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obligation to supply a product to a third party by a time certain cannot afford the delay and uncertainty that are frequently associated with rail movements. While issues related to the reliability of rail service are most prevalent in the case of interline movements, they can also arise where traffic handled in single-line service is subject to multiple classifications.

In a similar vein, some shippers select truck over rail because the multiple handling of commodities during the course of a rail movement increases the risk of loss and damage. This concern is particularly acute in the case of manufactured products.

In addition to these service related-issues, CSX faces economic hurdles in competing effectively with trucks on movements of general merchandise traffic. We frequently find that rail movements have fewer backhaul opportunities than trucks. The primary reason is that the cost of repositioning rail cars for a new loaded movement is considerably higher than the cost of repositioning trucks. The expense of repositioning rail cars is sufficiently high that rail carriers frequently return empties to the origin point rather than incur the repositioning cost. Trucks can be more readily repositioned both because of their greater flexibility and because they have a larger universe of potential loads to serve in the form of

customers who regularly rely on trucks. If the rail share of traffic were comparable to that of trucks, the likelihood of finding a return load would be higher. A second factor limiting the number of rail backhauls occurs in situations where the contamination of equipment is an issue for customers, such as the movement of certain metals and chemicals. Rail cars cannot be cleaned as quickly as trucks in order to handle another commodity in a backhaul movement.

Another economic impediment to competing effectively with trucks involves relatively short interline movements where both rail carriers must cover the costs of originating and terminating their portion of the movement. The general rule for interline rail service is that the shorter the haul for each railroad, and the more carriers involved in the haul, the more difficult it is to meet the carriers' economic needs with a truck-competitive price. There are numerous instances in which CSX and Conrail simply cannot compete with trucks on traffic that traverses the north/south boundary of the two carriers' service territories, even though the distance is long enough for the rail mode to be economically viable. This is because the combined revenue demands of the two of us to cover the costs of two relatively short hauls make our price non-competitive.

Since January of 1996, in the chemicals area alone, we have had 31 different opportunities to capture truck business moving between Conrail's and CSX's service territory. These potential movements were identified by CSX sales personnel as business we should be able to win from truck. However, we won the business in only 8 out of the 31 instances. Our inability to win the remaining traffic, some of which involved very substantial movements, stemmed from customer concerns about interline service and our inability to quote a price low enough to overcome these concerns. The overall value to the customer of the interline rail package was not great enough to win the traffic from trucks.

A final disadvantage of interline rail service involves the transaction costs to the customer of having two different service providers. Potential customers sometimes experience unacceptable transaction delays associated with establishing a joint line price for a two-carrier move. Even though the customer may deal with only one of the railroads in getting a price quotation, the delay that the first carrier encounters in getting revenue requirements (i.e., a division or revenue factor) from his connecting carrier can be sufficiently great that the customer will decide to move the traffic by truck. It is not uncommon to have a spot opportunity that lasts for a

month and for the two or more railroads involved in an interline movement to take three weeks to come up with a price. And if joint service is established, customers sometimes incur unacceptable costs in trying to resolve issues such as billing or freight damage because of the poor coordination between the railroads in responding to a customer inquiry directed to one of them.

The trend toward greater efficiency and increased productivity that we have seen in the rail industry exists in our customers' businesses as well. Our customers have reduced their transportation and logistics personnel to the minimum necessary to run an efficient business. Our customers place a premium on knowing who is accountable for their freight transportation and being able to go directly to one railroad contact to solve their problems promptly. Although I cannot quantify its effect in terms of our ability to win new business, I cannot overstate the importance to the customers of having sole accountability for freight transportation.

B. The Transaction Will Allow CSX to Compete More Effectively for Traffic Currently Handled by Trucks and to Provide Better Service to Existing Rail Customers

The large volume of traffic handled by trucks represents a major business opportunity for CSX. The access to the Conrail lines and associated facilities for which we seek Board authorization will provide a great boost in our efforts to realize that opportunity. Just as important, the transaction will allow us to improve our service to our existing customers, thereby making it easier and less costly for them to do business.

1. The Transaction Will Provide Increased Opportunities for Single-line Service

The transaction will allow us to improve service to existing customers and to win new customers through the creation of new single-line service. Most important, CSX will be able to provide single-line service between points which it serves in the South and the Southeast and points in the Mid-Atlantic and Northeast regions formerly served by Conrail which CSX will now serve. Given the broad scope of the existing CSX rail network, the extension of that network into the Mid-Atlantic and Northeast will create literally hundreds of new origin/destination pairs that will be linked by rail lines that are under the exclusive operating control of CSX. Dozens of pairs of major commercial areas will be linked more closely than before through the availability of single-line rail service. These include

Atlanta/New York, Charlotte/Boston, Richmond/Syracuse, Jacksonville/Elizabeth, NJ., and Miami/Montreal. The list goes on and on.

The advantages of single-line service are well documented, but they bear repetition here. The very same aspects of single-line service that will benefit existing customers will allow CSX to pursue merchandise traffic that is currently moving by truck but could be moved in rail cars.

Reduced Transit Times. A particularly prominent advantage of single-line service is the reduced transit times that result from eliminating interchanges between rail carriers. In the world of commerce, time is money. Elimination of interchanges reduces transit times and results in real savings, as our customers recognize:

[Our tank car shipments] originate from our supplier locations in Florida, North Carolina and Ohio, and must interchange with Conrail at Potomac Yard, Virginia, or Toledo, Ohio, for ultimate delivery to our distribution facilities in Boston, Buffalo, Croxton, NJ, Warwick, NY and Detroit. The interchange increases costs and transit times, reducing rail's competitiveness with truck for our business. After the acquisition, CSX will be able to provide single-line service to the

[aforementioned] locations, eliminating the interchange and reducing costs.

LCI Ltd.
Jacksonville Beach, Florida^{2/}

As part of the division of Conrail, CSX will acquire Conrail lines that run between Philadelphia and Massachusetts. This will mean that some of our shipments can move in single-line service to various locations in the northeast. For example, shipments to our box plants in Lowell and Cambridge, which now require interchange with Conrail at Potomac Yard, [Virginia], will have single-line service. This single-line service will save us time and money, and will be a more direct and efficient means of transportation.

Interstate Paper Corporation
Riceboro, Georgia^{3/}

Conrail has always been a chokepoint for East Coast rail traffic. No one likes products to sit on the sidings waiting to be transferred, but...when the product is beer, delay can be a deal breaker for some retailers. Faster service is what my business is all about--and that's what we'll get when CSX and NS purchase Conrail.

Dodd Distributing Company, Inc.
Rocky Mount, North Carolina^{4/}

Reduced transit times mean reduced inventory carrying costs for our customers. Reduced transit times also allow our customers to get their product to their customers more quickly.

The ultimate beneficiary of faster service is the consuming

^{2/} V.S. of Schechinger, Vol. IV D.

^{3/} V.S. of Millard, Vol. IV C.

^{4/} V.S. of Parrish, Vol IV C.

public, which is why the Dodd Distributing Company concludes that the proposed transaction will "be good for beer wholesalers--and good for beer drinkers too. Consumers are going to see lower prices as a result of more competitive shipping costs."

One particular segment of our general merchandise business that I expect will benefit from single-line service is food and consumer products, which is currently truck dominated. Currently CSX handles very little of the fruits and vegetables grown in Florida and shipped to the consuming markets of the Northeast. Those commodities move by truck. After the transaction, CSX will have direct single-line service from Florida to the Hunt's Point Produce Terminal in the south Bronx, which is the largest distribution point for fruits and vegetables in the New York metropolitan area. By definition, our ability to offer a service package that attracts the business of Florida producers into rail cars means that they will incur lower overall costs to get their products to market.

Increased Reliability of On-Time Delivery. Reduced transit times may not be that much of a benefit to some customers unless they can rely on the railroad to meet its projected or scheduled transit times on a regular basis. Rigorous inventory management has become more and more common among our customers

and prospective customers. This creates a need for predictable, on-time delivery, as our customers emphasize:

Because our product is perishable, transit time is extremely important to us. We have observed that single-line service is faster, more reliable, and allows for better shipment tracking than joint carrier moves. Also, it may help facilitate possible route specialization necessary for addressing our supplier's new quality and freshness directives This would help us better compete with the increasing popularity of 'micro-brews' which claim to be fresher because they [are] brew[ed] locally.

Ajax Turner Company, Inc.
Nashville, Tennessee^{5/}

Single-line service rail service creates a major opportunity for increased reliability because it places responsibility for on-time shipment in the hands of one party.

Improved Safety and Reduction in Loss and Damage. As a general rule, single-line service leads to improved safety and reduction in loss and damage to property. These benefits result from the reduced handling, switching and classification associated with single-line service as compared to interline service. Our customers are very much aware of this benefit of the proposed transaction:

[We are] a manufacturer and marketer of sulfur-based products, including sulfuric acid ... [Our] plant is heavily dependent

^{5/} V.S. of Williams, Vol. IV B.

upon rail transportation for both inbound and outbound movement of product Single-line hauls mean less handling of hazardous materials. The less a car is handled, the less chance of spillage.

Boliden Intertrade, Inc.
Atlanta, Georgia^{6/}

Bay Chemical is a wholesale chemical broker....In the shipment of chemicals, safety is paramount. One key to a safe shipment is to keep handling and switching from one railway to another to a minimum. More single-line service will mean there is less need to transfer cargo and therefore significant increases in safety.

Bay Chemical Company
Tampa, Florida^{7/}

Beyond the improved safety that will result from fewer interchanges, we at CSX anticipate an additional benefit that will result from extending CSX's safety programs to the portions of the Conrail system that we will operate. In the early 1990's CSX began an ongoing program to enhance the safety of our operations. As a result of this program, CSX is now the safest Class I rail carrier as measured by train accidents per million train miles. CSX's safety performance versus that of other Class I railroads is depicted on the chart on the following page.

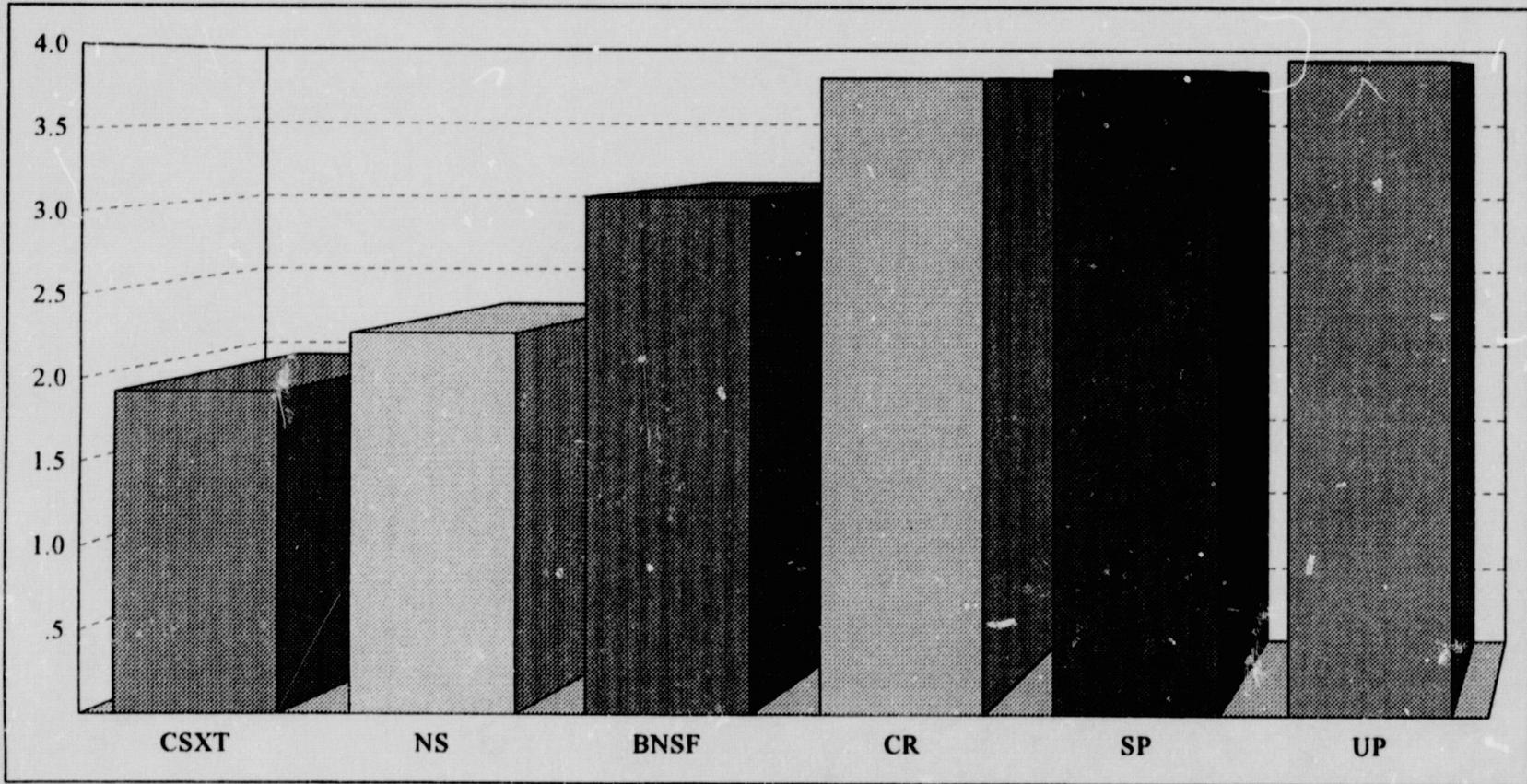
I anticipate that CSX's know-how and experience in

^{6/} V.S. of Mason, Vol. IV B.

^{7/} V.S. of Carroll, Vol. IV B.

<u>CSXT</u>	<u>NS</u>	<u>BNSF</u>	<u>CR</u>	<u>SP</u>	<u>UP</u>
<u>1.92</u>	<u>2.27</u>	<u>3.09</u>	<u>3.81</u>	<u>3.86</u>	<u>3.92</u>

FRA Train Accident Performance — Group A Railroads (1996)



FRA Train Accidents/MM Train Miles

improving the safety of its rail operations will be extended to our operation of the Conrail system and that CSX's safety record over those portions of Conrail that it operates will be comparable to the safety record achieved elsewhere on the CSX system. I would also note that the enhanced safety of our operations over Conrail's lines should be particularly beneficial in terms of our ability to compete for chemical traffic because safety considerations weigh very heavily in the selection of freight carriers by chemical shippers. Moreover, safer train operations in that portion of Conrail's service territory in which CSX will operate is a clear public benefit.

Improved equipment utilization. Much of our general merchandise traffic moves in equipment that is owned by our customers. For example, many movements of plastics on CSX occur in customer-owned equipment. Our ability to provide more efficient single-line service will benefit our customers by yielding faster turn times on their equipment and hence increased equipment utilization, which translates into reduced equipment ownership costs. Our customers recognize improved equipment utilization as one of the benefits that will flow from the proposed joint acquisition of Conrail:

[We have] a leased covered hopper fleet of [71] one hundred ton rail cars. Therefore, it is imperative that we obtain maximum

utilization of our rail equipment. The acquisition of Conrail by CSX Transportation and Norfolk Southern will help us [attain] this goal while lowering our freight costs.

Giles Chemical Industries, Inc.
Waynesville, North Carolina^{8/}

...[B]ecause Hoechst Celanese owns its own rail hopper cars, the efficiencies of single-line service will return cars to the origination point more quickly. This improved equipment utilization will reduce our transportation costs.

Hoechst Celanese Fiber & Film Group
Charlotte, North Carolina^{9/}

The improved utilization of CSX-owned freight cars will yield benefits for us and our customers:

Although CSX has the best supply of gondola cars among the railroads, the scrap metal industry is notorious for equipment shortages. The proposed transaction would increase the equipment supply available for our shipments, thereby enhancing the consistency of our transit times.

Davis Industries, Inc.
Lorton, Virginia^{10/}

[We] are a...steel importing business...[and] use trucking as an alternative to rail shipping....The proposed acquisition plan offers a number of operating changes that will address...problems that have hurt [rail's] ability to be competitive with more expensive truck-freight

^{8/} V.S. of Humphrey, Vol IV C.

^{9/} V.S. of Smith, Vol. IV B.

^{10/} V.S. of Ettleman, Vol. IV C.

services...includ[ing] [b]etter utilization of rail cars through triangulation giving steel producers, scrap recyclers and scrap processors better connections from [n]orth to [s]outh.

Duferco, Ltd.
Laurence Harbor, New Jersey^{11/}

One aspect of improved equipment utilization is that grain shippers currently located on Conrail lines who will become CSX customers will benefit from the availability of CSX's well-maintained covered hopper fleet. Conrail has dramatically reduced its covered hopper ownership, while CSX has a large and well-maintained covered hopper fleet. CSX's access to new grain origins on Conrail will mean that those elevators on Conrail will not only have access to CSX's grain consuming customers, they will also benefit from access to CSX's covered hoppers.

Reduced Transaction Costs. Finally, the increased single-line service that will result if our application is granted will benefit customers by allowing them to deal with one rail carrier rather than two or more on matters such as contract negotiations, billing issues, and questions regarding loss and damage to property. A customer observes that

[o]ne of the constant problems we experience is in negotiating and administering freight rates involving two or more carriers. This

^{11/} V.S. of Smith, Vol. IV C.

transaction will convert a portion of our traffic from dual line to single line service.

Boliden Intertrade, Inc.
Atlanta, Georgia^{12/}

The reduction in the amount of time devoted to these communications translates into real dollar cost savings for our customers.

2. The Transaction Will Result in More Efficient Routing of General Merchandise Traffic over the CSX Network

Apart from the creation of new single-line routes, the transaction will benefit our customers and position us to win additional traffic from our competitors by creating more efficient routes for traffic currently handled by CSX and/or Conrail. As discussed in detail in the CSX operating plan, we will reconfigure the operating networking and use the best combination of CSX and Conrail properties to overcome some of the operating problems that we currently encounter, such as multiple classifications and circuitous routings.

One of the best examples of our improved route structure involves chemical traffic and other merchandise traffic moving from the St. Louis gateway to the East. Currently that traffic is classified at CSX's Queensgate and Willard yards, before it moves east on the former B&O. Not only is this routing

^{12/} V.S. of Mason, Vol. IV B.

circuitous, it also requires classification of east-west traffic at some of the most congested points on our existing system. After the transaction, CSX general merchandise traffic moving between the St. Louis gateway and points in the Northeast will be able to use the existing Conrail route to St. Louis, which is up to 250 miles shorter and up to 24 hours faster than the existing CSX route between St. Louis and the East Coast, depending upon which eastern point is involved.

In addition to the benefits of reduced transit times, this new routing option will allow us to combine CSX and former Conrail traffic on a single route. The increased volumes should allow us to route traffic in overhead service, thereby avoiding classification at intermediate terminals such as Indianapolis and Cincinnati. Furthermore, as discussed in our operating plan, we expect that our more efficient route between St. Louis and the east coast will allow us to negotiate reciprocal agreements with western carriers for eastbound traffic to be pre-blocked and routed through or around St. Louis to terminals at Selkirk and Buffalo.

Similar benefits of more efficient routing of general merchandise traffic will be available on CSX's proposed Memphis Gateway Service Route which will combine Conrail's routes in and to the Northeast with CSX's present route between Memphis and

Cincinnati. The Memphis gateway links important markets in the eastern United States, including Boston and New York, with the Gulf Coast and Southwest. Our new service route will provide an efficient alternative to St. Louis and New Orleans for traffic moving from the Southwest. Alternative gateways with efficient internal routings are an extremely important component of service reliability because they alleviate congestion and allow us to deal with weather-related problems. This improved service will particularly benefit shippers of chemicals routed via Memphis to or from western carriers.

The creation of more efficient routes from mid-continent gateways to the East will benefit shippers as far away as Mexico:

Foremost among the benefits we anticipate from the acquisition is single line service to/from the [n]ortheast, reducing handling and transit costs. The current rail map of the U.S. forces most traffic associated with Mexico to be routed over gateways such as Chicago, a routing that causes needless cost and delay. With a combined CSX/NS/Conrail, traffic could be routed via a more 'natural' north-south route.

Petrocel/Temex
Monterey, Mexico^{13/}

^{13/} V.S. of Lozano, Vol. IV D.

C. Estimates of Traffic that CSX Will Win from Trucks and Barges Resulting from the More Efficient Service to Be Offered by the Combined System

As I have already indicated, we expect that the increased single-line service offerings and more efficient routing resulting from the proposed transaction will allow CSX to win considerable traffic that is currently moving by truck. We also expect that our new system will attract some traffic that is currently moving by barge. To quantify the amount of traffic we can expect to gain, CSX marketing personnel performed a truck/barge-to-rail carload traffic diversion study. This study focused on rail carload traffic and is distinct from the study performed for CSX by Reebie Associates, which identifies traffic diverted from the highways to rail intermodal service.^{14/}

The results of the truck/barge-to-rail carload study indicate that CSX can expect to generate an additional \$42.3 million in revenue from traffic that is currently moved by truck or barge that will be handled in rail carload (as opposed to intermodal) service following the transaction. This equates to nearly 74,000 trucks removed from the highways annually.

^{14/} A description of the methodology used in the truck/barge-to-carload diversion study is attached to my statement at Appendix A. A separate study was performed by ALK Associates to identify general merchandise traffic that CSX can expect to win from other railroads as a result of the proposed transaction.

On the following page is a table showing the breakdown of new traffic by principal commodity groups.

As one would expect, the major flows of these commodities are from points in the South and Southeast on the one hand to points in the Mid-Atlantic region and Northeast on the other. This pattern reflects the creation of new single-line routes linking these regions.

In my view, the study estimates of the amount of truck and barge traffic that we will be able to attract to rail are very conservative. As discussed more fully in the testimony of Dr. Gaskins, there is an enormous volume of general merchandise freight currently transported by truck that could move by rail if the overall value of our service package is sufficiently attractive to potential customers. I can assure the Board that CSX marketing personnel will set their sights far higher than the \$42.3 million dollar figure.

III. THE PROPOSED TRANSACTION WILL PROVIDE NEW MARKET OPPORTUNITIES FOR EXISTING AND POTENTIAL CSX CUSTOMERS AND INCREASED RAIL COMPETITION ON TRAFFIC MOVING TO AND FROM SHARED AREAS

The benefits of the proposed transaction to general merchandise customers are not limited to improved service on existing movements. These benefits also include new market opportunities for both CSX and former Conrail customers which

SUMMARY OF DIVERSIONS BY COMMODITY

Agricultural Products	Revenue	\$1,284,500
	Tons	69,325
	Cars	868
	Trucks	2,730
Auto Parts	Revenue	\$3,594,989
	Tons	74,897
	Cars	2,998
	Trucks	5,992
Chemicals/Petroleum Products	Revenue	\$12,576,220
	Tons	433,674
	Cars	5,085
	Trucks	16,828
Food Products	Revenue	\$4,940,340
	Tons	87,540
	Cars	2,651
	Trucks	4,581
Minerals	Revenue	\$6,216,500
	Tons	499,800
	Cars	5,109
	Trucks	20,540
Waste/Scrap Materials	Revenue	\$5,588,411
	Tons	234,850
	Cars	2,795
	Trucks	11,163
Paper Products	Revenue	\$8,073,803
	Tons	260,217
	Cars	4,038
	Trucks	11,890
Total Revenue		\$42,274,762
Total Tons		1,660,302
Total Cars		23,543
Total Trucks		73,723

will result from the expanded network of single-line service that will be created if the STB approves the joint application to acquire Conrail. In addition, general merchandise customers in the shared areas that will be created as a result of the transaction will experience enhanced competition and accompanying service benefits.

A. Expanded Market Opportunities

Many existing CSX customers and many former Conrail customers who will become CSX customers as a result of the transaction will be able to pursue new market opportunities as a result of the expanded single-line coverage of the new CSX system. As a starting point, consider the fact that every existing shipper on CSX is going to have new single-line service to the Ports of New York and New Jersey, the Port of Boston, as well as the Port of Baltimore, and to the world of commerce that those ports serve. Much of that world of commerce is accessible via vessel services offered by another member of the CSX corporate family, Sea Land Services. The rail transportation services offered by CSX are integrated to a unique degree with the global transportation services provided by Sea Land and the domestic water transport offered by another CSX affiliate, American Commercial Barge Lines. Customers anticipate benefits flowing from the existence of this global transportation network:

After acquiring Conrail lines, CSX, together with ACBL and Sealand, will be capable of providing global services unlike any other carrier. American Premier purchases and competes in both the domestic and international marketplace. The proximity of plants to ports in the U.S. often leaves us at a distinct disadvantage in competing with both European and Far East producers where ports are closer and transportation services are often seamless. We feel that CSX's increased access to eastern ports (New York and New Jersey) will enable us to develop new services and expand our global export opportunities.

