury and P. Srinagesh. To the Federal Communications Commission on behalf of Sprint Communications Company, L.P., November 23, 1998. *In the Matter of GTE Corporation, Transferor, and Bell Atlantic Corporation, Transferee, for Consent to Transfer of Control, Application for Transfer of Control, Public Interest Statement.*

“Standard Setting for Digital Radio.” With J. M. Gale. To the Federal Communications Commission on behalf of USA Digital Radio Partners, L.P., October 7, 1998. *Petition for Rulemaking In the Matter of Amendment of Part 73 of the Commission’s Rules to Permit the Introduction of Digital Audio Broadcasting in the AM and FM Broadcast Services.*

“An Economic Analysis of the Proposed SBC/Ameritech Merger.” With J. R. Woodbury and P. Srinagesh. To the Federal Communications Commission on behalf of Sprint Communications Company, L.P., October 14, 1998. *In the Matter of the Application for Consent of to the Transfer of Control of Licenses and Section 214 Authorization from Ameritech Corporation to SBC Communications, Inc.*

Declaration of Stanley M. Besen and R. Craig Romaine filed before the Federal Communications Commission on behalf of Sprint Corporation, September 4, 1998. *In the Matter of Implementation of the Pay Telephone Reclassification and Compensation Provisions of the Telecommunications Act of 1996, CC Docket No. 96-128.*

“A Response to Ameritech’s New Media’s ‘Allegations of a Price Squeeze’ by Vertically Integrated Cable Operators.” With J. R. Woodbury. To the Federal Communications Commission on behalf of Tele-Communications, Inc., September 3, 1998. *In re Comments of Ameritech New Media, Inc, Filed in MM Docket No. 92-264 and CS Docket No. 98-82 (August 14, 1998).*

“Comments on Dertouzos and Wildman, ‘Programming Access and Effective Competition in Cable Television.’” With J. R. Woodbury. To the Federal Communications Commission on behalf of Tele-Communications, Inc., September 3, 1998. *In re Comments of Ameritech New Media, Inc, Filed in MM Docket No. 92-264 and CS Docket No. 98-82 (August 14, 1998).*

“An Economic Analysis of the Effects of Partial Ownership Interests in Cable Systems.” With J. R. Woodbury, D. P. O’Brien, and S. X. Moresi. To the Federal Communications Commission on behalf of Tele-Communications, Inc., August 14, 1998. *FCC Notice of Proposed Rulemaking In the Matter of Implementation of the Cable Television Consumer Protection and Competition Act*



of 1992: Review of the Commission's Cable Attribution Rules, CS Docket No. 98-82 (released June 26, 1998).

"An Economic Analysis of the FCC's Cable Ownership Restrictions." With J. R. Woodbury. To the Federal Communications Commission on behalf of Tele-Communications, Inc., August 14, 1998. *FCC Memorandum Opinion and Order on Reconsideration and Further Notice of Proposed Rulemaking In the Matter of Implementation of Section 11(c) of the Cable Television Consumer Protection and Competition Act of 1992: Horizontal Ownership Limits, MM Docket No. 92-264 (released June 26, 1998).*

"An Economic Analysis of the Efficiency Benefits from Newspaper-Broadcast Station Cross-Ownership." With D. P. O'Brien. To the Federal Communications Commission on behalf of Chronicle Publishing and Gannett Co., Inc., July 21, 1998. *In the Matter of 1998 Biennial Regulatory Review – Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996.*

"A Further Analysis of the Effects of Cable Diversion, Premium Service Buy Rates, and Volume Discounts on Primestar's Competitive Incentives: A Response to Dr. Rosston." With S. C. Salop, J. R. Woodbury, and E. J. Murdoch. To the Federal Communications Commission on behalf of PRIMESTAR Partners, L.P., May 19, 1998. *In re Application of MCI Telecommunications Corporation and PRIMESTAR LHC, INC. For Consent to Assignment of Direct Broadcast Satellite Authorization.*

"An Economic Analysis of the Impact of the WorldCom-MCI Merger on the Provision of Internet Backbone Services." With J. R. Woodbury and P. Srinagesh. To the Federal Communications Commission and the European Commission on behalf of Sprint Corporation, April 7, 1998. *In re Application of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc., FCC CC Docket No. 97-211.*

"A Comparison of Primestar's Costs with Those of a Standalone Entrant." With Steven C. Salop, J. R. Woodbury, and E. J. Murdoch. To the Federal Communications Commission on behalf of PRIMESTAR Partners, L.P., March 31, 1998. *In re Application of MCI Telecommunications Corporation and PRIMESTAR LHC, INC. For Consent to Assignment of Direct Broadcast Satellite Authorization.*

"An Economic Analysis of Primestar's Competitive Behavior and Incentives: Reply to the Oppositions." With S. C. Salop, J. R. Woodbury, and E. J. Murdoch. To the Federal Communications Commission on behalf of PRIMESTAR Partners, L.P., February 20, 1998. *In re Applications of TCI Satellite Entertainment, Inc. and PRIMESTAR, Inc. For Transfer of Control of TEMPO Satellite, Inc. and MCI Telecommunications Corporation and PRIMESTAR LHC, INC. For Consent to Assignment of Direct Broadcast Satellite Authorization, File Nos. 91-SAT-TC-97 and 106-SAT-AL-97, respectively.*



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“An Economic Analysis of Primestar’s Competitive Behavior and Incentives.” With S. C. Salop, J. R. Woodbury, and E. J. Murdoch. To the Federal Communications Commission on behalf of PRIMESTAR Partners, L.P., January 7, 1998. *In Applications of TCI Satellite Entertainment, Inc. and PRIMESTAR, Inc. For Transfer of Control of TEMPO Satellite, Inc. and MCI Telecommunications Corporation and PRIMESTAR LHC, INC. For Consent to Assignment of Direct Broadcast Satellite Authorization, File Nos. 91-SAT-TC-97 and 106-SAT-AL-97, respectively.*

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