American Premier, Inc.
King of Prussia, Pennsylvania^{15/}

On the CSX rail network, examples of the new and improved commercial opportunities to our customers abound. Grain shippers located on former Conrail lines in Illinois and Indiana that CSX will operate will have an improved opportunity to market their products in the Southeast via CSX's proposed Chicago-Southeast Service Route. Conrail currently has more than enough grain production located on its railroad to satisfy the needs of the receivers of grain that it reaches in single-line service. CSX serves a large and growing number of feedmills in the Southeast whose appetite for grain requires supply from a large grain producing region. Currently some grain must be trucked considerable distances to reach CSX-served elevators that

^{15/} V.S. of Van Sickle, Vol. IV B.

can supply CSX-served consumers of grain. CSX access to Conrail-served elevators will allow the grain to move more efficiently from the point of production to the Southeastern feed mills by reducing the length of the truck haul on the origin end.

CSX intends to promote such new commercial opportunities for our customers because, if we succeed, it will mean new business for our railroad. For example, to compete more effectively with trucks, we will invest in rail-to-truck transfer facilities in the Conrail territory where we will operate. One such location would be in Montreal, where we are looking to build a rail to truck transfer facility to serve eastern Canada. While this facility would be used for many commodities, we see a core opportunity for plastics. The Eastern Canada market (Ottawa, Quebec, Montreal) is a very significant consumption market for plastics. CSX serves important plastics producers on its existing system and handles considerable Gulf Coast plastics production in interline service with western carriers. Our acquisition of a single-line route from CSX service territory to Montreal will give many plastics producers vastly improved access to a major metropolitan commercial area.

Our customers recognize the new market opportunities that they will enjoy if the joint application to control Conrail is approved:

[We] support[] the joint acquisition of Conrail by NS and CSX because it would open new markets for our scrap metal. Specifically, the transaction would allow us to access steel mills currently served by Conrail through new single-line service. We believe that the new single line [rates] would be more attractive than the joint line rates currently available, and would make it possible to grow our business.

American Compressed Steel Corp.
Cincinnati, Ohio^{16/}

While almost all our inbound raw material is shipped by rail, the outbound product is primarily shipped via truck....[W]ith the increased number of destinations able to be reached in single line service, we are more likely to be able to move outbound finished product by rail than we can today, to more distant markets. The expanded CSX system would serve markets as far away as New Orleans, thus allowing us to market our mineral products there. This kind of market reach is important to us.

Barnes Environmental International
Ontario, Canada^{17/}

Although...CSX currently has more grain sources than any other eastern carrier, the addition of some of Conrail's elevators would create more competition in the marketplace, which should...lower[] costs. We would be

^{16/} V.S. of Post, Vol. IV E.

^{17/} V.S. of Barnes, Vol. IV B.

able to access sources in east central Ohio
and in northeastern portions of Illinois.

Claxton Poultry Farms
Claxton, Georgia^{18/}

For a southern company like mine, eliminating
the old Conrail chokepoint will give us a
clear shot at New York City and other ports,
in addition to more direct access to the
Midwest.

Container Strapping, Division of
Illinois Tool Works, Inc.
Jacksonville, Florida^{19/}

[We] process[] scrap metals and ship[] it to
our customers who are steel mills located in
Virginia and the Carolinas....We believe that
the division of Conrail assets between CSX
and NS would allow us to expand and extend
our market reach in the northeast. In
particular, this transaction would bring us
new access to some of the Conrail-served
steel customers in this region.

Davis Industries, Inc.
Lorton, Virginia^{20/}

[The merger] will open up new markets in the
South. Our ability to compete in the South
has been hampered by the lack of direct
access to the market. In many cases, the
costs associated with an interchange has made
our product uncompetitive. The [merger] will

^{18/} V.S. of McDonald, Vol. IV B.

^{19/} V.S. of Rowan, Vol. IV B.

^{20/} V.S. of Ettleman, Vol. IV C.

solve this problem by providing single-line service to the area.

Delmarva Chemicals, Inc.
Blue Bell, Pennsylvania^{21/}

...[W]e have a mill located in Michigan which presently ships to some locations in the east that will be reduced from two-line service to direct single-line service. We expect this to improve service which has become increasingly important in our business as it adds another tool to increase the territory into which we are able to market our products.

Menasha Corporation
Neenah, Wisconsin^{22/}

In addition to the benefits of expanded geographic coverage, the creation of an expanded CSX rail network will allow some of our customers to satisfy all or most of their rail transportation requirements through an arrangement with one carrier that serves all or most of their facilities. Our customers want to reduce the number of vendors with whom they do business. There is a cost savings in being able to cover all freight transportation needs in one sales call. We expect the broader scope of network coverage to be very attractive to customers because of the efficiencies that it creates. In addition, as discussed below, a customer who is served by CSX at one facility and who is also served by a second rail carrier

^{21/} V.S. of Pilling, Vol. IV C.

^{22/} Letter of Fetzer, Vol. IV D.

at another facility can use his multiple rail options at that second facility as leverage in negotiating an overall transportation package with CSX.

B. The Transaction Will Result in Enhanced Competition on Traffic Moving to and From the Shared Areas

The proposed joint acquisition of Conrail by CSX and Norfolk Southern is different from other rail mergers and consolidations because it contemplates that certain important commercial areas where Conrail previously provided the only rail service will become shared areas that are equally accessible by CSX and Norfolk Southern. The creation of these shared areas promises clear benefits for shippers and receivers located in those areas who will have two transportation options at the other end of a contemplated movement. Furthermore, I expect that the discretionary business in the shared areas where both CSX and Norfolk Southern will operate will constitute a powerful bargaining chip for our customers, allowing them not only to negotiate attractive rates from the shared areas but also giving them leverage to negotiate attractive rates on traffic outside the shared areas.

In terms of the structure of the charges that our customers will see on traffic moving into and out of the shared areas, we intend to price that traffic independently like any other line-haul traffic. The customer will be offered a through

rate, with no separate charge for operation in the shared area. Traffic moving between points wholly within a shared area will be priced independently by CSX and Norfolk Southern. Again, the customer will be quoted a single through rate.

CONCLUSION

The transaction for which CSX and Norfolk Southern seek approval by the Surface Transportation Board promises substantial benefits in the form of improved service and greater range of commercial opportunities for CSX and Conrail customers. Reduced transit times and greater reliability will position us to compete more effectively with trucks. We also anticipate public benefits in the form of improved safety. Our efficient rail network will link together new geographic areas that cannot be served efficiently with existing interline rail service, thereby expanding the commercial opportunities of our customers. I urge the Board to approve our application expeditiously so that our customers may start to realize those benefits as soon as possible.

APPENDIX A

DESCRIPTION OF METHODOLOGY TRUCK/BARGE-TO-CARLOAD TRAFFIC STUDY

Scope of Study and Data Sources

CSX marketing personnel undertook a study to identify general merchandise traffic currently moving by truck or barge that would be diverted to CSX carload rail service as a result of the joint acquisition of Conrail by CSX and Norfolk Southern and the operation of certain Conrail lines and facilities by CSX. The study is referred to as the "truck/barge-to-carload study." The study did not cover coal, finished automobiles or truck traffic that could be diverted to rail intermodal service.

The study focused on two different categories of general merchandise traffic from which CSX might expect to realize gains. One category was traffic that currently involves a rail-truck or rail-barge movement on which CSX might obtain an extended rail haul following the transaction (the "extended haul" aspect of the study). The second category was traffic that currently moves by truck, barge or some combination thereof which might be expected to move by rail following the transaction (the "new market opportunity" aspect of the study).

Initial phases of the study were undertaken jointly by CSX and Conrail marketing personnel at a time when the

transaction being contemplated was a merger between CSX and Conrail. For the extended haul aspect of the study, Conrail and CSX staff separately reviewed their own company-specific information to identify 1995 Conrail and CSX rail-truck and rail-barge movements for which it was plausible that diversions might occur. Data were drawn from various sources, including the marketing staff's general knowledge of their customers' business, the staffs' general knowledge of the markets involved, and the railroads' internal waybill data (where useful). For the new market opportunity aspect of the study, Conrail and CSX staff identified 1995 truck and barge movements and rail-truck and rail-barge movements involving carriers other than Conrail and CSX. Data were drawn from all available sources, including Reebie Transearch data, bid information available to each of the marketing departments, available market reports or production data, and the marketing staffs' own general knowledge.

Diversion Analyses

Data compiled for both aspects of the study were reviewed separately by CSX and Conrail marketing staffs to identify traffic that would likely divert to the merged CSX/Conrail system by December 31, 2000. Judgments as to whether traffic would divert to rail carload service, and, if so, what percentage of traffic would divert were based on the knowledge

and experience of CSX and Conrail marketing personnel, taking into account certain assumptions about how the system would be operated. To avoid double counts, study participants were instructed not to divert traffic to carload service that would otherwise divert to intermodal service.

Formatting of Initial Study Results

Initial results of the study were incorporated into a traffic file in electronic spreadsheet format. To make the study results useful in preparing other portions of the proposed control application, study participants were requested to furnish the following information for diverted movements, which was incorporated into the traffic file:

- commodity group, by two digit STCC code
- origin and destination BEA
- volume of traffic estimated to be diverted, expressed in terms of rail carloads, tons and trucks
- existing route, including at least the modal types involved
- diversion route, including all junctions and carriers (including trucks and barges)
- revenues projected to be gained from the diversion
- reason for the diversion.

Representatives of Klick, Kent & Allen assisted CSX's and Conrail's study directors in refining the spreadsheet format and processing the study results so as to make them useful for

preparation of the proposed operating plan and environmental analysis.

Following the creation of the electronic spreadsheet reflecting the results of the combined CSX and Conrail study, the nature of the proposed transaction changed. When CSX and Norfolk Southern agreed jointly to acquire Conrail, CSX marketing personnel reviewed the initial study results to determine whether they could be used in conjunction with the proposed joint application. It was determined that certain records from the initial study could be used, subject to a procedure that assured that the previously generated information would remain valid given the terms of the new transaction.

**Modification of the Study to Comport
with the Current Transaction**

To generate revised study results that would comport with the terms of the joint CSX/Norfolk Southern acquisition of Conrail, the CSX study director, working in conjunction with Klick, Kent & Allen, reviewed the initial study traffic file and made the following adjustments:

- Records of movements to or from points on those portions of Conrail that would be controlled by Norfolk Southern were eliminated from the file.
- For movements involving an origin and/or destination on a portion of Conrail that would be jointly served by CSX and NS, CSX was assigned 50 percent of the previously assigned revenue.

CSX marketing personnel then conducted an additional review of the output from the traffic file, as follows:

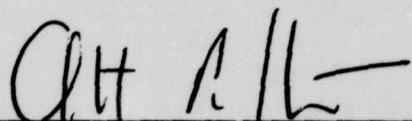
- All records of diversions from the initial study were reviewed by CSX marketing personnel to ensure that the study results were still valid and that they reflected the judgment of CSX marketing personnel.
- Records of movements to or from Conrail points that would be served by both CSX and Norfolk Southern were reviewed by the appropriate marketing personnel to determine whether the 50% assignment of revenue to CSX should be overridden by specific factors related to that movement.

Following this review process, the remaining records were formatted into a revised traffic file with the assistance of Klick, Kent & Allen. The file was then made available to ALK Associates for use in network modeling and to assist the CSX operating plan team.

VERIFICATION

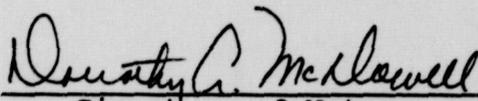
STATE OF FLORIDA)
) ss.
COUNTY OF DUVAL)

Christopher P. Jenkins, being duly sworn, deposes and says that he is Vice President Chemical Marketing of CSX Transportation, Inc., that he is qualified and authorized to submit this Verified Statement, and that he has read the foregoing statement, knows the contents thereof, and that the same is true and correct.



Christopher P. Jenkins

Subscribed and sworn to before me by Christopher P. Jenkins this 10th day of June, 1997.



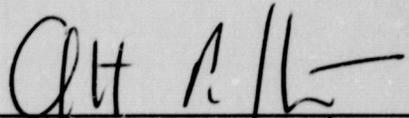
Signature of Notary

DOROTHY A. MCDOWELL
Notary Public - State of Florida
My Commission Expires Nov 22, 1999
Commission #CC490726

VERIFICATION

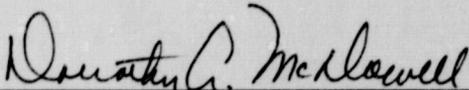
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**BEFORE THE
SURFACE TRANSPORTATION BOARD**

FINANCE DOCKET NO. 33388

**CSX CORPORATION AND CSX TRANSPORTATION, INC. AND
NORFOLK SOUTHERN CORPORATION AND
NORFOLK SOUTHERN RAILWAY COMPANY
--CONTROL AND OPERATING LEASES/AGREEMENTS--
CONRAIL INC. AND CONSOLIDATED RAIL CORPORATION**

VERIFIED STATEMENT OF JOHN W. ORRISON

BEFORE THE
SURFACE TRANSPORTATION BOARD

FINANCE DOCKET NO. 33388

CSX CORPORATION AND CSX TRANSPORTATION, INC. AND
NORFOLK SOUTHERN CORPORATION AND
NORFOLK SOUTHERN RAILWAY COMPANY
--CONTROL AND OPERATING LEASES/AGREEMENTS--
CONRAIL INC. AND CONSOLIDATED RAIL CORPORATION

VERIFIED STATEMENT OF JOHN W. ORRISON

I. INTRODUCTION

My name is John W. Orrison. I have made another verified statement, generally describing the operating plan of CSXT following the division of Conrail, contemplated by the Transaction which is the subject of the present application. I refer the reader to the introduction to that verified statement for my employment, background and qualifications.

This statement discusses the plans of CSX with respect to CRC's subsidiary, the Indiana Harbor Belt Railroad ("IHB"), and generally with respect to operations in the Chicago area. CRC owns 51% of IHB's stock. Under the Transaction Agreement, the 51% stock interest held by CRC will remain there and will not be allocated either to CSXT or NSRC.

Independently of its status as a shareholder of IHB, CRC has trackage rights over the lines of IHB. Certain of those trackage rights will be allocated to

and operated by CSXT. Baltimore & Ohio Chicago Terminal Railroad ("BOCT"), an affiliate of CSX, also has trackage rights over the IHB lines from Blue Island Yard northwest to Franklin Park Yard. These trackage rights will be dealt with as described in the IHB Agreement between CSX and NS. NS will also receive certain trackage rights over the IHB which are also described in the IHB Agreement. Other provisions of the IHB Agreement will define the ways in which CSX and NS agree to use their shared voting control of IHB, through their control of Conrail, with respect to the IHB. For the IHB Agreement, refer to Volume 8 of the Application.

II. OVERVIEW

Use of IHB's routes and yard facilities will form an essential part of CSX's service to and through Chicago, and CSX has planned major capital improvements in IHB's facilities which will redound to its benefit and to the benefit of other rail carriers owning and using IHB's facilities. CSX will also take other actions to improve IHB service that will be of advantage to the public and all of the rail carriers owning and using IHB's lines and facilities.

III. CSX'S PROPOSED OPERATING PLAN FOR THE CHICAGO AREA

Greater Chicago is a major rail interchange point. Rail traffic¹ moves in unit trains, pre-blocked merchandise trains, blocks of traffic, and individual cars that must be classified within Chicago area yards. Most of this classification work is performed by the three largest intermediate switch carriers in Chicago: the BOCT; the Belt Railway of Chicago ("BRC"); and the IHB.

¹ Including switch moves, local, intra-terminal and interchange traffic.

Westbound

CSX currently operates merchandise trains to BOCT's Barr Yard and BRC's Clearing Yard. CSX does not currently originate or terminate any trains at IHB's Blue Island Yard. Approximately 240 to 260 CSX cars per day must be transferred between Barr Yard and IHB's Blue Island Yard. This traffic must be switched at both yards, which is inefficient and results in additional handlings and excessive dwell time, and increases unreliability and the chance for loss and damage to lading.

The combined volume of former Conrail and of historic CSX traffic destined to Chicago and western points will allow CSX to pre-block merchandise traffic to go through Chicago without switching. CSX will maintain classifications for points west of Chicago (e.g., North Platte, Galesburg, and Northtown) at Cumberland, Albany, Buffalo, Willard, Toledo and Nashville. The CSX Operating Plan also contemplates expedited movement of traffic through Chicago. Much of the expected traffic will not be handled at IHB's Blue Island Yard or elsewhere in Chicago. For traffic that must be handled in Chicago, the train service design contemplated in the Operating Plan will expedite rail car movements through Chicago by routing this traffic directly either to Barr Yard or IHB's Blue Island Yard. The plan eliminates most yard-to-yard transfers but will result in an expected increase of about 240 cars per day to be handled by IHB's Blue Island Yard. In light of IHB's current excess capacity and of the improvements to be made by CSX as part of the rehabilitation described below (including modernization of the humping system and yard track improvements), CSX believes that IHB's Blue Island will have sufficient capacity to efficiently

perform all proposed switching services and to handle all traffic for IHB customers and other carriers.

Eastbound

CSX's eastbound operating plan reflects the expectation that western carriers will provide blocks of traffic for CSX that will allow traffic to move through Chicago to points within the present and expanded CSX network (e.g., Cumberland, Buffalo, Selkirk, and Nashville) without intermediate handling in Chicago. CSX's train service design balances the workload between BOCT's Barr Yard and IHB's Blue Island Yard. Train schedules, routes and blocking are designed to expedite traffic through Chicago. CSX's plan also uses BRC facilities to balance the merchandise network and yard workloads to match up with the movement of foreign carrier traffic into BRC's Clearing Yard. Overall, CSX's operating plan shifts the point of intermediate classification from the Chicago area to larger, more efficient system yards within the CSX and western carrier networks. We intend to progress this strategy vigorously so as to reduce rail car transit times and intermediate handlings within Chicago. The overall impact of this operating plan will be to shift the focus of Chicago yard operations from their historic role as the major switching hub for carriers, to one of effecting block swaps and handling local industrial traffic for the Chicago area. This should result in a large reduction of switching and classification work for all Chicago yards.

IV. CSX'S PROPOSED CAPITAL INVESTMENTS

Historically, Chicago has been a point of congestion and a bottleneck for the rail industry. To provide efficient train movement into, through and out

of Chicago, CSX intends to construct new connections that will improve train movements for all carriers in Chicago. These connections will provide multiple routes (*e.g.*, primary, secondary, and alternate routes) through Chicago so that if congestion occurs on one line segment, trains may move on other routes. Our design of these routes and connections includes making allowance for required transit times between points insuring the accuracy of schedules and on-time arrivals. CSX connections at Willow Creek, Lincoln Avenue, Rock Island Junction, Dolton, Forest Hill, Bedford Park, and Tolleston provide for the implementation of this strategy.

CSX's operating plan contemplates creating a counterclockwise flow of train operations within Chicago, the movement of westbound trains from Willow Creek to Rock Island Junction via the BRC to Bedford Park, and the movement of eastbound trains from Bedford Park via the IHB back to Willow Creek. The result of this design is a reduction in CSX-operated trains moving over the IHB which will allow the accommodation of new CSX trains on the IHB post acquisition. The effect of these train shifts over routes within the Chicago area will be that IHB will have, after the Transaction, about the same volume of CSX trains that CSX operates over the IHB today (estimated at 17.4 trains daily).

CSX also intends to upgrade mainline speeds within the Chicago area to 40 mph to allow for quicker dispatch of trains. The increased train speed will also provide greater capacity on the existing congested rail lines because quicker movement provides more track time for other trains. Mainline speed upgrades are to include the BOCT mainline and the IHB segment from McCook Yard to Franklin Park Yard. Crossover signals will be installed on the Barr subdivision.

Several other line capacity projects have been designed to further improve dispatching of trains. At McCook Yard, CSX intends to convert the "pass track" to a third main track. At 22nd Street Yard, four existing crossovers will be upgraded and at 71st Street Yard, power switches will be installed in conjunction with a new siding and signalization.

CSX will upgrade several yards within the Chicago area. These include the rehabilitation of BOCT's Barr Yard and of IHB's Blue Island Yard, including modernization of the humping system and yard track improvements at Blue Island, at CSX's expense. CSX will spend approximately \$10 million for improvements at Blue Island Yard. Additionally, CSX will expand an existing intermodal facility at Forest Hill and construct a new intermodal facility at 59th Street. These yard upgrades will support our proposed operating plan for train movements and car classification within Chicago.

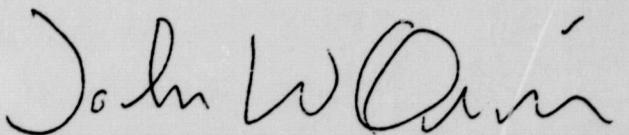
V. EXTENSIVE BENEFITS ACCRUING TO IHB OWNERS AND OTHER RAIL CARRIERS

CSX believes that the proposed operating plan and capital investments at IHB and elsewhere within the Chicago area will dramatically improve rail operations for all parties concerned. These improvements will include expedited movement of trains through Chicago and expedited handling of cars to and from switching yards and Chicago area customers. Local switching operations will benefit since these movements will have more line of road time available to access customers and meet switching requirements. Additionally, CSX's investments will develop new capacity to handle expected future growth in rail car movements.

DISTRICT OF COLUMBIA)
) SS.
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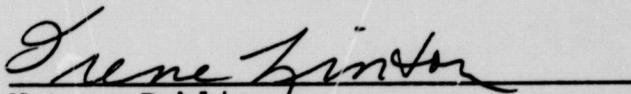
VERIFICATION

John W. Orrison, being duly sworn, deposes and says that he is General Manager, Field Operations Development of CSX Transportation, Inc., that he is qualified and authorized to submit this Verified Statement, and that he has read the foregoing statement, knows the contents thereof, and that the same is true and correct.



John W. Orrison

Subscribed and sworn to before me by John W. Orrison
this 9 day of June, 1997.



Notary Public

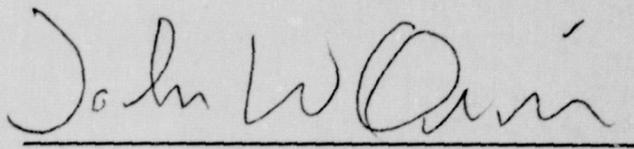
My Commission expires:

IRENE LINTON
District of Columbia
My Commission Expires
November 30, 2000

DISTRICT OF COLUMBIA)
) SS.
)

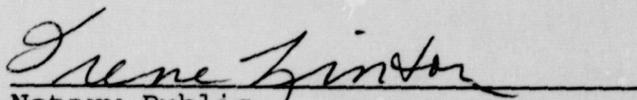
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John W. Orrison

Subscribed and sworn to before me by John W. Orrison
this 9 day of June, 1997.



Notary Public

My Commission expires:

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District of Columbia
My Commission Expires
November 30, 2000

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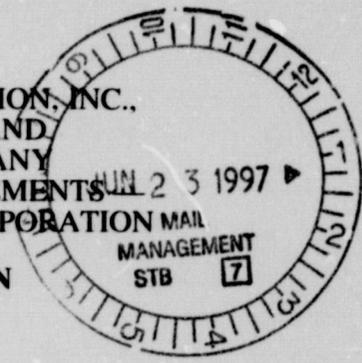
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ENTERED
Office of the Secretary
JUN 23 1997
5 Part of Public Record

BEFORE THE
SURFACE TRANSPORTATION BOARD

Finance Docket No. 33388

CSX CORPORATION AND CSX TRANSPORTATION, INC.,
NORFOLK SOUTHERN CORPORATION AND
NORFOLK SOUTHERN RAILWAY COMPANY
— CONTROL AND OPERATING LEASES/AGREEMENTS
CONRAIL INC. AND CONSOLIDATED RAIL CORPORATION



RAILROAD CONTROL APPLICATION

VOLUME 2B OF 8

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MARKET IMPACTS, COMPETITION AND SHIPPER BENEFITS
(EXHIBIT 12)

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FILED

JUN 23 1997

SURFACE
TRANSPORTATION BOARD

VOLUME 2B

**NS STATEMENTS CONCERNING MARKET IMPACTS,
COMPETITION, AND SHIPPER BENEFITS
(EXHIBIT 12)**

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VERIFIED STATEMENT

OF

BARRY C. HARRIS

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VERIFIED STATEMENT

OF

BARRY C. HARRIS

I. BACKGROUND AND QUALIFICATIONS

My name is Barry C. Harris. I am a Principal at Economists Incorporated, an economic consulting firm in Washington, D.C. My educational background includes a B.A. in mathematics, which I received from Lehigh University in 1970. In 1972, I received an M.A. in economics from the University of Pennsylvania. I also received a Ph.D. in economics in 1979 from the University of Pennsylvania.

My areas of specialization are microeconomics and industrial organization, with applications to antitrust and regulation. I have been employed at Economists Incorporated since 1985, except for the period from October 1992 to January 1993 when I was the chief economist in the Antitrust Division of the United States Department of Justice. My official title at the Department of Justice was Deputy Assistant Attorney General. Prior to joining Economists Incorporated, I was employed as a Project Manager and Senior Economist by ICF, Inc. Immediately prior to joining ICF, I served as Chief, Rail Cost and Pricing Branch, Office of Policy and Analysis at the Interstate Commerce Commission. Prior to holding that position, I was a senior economist in the Economic Policy Office of the Antitrust Division of the United States Department of Justice, where I served from 1974 to 1979. A copy of my curriculum vitae is included as Appendix A.

In my current position, as well as when I was at ICF, Inc., the Interstate Commerce Commission and the Department of Justice, I have analyzed the competitive effects of numerous business practices in many industries including freight transportation, chemicals, metals and metal products, agricultural products, food products, hazardous materials, petroleum products, coal, power generation, construction materials, retail and wholesale sales, and healthcare. I have testified as an expert witness regarding the competitive aspects of various types of conduct and transactions in many of these industries.

During my time at the Interstate Commerce Commission and the Department of Justice, I reviewed numerous mergers. In addition, I have analyzed the competitive effects of approximately 150 mergers since commencing private practice in 1981. This work has included analyses of the competitive impact of numerous mergers and proposed mergers in transportation industries including mergers involving Santa Fe/Southern Pacific, Soo Line/Milwaukee Road, Union Pacific/Southern Pacific, Wisconsin Central/Green Bay & Western, Conrail/Norfolk Southern, Burlington Northern/Santa Fe, and Canadian National/Canadian Pacific.

II. INTRODUCTION AND SUMMARY

I have been asked by Norfolk Southern Corporation ("Norfolk Southern") to evaluate the competitive impact of its proposed operation of significant segments of Conrail Inc. ("Conrail"), including lines to the Monongahela coal fields and the areas in New Jersey, Philadelphia and Detroit that will be jointly accessed by CSX Corporation ("CSX") and Norfolk Southern ("Shared Assets Areas"). In analyzing the competitive effects of such operations, I considered both current competition between Norfolk Southern and Conrail and future competition between Norfolk Southern and other carriers including CSX.

My overall conclusion is that Norfolk Southern's operation of Conrail assets as part of the Norfolk Southern/CSX restructuring is strongly procompetitive. It promises to create competitive rail options where none currently exists. Moreover, it does so without significantly reducing competition over other portions of the Norfolk Southern system. Currently, Norfolk Southern and CSX aggressively compete with each other throughout many portions of the eastern half of the United States. The Norfolk Southern/CSX restructuring will extend this competition into the Northeast, which will produce incentives for Norfolk Southern and CSX to seek to reduce costs and improve service.

Overall, the joint restructuring of Conrail by Norfolk Southern and CSX will result in a large and significant increase in competition for shippers now served by Conrail. Currently, Conrail is the only major railroad serving much of the northeastern region of the United States, including the greater New York City area. The Norfolk Southern/CSX restructuring of Conrail will effectively divide Conrail operations into three component parts: lines that will be operated by Norfolk Southern; lines that will be operated by CSX; and lines that will be operated by Conrail and made available for use by both Norfolk Southern and CSX. Broadly, Norfolk Southern will operate the Southern Tier Line from northern New Jersey through Binghamton, NY, to Buffalo and Conrail's mainline between the Northeast and Chicago via Harrisburg, Pittsburgh and Cleveland. At Harrisburg, lines radiate to New York/New Jersey, Philadelphia, Wilmington, Baltimore, and Washington, DC. Norfolk Southern will also operate Conrail lines from Columbus, OH, to Charleston, WV, and from Columbus to Cincinnati. Norfolk Southern will also receive overhead rights on newly acquired CSX lines between Crestline, OH, and Chicago and will gain trackage rights for access to Indianapolis, from both the east and the west.

As part of the joint restructuring of Conrail, CSX will operate the main Conrail line that runs between northern New Jersey through Albany, Syracuse, Buffalo, Ashtabula, Crestline, OH, Indianapolis, and St. Louis. From Crestline, CSX will operate Conrail and Norfolk Southern lines that run to Chicago via Ft. Wayne, IN. In addition, CSX will operate Conrail lines between Albany and the Boston area, between Syracuse and Montreal, and between Toledo and Columbus.

The Shared Assets Areas will principally consist of lines in the Northern New Jersey/New York area, lines in the Southern New Jersey/ Philadelphia area, and lines that serve Detroit. Shippers located in the Shared Assets Areas will have a choice between Norfolk Southern and CSX, where currently most of these shippers are served only by Conrail.

Both Norfolk Southern and CSX will also serve shippers in the Monongahela coal fields in southwestern Pennsylvania and northern West Virginia. These shippers are currently served only by Conrail. Norfolk Southern will operate, dispatch and maintain the facilities of the former Monongahela Railway. Norfolk Southern and CSX will enter into a joint-use agreement that provides CSX with equal, perpetual access to all current and future customers. Norfolk Southern and CSX will share the operating and maintenance expenses on a usage basis. Consequently, the Monongahela coal mines will be served by two competitive railroads, where they are currently served only by Conrail.

I used two different methods to estimate the amount of traffic currently served only by Conrail that after the restructuring will be served by both Norfolk Southern and CSX. One method looks at origin-destination pairs that will be subject to this increased competition, while the other method first looks at origin points and then at destination points currently served only by Conrail.

Under the first of these methods, I considered traffic moving between origin and destination pairs (measured on a 4-digit SPLC basis) and determined that \$779.2 million in 1995 freight revenues from specific routings that currently require Conrail's participation will have two independent and competitive rail options after the transaction is implemented.

Under the second method, I considered traffic that is currently served only by Conrail at origin or destination (again, measured on a 4-digit SPLC basis) which, after the transaction is implemented, will be served by both Norfolk Southern and CSX at those origins and destinations. I determined that originating traffic with 1995 revenues of \$684.9 million and terminating traffic with 1995 revenues of \$840.5 million will go from one to two railroads at those origins and destinations.

Attachment BCH-1 is a summary of my estimates of the foregoing competitive benefits measured on a 4-digit SPLC basis as well as on 6-digit SPLC and BEA bases.

In addition to creating competition over much of the current Conrail system, the proposed restructuring promises to provide most shippers with service that is better than the service currently available. After the transaction, Norfolk Southern will be able to offer single-line service from and to locations throughout the East. In addition, the joint Norfolk Southern/CSX restructuring will make CSX a second rail system that can also offer single-line service and other service improvements from and to locations throughout the East.

The enhanced ability to offer single-line service will significantly improve rail service in the East. Norfolk Southern anticipates that the creation of new single-line service will result in faster and more reliable service. Transit times will be improved by reducing the number of interchanges between railroads and making it easier for Norfolk Southern to use the most efficient routes. Faster and more reliable rail service can also attract customers that currently do not ship by rail.

The Interstate Commerce Commission and the Surface Transportation Board have consistently recognized that the establishment of efficient single-line service is a major benefit of railroad mergers.

The Norfolk Southern/CSX restructuring will allow for the formation of two balanced and efficient rail systems that are capable of competing with each other throughout the eastern United States. Competition between two balanced and efficient railroads will result in cost savings and efficiencies being passed to customers in the form of lower rates and better service.¹ Ultimately, competition in any market forces each firm to offer a desirable price/quality package or risk losing business to a competitor. The specific price and quality levels necessary to obtain business are determined by the specific options available to customers. When the nature of these options differs, the competitor offering the more desirable service only needs to offer rates and service slightly better than that offered by its competitor. That is, when only one competitor is able to achieve cost savings, there is only limited pressure on that competitor to pass these savings to consumers. In such a situation, these cost savings can be taken as additional profit or an "economic rent." By contrast, when two competitors have similar abilities to offer a particular service and have similar cost structures, each of them is forced to continue to enhance

¹ The Board reached this same conclusion in the Union Pacific/Southern Pacific merger proceeding (Finance Docket No. 32760 (p. 118)), where it stated that:

In prior mergers, the ICC often permitted the number of railroads offering service in a given market to decrease to two railroads. Indeed, it approved mergers resulting in only two major railroads serving large portions of the East. The two railroads, CSX and NS, have competed effectively in these markets. As has been true for the nation's rail system as a whole since the Staggers Act, competitive pressures have been sufficient to spur railroads to enhance productivity by adopting efficient operating and management systems, and their costs have gone down each year because of significant productivity gains. Competitive pressures have ensured that the preponderance of those gains have been passed along to shippers in the form of lower rates and better and more responsive service. There is no evidence that railroads have colluded, overtly or tacitly, to maintain inefficient operations, unresponsive service, or above-market rate levels.

productivity, reduce rates and improve quality until each earns no more than a competitive return. With this type of balanced competition between Norfolk Southern and CSX, cost savings are likely to be passed to consumers.

The operation of Conrail's lines by Norfolk Southern is principally end-to-end and does not raise many traditional competitive concerns. Nonetheless, a very small number of geographic areas involving small amounts of traffic are currently served by both Norfolk Southern and the Conrail lines it will operate ("operated Conrail lines"). Based on my analysis, I have concluded that competition in virtually all of these areas will remain vigorous after the transaction due to the continued presence of current competitors and the new presence of CSX that will result from its operation of other Conrail lines. Overall, the proposed joint Norfolk Southern/CSX transaction will benefit shippers by providing for improved service and increased competition.

The remainder of this statement describes the analyses that I conducted to arrive at this conclusion. Section III describes the Norfolk Southern and Conrail systems. Section IV summarizes the competitive benefits of the proposed transaction. Section V identifies geographic areas that currently are served only by Conrail and will receive new competitive railroad service as a result of the Norfolk Southern/CSX restructuring. Section VI identifies current competitive overlaps between Norfolk Southern and the Conrail assets it will operate. My overall conclusions are summarized in Section VII.

III. THE NORFOLK SOUTHERN AND CONRAIL SYSTEMS

The Norfolk Southern and Conrail systems are basically complementary end-to-end railroads with only limited overlaps. Norfolk Southern provides rail service throughout the southeastern United States and parts of the Midwest. The Norfolk Southern system extends from

New Orleans, Mobile and Jacksonville in the South to Washington, DC, and Hagerstown, MD along the eastern seaboard to Buffalo, Cleveland, Detroit and Chicago in the Midwest, and to Kansas City, St. Louis and Memphis on the system's western edge. In addition, Norfolk Southern has haulage rights on the Florida East Coast Railroad from Jacksonville to Miami. The entire Norfolk Southern system encompasses 14,282 miles of road operated in 1996.²

The Conrail System principally serves the northeastern section of the United States. This system extends from Boston, New York City, Philadelphia, Baltimore and Washington, DC in the East to Chicago and St. Louis in the West. Major intermediate points served include Pittsburgh, Buffalo, Cleveland, Columbus, Detroit and Indianapolis. The entire Conrail system consists of 10,543 miles of road operated in 1996.³ In many parts of its system, Conrail currently is the only provider of Class I rail service, including New York City and Northern New Jersey, Southern New Jersey, and many areas in New England. Both Conrail and Norfolk Southern currently have lines that run between Buffalo, Cleveland and Chicago and between Cleveland and St. Louis. The principal end-to-end connections between Conrail and Norfolk Southern are at Hagerstown, MD; Columbus, OH; and Cincinnati, OH.⁴

The limited overlap of the two systems is apparent from a review of Conrail's and Norfolk Southern's percentage of Class I mileage in each of the states in which they both provide rail service, as set forth in Attachment BCH-2. In most of these states, (i.e., Pennsylvania, Maryland, New York and Michigan) Norfolk Southern has a share of 5% or less. In the remaining overlap

² Norfolk Southern, 1996 R-1 Report.

³ Conrail, 1996 R-1 Report.

⁴ Washington, DC was, but no longer is, a principal connecting point between Norfolk Southern and Conrail. This connection was lost when Conrail discontinued through service. Currently the small number of Conrail-Norfolk Southern cars moving through Washington, DC are relayed to Norfolk Southern by CSX. Reestablishing this link will be a benefit of the transaction for Norfolk Southern.

es, railroads other than Conrail and Norfolk Southern have shares between 40% (Ohio) and % (Illinois).

The limited overlap between Norfolk Southern and even the complete Conrail system is so apparent from a review of their traffic data. The two systems combined produced railway operating revenues of \$7.7 billion in 1995. The total revenue on routes where Norfolk Southern and the complete current Conrail system provide the only independent competitive options (i.e., 2-to-1 routes) was \$107,790,942 or 1.4% of Norfolk Southern's and Conrail's combined 1995 railway operating revenues. As the analysis described in Section VI shows, for these routings, Norfolk Southern's operation will not result in a significant reduction of competition, in large part because CSX rather than Norfolk Southern will be operating that portion of the Conrail system. The total revenue from shippers on 2-to-1 routes serviced only over Norfolk Southern or the Conrail lines it will operate was \$12,563,989 or less than 0.2% of the railroads' combined 1995 railway operating revenue.

IV. THE NORFOLK SOUTHERN/CSX RESTRUCTURING OF CONRAIL WILL PRODUCE BALANCED COMPETITION IN THE EASTERN UNITED STATES THAT WILL BENEFIT SHIPPERS

The Norfolk Southern/CSX restructuring of Conrail will produce two competitively balanced rail transportation systems in the eastern United States. Shippers and the public interest will be well served by such a system, especially in the Northeast where Conrail currently is the only provider of rail service in many areas. Competition between the two railroads will result in cost savings and efficiencies being passed to customers in the form of lower rates and better service. My conclusions are based on (1) economic principles of oligopoly behavior and (2) economic principles of network economics.

Generally speaking, consumers benefit from competition between suppliers of a product or service. The vitality of competition, however, is not solely a function of the number of suppliers providing the product or service. Customers differentiate between suppliers on the basis of price, quality and ability of the suppliers to meet customer needs. Customers often benefit from actions, including mergers, that reduce costs and improve service, even when these actions reduce the number of competitors.

It is well established that in markets with a small number of competitors, customers generally will benefit when there is a strong number-two firm.⁵ The number-one firm in an industry may have lower costs or operate particularly efficiently, but it will have little incentive to pass these savings to its customers absent competitive pressures to do so. For freight transportation, this means that shippers receive a combination of price and service ("value") that is actually determined by what the second most-competitive carrier can offer. That is, the carrier with the potential of offering shippers the most value, due to lower costs, more efficient service, or a combination of the two, only needs to offer shippers the minimum value necessary to surpass the value offered by the next-best alternative carrier. In effect, the number-two carrier determines the value that shippers will receive. Thus, the number-two carrier's cost structure and level of service are critical factors in determining the extent of competition for rail transportation. Two competing railroads -- with comparable rail transportation systems that allow them to meet shippers needs and achieve operating efficiencies -- will produce more competitive rates and service.

⁵ See, for example, F.M. Scherer and D. Ross, *Industrial Market Structure and Economic Performance*, 3rd Edition, 1990, Chapter 6; C. Shapiro, "Theories of Oligopoly Behavior," Chapter 6 in *Handbook of Industrial Organization*, Volume I, edited by R. Schmalensee and R.D. Willig, 1989. Also see Section 2.2 of the *Horizontal Merger Guidelines*, issued by the U.S. Department of Justice and the Federal Trade Commission, for a discussion of the importance of next-best substitutes in competition among differentiated products.

The competitive balance in the East that will result from the Norfolk Southern/CSX restructuring of Conrail can also be understood by applying principles of network economics. Railroads can be viewed as operating networks serving multiple interrelated points that, much like other network industries, have demand and cost structures that are significantly affected by economies of scope, scale and density.⁶

Network industries are distinguished by the underlying sources of economies that drive them. In some network industries, network effects among users are critical, leading to important "demand-side economies." A computer program, for example, may become more valuable to each user as the number of users of that program increases, since as the number of users increases, each user has more persons with whom data can be exchanged.

For other network industries, "supply-side economies" are more important. An airline passenger, for example, does not directly care how many other passengers are on the flight. Rather, the passenger cares about price and the quality of service received. Quality of service for airline passengers is determined by a wide array of factors that includes frequency and breadth of service. If a passenger desires roundtrip travel between cities A and B, the passenger may well prefer the carrier that offers the most flights in that city pair in order to reduce the likelihood of being inconvenienced if there is a need to change plans at the last minute. Similarly, a passenger may prefer to patronize the carrier that serves the most locations from his office because it may offer efficiencies ranging from the opportunity of corporate travel departments to negotiate volume discounts to the ability to accumulate frequent flier awards and choose among multiple destinations to redeem them.

⁶ Economies of scope refer to interrelationships in the system such as geographic coverage or the ability to offer coordinated service across the system. Economies of scale refer to cost savings related to increases in the size of a rail network. Economies of density refer to cost savings related to increases in the amount of traffic or density of the network.

Similar economies are found in other industries such as parcel delivery and courier services. Customers with needs to send packages to or receive packages from multiple locations will typically have a preference to use suppliers that serve the broadest array of those locations. There are often cost and efficiency benefits to a customer that come from consolidating purchases in fewer suppliers. Parcel delivery and courier service companies therefore often strive to establish broad geographic networks.

As in other network industries, in the railroad industry economies of scope, scale and density can be critical to performance and competitiveness. Shippers, like airline passengers, desire networks that can serve the geographic areas that they use the most. Many shippers also value the ability of a railroad to provide a broad geographic scope of single-line service. The railroad industry, as well as the Surface Transportation Board and the Interstate Commerce Commission, has long recognized the benefits to shippers of single-line service. Moreover, some rail users that ship freight to or receive freight from multiple and often widely-dispersed points perceive value in being able to consolidate their shipments. Many shippers therefore prefer to deal with a carrier that serves more of their origin and destination points.⁷

As long as Conrail was an independent carrier, serving as a connection for Norfolk Southern and CSX in the Northeast, neither of those two carriers could meet shippers' needs into or out of the Northeast on a single-line basis. The Norfolk Southern/CSX restructuring will provide both carriers with the broad geographic scope to offer efficient single-line service.

⁷ The value to shippers of minimizing the number of different carriers with which they deal may reflect significant reductions in transaction costs, the ability to negotiate lower rates based on higher volumes, and improved service from higher volume (such as logistic efficiencies and increased speed, predictability and consistency). The *Wall Street Journal* reported on April 29, 1997 that companies have substantially reduced the number of transportation carriers with which they deal in order to improve predictability, reduce damage and save costs. "More Firms Rely on 'One-Stop' Shopping," *Wall Street Journal*, p. A2 (April 29, 1997).

Shippers also value lower rates for any given level of service. The ability of a carrier to offer lower rates is, in large part, a function of the carrier's ability to achieve economies of scale, scope and density, which reduce its costs. In network industries with substantial fixed costs, competitors can significantly reduce unit costs by increasing utilization. This is similar to airlines that feed passengers from flights originating in small cities to flights at hubs in larger cities, which increases passenger loads. Ultimately, network economies of scope, scale and density are interrelated: a broad geographic network can attract a large customer base with resulting increased use that allows the network operator to achieve operating efficiencies that drive down unit costs that can be passed on to consumers -- if there is a competitive incentive to do so.

It is widely recognized that railroads experience significant economies over some range of output due to various fixed costs, most obviously the fixed costs of track and rights of way. Unit costs decline substantially as traffic over a particular line ("density") increases. In addition to route-specific factors, however, the amount of traffic moving over a particular route is determined by system-wide economies of geographic scope and scale. System-wide economies of scope and scale will allow a carrier to gather freight from secondary lines and consolidate it for movement along other lines throughout the network. This allows for the more efficient use of track, rolling stock, terminals and other assets, further reducing unit costs and allowing the carrier to pass those savings along, even to the shippers on the secondary lines -- again, so long as there is a competitive incentive to do so.

Currently, no railroad has the geographic scope or the economies of scale necessary to offer single-line service throughout the eastern United States. The proposed restructuring of Conrail by Norfolk Southern and CSX will result in substantial economies including more direct and efficient service, reduced interline connections, and increased ability to meet shippers' needs.

Because the proposed transaction will create two strong and comparably sized competitors that are able to realize much the same economies, with each able to serve most major markets in the eastern United States, both carriers will have the competitive incentive to pass savings to shippers in the form of improved service and lower rates. Both Norfolk Southern and CSX also stand to gain from diversions from other modes of transportation, which would increase rail volumes thereby lowering rail unit costs.

V. **THE NORFOLK SOUTHERN/CSX RESTRUCTURING WILL INCREASE COMPETITION FOR SHIPPERS CURRENTLY SERVED ONLY BY CONRAIL**

The Norfolk Southern/CSX restructuring will improve and increase competition both by improving service and lowering costs and by creating competitive railroad options at locations that are currently served only by Conrail. This section of my statement focuses on the new railroad options that will be created. These new options will principally affect traffic: (1) on the Shared Assets Area in Southern New Jersey/ Philadelphia; (2) on the Shared Assets Area in Northern New Jersey; and (3) in the coal fields in southwest Pennsylvania and northern West Virginia. In addition, certain automotive and other customers in the Detroit area will receive additional competitive rail service over that Shared Assets Area.

I have estimated the extent of freight affected by the new competition in two ways. The first way makes use of historical routings and algorithms developed in Norfolk Southern's Rail Traffic Diversion Study that identifies post-transaction routings over current Conrail lines.⁸ This method identifies specific origin-destination pairs that currently require participation by Conrail and will have two independent and competitive rail options from origin to destination after the transaction is implemented. Separate estimates based respectively on origins and destinations

⁸ See verified statement of John H. Williams.

defined by BEA, 4-digit SPLC location and 6-digit SPLC location were made using this method.⁹

The amount of traffic identified in this manner is quite large, with estimates varying between revenue levels of \$654.3 million and \$779.2 million, depending on which definition of origin and destination is used. These estimates of revenues associated with newly competitive routings constitute between 18% and 22% of Conrail's 1995 revenues. Moreover, these estimates may significantly understate the amount of traffic subject to increased competition because this estimation method fails to identify origin-destination pairs where Norfolk Southern and CSX are close competitive options but where one or the other obtains all of the traffic.

The second method of identifying the amount of traffic that will receive new competitive rail service measures the amount of traffic originating or terminating at specific locations that are currently served only by Conrail and after the restructuring will be served by both Norfolk Southern and CSX at those locations. These areas include the Shared Assets Areas and the Monongahela coal fields. Using this second method, and applying a 4-digit SPLC definition, I have identified traffic with \$684.9 million in rail revenues from originating traffic and \$840.5 million in rail revenues from terminating traffic. This method may somewhat overstate the extent of traffic that will receive newly competitive rail service. Such an overstatement may arise, for example, because other segments of a rail movement have only a single carrier as an option. These conclusions are summarized in Attachment BCH-1 and are discussed more fully below.

⁹ "BEA" refers to Business Economic Area, a location grouping established by the Bureau of Economic Analysis of the U.S. Department of Commerce for statistical reporting of regional economic activity. BEAs are collections of counties. "SPLC" refers to the Standard Point Location Code, a code used on freight accounting forms to identify all U.S. points served by rail or motor carriers. It may have up to six position numbers, identifying a geographic area in the first position, the state in the second position, the county in the third and fourth positions, and the station, city or town in the fifth and sixth positions.

A. Increased Competition: Origin-Destination Analysis

As noted, the first method of estimating the amount of freight affected by the new competition identified specific origin-destination pairs that currently require participation by Conrail and will have two independent and competitive rail options after the transaction. This estimation method was repeated three times, with origins and destinations defined in turn as BEAs, 4-digit SPLC areas, and 6-digit SPLC areas. The results of each of the three analyses strongly indicate that a large amount of traffic currently served only by Conrail will obtain access to competitive rail service.

Specifically, the BEA analysis identifies rail traffic with \$706,379,030 in 1995 revenues as obtaining this new competition. This traffic involved 478,927 carloads and 25,254,746 net tons of freight. A large portion of this traffic involved movements that either terminated or originated in the New York BEA or in the Philadelphia BEA.¹⁰

The analysis based on 4-digit SPLC locations provided similar results. The revenue associated with traffic on 1-to-2 origin-destination pairs was \$779,221,528. This traffic involved 851,650 carloads and 33,015,915 net tons of freight. Again, a large portion of this traffic originated or terminated at locations in the New York City/Northern New Jersey area and the Southern New Jersey/Philadelphia area.¹¹ This analysis also identified 1-to-2 movements from the Monongahela coal fields. Overall, the Monongahela movements had rail revenues of \$144,474,480. Specifically, 1-to-2 movements from Greene County, PA, had rail revenues of

¹⁰ The New York BEA includes both the Northern New Jersey Shared Assets Area and the greater New York City area that will be served by lines operated respectively by Norfolk Southern and CSX. The Philadelphia BEA includes the Southern New Jersey/Philadelphia Shared Assets Areas.

¹¹ There was \$357,050,075 in revenues associated with 1-to-2 origin-destination pairs that either originated or terminated on the Northern New Jersey Shared Assets Area. For the Southern New Jersey/Philadelphia portion of the Shared Assets Area the revenue from such traffic was \$69,140,788.

\$93,992,849, movements from Monongalia County, WV, had rail revenues of \$26,753,214, and movements from Marion County, WV, had rail revenues of \$23,728,417.¹²

Finally, the analysis of 6-digit SPLC locations identified traffic over 1-to-2 routes as having rail revenues of \$654,274,806, with 777,707 carloads and 31,775,877 net tons. As with the BEA and 4-digit SPLC analyses, the 6-digit SPLC analysis identified a great deal of traffic subject to new competition in the New York area, the Philadelphia area and the Monongahela coal fields.

Overall these three analyses identify specific origin-destination pairs with rail revenues between \$654.3 million and \$779.2 million that currently require Conrail's participation and that will have two independent rail options after the transaction. These very similar estimates using the three different definitions of origins and destinations strongly demonstrate that as a result of the Norfolk Southern/CSX restructuring of Conrail, a great deal of traffic will have competitive rail service where none currently exists.

B. Traffic Originating or Terminating on the Shared Assets Areas

The Shared Assets Areas in Southern New Jersey/Philadelphia and Northern New Jersey will connect in the north and in the south with both Norfolk Southern and CSX. In Northern New Jersey, the Shared Assets Area will connect with Conrail lines to be operated by Norfolk Southern that go farther north to Buffalo and that go west through Harrisburg and Pittsburgh. The Shared Assets Area will also connect with different Conrail lines to be operated by CSX that

¹² These movements from Greene County had 87,809 carloads and 8,617,773 net tons. Movements from Monongalia County had 25,052 carloads and 2,471,436 net tons, and movements from Marion County had 22,307 carloads and 2,238,963 net tons.

go west via Buffalo and west via Baltimore and Pittsburgh and with other Conrail lines that go to Boston and southern Massachusetts.

In the Southern New Jersey/Philadelphia area, the Shared Assets Area will connect with Conrail lines to be operated by Norfolk Southern that will connect with the existing Norfolk Southern system at Washington, DC, and at Hagerstown, MD. The Shared Assets Area will also connect with the existing CSX system in Philadelphia.

The joint use of the Shared Assets Areas will create competitive rail options for shippers on these lines that are currently served only by Conrail. After the restructuring, Northern New Jersey and Southern New Jersey/Philadelphia will each be a joint access area with both Norfolk Southern and CSX having direct access to all customers. Because Norfolk Southern and CSX will establish rates independently of each other, they will need to compete for freight on the Shared Assets Areas.

Competition between Norfolk Southern and CSX for traffic moving on the Shared Assets Areas should provide shippers with superior price and quality choices. Most traffic will be able to move over a single railroad for considerable distances over either Norfolk Southern or CSX. Consequently, as a general matter, Norfolk Southern's and CSX's joint operation of the Shared Assets Areas should result in lower rates and higher quality for shippers.

1. Northern New Jersey

The Norfolk Southern/CSX northern New Jersey portion of the Shared Assets Areas generally encompasses all northern New Jersey Conrail trackage east of and including the Northeast Corridor plus: the Conrail Lehigh Line west to CP Port Reading Junction; the NJT Raritan Line; the Conrail Port Reading Secondary Line west to Bound Brook; and the Conrail

Perth Amboy Secondary Line west to South Plainfield.. This area roughly corresponds to the New Jersey counties of Bergen, Passaic, Morris, Essex, Hudson, Union, Warren, Middlesex, Somerset, Monmouth and Mercer.

As explained previously, the method of estimation that focuses on specific 1-to-2 origin-destination pairs probably understates the extent of new competition. The second estimation method focuses first on all traffic originated and then on all traffic terminated in the relevant counties. Attachments BCH-3 and BCH-4 respectively identify the amount of originating and terminating traffic in these counties. These attachments show that there were revenues of \$300,937,156 from traffic that originated and \$712,541,018 from traffic that terminated in these northern New Jersey counties. Conrail's revenues in this area from originating traffic were \$286,786,659 (96% of the total) and from terminating traffic were \$696,345,640 (98% of the total).¹³ Virtually all of Conrail's revenues came from locations not served by other railroads.¹⁴ Consequently, these Conrail revenue measures provide a good estimate of the amount of traffic in this area that will go from being served by one rail carrier to being served by two rail carriers.

2. Southern New Jersey/Philadelphia

The Southern New Jersey/Philadelphia Shared Assets Area generally encompasses all Conrail Philadelphia-area stations, industries located on the Conrail Chester secondary tracks, all

¹³ A small amount of traffic identified as Conrail traffic was carried on the Conrail System by Burlington Northern/Santa Fe under a haulage agreement with Conrail. All of this traffic either originated or terminated in 6-digit SPLC locations 191480 or 191560. Most of this traffic was to or from the West Coast. Conrail did not have large volumes of traffic in these locations.

¹⁴ The Waybill data show that some shippers in 4-digit SPLC locations 1910, 1912 and 1916, which are in Passaic, Bergen and Essex counties, received some rail service from carriers other than Conrail. Much of the traffic at these 4-digit locations that was not carried by Conrail originated in 6-digit SPLC locations 191268 or 191630 or terminated in 6-digit SPLC locations 191268 or 191630. Conrail did not originate any traffic in these 6-digit SPLC areas and did not terminate any traffic in 6-digit SPLC location 191630.

Conrail trackage in south New Jersey, and the Conrail freight franchise rights on Amtrak's Northeast Corridor north from Philadelphia (Zoo Tower) to the Trenton, NJ area. This area roughly corresponds to the New Jersey counties of Ocean, Burlington, Camden, Atlantic, Gloucester, Salem, Cumberland and Cape May as well as the Pennsylvania counties of Philadelphia, Delaware and Chester.

Attachments BCH-5 and BCH-6 report the amount of traffic in those Southern New Jersey/Philadelphia counties that will receive newly created railroad competition. These attachments indicate that there were rail revenues of \$176,578,119 on traffic that originated from these counties and rail revenues of \$347,281,280 on traffic that terminated in these counties. Conrail's revenues in the Southern New Jersey/Philadelphia Shared Assets Areas area from 4-digit SPLC areas not served by other carriers were \$46,291,528 on originating traffic and \$141,907,469 on terminating traffic.¹⁵ These values provide a good estimate of the amount of traffic in this area that will go from being served by one rail carrier to being served by two rail carriers.

C. Traffic Originating or Terminating in the Monongahela Coal Fields

The Norfolk Southern/CSX acquisition will also create railroad competition in the Monongahela coal fields. Currently, these coal fields are only served by Conrail. After the restructuring, Norfolk Southern will operate, dispatch and maintain the former Monongahela Railway, while CSX will have full commercial and operating rights to serve all current and future facilities. The amount of traffic that will be subject to this new competition is estimated by identifying the amount of traffic that originated or terminated in Greene County in Pennsylvania

¹⁵ The Waybill data shows that some shippers in 4-digit SPLC locations 2078, 2079, 2085, and 2087 which are in Philadelphia, Delaware, and Chester counties, received rail service from carriers other than Conrail.

and Monongalia and Marion Counties in West Virginia.¹⁶ These estimates are reported in Attachments BCH-7 and BCH-8. Overall, Conrail had originating traffic from these counties with rail revenues of \$351,835,499 and terminating traffic with rail revenues of \$2,277,518.

VI. NORFOLK SOUTHERN'S OPERATION OF CONRAIL LINES WILL NOT SIGNIFICANTLY REDUCE COMPETITION

A. Overview and Methodology

While the general description of the Conrail and Norfolk systems presented in Section III suggests that their competitive overlaps are limited, ultimately ascertaining the extent and importance of these overlaps requires an examination of the traffic at overlap points on portions of Conrail to be operated by Norfolk Southern and an evaluation of the transportation alternatives available in these areas. Following the Board's decision in Finance Docket No. 32760, my analysis focuses on those geographic areas that are currently served only by Norfolk Southern and the portions of Conrail it will be operating.¹⁷ Based on my analysis, I conclude that the proposed transaction will not result in a significant lessening of competition. Simply, there are very few overlap areas that involve Norfolk Southern and the Conrail lines it will operate, and these areas involve only a small amount of traffic.

For purposes of my analysis I first looked at Norfolk Southern and Conrail system maps to get an overview of the areas served by Norfolk Southern and the Conrail lines it will operate. I next looked at locations defined by BEAs and 4-digit SPLC codes because together they provide both a good overview of where Norfolk Southern and the Conrail lines it will operate offer

¹⁶ While some coal rail traffic may be under long-term contracts and not immediately subject to competition, these revenue figures indicate the size of the market that will receive the new rail competition. Rail competition will occur as existing contracts are renewed or revised or as new contracts are negotiated.

¹⁷ The Board determined in Finance Docket No. 32760 that, "... rail carriers can and do compete effectively with each other in two-carrier markets."

competing service and a good compromise compared to more narrow definitions. In this analysis, I have also looked at options available to some specific shippers in areas identified as going from two rail carriers to one in the 4-digit SPLC analysis. As a check, I repeated the analysis using 6-digit SPLC locations. Each of these analyses indicated that: (1) there are only a small number of locations at which service is provided over Norfolk Southern and the Conrail lines it will operate; (2) most of these overlap locations are also served by other railroads, including CSX; and (3) the amount of freight at locations served only by Norfolk Southern and the Conrail lines it will operate is quite small.

No analysis based on one particular level of geographic aggregation can fully address every competitive issue. Focusing on narrow geographic areas may allow the identification of current railroad use by individual shippers. The use of these narrow geographic areas, however, may mask local competition among shippers and ignore the need for railroads serving competing shippers to provide the shippers they serve with competitive rates. Otherwise, shippers served by a railroad with high rates will be disadvantaged compared to its own competitors. When a shipper loses sales to competitors served by other railroads, the railroad that serves this shipper also loses sales. Similarly, narrow geographic areas may fail to identify competitive options available to a shipper through transloading options or extensions of existing rail lines. The loss of only a small percentage of a railroad's sales will be sufficient to cause higher rates to be unprofitable.¹⁸

¹⁸ See Barry C. Harris and Joseph J. Simons, "Focusing Market Definition: How Much Substitution is Necessary?" *Research in Law and Economics* (1989); reprinted in *The Journal of Reprints for Antitrust Law and Economics* (1991). In essence, the percentage loss in sales necessary to make a price increase unprofitable is determined by comparing the additional profits gained from the higher prices charged to those shippers who continue to use the railroads with the profits lost from reduced sales. The lost profits component of this comparison depends on two factors: (1) the amount of sales lost because of the price increase and (2) the variable contribution margin that would have been earned from those sales. The contribution margin is the difference between revenues lost from lost sales and the incremental cost of serving them, expressed as a percentage of lost revenues. Incremental costs are considered to be those costs that would be varied within one year in response to a small but significant loss in volume. My understanding is that, because of railroads' high fixed costs, variable contribution margins for railroads are likely to be in the range of 50-70%. With a contribution margin of 70%, a loss of only 6.6% of sales would render a 5% price increase unprofitable. If the contribution margin were 50%, a

The potential importance of competition between shippers in evaluating railroad competition can be shown through an illustrative example. Consider a California shipper of consumer products served by several originating railroads that makes regular deliveries to a city in the northeastern United States. In this example, all of the consumer products are shipped by TOFC and can be economically received in the northeastern city at either of two intermodal facilities. The two intermodal facilities are assumed to be in the same BEA and the same 4-digit SPLC area but different 6-digit SPLC areas. Unlike an analysis that started with BEAs and 4-digit SPLC areas, an analysis that focused on 6-digit SPLC areas would fail to identify this competition. Consequently, my analysis starts by considering overlaps in BEAs and 4-digit SPLC areas. As a check, however, I also consider overlaps in 6-digit SPLC areas.

My analysis of potential competitive overlaps uses two independent methods. One method considers origin-destination pairs, while the second method considers individual shipping locations.

Separately using the BEA, 4-digit SPLC, and 6-digit SPLC geographic areas, my analysis of origin-destination pairs identifies each origin-destination routing currently served only by Norfolk Southern and the Conrail lines it will operate. The next step of the origin-destination analysis focuses on the individual origins and destinations on Norfolk Southern and the Conrail lines it will operate associated with these origin-destination pairs.¹⁹ Finally, all of the traffic

lost of only 9.1% of sales would make a 5% price increase unprofitable. By way of comparison, with an 70% contribution margin, a 10% price increase will be unprofitable if only 12.5% of sales are lost as a result. Even if a railroad's variable contribution margin were as low as 50%, a 10% price increase would be unprofitable if it lost as little as 16.7% of its sales.

¹⁹ The analysis ultimately identifies specific locations served only by Norfolk Southern and Conrail. Focusing first on origin-destination pairs helps assure that any overlaps identified at a particular location involve movements that Norfolk Southern and Conrail could realistically serve. The initial BEA analysis is sufficiently broad geographically and involves a sufficient amount of traffic that it is unlikely that important 2-to-1 locations will not be identified.

originating or terminating at these potential 2-to-1 locations is reviewed to see what railroad options are available to shippers at these locations.

My analysis of individual shipping locations directly considers rail options at each shipping location served by both Norfolk Southern and the Conrail lines it will operate. Each of these analyses uses railroad traffic data from the 1995 Waybill Sample.

B. Review of Norfolk Southern and Conrail Maps

A review of the Norfolk Southern and Conrail system maps shows that New York, Pennsylvania, Ohio, Indiana, Illinois and Michigan are the principal states where Norfolk Southern and the operated Conrail lines serve the same locations.²⁰ In New York and Pennsylvania the overlap is limited to end-to-end connections at Buffalo and Erie, PA, respectively.²¹ The Michigan overlap is limited to lines that run into Detroit. The Illinois overlap is limited to lines running into Chicago.²² There are several overlaps in both Ohio and Indiana.

The system maps show that the overlaps between Norfolk Southern and Conrail in New York, Pennsylvania, Michigan and Illinois clearly do not pose competitive problems. Not only are the only competitive situations in New York and Pennsylvania end-to-end but, in any event, they

²⁰ Norfolk Southern serves industries in Alexandria, VA, but not in either Washington, DC, or its Maryland suburbs. Conrail serves some industries in Washington, DC and its Maryland suburbs over the Northeast Corridor. Norfolk Southern has a line that runs north and will connect with the Conrail lines at Hagerstown, MD.

²¹ Norfolk Southern currently serves Erie, PA, on its own line that runs from Chicago to Buffalo. Conrail currently serves Erie both on its own east-west line that runs from Chicago to Buffalo and by traffic rights over the Allegheny and Eastern Railroad. The Allegheny and Eastern line connects at Corry, PA, (south of Erie) with a Conrail line that Norfolk Southern will operate. CSX will operate Conrail's Cleveland-Buffalo line that runs through Erie. After the transaction, Erie will be served by Norfolk Southern, CSX, and the Allegheny and Eastern.

²² Conrail served Peoria in 1995 via traffic rights over a Norfolk Southern line. Conrail does not currently serve Peoria and has relinquished its rights on Norfolk Southern to serve Peoria. More specifically, Conrail withdrew from all services to all points on their Peoria line west of Danville, IL, with the sole exception of Normal, IL. Conrail currently has haulage rights between Normal and Lafayette for traffic to Conrail stations. These haulage rights will be transferred to CSX as part of the Norfolk Southern/CSX restructuring of Conrail.

will be unchanged because CSX will operate the Conrail line that directly competes with Norfolk Southern. Detroit, the source of the Michigan overlap, is served by several other railroads including CSX and Canadian National (formerly Grand Trunk Western).²³ Similarly Chicago is served by numerous other railroads including CSX. The remaining overlaps are limited to Ohio and Indiana. The analyses presented in the following sections indicate that even these overlaps are limited and do not pose significant competitive problems.

C. BEA Analysis

The same conclusion results from the BEA Waybill data analysis.²⁴ The analysis of origin-destination pairs identified seven BEAs with specific routings served in 1995 over only Norfolk Southern and the Conrail lines it will operate.²⁵ Appendix B describes the details of my review of competitive options in these seven BEAs, which are Columbus, Cincinnati, Toledo, Lafayette, Kokomo-Marion, Anderson-Muncie and South Bend. For each of these areas, there is only a small number of origin-destination pairs on which Norfolk Southern and the operated Conrail lines are the only railroads used. This review shows clearly that there are no competitive issues in Columbus, Cincinnati, Toledo, Lafayette or South Bend. Most routings to or from these locations also involve competing railroads. CSX currently serves Lafayette and each of the Ohio

²³ In addition, both Norfolk Southern and CSX will have rights to run their own trains over the trackage in the Shared Assets Area in Detroit. This Shared Asset Area includes all Conrail trackage and access rights east of CP-Townline and south to and including Trenton, MI.

²⁴ The Department of Commerce changed their definitions of BEAs in 1995. (See Kenneth P. Johnson, "Redefinition of the BEA Economic Areas," *Survey of Current Business*, February 1995, pp. 75-80.) The 1995 Waybill data employs the earlier definition of BEA areas.

²⁵ These BEAs were identified by first reviewing every BEA origin-destination pair over which Norfolk Southern and Conrail both provide service and then considering in detail those pairs for which every movement involved either Norfolk Southern or Conrail. This list of 2-to-1 BEA pairs was further analyzed to see the extent that other railroads also served the same locations and alternate railroad routings were available but not utilized for a specific origin-destination pair.

areas over its own lines. It also services South Bend via a connection with the Chicago, SouthShore & South Bend Railroad. Thus, shippers at each of these locations will continue to have access to competing railroads after the transaction.

The only remaining overlaps involve the Kokomo-Marion and Anderson-Muncie BEAs, which are small contiguous BEAs in central Indiana. These two overlaps result because of the intersection of Norfolk Southern lines with a north-south Conrail line that runs from Goshen to Anderson, including a spur that runs between Marion and Red Key. As I discuss in the next section, the competitive impact on shippers in these BEAs is *de minimis*.

D. 4-Digit SPLC Analysis

The 4-digit SPLC analysis, which is described in detail in Appendix C, confirms that the only potential 2-to-1 overlaps are limited to a small number of shippers in central Indiana. The 4-digit SPLC analysis initially identified Franklin and Summit Counties in Ohio and Grant and Clinton Counties in Indiana as being involved either in origin-destination pairs or at specific locations served in 1995 only by Norfolk Southern and the Conrail lines it will operate. Franklin and Summit Counties, however, are currently served by other railroads including CSX.²⁶

Grant County and Clinton County, IN, involve small amounts of traffic. The only shippers that currently appear to have access to both Norfolk Southern and Conrail are located in Alexandria and Red Key.²⁷ Alexandria had a very small amount of traffic. The Andersons, Inc.,

²⁶ A review of traffic originating and terminating at individual 4-digit SPLC locations also identified Sandusky, OH as a location that is currently served by Norfolk Southern and an operated Conrail line. Norfolk Southern's Sandusky traffic consists of lake coal transloaded to water, but Conrail does not serve this Norfolk Southern-owned facility. Most shippers in Sandusky are not served and cannot be accessed by both Norfolk Southern and Conrail. There are three shippers, however, that are served by both railroads. Norfolk Southern will provide haulage/trackage rights to CSX for the 2-to-1 customers at Sandusky.

²⁷ Norfolk Southern currently serves Red Key over a reciprocal switch with Conrail.

the only shipper at Red Key, has indicated that Norfolk Southern's operation of the Conrail line is desirable.²⁸

The analysis also identified Lorain, OH, as being principally served by Conrail and Norfolk Southern, with some traffic originated and terminated on CSX. CSX currently can access Lorain over its own line from Grafton and Lester and the Lake Terminal Railroad. CSX is not currently able to access two specific automobile plants located near the city of Lorain that are currently served over both Norfolk Southern and the Conrail lines it will operate. These shippers are located at Avon Lake, OH, and Fairlane, OH.²⁹ The Norfolk Southern/CSX restructuring will grant CSX permanent haulage/trackage rights on Conrail's Chicago Line between Cleveland and the Avon Lake and Fairlane plants for the purpose of serving customers at these plants.

E. 6-Digit SPLC Analysis

For completeness, I repeated the same analysis for 6-digit SPLC locations. This additional analysis did not identify any locations with competitive issues that were not identified by the BEA or 4-digit SPLC analyses. The 6-digit analysis identified only three locations for which there were origin-destination pairs where all of the 1995 traffic was carried over either Norfolk Southern or the Conrail lines it will operate.³⁰ These three locations are Detroit, MI; Toledo, OH; and Cincinnati, OH.³¹ All three locations are served by other railroads including CSX.³²

²⁸ May 1, 1997 letter to Surface Transportation Board from Mike Anderson, President and Chief Operating Officer of the Andersons, Inc.

²⁹ The joint Ford Motor Company/Nissan Motor Company plant at Avon Lake is currently served by both Norfolk Southern and Conrail. Norfolk Southern serves it directly, while Conrail serves it by a reciprocal switch. CSX will serve Avon Lake under a haulage and trackage rights agreement with cost-based charges and will have access to all Nissan and Ford traffic at this location. The Ford plant at Fairlane, OH, is currently served by both Conrail and Norfolk Southern. CSX will serve the Fairlane plant under the same haulage and traffic arrangement that covers Avon Lake.

³⁰ The analysis also identified a single routing involving South Lorain, OH, and a single routing involving Danville, IL. The South Lorain routing was limited to a 20-mile movement of metal to Cleveland. The Danville

VII. SUMMARY OF CONCLUSIONS

My overall conclusion is that Norfolk Southern's operation of Conrail assets as part of the Norfolk Southern/CSX restructuring package is strongly procompetitive. It promises to reduce costs, improve service and create competitive rail options that do not currently exist. Moreover, it does so without significantly reducing competition over other portions of the Norfolk Southern system. Currently, Norfolk Southern and CSX aggressively compete with each other throughout the southeastern and midwestern portions of the United States. The Norfolk Southern/CSX restructuring will extend this competition into the Northeast, which in many locations is currently served only by Conrail.

The Norfolk Southern/CSX restructuring will allow for the formation of two balanced and efficient rail systems that are capable of competing with each other throughout the eastern United States. Competition between two balanced and efficient railroads will result in cost savings and efficiencies being passed to customers in the form of lower rates and better service. Ultimately, competition in any market forces each firm to offer a desirable price/quality package or risk losing business to a competitor. The specific price and quality levels necessary to obtain business are determined by the specific options available to customers. When the nature of these options differ, the competitor offering the more desirable service only needs to offer rates and service slightly better than that offered by its competitor. That is, when only one competitor is able to

routing was limited to movements from Chicago. Virtually all of this freight to Danville moved over Norfolk Southern, with Conrail's involvement limited to a single-sampled carload interlined with Burlington Northern/Santa Fe. Danville is also served by CSX.

³¹ As a further check, I also identified each individual 6-digit SPLC location that the 1995 Waybill data identified as being served only by Norfolk Southern or Conrail. This analysis, which is described in Appendix D, did not identify any locations with competitive issues that were not identified in the BEA or 4-digit SPLC analyses.

³² CSX will also be able to serve Detroit over the Shared Assets Area that runs south from Detroit.

achieve cost savings, there is only limited pressure on that competitor to pass these savings to consumers. By contrast, when two competitors have similar abilities to offer a particular service and have similar cost structures, each of them is forced to continue to enhance productivity, reduce rates and improve quality until each earns no more than a competitive return. With this type of balanced competition between Norfolk Southern and CSX, cost savings are likely to be passed to consumers.

VERIFICATION

District of Columbia

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I, Barry Harris, verify under penalty of perjury that the foregoing statement is true and correct. Further, I certify that I am qualified and authorized to file this statement. Executed on _____

Barry C. Harris

Barry C. Harris

Sworn to and signed before
me this 12th day of June, 1997

Sandra L. Paylor
Notary Public

SANDRA L. PAYLOR
A Notary Public of District of Columbia
My Commission Expires May 31, 1999

VERIFICATION

District of Columbia

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Barry C. Harris

Barry C. Harris

Sworn to and signed before
me this 12th day of June, 1997

Sandra L. Prylor

Notary Public

SANDRA L. PRYLOR
A Notary Public of District of Columbia
My Commission Expires May 31, 1999

Attachment BCH-1

**Summary of Estimates of Revenue from Conrail-Only
Traffic that Will Be Served by Norfolk Southern and CSX**

<u>Estimation Method</u>	<u>Revenues</u>
BEA Origin-Destination Pairs	\$706,379,030
4-digit SPLC Origin-Destination Pairs	779,221,528
6-digit SPLC Origin-Destination Pairs	654,274,806
4-digit SPLC Originating Traffic	684,913,686
4-digit SPLC Terminating Traffic	840,530,627
Sum of 4-digit SPLC Originating Traffic and Terminating Traffic*	\$1,525,444,313

* Some traffic may be included in both the originating traffic and terminating traffic totals.

Attachment BCH-2

**Percentage of Class I Mileage
in States Served by Norfolk Southern and Conrail**

State	Norfolk Southern	Conrail	Other Railroads
Delaware	0%	90%	10%
Pennsylvania	1	77	22
Maryland	2	43	55
New York	5	90	5
West Virginia	22	14	64
Ohio	21	39	40
Michigan	5	22	73
Indiana	30	27	43
Illinois	14	7	79

Attachment BCH-3

**Revenue from Originating Rail Traffic in the
Northern New Jersey Shared Assets Area**

SPLC	County	Conrail	All Railroads
1909	Passaic	\$2,574,396	\$2,574,396
1912	Bergen	2,155,490	12,503,010
1914	Hudson	175,475,479	176,833,271
1915	Hudson	5,667,678	5,667,678
1916	Essex	14,378,430	16,729,256
1917	Essex	4,326,596	4,326,596
1918	Union	39,377,857	39,377,857
1921	Morris	237,328	237,328
1925	Warren	612,930	612,930
1931	Somerset	3,926,807	3,926,807
1932	Somerset	1,183,141	1,183,141
1941	Middlesex	13,746,406	13,746,406
1942	Middlesex	21,821,952	21,821,952
1910	Passaic		
1945	Mercer	296,344	390,703
1951	Monmouth		
1952	Monmouth	1,005,825	1,005,825
Total		\$286,786,659	\$300,937,156

Note: SPLCs 1910, 1945 and 1951 combined to protect confidentiality.

Attachment BCH-4

**Revenue from Terminating Rail Traffic in the
Northern New Jersey Shared Assets Area**

SPLC	County	Conrail	All Railroads
1910	Passaic	\$7,299,395	\$7,299,395
1911	Bergen	2,883,522	2,883,522
1912	Bergen	58,012,697	62,742,915
1914	Hudson	168,911,059	168,911,059
1915	Hudson	99,391,933	99,391,933
1916	Essex	119,378,753	130,843,913
1917	Essex	822,509	822,509
1918	Union	88,020,184	88,020,184
1919	Union	2,288,748	2,288,748
1921	Morris	4,949,281	4,949,281
1922	Morris	2,648,288	2,648,288
1925	Warren	6,117,843	6,117,843
1931	Somerset	11,522,854	11,522,854
1932	Somerset	347,009	347,009
1941	Middlesex	36,530,800	36,530,800
1942	Middlesex	77,384,773	77,384,773
1945	Mercer	3,906,424	3,906,424
1951	Monmouth	3,702,029	3,702,029
1952	Monmouth	2,227,539	2,227,539
Total		\$696,345,640	\$712,541,018

Attachment BCH-5

**Revenue from Originating Rail Traffic in the
Southern New Jersey/Philadelphia Shared Assets Area**

SPLC	County	Conrail	All Railroads
1971	Burlington	\$1,910,392	\$1,910,392
1981	Camden	4,222,338	4,222,338
1985	Gloucester	26,203,172	26,203,172
1987	Salem	5,416,371	5,416,371
1993	Cumberland	8,100,638	8,100,638
2078	Philadelphia	55,739,549	96,877,963
2079	Philadelphia	4,605,517	6,101,672
2085	Delaware	13,536,943	21,210,388
2086	Chester	438,617	438,617
2087	Chester	5,443,801	6,096,568
Total		\$125,617,338	\$176,578,119

Note: Revenues for SPLC 1986 include a small amount of traffic from SPLC 2084 (Delaware County) to protect confidentiality.

Attachment BCH-6

**Revenue from Terminating Rail Traffic in the
Southern New Jersey/Philadelphia Shared Assets Area**

SPLC	County	Conrail	All Railroads
1961	Ocean	\$990,497	\$990,497
1971	Burlington	18,803,417	18,803,417
1981	Camden	12,808,794	12,808,794
1982	Camden	2,790,817	2,790,817
1985	Gloucester	31,833,230	31,833,230
1987	Salem	37,216,090	37,216,090
1993	Cumberland	18,032,348	18,032,348
1995	Cape May	11,818,624	11,818,624
2078	Philadelphia	23,272,301	110,508,768
2079	Philadelphia	8,836,409	11,243,683
2084	Delaware	747,059	747,059
2085	Delaware	29,382,348	75,211,576
2086	Chester	6,866,593	6,866,593
2087	Chester	8,409,784	8,409,784
Total		\$211,808,311	\$347,281,280

Note: Revenues for SPLC 1993 include a small amount of traffic from SPLC 1991 to protect confidentiality.

Attachment BCH-7

**Revenue from Originating Rail Traffic in the
Monongahela Coal Fields**

<u>SPLC</u>	<u>County</u>	<u>Conrail</u>	<u>All Railroads</u>
2198	Greene	\$54,439,729	\$54,439,729
2199	Greene	166,988,142	166,988,142
2732	Monongalia	5,017,383	5,017,383
2733	Monongalia	96,729,758	96,729,758
2735	Marion	28,660,487	28,763,374
Total		\$351,835,499	\$351,938,386

Attachment BCH-8

**Revenue from Terminating Rail Traffic in the
Monongahela Coal Fields**

SPLC	County	Conrail	All Railroads
2199	Greene	\$173,463	\$173,463
2733	Monongahela	2,104,055	2,104,055
2735	Marion	0	160,186
Total		\$2,277,518	\$2,437,704

Appendix A

CURRICULUM VITÆ

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EDUCATION

B.A. Mathematics	1970	Lehigh University
M.A. Economics	1972	University of Pennsylvania
Ph.D. Economics	1979	University of Pennsylvania

Dissertation Title: The Multidivisional Form Organization: Studies of Its Effects on Performance in Large Corporations.

PROFESSIONAL EXPERIENCE

Positions:

Principal and Senior Vice President, Economists Incorporated (March 1992 - October 1992; January 1993 - Present)

Chief Economist and Deputy Assistant Attorney General, Antitrust Division, United States Department of Justice (October 1992 - January 1993)

Senior Vice President, Economists Incorporated (April 1990 - March 1992)

Senior Economist, Economists Incorporated (April 1985 - March 1990)

Project Manager, ICF, Incorporated (November 1981 - April 1985)

Senior Economist and Chief, Rail Cost and Pricing Branch, Office of Policy and Analysis, Interstate Commerce Commission (December 1979 - November 1981)

Economist, Economic Policy Office, Antitrust Division, United States Department of Justice (October, 1974 - December 1979)

Selected Matters:

Acquisition of Healthsource, Inc. by CIGNA Corporation: Hart-Scott-Rodino review by the Federal Trade Commission

Acquisition of waste disposal assets of Taormina Industries, Inc. by Republic Industries, Inc.: Hart-Scott-Rodino review by the Department of Justice

Acquisition of waste disposal assets of Rainbow Industries, Inc. by Republic Industries, Inc.: Hart-Scott-Rodino review by the Department of Justice

Acquisition of funeral home and cemetery assets of Brookside Funeral Home, Inc. by Service Corporation International (SCI): Hart-Scott-Rodino review by the Federal Trade Commission

Acquisition of Owen Healthcare, Inc. by Cardinal Health, Inc.: Hart-Scott-Rodino review by the Federal Trade Commission

Acquisition of American Aggregates Corporation by the Edward C. Levy Co.: Hart-Scott-Rodino review by the Department of Justice

Acquisition of radio stations WWWW and WDFN from Chancellor Broadcasting Company and WMXD and WJLB from Secret Communications, L.P. by Evergreen Media Corporation: Hart-Scott-Rodino review by the Department of Justice

Formation of alliance of Children's Hospital of New Orleans, Ochsner Foundation Hospital, Pendleton Memorial Methodist Hospital, Slidell Memorial Hospital, St. Tammany Parish Hospital, and Touro Infirmary: Hart-Scott-Rodino review by the Federal Trade Commission

Pride Companies, L.P. v. United States of America: Case in U.S. Court of Claims involving damages associated with a contract to supply jet fuel to the Department of Defense.

Acquisition of Ticon, Incorporated's highway construction assets by Oldcastle, Inc.: Hart-Scott-Rodino review by the Department of Justice

Consolidation of Pennsylvania Blue Shield and Blue Cross of Western Pennsylvania: Review by Pennsylvania Department of Insurance

- Merger between Aetna Life and Casualty Company and U.S. Healthcare Inc.:
Hart-Scott-Rodino review by the Federal Trade Commission**
- Affiliation between Miami Valley Hospital (Dayton) and Good Samaritan Hospital
and Health Center (Dayton): Hart-Scott-Rodino review by the Federal Trade
Commission**
- Merger of Charlton Memorial Hospital, Inc., St. Luke's Hospital of New Bedford
and Tobey Hospital, Inc.: Hart-Scott-Rodino review by the Federal Trade
Commission and review by the Commonwealth of Massachusetts**
- Consolidation of St. Barnabas Health Care System, Community-Kimball Health
Care System, Newark Beth Israel Medical Center, Irvington General Hospital,
Monmouth Medical Center, and Wayne General Hospital: Hart-Scott-Rodino
review by the Federal Trade Commission**
- Acquisition of Bredero Price's pipeline coating assets by Dresser Industries, Inc.:
Hart-Scott-Rodino review by the Federal Trade Commission**
- Acquisition of Vigoro Corporation's potash assets by IMC Global, Inc.: Hart-
Scott-Rodino review by the Department of Justice**
- Consolidation of Owensboro-Daviess County Hospital and Mercy Hospital of
Owensboro: Hart-Scott-Rodino review by the Department of Justice**
- Acquisition of St. Luke's Episcopal-Presbyterian Hospitals by the Institute of The
Sisters of Mercy of the Americas, Regional Community of St. Louis: Hart-
Scott-Rodino review by the Federal Trade Commission**
- Acquisition of Continental Medical Systems, Inc. by Horizon Healthcare
Corporation: Hart-Scott-Rodino review by the Department of Justice**
- Acquisition of Grove Italia S.p.A.'s pipeline valve assets by Dresser Industries,
Inc.: Hart-Scott-Rodino review by the Department of Justice**
- Acquisition of New England Newspaper Group by The Journal Register Company:
Hart-Scott-Rodino review by the Department of Justice**
- Acquisition of funeral home and cemetery assets of Uniservice by Service
Corporation International (SCI): Hart-Scott-Rodino review by the Federal
Trade Commission**
- Acquisition of HealthTrust, Inc. by Columbia/HCA Healthcare Corporation: Hart-
Scott-Rodino review by the Federal Trade Commission**

Establishment of worldwide joint venture between Bayer AG and Hoechst AG to produce textile dyes: Various antitrust reviews

Competitive assessment of proposed joint venture between the Canadian Pacific and Canadian National Railroads to serve eastern Canada: Prepared for CP and CN management

Competitive assessment of proposed acquisition of Santa Fe Pacific Corporation by Union Pacific Corporation: Prepared for Board of Directors of Santa Fe Pacific Corporation

Merger between Harvard Health Plan and Pilgrim Health Plan: Hart-Scott-Rodino review by the Federal Trade Commission and review by the Commonwealth of Massachusetts

Acquisition of GenCare Health Systems, Inc. by United HealthCare Corporation: Hart-Scott-Rodino review by the Department of Justice and review by the State of Missouri

Merger between Minneapolis Children's Medical Center and The Children's Hospital (St. Paul, MN): Hart-Scott-Rodino review by the Department of Justice

Consolidation between Providence Health System (Williamsport, PA) and Williamsport Hospital and Medical Center: Hart-Scott-Rodino review by the Department of Justice

Merger between Northeast Health Systems (Beverly, MA) and Cape Anne Health System (Gloucester, MA): Review by the Commonwealth of Massachusetts

Acquisition of Westinghouse Corporation's Electrical Distribution and Control Unit by The Eaton Corporation: Hart-Scott-Rodino review by the Department of Justice

Acquisition of Ashland Oil, Inc.'s APAC-Arizona Construction Unit by Peter Kiewit Sons', Inc.: Hart-Scott-Rodino review by the Department of Justice

Merger between Columbia Hospital Corporation and Hospital Corporation of America: Hart-Scott-Rodino review by the Federal Trade Commission

Establishment of a joint venture between Service Corporation International (SCI) and McNeal-Loftis, Inc. (MLI) to own and operate funeral homes and cemeteries: Hart-Scott-Rodino review by the Federal Trade Commission

Merger between Elliot Hospital (Manchester, NH) and Catholic Medical Center of Manchester: Hart-Scott-Rodino review by the Department of Justice

Merger between Providence Hospital (Everett, WA) and General Hospital Medical Center of Everett: Hart-Scott-Rodino review by the Department of Justice

Acquisition of the Container Rental Division of Tiphook plc by Transamerica Corporation: Hart-Scott-Rodino review by the Federal Trade Commission

Merger between Columbia Hospital Corporation and Galen Health Care, Inc.: Hart-Scott-Rodino review by the Federal Trade Commission

Acquisition of American Tourister, Inc. by Astrum International Corp. (Samsonite): Hart-Scott-Rodino review by the Department of Justice

Acquisition of Rugby-Darby Group Companies, Inc. by Marion Merrell Dow, Inc.: Hart-Scott-Rodino review by the Department of Justice

Acquisition of Home Intensive Care, Inc. by W.R. Grace & Co.: Hart-Scott-Rodino review by the Federal Trade Commission

Acquisition of Golden Glades Regional Medical Center (North Dade County, FL) by OrNda, Inc.: Hart-Scott-Rodino review by the Department of Justice

Establishment of a joint venture between Rohm & Haas and Atochem to produce acrylics: Hart-Scott-Rodino review by the Federal Trade Commission

Acquisition of Humana Hospital-McFarland (Lebanon, TN) by National Medical Enterprises: Hart-Scott-Rodino review by the Federal Trade Commission

Antitrust analysis undertaken for Revco D.S., Inc. addressing the competitive effects of various bankruptcy reorganization plans

Acquisition of NorLight's fiber optics transmission network by MRJ: Hart-Scott-Rodino review by the Federal Trade Commission

Merger between Flagler Memorial Hospital and St. Augustine (Florida) General Hospital: Hart-Scott-Rodino review by the Federal Trade Commission

Acquisition of Cross & Trecker, Inc. by Giddings & Lewis, Inc.: Hart-Scott-Rodino review by the Department of Justice

Merger between Children's Hospital of San Francisco and Pacific Presbyterian Medical Center (San Francisco): Hart-Scott-Rodino review by the Federal Trade Commission

Pocono Artesian Waters Company v. Occidental Chemical Corporation, et al.:
Case in U.S. District Court involving estimation of damages resulting from
alleged product defect

Nice-Pak Products, Inc. v. Packaging Resources, Inc.: Case in U.S. District Court
involving estimation of damages resulting from alleged breach of a packaging
supply contract

Tops Ambulance Service, Inc., et al. v. Quakertown Community Hospital, et al.:
Case in U.S. District Court involving alleged monopolization by hospital
owned and nursing home owned ambulance services

Study undertaken for the Edison Electric Institute addressing FERC's acceptance
of market-based pricing for long-term energy and power sales

Acquisition of Continental Can's beverage and food can-making assets by Crown,
Cork & Seal, Inc.: Hart-Scott-Rodino review by the Department of Justice

United States v. American Safety Razor Company and Ardell Industries, Inc.:
Case in U.S. District Court involving the acquisition of Ardell's industrial blade
making assets

Study undertaken for Jacobs Suchard Ltd. addressing the economic effects of E.J.
Brach & Sons' application for a Foreign Trade Zone for its Chicago candy
manufacturing plant

Acquisition of LWD, Inc. by Chemical Waste Management, Inc.: Hart-Scott-
Rodino review by the Department of Justice

The Broker's Assistant v. Williams Real Estate, et al.: Case in U.S. District Court
involving the estimation of damages resulting from alleged conspiracy among
New York City commercial real estate firms

The Dow Chemical Company v. Occidental Chemical Corp.: Case in U.S. District
Court involving estimation of damages resulting from alleged breach of VCM
supply contract

May Department Stores Co. v. First National Supermarkets, Inc., et al.: Case in
U.S. District Court involving estimation of damages resulting from alleged
price fixing among Cleveland supermarkets

Establishment of a joint venture by Komatsu Ltd. and Dresser Industries, Inc. for
the production of construction equipment: Hart-Scott-Rodino review by the
Federal Trade Commission

Study undertaken for the Toyota Motor Company addressing the economic effects of foreign owned automobile assembly plants in the United States

Drs. Steuer and Latham, et al. v. National Medical Enterprises, Inc., et al.: Case in U.S. District Court involving an exclusive contract between a hospital and a pathologist

Vinod C. Bhan, CRNA v. NME Hospitals, et al.: Case in U.S. District Court involving a contract between a hospital and a group of anesthesiologists

Acquisition of Knoxville Steel Company by Florida Steel Corporation: Hart-Scott-Rodino review by the Department of Justice

Acquisition of American Cigar Corporation by Consolidated Cigar Corporation: Post-acquisition review by the Department of Justice

Acquisition of chemical assets of Diamond Shamrock Corporation by Occidental Petroleum Corporation: Hart-Scott-Rodino review by the Federal Trade Commission

Certificate of Need application by Garden State Surgi-Center: Hearings before State of New Jersey Administrative Law Judge

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Appendix B

Description of Traffic at Potential BEA Two-to-One Overlaps

The BEA analysis of origin-destination pairs identified seven BEA locations at which shippers were served in 1995 only over Norfolk Southern or the Conrail lines it will operate. These seven BEAs are Columbus, OH; Cincinnati, OH; Toledo, OH; Lafayette, IN; South Bend, IN; Kokomo-Marion, IN; and Anderson-Muncie, IN. A description of rail options at these locations follows.

1. Ohio BEAs

The only Ohio BEAs involved in potential 2-to-1 origin-destination pairs are Columbus, Cincinnati and Toledo.³³ A closer look at the Waybill data indicates that shippers at each of these locations will continue to have access to competitive railroads after Norfolk Southern's operation of Conrail lines.

The Columbus origin-destination pairs are limited to movements originating from Columbus to Erie, PA, Quebec, and Washington, DC. There was also a movement from Cleveland that terminated in Columbus. The Waybill data show only a small amount of traffic is involved over these four origin-destination pairs. The waybill data also show that a significant amount of traffic is originated or terminated in Columbus by other railroads (principally CSX) for other origin-destination pairs. Two CSX lines run through

³³ Toledo is served by the Chicago-Cleveland Conrail line that Norfolk Southern will operate. Columbus and Cincinnati are each served by the Conrail line from Cincinnati to Columbus to Charleston, WV.

Columbus. One CSX line into Columbus goes north-south from Huntington, WV and points south to Toledo and points north. The other CSX line interlines with the Columbus & Ohio River Railroad and the Ohio Central Railroad, and runs southeast through Columbus to Cincinnati and Louisville.

The only 2-to-1 origin-destination BEA pairs originating in Cincinnati involve movements to Buffalo and British Columbia. The revenue associated with these movements was less than \$1 million. There were two 2-to-1 pairs that terminated in Cincinnati, one from South Bend and one from Monroe, LA. These terminating movements had revenues of approximately \$2.3 million. The Waybill data show that CSX originates and terminates substantial amounts of traffic in Cincinnati.

The three 2-to-1 origin-destination pairs originating in Toledo respectively terminate in Kansas City, South Bend and Portland, OR. The only 2-to-1 pairs terminating in Toledo involve traffic from Modesto, CA and South Bend. Toledo is currently served by CSX, as well as by the Canadian National (formerly Grand Trunk Western lines) and Ann Arbor railroads.

2. Indiana BEAs

The Indiana overlap BEAs are Lafayette, South Bend, Kokomo-Marion and Anderson-Muncie. Lafayette is served by CSX. South Bend is served over the mainline of the Canadian National (formerly Grand Trunk Western lines) and the Chicago SouthShore & South Bend Railroad, which is a CSX regional connection. More generally, South Bend will be served by at least three independent railroads after the transaction. The Waybill data show that the Canadian National (\$272,172), Conrail

(\$18,685,716), CSX (\$7,678,995) and Norfolk Southern (\$12,868,829) originated traffic in South Bend. It also shows that the Canadian National (\$7,628,920), Chicago SouthShore (\$960,700), Conrail (\$61,224,387), CSX (\$4,887,748) and Norfolk Southern (\$5,092,015) terminated traffic in South Bend.

The only competitive overlaps in Kokomo-Marion and Anderson-Muncie result from Norfolk Southern's operation of the Conrail lines that run from Anderson to Goshen and Marion to Red Key. CSX will operate Conrail's east-west line that runs through Anderson and Muncie. Most of the rail traffic through these BEAs does not involve shippers who can currently access both Norfolk Southern and Conrail.

Appendix C

Description of Traffic at Potential 4-Digit SPLC Two-to-One Overlaps

The analysis of traffic data based on BEAs identified Kokomo-Marion, IN and Anderson-Muncie, IN as the only areas that would have a reduction from two to one railroads serving them. The analysis based on 4-digit SPLC areas confirms this limited impact.

The only 4-digit SPLC origin-destination pairs where Norfolk Southern and Conrail were the only railroads shown to have carried freight in 1995 involved: Erie, NY; Erie, PA; Cuyahoga, OH; Marion, OH; Franklin, OH; Lake, OH; Lorain, OH; Ashtabula, OH; Summit, OH; Crawford, OH; Allen, IN; Lake, IN; Grant, IN; Madison, IL; and St. Clair, IL.³⁴ Erie, NY; Erie, PA; Cuyahoga, OH; Marion, OH; Crawford, OH; Lake, OH; Ashtabula, OH; Madison, IL; St. Clair, IL; and Allen, IN are all served by Conrail lines that will be operated by CSX and consequently do not present any competitive issues³⁵. CSX currently accesses parts of Lorain County. CSX cannot access automobile plants at Avon Lake and Fairlane. CSX will receive permanent trackage rights for the purpose of

³⁴ As with the BEA analysis, the 4-digit SPLC analysis does not identify as 2-to-1 pairs instances where Norfolk Southern and Conrail serve different geographic areas. In these instances Norfolk Southern and Conrail provide complementary rather than competitive service. Also, the 1995 Waybill data show an overlap at Peoria, IL. Conrail does not own a line that services Peoria. Conrail served Peoria over trackage rights that it no longer possesses.

³⁵ Lake County, IN is served by two Conrail lines, one that will be operated by CSX and one that will be operated by Norfolk Southern. In addition, there is a great deal of rail competition in Lake County, which is also currently served by CSX, the Elgin, Joliet and Eastern Railway, and the Chicago SouthShore and South Bend Railroad.

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serving customers at these plants. This leaves only Franklin and Summit Counties in Ohio and Grant County in Indiana as potential 2-to-1 locations. In addition, the analysis of individual shipping locations identified Clinton County, IN as a potential 2-to-1 location.³⁶

1. Ohio 4-Digit SPLC Locations

Franklin and Summit counties are the only remaining Ohio locations involved in 2-to-1 origin-destination pairs. Columbus is the principal city in Franklin County. There were no 2-to-1 routings that originated in Franklin County. The total rail revenue terminating in Franklin County and moving over a 2-to-1 route was only \$1,769,769. Columbus is served by competing railroads including CSX, which has two lines that run through Columbus. One line runs north-south between Huntington, WV and Toledo. The other line runs southwest-northeast from Louisville and Cincinnati. The Waybill data also show that significant amounts of traffic were originated or terminated by both CSX and BNSF. A smaller amount of traffic was originated or terminated by Union Pacific/Southern Pacific.

The principal city in Summit County is Akron. The only 2-to-1 route involves traffic originating in Cook County (Chicago), IL. On this route Conrail accounted for 93% of the carloads, with Norfolk Southern showing only one sampled carload. The Norfolk Southern system does not extend to Akron, which is served directly by Conrail, CSX and the Wheeling and Lake Erie.

³⁶ Wabash County was also identified as a potential 2-to-1 location. Norfolk Southern and Conrail did not serve shippers that could be accessed by the other railroad.

2. Indiana 4-Digit SPLC Locations

There are two 2-to-1, 4-digit SPLC locations in Indiana: Grant and Clinton counties. Marion is in Grant County. Clinton County is located in the Lafayette, IN BEA but borders on the Kokomo-Marion BEA to the west.

Grant County is the terminating point for two 2-to-1 routes. There are no 2-to-1 routes for which it is the originating point. One of these routes originates in Cook County, IL (349 carloads; \$324,043 revenues), the other in LaSalle County (1,108 carloads; \$1,234,484 revenues). Norfolk Southern received only a small amount of revenue from traffic either originating or terminating in Grant County. Specifically, it had revenues of \$1,828,509 on originating traffic (9.2% of the county total) and revenues of \$1,611,068 on terminating traffic (33.9% of the county total). Similarly, for rail traffic originating or terminating in Clinton County, total rail revenues were only \$11.2 million with Norfolk Southern accounting for \$6.1 million or 55% of the total.

Appendix D

Description of Traffic at Potential 6-Digit SPLC Two-to-One Overlaps

As a further check, I also identified 6-digit SPLC locations that, based on the 1995 Waybill data, were served only by Norfolk Southern or by Conrail over lines that will be operated by Norfolk Southern. In addition to locations in central Indiana in the areas previously identified in the BEA or 4-digit SPLC analyses, this 6-digit SPLC analysis identified a small number of additional potential 2-to-1 locations. All of these potential 2-to-1 locations, however, are served by other railroads.

These 6-digit SPLC locations are Coshocton, OH; Heath, OH; Ivorydale, OH; St. Bernard, OH; Michigan City, IN; Hammond, IN; East Chicago, IN; Marion, IN; and Walton, IN. Coshocton and Heath are located near Columbus. Ivorydale and St. Bernard are located close to Cincinnati. Michigan City, Hammond and East Chicago are located east of Chicago. Marion and Walton are in the Kokomo-Marion BEA.

Both Conrail and Norfolk Southern served Coshocton and Heath by a handling line arrangement over a former Conrail line. Coshocton is also served by the Columbus and Ohio River Rail Road and the Ohio Central Railroad. Heath is also served by CSX and the Columbus and Ohio River Rail Road. Coshocton had only \$4,392,501 in originating traffic and \$1,940,430 in terminating traffic. Heath had no originating traffic and only \$2,786,304 in terminating traffic. Competition will not be reduced at these locations as a result of the proposed transaction. Competition also will not be reduced at Ivorydale and St. Bernard, since both are served by CSX.

Michigan City, Hammond and East Chicago are located in an area served by numerous railroads. In addition to Norfolk Southern and Conrail, Michigan City is also served by Chicago, SouthShore and CSX. Hammond is served by these same railroads plus the Baltimore & Ohio Chicago Terminal Railroad Company, a subsidiary of CSX. East Chicago is served by the same railroads as Hammond plus the Indiana Harbor Belt Railroad.

Conrail has sold the lines that serve Marion and Walton, and, thus, they are not part of the Norfolk Southern/CSX transaction. The line serving Marion was sold to Central Railroad Company of Indianapolis. The line serving Walton was sold to the Winamac Southern Railway Company. These areas are also served by other railroads including the Central Railroad Company of Indiana and the Toledo, Peoria and Western Railway. Nonetheless, there were only small levels of traffic at these 6-digit SPLC locations. There was no originating traffic from either Marion or Walton. Terminating traffic at these locations had revenues of only \$3,204,458 at Marion and \$477,811 at Walton.

VERIFIED STATEMENT

OF

JOHN H. WILLIAMS

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VERIFIED STATEMENT

OF

JOHN H. WILLIAMS

I. INTRODUCTION

My name is John H. Williams. I am president of The Woodside Consulting Group, Inc., which is located in Menlo Park, California.

I am providing this statement to describe the methodology and results of a study (the "Rail Traffic Diversion Study," or "Study") conducted by me and under my supervision concerning the likely impacts of the operation by Norfolk Southern of Conrail's Penn Lines ("Norfolk Southern/Penn Lines") on the traffic and revenues of affected railroads. The Study analyzed the diversions of existing rail traffic from railroads to other railroads likely to result from that transaction. It also analyzed the expected diversions from Norfolk Southern/Penn Lines likely to result from the simultaneous operation by CSX Transportation of Conrail's New York Central Lines ("CSX Transportation/New York Central Lines"). The Study did not estimate the amount of traffic likely to be diverted to the Norfolk Southern/Penn Lines System that is currently moving by truck, which is the subject of a statement being submitted on behalf of Norfolk Southern by Mr. Patrick J. Krick. The Study also did not estimate the amount of new rail traffic likely to be generated from new marketing opportunities that will be created as a result of the formation of the Norfolk Southern/Penn Lines System.

The term "Penn Lines" is intended to refer to all of those operations of Conrail's lines by Norfolk Southern, which have primarily as their historic basis some of the main arteries of the former Pennsylvania Railroad. Similarly, for historic linkage, I use the term "New York Central

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Lines" in order to refer to all of those operations of Conrail's lines by CSX Transportation. Both terms also include the Shared Assets Areas and other properties that will be operated jointly by and for the benefit of both Norfolk Southern and CSX Transportation.

II. QUALIFICATIONS

My qualifications and my experience, encompassing almost thirty-five years in the railroad industry and consulting, are described in Appendix A. Following is a brief summary of my experience of particular relevance to this proceeding.

As an employee of the Federal Railroad Administration in 1968-72, I developed FRA's first rail network model and specialized in rail network restructuring and mergers. As an Assistant Vice President-Strategic Analysis of Conrail in the early 1980's, I focused on mergers and acquisitions and on designing and evaluating structural alternatives to Conrail as a corporate entity. In the latter assignment, the ALK Traffic Diversion Model, which is based on the FRA network model, was used under my supervision in order to divide Conrail's traffic base into two parts for prospective acquisition by other railroads. As a result of that analysis and through my knowledge and experience, I am familiar with Conrail and its competitive position as well as the competitive positions of the other principal rail carriers operating within the Northeast Region.

Further, I have prepared economic and marketing analyses as an employee of Conrail and of Southern Pacific, as well as in the capacity of a consultant. I have presented such economic and marketing analyses before the Interstate Commerce Commission in several railroad consolidation proceedings, including much of the required Exhibit 12 -- Market Impact Analysis in support of Kansas City Southern's proposed acquisition of Southern Pacific.

III. CONCLUSIONS

This section of my Statement summarizes the conclusions of the Rail Traffic Diversion Study, as expressed in terms of revenue, competitive, and service impacts.

A. Revenue Impacts

The estimated revenue effects from the formation of the Norfolk Southern/Penn Lines System, including the projected losses by Norfolk Southern/Penn Lines resulting from the formation of the CSX Transportation/New York Central Lines System, are summarized in Attachment JHW-1.

As shown in Attachment JHW-1, our Study established that the gross revenues attributable to the Penn Lines in the 1995 base year comprised \$2,050.4 million. As shown by Attachment JHW-2, the Penn Lines' gross revenues were reduced in our study by \$51.7 million of revenue rerouted to other railroads in the base case; primary beneficiaries were Union Pacific at the Sidney, IL, gateway and Canadian Pacific for traffic moving to and from New England. As a result, the Penn Lines' net revenues in the base year were \$1,998.8 million.

The effect of splitting Conrail's operations between Norfolk Southern and CSX Transportation will be to create greater comparability between the four largest U.S. rail systems. Prior to consideration of any diversion effects, but including the effects of splitting Conrail's revenues, gross freight revenues for those four systems would be:

Figure JHW-1
Comparison of Major U.S. Rail Systems

	<u>Revenues</u> (millions)
Norfolk Southern/Penn Lines	\$6,157.9
CSX Transportation/New York Central	\$6,897.2
Burlington Northern Santa Fe	\$8,663.1
Union Pacific/Southern Pacific	\$9,822.6

Source: 1995 *Freight Commodity Statistics Reports*

Our Study projects additional annual diversion revenue gains to Norfolk Southern/Penn Lines of \$252.9 million, as shown in Attachment JHW-1. All of these annual revenue gains will result from the diversion of existing rail traffic from other rail carriers, including from CSX Transportation.

At the same time, the Norfolk Southern/Penn Lines System will experience rail traffic diversions because of the formation of the CSX Transportation/New York Central Lines System. Our Study projects such revenue losses at \$62.3 million annually, as shown by Attachment JHW-1. Combined, the "Net Annual Diversion Gains" from rail traffic diversions to Norfolk Southern/Penn Lines will be \$190.6 million, as shown by Attachment JHW-1.

Based on our Study and experience, we estimate that 30% of the Net Annual Diversion Gains and their related volume will be realized by Norfolk Southern/Penn Lines in their first year of unified operation, 80% in the second year, and 100% in the third year and in each succeeding year.

Subsequent to the completion of our Rail Traffic Diversion Study, I provided Norfolk Southern with an estimate of projected rail rate compression for that carrier as a result of the Conrail transaction. The underlying premise of the Conrail transaction is that it will result in two comparably sized and financially strong railroads serving most major markets in the eastern half of

the United States. Competition affects rail rates, and some rail rate compression is to be expected from the increased competition established by the Conrail transaction. Considering the significant extent that Conrail's territory and stations will be opened to competition, the level of diversions predicted by my Rail Traffic Diversion Study, the commodities involved, and their contribution margins, I estimated that Norfolk Southern would experience rate compression of approximately \$82.0 million annually.

B. Competitive Impacts

The Norfolk Southern/Penn Lines will greatly enhance competition for traffic moving within that System's service territory, as summarized below:

- That enhancement will be most evident on those routes between the Southeast and Northeast Regions, either where no single system rail service is now available (e.g., to or from Northern New Jersey) or at locations within the Northeast Region, such as Baltimore and Philadelphia, that are currently served by CSX Transportation but not by Norfolk Southern.
- For the first time since the formation of Conrail in 1976, head-to-head railroad competition will be reintroduced on both east-west and north-south routes to and from the Northern New Jersey and New York metropolitan markets.
- Particularly in the five areas of Northern New Jersey, Southern New Jersey, Philadelphia, Detroit, and the Monongahela coal fields that will be served by both carriers--but at other important stations as well--head-to-head railroad competition will be introduced between the Norfolk Southern/Penn Lines and CSX

Transportation/New York Central Lines Systems. Our Study found that, although only about 37% of Penn Lines' traffic was open to intramodal competition at both ends of the movements in 1995, formation of the Norfolk Southern/Penn Lines System will increase to about 55% of the Penn Lines' traffic base the amount of traffic accessible to two or more rail carriers and, therefore, to the public benefits inherent in head-to-head railroad competition. I presume that formation of the CSX Transportation/New York Central Lines System will produce similar results. Such extraordinary private sector actions are unparalleled, I believe, in the history of U.S. railroading.

- Our Study demonstrated the intensity of the enhanced head-to-head competition throughout the Northeast Region by its finding that, while the Norfolk Southern/Penn Lines System will divert \$147.3 million of revenue annually from the CSX Transportation/New York Central Lines System, the CSX Transportation/New York Central Lines System will divert, at the same time, \$62.3 million of revenue annually from the Norfolk Southern/Penn Lines System.

C. Service Impacts

The formation of the Norfolk Southern/Penn Lines System will significantly improve service to that System's shippers, as summarized below:

- Single line service will be increased, particularly between the Northeast and Southeast regions, as traffic now moving between stations on Norfolk Southern and Conrail's Penn Lines will be moved from origin to destination by the System. Our Study found that 291,000 units that previously moved in interline service over

the Penn Lines will move in single line service after the Norfolk Southern/Penn Lines System is formed. Unavoidable loss of existing single line service to about 92,000 Conrail units will occur because of the formation of both the Norfolk Southern/Penn Lines and CSX Transportation/New York Central Lines Systems, of which I have assigned one-half to the Norfolk Southern/Penn Lines.

Accordingly, my Rail Traffic Diversion Study found that the benefits of the Norfolk Southern/Penn Lines single line service will be extended to the significant net number of 245,000 units annually; as a result of the creation of that System, approximately six single system moves will be created for every one lost.

- Use of Norfolk Southern's Kansas City Gateway to and from points farther west will be available to all of Conrail's Penn Lines' shippers. This excellent route avoids the congestion of the Chicago and St. Louis Gateways; for intermodal traffic, it avoids the often-required highway transfer of intermodal trailers and containers at the Chicago Gateway. It is for these same reasons that, while I was Assistant Vice President-Strategic Analysis of Conrail, we at Conrail sought trackage rights to the Kansas City Gateway as a condition of the Norfolk Southern transaction.
- The combination of the Penn Lines' substantial east-west and north-south traffic volumes with those of Norfolk Southern will, I have been informed by those who have prepared the Norfolk Southern/Penn Lines System's Operating Plan, permit reduced transit times and greater train frequencies over many routes, both within and beyond the System's service territory.

In total, the Norfolk Southern/Penn Lines operations will provide a significant increase in single line service and reduced transit times on many north-south and east-west routes, particularly via the Kansas City Gateway. In conjunction with intensified, head-to-head rail competition in the Northeast, following implementation of the two transactions, the public will benefit.

IV. STUDY METHODOLOGY

The year 1995 is considered the base year for analyses in this proceeding. In conducting the Rail Traffic Diversion Study, I utilized the 1995 *Carload Waybill Sample*, the results of the ALK Rail Traffic Diversion Model's split of Conrail's 1995 traffic volumes, the DNS Rail Traffic Diversion Model, and my own knowledge and experience.

Prior to analysis, the *Carload Waybill Sample* data were adjusted to reflect those railroad industry realignments (e.g., the Burlington Northern/Santa Fe and Union Pacific/Southern Pacific consolidations) and known Conrail line sales completed in 1995, 1996 and early 1997. Accordingly, my Study results are presented at 1995 volume and revenue levels, but reflect the current railroad corporate structure.

A. Conrail Network Definition

The definitions of Conrail's Penn Lines and New York Central Lines in terms of principal routes, stations, access rights and interchange locations were provided to me by Norfolk Southern's Strategic Planning Department and by representatives of CSX Transportation. Working directly with ALK Associates, any definitions of the Penn Lines network that may have

conflicted with definitions of the New York Central network were reconciled by the participating parties.

Subsequently, at my direction and under my supervision, the definitions of the Penn Lines network (i.e. routes, stations, and interchanges) and of the New York Central Lines network were translated into the DNS Rail Traffic Diversion Model for analysis. In order to ensure that the translation was reasonable and accurate, I personally reviewed their definitions within the DNS Model. Those Conrail stations and connecting line segments that will be operated by CSX Transportation as its New York Central Lines were identified separately from the Norfolk Southern/Penn Lines System for our Rail Traffic Diversion Study. Further, the DNS Model was revised to reflect the joint status of those Conrail and other railroad stations that will be served by both Systems. The results of the Rail Traffic Diversion Study, therefore, project revenue gains from Norfolk Southern's operation of Conrail's Penn Lines, with the assumption that CSX Transportation will simultaneously begin operating Conrail's New York Central Lines.

B. ALK Model's Split of Conrail Traffic

Norfolk Southern and CSX Transportation jointly engaged ALK Associates to split Conrail's 1995 traffic volumes, as represented in the *Carload Waybill Sample*, accruing to each of the two companies in accordance with the Conrail line segments to be operated by each, for use in their respective rail traffic diversion studies in this Surface Transportation Board proceeding. The two companies agreed that the ALK Model's split of Conrail's traffic volumes would be utilized by Norfolk Southern and CSX Transportation in both their base cases and in their post-transaction cases.

The purpose of this joint approach to the presentation, by two competing carriers of their separate operations, was to minimize both double-counting and under-counting of Conrail traffic,

either of which could potentially result in consequential over- or under- calculations of train counts, tonnages, yard activity, labor, and environmental impacts. In furtherance of that goal, it was agreed that subsequent changes to ALK's allocations of Conrail volumes were not to be made by either party in its independent assessment of potential rail traffic diversions of Conrail's traffic. However, either Norfolk Southern or CSX Transportation might choose to exercise independent judgment in identifying gateways other than those assigned by ALK to the Conrail traffic, with resultant extended hauls and revenue gains to its System. For example, such extended hauls were expected to include coal resourcing by both Norfolk Southern and CSX Transportation.

I participated in the review of the ALK Model's split of Conrail's traffic as to the accuracy of line segment definition and reasonableness of its results. Subsequently, the ALK Model's split of Conrail's traffic volumes was incorporated into our Rail Traffic Diversion Study.

C. DNS Rail Traffic Diversion Model

The DNS Traffic Diversion Model ("DNS Model") was developed by DNS Associates, Inc. in the mid-1980's. From my consulting experience, I know that the DNS Model has been used by numerous railroads in addition to Norfolk Southern, including Santa Fe, Illinois Central Gulf, the Milwaukee Road, and several regional railroads.

The DNS Model was used to conduct our Rail Traffic Diversion Study on behalf of Norfolk Southern for this proceeding. Under my supervision, Mr. Bengt Mutén, now President of Mutén & Associates, Inc., and one of the primary developers of the DNS Model, provided all of the DNS Model analytical support and computer operations during the conduct of the Rail Traffic Diversion Study.

I am also familiar with ALK's Rail Traffic Diversion Model. As noted above, during my tenure at Conrail, I was responsible for designing and evaluating structural alternatives to Conrail as a corporate entity. Certain of those structural alternatives were published in Conrail's April 1, 1981 report entitled *Options For Conrail*. Both Chapter 11 of that Report, entitled "Alternatives To Conrail," and the Technical Appendix were prepared under my direction and supervision. In order to predict the changes in traffic flows and revenue diversions shown in that Report as a result of the proposed split-up of Conrail, I utilized ALK's Rail Traffic Diversion Model in conjunction with the 1980 *Carload Waybill Sample*.

Both the DNS Model and the ALK Model use algorithms to route traffic over a rail network based on the Federal Railroad Administration's rail network. Similarly, in both models, revenues are allocated to the participating carriers by formulas in proportion to rail mileage, with additional weight given to the originating and terminating carriers to reflect their generally higher revenue divisions. Although there may be minor differences in the approach and application of these two models, their primary advantage is their ability to consider a large volume of relevant railroad movement records consistently, utilizing the same diversion logic. Maintaining such consistency for a transaction the size of Norfolk Southern/Penn Lines would not have been possible without use of a model. To illustrate, in our Rail Traffic Diversion Study, the DNS Model read over 200,000 route records of potentially divertible traffic. Such an extensive review would have been impossible manually.

D. Use Of The Carload Waybill Sample

I utilized the 1995 *Carload Waybill Sample* for the Rail Traffic Diversion Study. In assessing impacts of the Norfolk Southern/Penn Lines transaction, I considered relevant rail traffic

in the following categories:

- Norfolk Southern traffic, including all Norfolk Southern-Conrail joint traffic;
- Conrail traffic;
- Non-Norfolk Southern/non-Conrail traffic (also called "non-participatory" or "third party" traffic), which is traffic in which neither Norfolk Southern nor Conrail participated in 1995.

I considered as relevant all of the rail traffic destined to, from, or through the Northeast Region, in order to ensure that all traffic potentially divertible because of the formation of the Norfolk Southern/Penn Lines System would be considered.

Lack of complete traffic data for Conrail, CSX Transportation, and Norfolk Southern necessitated calibration of the *Carload Waybill Sample* data with the 1995 *Annual Report of Freight Commodity Statistics* of Conrail, CSX Transportation and Norfolk Southern. To that end, we made several adjustments, which significantly enhanced the accuracy of the *Carload Waybill Sample* used in our Study:

1. Canadian Terminations Adjustments

The requirements for carrier reporting of traffic for inclusion in the *Carload Waybill Sample* do not apply to traffic terminating in Canada. In order to rectify that omission, 100% files of Norfolk Southern, Conrail, and CSX Transportation waybill data for Canadian terminations were appended to the *Carload Waybill Sample*, and those few similar traffic movements terminating in Canada for those three carriers that were included in the *Carload Waybill Sample* were removed.

2. Norfolk Southern Export Coal Adjustments

Because the *Carload Waybill Sample* did not include any Norfolk Southern export coal movements at Lamberts Point, VA, Norfolk Southern's 100% traffic records for coal destined to Lamberts Point were added to the *Carload Waybill Sample*.

3. Revenue Adjustments

The revenues reported in the *Carload Waybill Sample* by the rail carriers may not match their actual revenues, because the carriers are permitted to "mask" their contract revenues by factoring them either higher or lower.* Our review determined that the revenues reported through the *Carload Waybill Sample* were consistently overstated for all three carriers, Norfolk Southern, Conrail, and CSX Transportation. Accordingly, for each of these three carriers, we calculated revenue per ton adjustment factors at the two-digit STCC level, in order to equate the revenue per ton in the *Carload Waybill Sample* to the revenue per ton reported in each carrier's *Annual Report of Freight Commodity Statistics*. An additional revenue adjustment was made to more closely comport with the data reported in Conrail's *Annual Report of Freight Commodity Statistics*.

4. Conrail Volume Adjustments

We compared Norfolk Southern, Conrail, and CSX Transportation tonnage from the *Carload Waybill Sample* with that of the *Annual Report of Freight Commodity Statistics*, and found that only Conrail's tonnage varied significantly. Because Conrail's

* Association of American Railroads, *User Guide for the 1995 Surface Transportation Board Waybill Sample*, July 15, 1996; see Page 3 of K. Eric Wolfe's 1991 Paper on this subject.

tonnage contained in the *Carload Waybill Sample* constituted only 93% of the total reported in Conrail's *Annual Report of Freight Commodity Statistics*, we made selective adjustments to increase Conrail's tonnage by commodity (at the two-digit STCC level) and by class of traffic within the *Carload Waybill Sample*. The result of our adjustments was that total Conrail tonnage in the adjusted *Carload Waybill Sample* was increased to more than 99% of Conrail's total tonnage reported in its *Annual Report of Freight Commodity Statistics*.

5. Rebill Traffic

A certain amount of railroad interchange traffic is reported on separate waybills, rather than a single joint waybill, by the participating carriers. For such "rebill" traffic, a carrier's waybill will identify either the actual origin rail station or the actual destination rail station, but not both. This complicates the task of estimating diversions across the junctions. According to the Surface Transportation Board Waybill File Record Layout for the 1995 *Carload Waybill Sample*, rebill traffic should be identified by a one-digit "Rebill Code." By definition, a Rebill Code (1) "...indicates that the shipment is rebilled at a portion of the through rate from origin to destination, and involves non-through billing railroads..." Conrail's use of the Rebill Code in the *Carload Waybill Sample* appeared to be accurate, although this did not appear to be universally true of other railroads.

In order to avoid understating the likely amount of Norfolk Southern/Penn Lines System traffic diversion through the Kansas City and Hagerstown Gateways, we developed and applied a rebill traffic methodology that linked Conrail rebill traffic that was potentially divertible to either gateway with the other end of the move by allocating to those gateways the connecting carriers' traffic that was potentially divertible. Such linked

rebill traffic was subjected to the standard diversion logic encompassed in the DNS Model. The result of that linkage was that about 46,516 carloads and intermodal units were projected to be diverted to the Norfolk Southern/Penn Lines System, with a companion revenue gain of \$15.9 million.

E. Marketing Department Reviews

Norfolk Southern manages the commercial aspects of its railroad business under seven commodity groupings:

- (1) Agriculture, Government, and Consumer;
- (2) Construction and Metal;
- (3) Automotive;
- (4) Paper, Clay and Forest Products;
- (5) Chemicals;
- (6) Intermodal; and
- (7) Coal.

In order to test the preliminary results of the Rail Traffic Diversion Study, we reviewed those results with representatives of Norfolk Southern's Marketing Department. Commodity group representatives were permitted to see the detailed records of Norfolk Southern traffic diversions and non-diversions, but, in order to maintain confidentiality, they were not permitted to review the detailed traffic records of other railroads.

As a result of those marketing reviews, several significant modifications were made in the Study diversion logic in order to reflect the commercial realities of the marketplace, as known by Norfolk Southern's commercial experts:

- For all commodity groups moving to or from the Southwestern Exclusion Territory (defined as all of Arkansas, Mississippi, Louisiana, Eastern Texas and Western Tennessee), no traffic would be considered divertible from its existing gateway unless either a single system Norfolk Southern/Penn Lines System route could be created or KCS was involved in the route.
- Intermodal and automotive traffic moving to or from the Pacific Northwest Exclusion Territory (defined as Oregon, Washington, Idaho, Montana, Wyoming, North and South Dakota, Nebraska, Minnesota, Wisconsin and Iowa) would not be diverted via the Kansas City Gateway.
- A competitive unloading ramp for automotive traffic was assumed to be available to the Norfolk Southern/Penn Lines System in the Baltimore area and in the Philadelphia area. Both will be new facilities, although alternative facilities are believed by NS automotive marketing to be available on an interim basis. These two new facilities will compete with existing CSX facilities at Jessup, MD, and Twin Oaks, PA (only CSX Transportation currently has a ramp to serve each area). The probability of diverting all traffic terminating at those two CSX Transportation ramps to the Norfolk Southern/Penn Lines System was judged to be 0.5. Similarly, the probability of diverting to the Norfolk Southern/Penn Lines System all automotive traffic destined to the CSX Transportation ramp at Jacksonville, FL, was judged to be 0.5. Each diversion probability was determined

based on the estimated inbound shares of total traffic for each automotive manufacturer to each ramp.

- For intermodal traffic, the probability of diverting all Dallas - Ft. Worth intermodal traffic originating or terminating generally east of Pittsburgh via the Meridian Gateway was judged to be 0.25.
- Coal originating at CSX Transportation-served mines and moving to Penn Lines-served stations was judged to be vulnerable to re-sourcing, if there were Norfolk Southern mines located within less than 50 miles of the CSX Transportation mines.

The final results of the Rail Traffic Diversion Study reflect these modifications.

F. Diversion Logic

The diversion logic, which I directed to be applied to the *Carload Waybill Sample* in the Rail Traffic Diversion Study, consisted of more than one hundred reasons for judging traffic divertible or non-divertible. In addition, I developed a matrix of diversion percentages that was applied to all potentially divertible traffic.

Although complex in its application and subject to commodity exceptions, the fundamental principles of my diversion logic can be summarized as follow:

- In general, a Norfolk Southern/Penn Lines single system route will divert 100% of a competing joint line route's traffic, but only 50% of a competing single system route's traffic.

- In connection with interline movements with other carriers, the relative negotiating strength for maximum length of hauls possessed by the Norfolk Southern/Penn Lines System versus its connecting carriers will be determined in most cases by whether the originating and terminating stations are open or closed to two or more competing rail carriers. The following matrix shows, for the four conditions of stations being opened or closed, the percentages of 1995 traffic that our Study judged would be diverted to extended hauls after the formation of the Norfolk Southern/Penn Lines System:

Figure JHW-2
Extended Hauls Diversion Matrix

<u>Stations Open or Closed</u>		<u>Diversion</u>
<u>NS+PL</u>	<u>Other Carriers</u>	<u>Percentage</u>
Closed	Open	75%
Open	Closed	0%
Closed	Closed	50%
Open	Open	25%

To illustrate, if traffic moved in 1995 from a Conrail Station on the Penn Lines that would not be served by other carriers post-transaction via the Chicago Gateway and thence to a destination station served by two or more competing carriers, 75% of that traffic would have been diverted to an extended haul by the Norfolk Southern/Penn Lines System using an appropriate gateway, such as Kansas City.

- The diversion of interline traffic away from an overhead carrier would be 100% if neither the originating nor the terminating carrier in the route will be shorthauled. If the connecting carrier would be shorthauled, then the applicable diversion

percentage would be drawn from the "Stations Opened or Closed" matrix shown above.

Today's railroad network includes numerous short lines and regional railroads. In general, my diversion logic emphasized the competitive relationships among the Class I carriers in a route (for example, when evaluating single system service opportunities). However, in applying the "Stations Opened or Closed" matrix, if an originating or terminating non-Class I carrier (i.e., a short line or regional railroad) would connect with more than one Class I railroad, then that origin or destination was treated as an open station; otherwise, the station was deemed to be closed.

Of all of the reasons identified in our Study for diversions to the Norfolk Southern/Penn Lines System, the ten principal reasons for diversions (in excess of \$5.0 million each) accounted for \$207.3 million, or 82% of the \$252.9 million total Norfolk Southern/Penn Lines diversion gains from all carriers projected by our Rail Traffic Diversion Study. Attachment JHW-5 contains a listing of those ten principal reasons for diversions, showing the diversion category, projected revenue gain, reason code, reason, and diversion percentage. As shown by Attachment JHW-5, each of these ten principal reasons fall into one of three diversion categories: single system service, extended hauls, or special rules. Of those three, the single system service category created by the formation of the Norfolk Southern/Penn Lines System is by far of greatest importance. These four reasons alone account for \$131.8 million, or more than one-half of the total revenue gains of \$252.9 million projected by our Rail Traffic Diversion Study.

Similarly, eight principal reasons for non-diversions to the Norfolk Southern/Penn Lines System account for the great majority of the rail traffic judged non-divertible in our Study. Attachment JHW-6 provides those eight principal reasons by reason code and by reason. Except for the Southwestern Territory geographic exclusion, the remaining seven principal reasons essentially identify traffic deemed to be non-divertible because there is no merger impact on the

movement being evaluated. Stated somewhat differently, unless a post-transaction route created by the formation of the Norfolk Southern/Penn Lines System was superior to the pre-transaction route, then our Study did not project a rail traffic diversion because of the formation of the Norfolk Southern/Penn Lines System.

V. STUDY RESULTS

A. Results For Norfolk Southern/Penn Lines

This section of my Statement presents the results of my Rail Traffic Diversion Study for the Norfolk Southern/Penn Lines System, including the impacts on other carriers.

Attachment JHW-2 shows the annual traffic by principal commodity groups in the Penn Lines base traffic for the base year 1995. As shown, after losses to other carriers of \$51.7 million annually, largely because of changes in the Canadian Pacific and Union Pacific gateways to New England and at Sidney, IL, respectively, the annual Penn Lines traffic totals 2.3 million carloads, 136.7 million net tons, and \$1,998.8 million of revenue. This is the base level of traffic attributable to Conrail's Penn Lines that will be operated by Norfolk Southern. The traffic is concentrated in the following commodities, as shown by Attachment JHW-2:

	<u>Millions</u>
Coal:	\$352.0
Intermodal:	310.7
Automotive:	266.6
Chemicals:	235.7
Primary Metal Products:	209.2
Food:	137.1

These six commodity groups together comprise a total of \$1,511.3 million, or 76% of the projected annual revenues in the Penn Lines traffic base.

The Rail Traffic Diversion Study projects annual traffic diversion gains to the Norfolk Southern/Penn Lines System totaling 85,100 carloads, 4.3 million net tons, and revenue of \$252.9 million, as shown by Attachment JHW-3. Our Study also estimated the annual diversion losses that the Norfolk Southern/Penn Lines System would incur as a result of the formation of the CSX Transportation/New York Central Lines System as \$62.3 million, as shown by Attachment JHW-3. These predicted traffic losses by the Norfolk Southern/Penn Lines System were derived by applying generally the same diversion logic as was applied to the Norfolk Southern/Penn Lines System to the CSX Transportation/New York Central Lines System.

Reducing the projected gains to the Norfolk Southern/Penn Lines System by its projected losses to the CSX Transportation/New York Central Lines System, our Rail Traffic Diversion Study projected annual net traffic diversion gains to the Norfolk Southern/Penn Lines System of \$190.6 million. The distribution of the majority of those traffic gains by commodity is shown by Attachment JHW-3 to be as follows:

	<u>Millions</u>
Automotive	\$62.8
Intermodal	33.9
Coal	26.1

In combination, these three commodity groups comprise a total of \$122.8 million, or 64% of the projected total annual revenue gains from rail traffic diversions to the Norfolk Southern/Penn Lines System.

B. Impacts On Other Carriers

This section presents the net impacts of the formation of the Norfolk Southern/Penn Lines System on selected carriers, as shown in Attachment JHW-4. From the perspective of the Norfolk Southern/Penn Lines System, its losses of \$51.7 million to other carriers due to reroutes

of NS's share of the split of Conrail traffic, as described earlier, (see Attachment JHW-2) offset in part the net traffic diversion gains of \$190.6 million projected by our Rail Traffic Diversion Study. The net impact on all other carriers, therefore, is net annual revenue losses of \$138.9 million.

Of the total annual net traffic diversion gains to the Norfolk Southern/Penn Lines System, the CSX Transportation/New York Central Lines System will lose \$147.3 million. That amount will be partially offset by gains of \$62.3 million from the Norfolk Southern/Penn Lines System. Overall, the CSX Transportation/New York Central Lines System's net annual revenue losses to the Norfolk Southern/Penn Lines System will be \$85.0 million, although such losses will be offset by net revenue diversions from other carriers.

The two large western carriers had total net annual revenue losses from the formation of the Norfolk Southern/Penn Lines System, as follow:

	<u>Millions</u>
Burlington Northern Santa Fe System	\$(33.6)
Union Pacific System	(12.5)

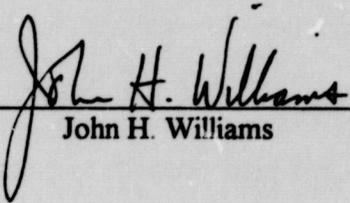
Compared with the total annual freight revenues generated by each of the two carriers listed above, our projected net annual revenue losses to them are, in both cases, far less than one-half of 1% each.

Attachment JHW-4 also shows the combined, net annual traffic gains and losses for all other carriers projected to have net annual revenue gains or losses greater than \$1.0 million resulting from the Norfolk Southern/Penn Lines transaction. Further, Attachment JHW-4 shows net annual revenue gains and losses for those other carriers that may experience more than minimal impacts because of the effects of either or both of the Norfolk Southern/Penn Lines and CSX Transportation/New York Central Lines transactions.

VERIFICATION

I, John H. Williams, verify under penalty of perjury that the foregoing statement is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on June 11, 1997.

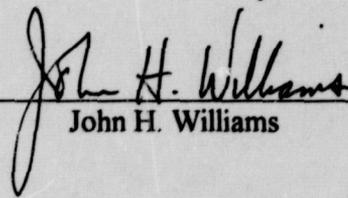


John H. Williams

VERIFICATION

I, John H. Williams, verify under penalty of perjury that the foregoing statement is true and correct. Further, I certify that I am qualified and authorized to file this statement.

Executed on June 11, 1997.



John H. Williams

ATTACHMENT JHW-1

**Annual Revenue Effects of The
Norfolk Southern/Penn Lines Transaction**

**Millions of
1995 Dollars**

Penn Lines' Base Revenues

Gross Revenues	\$2,050.4 ¹
Revenues Rerouted to Other Railroads	<u>(51.7)</u>
Net Revenues	\$1,998.8

Rail Traffic Diversions

Annual Diversion Gains to Norfolk Southern/Penn Lines	\$252.9
Annual Diversion Losses by Norfolk Southern/Penn Lines to CSX Transportation/New York Central Lines	<u>(62.3)</u>
Net Annual Diversion Gains To Norfolk Southern/Penn Lines	\$190.6

¹ As information, Conrail's 1995 *Freight Commodity Statistics* Revenues were \$3,650.0 million and Conrail's 1995 *Carload Waybill Sample* Revenues Split by ALK Associates were \$3,536.9 million.

ATTACHMENT JHW-2

Annual Traffic by Principal Commodity Groups
In the Penn Lines Base Traffic

<i>STCC Commodity</i>	<u>Penn Lines Gross</u>			<i>Rerouted to</i>	<u>Penn Lines Net</u>		
	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)	<u>Other RRs</u> <u>Revenue</u> (Millions)	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)
01 Farm Products	34.0	3,216.7	\$ 34.5	\$ (1.7)	34.0	3,216.7	\$ 32.9
10 Metallic Ores	88.9	7,289.7	56.3	(0.2)	88.9	7,289.7	56.1
11 Coal	458.1	45,989.8	352.4	(0.4)	458.1	45,989.8	352.0
14 Non-Metallic Minerals	62.0	5,731.7	37.4	(0.3)	62.0	5,731.7	37.1
20 Food, etc.	87.5	6,707.1	138.3	(1.2)	87.5	6,707.1	137.1
24 Lumber & Wood	40.3	3,046.7	53.3	(2.8)	40.3	3,046.7	50.5
26 Pulp & Paper	86.8	5,807.1	97.5	(5.5)	86.8	5,807.1	92.0
28 Chemicals	121.2	10,996.7	249.3	(13.6)	121.2	10,996.7	235.7
29 Petroleum & Coal Products	85.6	5,540.0	84.4	(4.1)	85.6	5,540.0	80.3
32 Stone, Clay, Glass, etc.	32.7	2,890.6	37.1	(3.4)	32.7	2,890.6	33.7
33 Primary Metal Products	188.5	16,253.1	213.3	(4.1)	188.5	16,253.1	209.2
37 Automotive	225.4	4,653.7	272.9	(6.3)	225.4	4,653.7	266.6
41-46 Intermodal	707.5	10,396.9	315.7	(5.0)	707.5	10,396.9	310.7
All Other	<u>112.0</u>	<u>8,206.9</u>	<u>107.9</u>	<u>(3.1)</u>	<u>112.0</u>	<u>8,206.9</u>	<u>104.8</u>
Total	2,330.5	136,726.5	\$ 2,050.4	\$ (51.7)	2,330.5	136,726.5	\$ 1,998.8

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ATTACHMENT JHW-3

Net Annual Traffic Diversion Gains and Losses by Principal Commodity Groups
Resulting From the Norfolk Southern/Penn Lines Transaction

<u>STCC</u> <u>Commodity</u>	<u>NS/PL Gains From All Carriers</u>			<u>NS/PL Losses to CSXT/NYC</u>			<u>Net NS/PL Gains and Losses</u>		
	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)
01 Farm Products	1.4	135.1	\$ 2.4	(4.2)	(406.7)	\$ (5.4)	(2.7)	(271.6)	\$ (3.0)
10 Metallic Ores	0.0	1.9	2.4	-	-	(0.6)	0.0	1.9	1.8
11 Coal	23.6	2,362.3	31.9	(6.4)	(608.2)	(5.8)	17.1	1,754.1	26.1
14 Non-Metallic Minerals	0.1	5.9	1.1	(0.1)	(6.1)	(0.1)	(0.0)	(0.1)	1.1
20 Food, etc.	2.4	223.0	12.8	(2.5)	(208.2)	(2.4)	(0.1)	14.8	10.4
24 Lumber & Wood	0.2	12.1	6.1	(2.1)	(152.4)	(2.6)	(1.9)	(140.3)	3.5
26 Pulp & Paper	2.4	168.5	22.4	(6.8)	(443.7)	(11.3)	(4.4)	(275.2)	11.1
28 Chemicals	1.0	90.9	21.2	(4.8)	(433.6)	(8.5)	(3.8)	(342.6)	12.7
29 Petroleum & Coal Products	1.0	75.9	9.6	(0.1)	(8.0)	(0.1)	0.9	67.9	9.5
32 Stone, Clay, Glass, etc.	0.3	19.1	5.0	(0.7)	(49.6)	(2.7)	(0.4)	(30.5)	2.3
33 Primary Metal Products	2.9	245.3	12.8	(0.4)	(30.8)	(0.5)	2.6	214.4	12.3
37 Automotive	16.7	351.3	70.0	(5.4)	(141.7)	(7.2)	11.3	209.6	62.8
41-46 Intermodal	31.3	492.7	46.6	(28.7)	(406.9)	(12.7)	2.6	85.8	33.9
All Other	1.8	129.2	8.6	(1.9)	(91.8)	(2.4)	(0.2)	37.3	6.2
	85.1	4,313.2	\$ 252.9	(64.0)	(2,987.6)	\$ (62.3)	21.0	1,325.6	\$ 190.6

ATTACHMENT JHW-4

Annual Revenue Gains And Losses For Selected Carriers Resulting From Norfolk Southern/Penn Lines Transaction

Carrier

Revenue Gains (Losses) (millions)

Buffalo & Pittsburgh Railroad	\$ (1.2)
Burlington Northern Santa Fe System	(33.6)
Canadian National Railways System	(4.9)
Chicago SouthShore and South Bend Railroad	0.0
CP Rail System	8.9
CSX Transportation	(85.0)
Eastern Shore Railroad	(0.2)
Elgin, Joliet and Eastern Railway	(0.3)
Guilford Rail System	3.5
Illinois Central Railroad	(14.3)
Kansas City Southern Railway System	2.0
Louisville & Indiana Railroad	(1.2)
New England Central Railroad	(0.2)
New York Susquehanna and Western Railway	(0.1)
Providence and Worcester Railroad	(0.1)
Union Pacific System	(12.5)
Wheeling & Lake Erie Railway	(1.9)
Wisconsin Central	0.0

ATTACHMENT JHW-4

Annual Revenue Gains And Losses For Selected Carriers Resulting From Norfolk Southern/Penn Lines Transaction

<u>Carrier</u>	<u>Revenue Gains (Losses)</u> (millions)
Buffalo & Pittsburgh Railroad	\$ (1.2)
Burlington Northern Santa Fe System	(33.6)
Canadian National Railways System	(4.9)
Chicago SouthShore and South Bend Railroad	0.0
CP Rail System	8.9
CSX Transportation	(85.0)
Eastern Shore Railroad	(0.2)
Elgin, Joliet and Eastern Railway	(0.3)
Guilford Rail System	3.5
Illinois Central Railroad	(14.3)
Kansas City Southern Railway System	2.0
Louisville & Indiana Railroad	(1.2)
New England Central Railroad	(0.2)
New York Susquehanna and Western Railway	(0.1)
Providence and Worcester Railroad	(0.1)
Union Pacific System	(12.5)
Wheeling & Lake Erie Railway	(1.9)
Wisconsin Central	0.0

ATTACHMENT JHW-3

**Net Annual Traffic Diversion Gains and Losses by Principal Commodity Groups
Resulting From the Norfolk Southern/Penn Lines Transaction**

<u>STCC</u> <u>Commodity</u>	<u>NS/PL Gains From All Carriers</u>			<u>NS/PL Losses to CSXT/NYC</u>			<u>Net NS/PL Gains and Losses</u>		
	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)	<u>Units</u> (000)	<u>Net Tons</u> (000)	<u>Revenue</u> (Millions)
01 Farm Products	1.4	135.1	\$ 2.4	(4.2)	(406.7)	\$ (5.4)	(2.7)	(271.6)	\$ (3.0)
10 Metallic Ores	0.0	1.9	2.4	-	-	(0.6)	0.0	1.9	1.8
11 Coal	23.6	2,362.3	31.9	(6.4)	(608.2)	(5.8)	17.1	1,754.1	26.1
14 Non-Metallic Minerals	0.1	5.9	1.1	(0.1)	(6.1)	(0.1)	(0.0)	(0.1)	1.1
20 Food, etc.	2.4	223.0	12.8	(2.5)	(208.2)	(2.4)	(0.1)	14.8	10.4
24 Lumber & Wood	0.2	12.1	6.1	(2.1)	(152.4)	(2.6)	(1.9)	(140.3)	3.5
26 Pulp & Paper	2.4	168.5	22.4	(6.8)	(443.7)	(11.3)	(4.4)	(275.2)	11.1
28 Chemicals	1.0	90.9	21.2	(4.8)	(433.6)	(8.5)	(3.8)	(342.6)	12.7
29 Petroleum & Coal Products	1.0	75.9	9.6	(0.1)	(8.0)	(0.1)	0.9	67.9	9.5
32 Stone, Clay, Glass, etc.	0.3	19.1	5.0	(0.7)	(49.6)	(2.7)	(0.4)	(30.5)	2.3
33 Primary Metal Products	2.9	245.3	12.8	(0.4)	(30.8)	(0.5)	2.6	214.4	12.3
37 Automotive	16.7	351.3	70.0	(5.4)	(141.7)	(7.2)	11.3	209.6	62.8
41-46 Intermodal	31.3	492.7	46.6	(28.7)	(406.9)	(12.7)	2.6	85.8	33.9
All Other	1.8	129.2	8.6	(1.9)	(91.8)	(2.4)	(0.2)	37.3	6.2
	85.1	4,313.2	\$ 252.9	(64.0)	(2,987.6)	\$ (62.3)	21.0	1,325.6	\$ 190.6

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ATTACHMENT JHW-5

Principal Reasons For Diversions To The Norfolk Southern/Penn Lines System

<u>Diversion Category</u>	<u>Revenue Gains (Millions)</u>	<u>Reason Code</u>	<u>Diversion %</u>	<u>Reason</u>
Single System	\$ 5.6	110	100%	Forwarded Traffic: NS/PL Single System, Closed to Open stations.
Single System	41.7	111	50%	Forwarded Traffic: NS/PL Single System, Open to Open stations. CSXT/NYC can also provide a Single System route.
Single System	22.2	112	100%	Forwarded Traffic: NS/PL Single System, Open to Open stations. CSXT/NYC cannot provide a Single System route.
Single System	62.3	771	100%	Penn Lines Traffic: Diverted to NS/PL Single System.
Extended Haul	6.3	520	75%	Received Traffic: Two carriers, with connecting carrier shorthauled. Open to Open stations.
Extended Haul	6.3	772	100%	Overhead Traffic: Diverted to NS/PL forwarded traffic.
Extended Haul	8.5	776	100%	Penn Lines Traffic: CSXT eliminated from route.

ATTACHMENT JHW-5

Principal Reasons For Diversions To The Consolidated Norfolk Southern/Penn Lines System

<u>Diversion Category</u>	<u>Revenue Gains (Millions)</u>	<u>Reason Code</u>	<u>Diversion %</u>	<u>Reason</u>
Special Rule	25.6	911	50%	Automotive Traffic: Destined to Jessup, MD or Twin Oaks, PA.
Special Rule	16.1	912	50%	Automotive Traffic: Destined to Jacksonville, FL.
Special Rule	12.7	968	100%	Overhead Carrier between NS/PL and KCS is eliminated.

ATTACHMENT JHW-6

**Principal Reasons For Non-Diversions
To The Norfolk Southern/Penn Lines System**

REASON CODE	DIVERSION %	REASON
5	0%	No merging carrier is in the diverted route.
11	0%	One merging carrier is in both the original and diverted routes.
13	0%	Merging carrier's portions are identical in both the original and diverted routes.
29	0%	Forwarded Traffic: One merging carrier is in both the original and diverted routes.
30	0%	Received Traffic: One merging carrier is in both the original and diverted routes.
31	0%	Overhead Traffic: One merging carrier is in both the original and diverted routes.
32	0%	Local Traffic: One merging carrier is in both the original and diverted routes.
51	0%	Southwestern Exclusion Territory, origination or termination.

APPENDIX A

Qualifications of John H. Williams

I am President of The Woodside Consulting Group, Inc., 3000 Sand Hill Road, Building 4, Suite 140, Menlo Park, California 94025, a firm which specializes in railroad transportation consulting.

I was educated at the University of Illinois, where I received an A.B. in Liberal Arts and Sciences in 1962, with a major in economics, and an M.B.A. in 1963, with finance as my area of specialization; my educational training included courses in these fields as well as in marketing and operations. Although transportation was not a recognized area of emphasis for either degree, that was my interest throughout college; as a result, I completed almost every transportation course, either in the College of Commerce and Business Administration or in the Department of Civil Engineering, offered by Professors D. Philip Locklin (transportation economics), W. W. Hay (railway engineering), and K.U. Flood (distribution).

In 1963, I joined the Southern Pacific Transportation Company as a Transportation Analyst in the Bureau of Transportation Research. Following a year of introductory training, I was transferred to the Total Operations Processing System ("TOPS") project, which was responsible for designing and obtaining the adoption of a real-time, computerized information system for planning, controlling, and evaluating railroad operations. This was a pioneering project in computerized management and control of railroads, which was subsequently adopted by numerous other carriers.

In 1966, I joined the Operating Department of Southern Pacific, working initially as a brakeman on the Western Division and subsequently as an Assistant Trainmaster in El Centro, California. In early 1967, I was promoted to Trainmaster at Lordsburg, New Mexico, where I was responsible for supervising train operations over some three hundred miles of Southern Pacific's main line track, plus branch lines, between Tucson and El Paso.

In 1968, I was granted a three-year leave of absence to join the U.S. Department of Transportation's newly formed Federal Railroad Administration in Washington, D.C. As a Transportation Specialist in the Office of Policy and Planning, I provided economic and operational analyses, and evaluated, proposed, and assisted in the development of various public policies affecting the railroads. I specialized in rail network restructuring (where I developed FRA's first rail network model) and mergers, freight car supply, and other rail operational issues, in addition to formulating FRA's economic research and development program. During that time, I also represented FRA as a member of Assistant Secretary Charles D. Baker's interdepartmental team which proposed deregulation of the railroads; many of the concepts and policies that we debated then have now been implemented through the 4-R Act, the Staggers Act, and through subsequent Interstate Commerce Commission and Surface Transportation Board initiatives.

In 1972, I returned to Southern Pacific as a Special Assistant in the Executive Department, with responsibility for coordinating the preparation of Southern Pacific Company's corporate ten-year financial plan. Later that year, I was promoted to Manager of the Bureau of Transportation Research, the organization in which I began my railroad career in 1963. In that capacity, I managed a staff of some twenty individuals, reporting directly to the senior executive management of Southern Pacific. We were directly responsible for analyses of commodity and route profitability, cost-of-service calculations, evaluations of possible line abandonments, and

analyses of prospective investments and acquisitions -- both railroad and non-railroad. In addition, we were responsible for presentations before regulatory authorities; I appeared before the Interstate Commerce Commission on several such issues.

In late 1977, I was promoted to the position of Assistant to the Vice President in the Executive Department of Southern Pacific. In that position, I managed the Office of Special Projects, which was created in order to permit me to concentrate on those matters of particular importance to the senior executive management of Southern Pacific. At that time, those special projects included Southern Pacific's prospective acquisitions of the Chicago, Rock Island & Pacific's Tucumcari Line and of the Seaboard Coast Line System -- the latter now being a part of CSXT.

In August 1980, I left Southern Pacific to become Assistant Vice President - Strategic Analysis for Consolidated Rail Corporation in Philadelphia. I reported directly to the Chairman, Mr. Edward G. Jordan, and my responsibilities continued to be focused in the merger and acquisition area. I directed the preparation of Conrail's position on the Norfolk Southern merger - - and testified before the Interstate Commerce Commission in that case - - as well as the preparation of Conrail's merger studies and policy position in the Union Pacific Missouri Pacific/Western Pacific merger case. In both instances, I participated in the negotiated settlements that resulted. I was also responsible for designing and evaluating structural alternatives to Conrail as a corporate entity.

In late 1981, I returned to San Francisco as Vice President/Land Transportation of Manalytics, Inc., a transportation consulting firm. There, I was responsible for the business development and conduct of land transportation activities.

In October 1983, I became President of The Woodside Consulting Group, Inc. In this capacity, I am responsible for all of the business conduct and policy decisions of our firm. We offer a broad range of transportation consulting services, both to the public agencies and private sector clients, dealing primarily with railroad transportation issues.

In March 1985, representing both the California Public Utilities Commission (CPUC) and the California Department of Transportation, I presented testimony before the Interstate Commerce Commission in the Southern Pacific/Santa Fe merger proceeding. My testimony -- which was cited in the Commission's *Decision* -- analyzed the market impacts of that proposed merger on California and its shippers, and recommended the imposition of conditions in order to mitigate the anticompetitive effects of that merger as proposed.

In May 1988, representing the Kansas City Southern, I presented testimony before the Interstate Commerce Commission, including a substantial portion of the required Exhibit 12 -- Impact Analysis, in support of that carrier's application for control of the Southern Pacific Transportation Company. My testimony analyzed the market impacts of a consolidated Kansas City Southern/Southern Pacific System on shippers, competition, efficiency, and other carriers. I also submitted testimony in opposition to the proposed Denver and Rio Grande Western/Southern Pacific combination, in which I characterized those applicants' Exhibit 12 -- Impact Analysis as being unrealistic in the marketplace.

During 1996, I provided consulting advice and analyses to the CPUC with regard to the Union Pacific's proposed acquisition of Southern Pacific. My recommendations toward ensuring the preservation of adequate and effective competition were included in the CPUC's presentation to this Board.

As a part of our consulting practice during the past decade, The Woodside Consulting Group has undertaken more than three dozen regional railroad analyses, including due diligence studies, the preparation of Business Plans, and assessments of the operating entities when the Business Plans were not being met. Included among the railroads we have studied are MidSouth Rail Corporation, Paducah & Louisville Railway, Inc., Dakota, Minnesota & Eastern Railroad Corporation, and Montana Rail Link. For each such analysis, my responsibility has been either to prepare a marketing plan or to evaluate whether the marketing plan being presented was realistic. I also served, on a part-time basis, as Chairman of the Board of Directors of the Dakota, Minnesota & Eastern Railroad Corporation.

During my thirty-four year career at Southern Pacific, Conrail, the Federal Railroad Administration, Manalytics, and The Woodside Consulting Group, my work has required me to consider many aspects of railroading, including marketing, operations, finance, economics, planning and public policy. At FRA, the economic research and development program I developed included marketing studies of grain and perishable produce. At Southern Pacific, I conducted and directed numerous marketing studies of both deficit and highly profitable railroad commodities (including lumber, wood chip, automotive, chemical, intermodal, perishable, sugar beet, and iron ore traffic), as well as of competing modes. At the higher corporate levels my positions entailed beginning in 1972, the types of work for which I was responsible required me to consider all aspects of railroading, including the three basic functional areas of marketing, finance, and operations. As a consultant, I have provided services to clients encompassing most aspects of railroading-- including primarily marketing, finance, operations, economics, and public policy.

VERIFIED STATEMENT

OF

PATRICK J. KRICK

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VERIFIED STATEMENT

OF

PATRICK J. KRICK

I. INTRODUCTION

A. Author Qualifications

My name is Patrick J. Krick. I am Director of Economic Analysis for the Kingsley Group, a San Francisco-based transportation, economics, and logistics consulting firm, and serve as Managing Consultant of our Dallas/Ft. Worth office. My business address is 1901 Central Drive, Suite 333, Bedford, Texas, 76021.

In my capacity as an economist and transportation market consultant I have been called on to perform research, speak and/or write on a wide range of transportation and economic issues. Audiences for these activities have included senior level public and corporate officials, as well as the STB specifically. Prior to my current position I served for over 17 years in economic and financial analytical capacities in the rail, insurance, and local governmental planning sectors. During 15 of those 17 years I was employed in the rail industry, serving two major western Class I carriers. Throughout that period, I was promoted into positions of ever increasing responsibility. Most recently, prior to my current position, I served as Burlington Northern Santa Fe Railroad's Assistant Vice President, Corporate Analysis and Development, responsible for unit cost and profitability measurement, operational economic assessment, and franchise strategy development and support. Over this period I developed modal traffic analysis techniques for evaluating prospective rail mergers and acquisitions, trackage rights initiatives, and other track asset disposition planning. I worked in the rail industry at various levels, including Senior

Analyst, Manager, Senior Economist, and Director, in areas of macroeconomic and industry forecasting, traffic, revenue and expense budgeting, strategic planning, business process design and engineering, rail industry benchmarking, merger and acquisition policy development and execution, freight market and carrier competitive analysis, and management information systems development and design.

Over the years I have belonged to and/or spoken before many professional organizations, including the Transportation Research Forum, the National Association of Business Economists, the Planning Forum, the AAR Cost Analysis Organization, the American Economic Association, and the Missouri Valley Economics Association, to name a few. Additionally, I served as instructor of economics at Iowa Western Community College. I hold a Master of Science degree in economics from the University of Nebraska (December 1977), and a Bachelor's degree with political science and economics majors from the University of Nebraska-Omaha (August 1976).

This statement, in support of Norfolk Southern and its joint application with CSX to acquire control of Conrail, discusses the analyses I directed to measure the freight traffic likely to divert from motor carriers to the Norfolk Southern/Conrail system. The operational integration of Conrail assets into the separate NS and CSX rail systems represents an historic opportunity for significant diversion to the rail system of inter-city freight now moving on the highways in the eastern half of the U.S. Numerous and important freight markets in this territory will, as a result of this transaction, be served by one or two single line rail carrier routes for the first time. Additional diversion resulting from greater intermodal market penetration in lanes currently served by Conrail is indicated by the Changed Strategy analysis, which estimates the probable impact of the change in strategic focus of intermodal business brought on by this transaction. A summary of these two bases for the diversion of freight from truck to rail is presented below.

B. Sources of Truck-to-Rail Traffic Diversion and Analytical Approach

The most important reason that railroad mergers and consolidations result in diversion of freight from truck to rail is the establishment of new or significantly improved single line service (SLS). This refers to the ability of a newly merged carrier to move freight from origin to destination between city pairs where prior to merger an interchange was required. Elimination of this interchange results in improved efficiency and quality of service. The merged carrier can improve efficiency through its new ability to focus an integrated and coordinated origin to destination train operation, thus improving power and equipment cycle times, eliminating wasteful dwell times and generally reducing the cost of the service. This adjustment not only improves the quality of the service from the shippers' point of view, but also improves the return the rail carrier receives for participating in markets where SLS is introduced or increased. From the shippers' point of view, this translates into a more competitive rail offering as compared with the truck alternative. The combination of improved service quality, improved rail carrier returns, and typically lower transportation cost per ton offered by rail results in a shift of freight market share from highway to rail.

In addition to SLS effects, the consolidation of Norfolk Southern and portions of Conrail operations ("Norfolk Southern/Conrail") presents another source of truck-to-rail diversions I refer to as Changed Strategy (CS). This refers to the opportunity in a newly merged rail system to apply the more effective operating and marketing practices of the previously separate carriers across the entire merged network. To the extent the practices of the separate entities have resulted in different market performance (i.e., market share), application of the more effective strategies across the entire newly-merged system can result in improved market penetration and shifting of freight from highway to rail. This outcome, as evidence I present in Section II will demonstrate, is likely in the consolidation of Norfolk Southern with portions of Conrail

operations.

The remainder of my testimony will discuss the basis for and results of my analyses, which involved a two-step process:

- First, I assessed the likely outer bounds of the total truck diversion resulting from single line service and changed strategy from the Norfolk Southern/Conrail transaction;
- Second, I developed diversion estimates for individual origin-to-destination locations that when totaled fell within the outer bounds established in step one. Additionally, the detailed estimates were constrained by operating parameters such as train frequency and service schedules, terminal and equipment capacities, and balance considerations incorporated in the operating plan set forth in the verified statement of D. Michael Mohan, of The Kingsley Group. Traffic flows resulting from my detailed truck diversion estimates were also included in the traffic base from which that operating plan was developed.¹

Finally, I am confident that the approach employed in this diversion study renders conservative and reasonable the overall truck diversion estimates developed for the Norfolk Southern/Conrail transaction.

C. Summary of Conclusions

I expect the transaction and future operation of portions of Conrail by Norfolk Southern to result in the diversion from truck to rail of 10 million tons of motor carrier freight in the eastern half of the United States. As Attachment PJK-1 shows, of that 10 million tons, 6.3 million tons will be SLS diversions resulting from new single line service in territory now served by Norfolk Southern and Conrail interchange service. Additionally, CS diversions — truck diversions

attributable to changes in commercial and operating strategies which result in deeper market penetration -- will amount to an additional 3.7 million tons.

While these tonnage estimates are quite substantial, they are conservative, particularly viewed in light of the size of the relevant overall truck market, as Attachments PJK-2.1 and PJK-2.2 demonstrate. The expected SLS diversions comprise 4.1 percent of the truck market in which new single line service will be either introduced or increased. CS diversions amount to about 5.4 percent of that relevant truck market, namely the traffic moving in those lanes comprising the current Conrail system which will be operated by Norfolk Southern. Diversions are expected to increase as a proportion to the truck market as the length of haul increases, with just 3 percent expected diversions in markets less than 500 miles and 7 percent in markets greater than 750 miles.

Attachment PJK-3.1 shows how the proposed Norfolk Southern/Conrail system is expected to handle the diverted freight. The bulk of the diversion -- roughly 80 percent -- will travel in intermodal service; this includes both conventional intermodal and RoadRailer® units operated by Triple Crown Services® Company ("TCS").² The remaining 20 percent will travel by traditional mixed freight, merchandise, or unit train service.

Attachment PJK-3.2 shows the estimated incremental revenues to the Norfolk Southern/Conrail System associated with each type of service handling truck diversions. The revenues, totaling \$269 million per year, were estimated using factors supplied by Norfolk Southern's Merchandise and Intermodal marketing groups.

An important public benefit of reducing truck miles leading to a reduction in highway damage is outlined in Appendix VI of this verified statement. I also developed a calculation of the reduction in truck miles.

Although the study I conducted in support of this testimony focused solely on quantifying

diversions to the Norfolk Southern/Conrail system, I expect the CSX/Conrail system (CSX and the CSX-operated portions of Conrail) will experience SLS diversions at rates similar to those herein. On a combined basis, the diversion of truck traffic to rail resulting from the operation of Conrail by Norfolk Southern and CSX will be of historic proportions. The subsequent increased efficiency and reduced logistics costs accruing to shipping interests resulting from this modal shift, even before consideration of other public benefits (e.g., environmental, public infrastructure) will represent a significant boost to the global competitiveness of the economies in the eastern half of the United States.

II. THEORETICAL AND ANALYTICAL APPROACH

As mentioned in Part I, my analysis in this effort addressed two theoretical bases for truck diversion arising from the Norfolk Southern/Conrail transaction:

- New or additional single line service opportunities (SLS diversions), and;
- Improved market penetration on the former Conrail system (CS diversions).

This section discusses the theory underlying both of these topics, and describes the analytical approach to measuring the impact of each on truck-to-rail diversions.

A. Single Line Service (SLS) Diversions

Assessing the diversions to be expected from new single line service opportunities requires answering the following quantitative questions:

- In what lanes would single line rail service be introduced or increased as a result of the Norfolk Southern/Conrail system?
- How much truck traffic do these lanes represent?

- What portion of the truck traffic in each lane would likely divert to Norfolk Southern/Conrail, based on a given set of discrete operating assumptions?

1. Identifying SLS Lanes and Related Tonnage

To answer the first two questions I turned to TRANSEARCH®, a large set of annual freight traffic flow estimates, stated by mode (including truck and rail), and identified by commodity type and geographic territories of origin and destination.³ TRANSEARCH is widely recognized in the industry, as well as in regulatory proceedings such as this, as the most comprehensive estimate available of truck volume and motor carrier activity on an origin-to-destination basis.

Defining and Identifying SLS Lanes. The process of identifying SLS lanes begins by designating a carrier service profile for each relevant Business Economic Area (BEA). (See Appendix IV.) The BEA is the geographical subdivision used in TRANSEARCH as the origin and destination endpoints of the numerous traffic records in the database. The carrier profile indicates whether the BEA is served by:

- Norfolk Southern;
- CSX;
- A Conrail segment to be operated by Norfolk Southern;
- A Conrail segment to be operated by CSX; and/or
- A Conrail segment to be jointly operated by Norfolk Southern/CSX.

The determination as to which carrier “serves” a given BEA is based on whether a carrier’s track is physically within the confines of the BEA or the BEA is in proximity to an intermodal facility. This approach does not allow for various “levels” of service within a BEA

(i.e., one carrier having greater route miles within the BEA or serving more originating points). It is expected, however, that any resulting over or under estimates of the "actual" market presence of a carrier will sum close to nil across hundreds of individual BEA pair estimates. Under this assumption, the approach would not tend to introduce any bias to the overall estimation results.⁴

With the carrier profile of each BEA identified, TRANSEARCH estimates were logically separated into two categories:

- SLS-affected lanes - those BEA pairs in which new or secondary SLS will be created by the Norfolk Southern/Conrail and CSX/Conrail transaction; and
- SLS-non-affected lanes - Those BEA pairs in which single line service will not be introduced or increased by the Norfolk Southern/Conrail and CSX/Conrail transaction.

SLS-affected lanes were subdivided further into:

- 0 to 1 SLS lanes - lanes in which Norfolk Southern/Conrail would be the sole SLS carrier;
- 0 to 2 SLS lanes - lanes in which **both** Norfolk Southern/Conrail and CSX/Conrail would offer new competing SLS service
- 1 to 2 SLS lanes - lanes in which Norfolk Southern/Conrail would join CSX, already serving the lane.

Truck Tonnage Estimates for SLS Lanes. I then examined the TRANSEARCH data to determine the total truck tonnage in each of the SLS lane categories. The 1995 estimate for truck traffic in SLS lanes is 151 million tons, or about 8.9 million truck loads, assuming an average of 17 tons per truck load. As is shown in Attachment PJK-4, 14 percent of total SLS traffic falls in 0 to 1 SLS lanes, 15 percent in 0 to 2 SLS lanes, and 72 percent in 1 to 2 SLS lanes.

2. Developing the SLS Diversion Model

Once the markets that will be affected by new or increased single line service are identified and the total relevant truck tonnage in these lanes estimated, we move on to the third quantitative question within the SLS measurement problem: How much of this traffic will likely divert to the Norfolk Southern/Conrail system?

My methodology for estimating SLS diversions, which I originated during my tenure as a railroad strategic planner, uses TRANSEARCH estimates to develop a parametric statistical model. The objective of the model is to measure the sensitivity of key factors, including the presence or absence of SLS, on truck volumes in a given BEA-to-BEA lane, so as to isolate the effect on truck volume of establishing new or additional SLS in that lane.

The model is specified to measure truck tonnage for a given BEA-to-BEA pair by analyzing four factors:

- total tonnage moving in the BEA-to-BEA lane;
- commodity type;
- distance between the origin and destination BEAs;
- number of single line rail service carriers.

The theory behind the four relevant factors is relatively straightforward:

Total Tonnage: Total tonnage is relevant because it establishes the upper limit of possible truck tonnage. The model should indicate that, other factors remaining constant, as total tonnage grows, so should truck tonnage.

Commodity Type: The type of commodity being shipped will affect the volume of truck tonnage in a given lane. This factor isolates the natural competitive advantages of rail or truck in handling and transporting different types of commodities. Clearly, for example, one might expect the share of manufactured goods carried by truck in a given lane (BEA to BEA pair) to exceed

that of, say, coal or other bulk commodities.

Distance: As the length of the lane increases, all other factors remaining constant, truck tonnage should fall. This factor captures the widely understood relationship between distance and the relative portion of total logistics cost represented by its two components: transportation cost and non-transportation logistics costs (i.e., inventory costs). As distance increases, transportation cost becomes relatively more important and non-transportation logistics costs become relatively less important. This principle works to the advantage of rail and intermodal transportation, as rail and intermodal generally offer lower transportation cost per unit than do trucks, while trucks offer lower average non-transportation logistics costs.

Presence or Absence of Single Line Service: In the absence of SLS, I make the simplifying assumption that the market must choose between truck and joint rail service. Joint rail service can usually offer a competitive transportation rate vis-à-vis truck, despite the cost penalty of interchange which joint service must usually bear. But rational shippers must look at an array of logistics cost factors when selecting a carrier. Joint rail service rarely competes effectively with trucks when it comes to service reliability, transit time, and inventory related costs. Due to that shortcoming, rail service in markets without SLS tends not to compete with trucks as effectively as it does in markets with SLS. When single line service is present, however, not only is the cost of the interchange activity eliminated, providing even more cost competitiveness to rail, but one carrier can ensure higher service quality (i.e., equipment utilization, reliability, transit times) compared to joint carriers. This cost/service improvement typically results in greater market penetration for rail as well as improved logistics value for shippers in new SLS lanes.

Once the relevant factors affecting truck tonnage are identified, the model must be calibrated by statistically establishing the numerical relationships between each of the four factors and the variable being modeled, truck tonnage. Using the 1995 TRANSEARCH file, I developed

a cross-sectional data set to determine these numerical relationships. A large random sample of TRANSEARCH records was drawn. From this sample I extracted total tonnage (rail and truck), truck tonnage estimates, commodity designation (indicated by 4-digit STCC code), and BEA-to-BEA distance.

The commodity factor was developed by assigning the 4-digit STCC code for each TRANSEARCH record to one of 11 categories, which were designed to group together commodities with similar traits with respect to conveyance equipment. These classifications are set forth in Attachment PJK-5.

The SLS factor (i.e., the factor indicating the level of, or absence of, single line service in the lane) is assigned a value indicating whether 0, 1, 2 or 3 single line routes exist for the respective BEA-to-BEA pair. Additionally, my analysis indicated that the SLS factor should be weighted to account for the fact that a second and third additional single line rail carrier in a given lane would likely have less incremental truck diversion impact than the first. The applied values are as follows:

- 0 if no single line service existed for the BEA-to-BEA pair,
- 1 if 1 SLS carrier is present,
- 1.4 if 2 SLS carriers exist, and
- 1.7 if 3 SLS carriers are present.

Attachment PJK-6 illustrates the different implied weights for one to three single line rail carriers in the relevant market.

Regression analysis was performed on traffic data drawn from roughly 3,100 random observations selected from BEA pairs in the eastern half of the United States.⁵ The resulting model indicates that to estimate truck tonnage for a given lane and commodity flow, one begins with 93 percent of the total tonnage in the lane plus some adjustment depending on the

commodity, less 12 percent for every 1 percent increase in miles, and less 13 percent for the presence of one single line rail carrier in the lane, 18 percent for two SLS carriers, and 22 percent for three.⁶

The SLS regression model has a statistical reliability of 80 percent, meaning that it predicts 80 percent of the variation of truck tonnage across the 3,100 records from which it was estimated. Furthermore, the model correctly states the expected relationships between truck tonnage and each of the four component factors, and produces values that are reasonable based on my years of experience in implementing and evaluating initiatives specifically designed to improve rail competition against trucks.

The model serves as a diversion estimation tool. SLS factor values can be transformed for application on the three types of SLS lanes discussed above – 0 to 1 lanes, 0 to 2 lanes, and 1 to 2 lanes - to predict the percent of truck volume likely to divert to Norfolk Southern/Conrail:

- 13 percent in 0 to 1 SLS lanes – that is, lanes in which the Norfolk Southern/Conrail system would be the only resulting SLS service, none being present today. The model would suggest the creation of such service would divert 13 percent of the current truck market, all other factors being equal.
- 9 percent in 0 to 2 SLS lanes - that is, lanes in which both the Norfolk Southern/Conrail and CSX/Conrail systems offer SLS as a result of the transaction. In these lanes the model predicts a total 18 percent diverted to both carriers, all other factors being equal; I make the simplifying assumption that diversions will be split evenly between the two systems.
- 2.5 percent in 1 to 2 SLS lanes – that is, lanes in which a Norfolk Southern/Conrail SLS is created, but CSX already provides single line service. The model would suggest a total diversion in this case equal to the difference in the 0 to 1 SLS factor

(13 percent) and 0 to 2 SLS factor (18 percent), or 5 percent, all other factors being equal. I again make the simplifying assumption that this increment would be shared evenly between the current and new SLS carriers.

Attachment PJK-7 provides a summary of the application of the SLS diversion model on the TRANSEARCH data indicated for each of the three categories of SLS lanes. As is shown, the weighted average SLS effect, based on the relative importance of each of the three SLS categories, is estimated to be 4.9 percent of a 151 million-ton truck market, resulting in an implied diversion opportunity of 432 thousand containers and trailers per year.

B. Changed Strategy (CS) Diversions

Another opportunity exists for truck diversion in territory Conrail currently serves on a SLS basis. As such this territory will not, by definition, be subject to SLS diversion. The economic basis for this type of diversion I refer to as Changed Strategy.

A rail carrier can be viewed in terms of the businesses, industries, trade lanes, and economic centers it serves by virtue of the physical extent of its track structure. These elements make up what I refer to as a railroad's franchise. A railroad's franchise represents the sum of the potential business for which it has the opportunity to compete. Every rail operation can be defined, even measured, by the scope and makeup of its franchise. Measuring a railroad's franchise can be important in evaluating the business opportunity that a particular rail property represents, as well as in assessing the extent to which a railroad is penetrating its potential market.

Identifying differences in the levels of market penetration the prospective merger partners have achieved is useful in assessing the potential value resulting from the merger. Three conditions set the stage for Changed Strategy merger synergy:

- clear performance differences are evident between the two prospective merger partners;

- the differences can be attributed to significantly differing management practices and strategies; and
- the management practices and commercial strategies of the partner with the deeper market penetration can be applied to the segments of the merged operation not currently subject to those practices.

How would such opportunities affect truck diversion in the Norfolk Southern/Conrail case?

There is recent evidence that Norfolk Southern has more aggressively grown the truck-competitive element of its business, namely, the intermodal market. As can be seen in Attachment PJK-8, Norfolk Southern has had the fastest growing intermodal business of the U.S. Class I carriers in the 1988 to 1996 period. This rate of growth exceeds that of Conrail and the industry by 52 percent over the entire period, or by 7 percent per year.

If we look at the makeup of the Norfolk Southern and Conrail intermodal businesses, there are some important differences. Conrail intermodal is more influenced by transcontinental traffic (i.e., Chicago/St. Louis gateway interchange to/from Philadelphia/New York/Boston). Much of this interchange traffic is masked as "local" (i.e., originating and terminating on its own system) in the traffic data when it is in fact "re-billed" interchange business. Norfolk Southern, not serving the large Northeast markets, has an intermodal business dominated by the intra-eastern U.S. domestic traffic and has successfully expanded its participation in that market over the last several years.

Sharpening the focus to a detailed comparison of Norfolk Southern and Conrail intermodal performance, a more useful picture emerges of opportunities which could be created by a change in strategy. To do this, I developed measures of the two rail carriers' performance at the lane-specific level, determined by the units moved in a lane as a percentage of the total units moving in that lane by truck and rail. Rail carrier unit counts were derived by tallying intermodal

unit counts between various intermodal terminals on the Conrail and Norfolk Southern systems for 1995.⁷ Truck unit counts were derived by first assigning one or more BEAs to each terminal in the Conrail and Norfolk Southern intermodal terminal networks.⁸ TRANSEARCH truck volumes were then totaled for all BEA-to-BEA pairs assigned to each terminal-to-terminal pair and converted to unit counts.

Since this Changed Strategy assessment is intended to focus on the penetration of each carrier's service in the territory served by the origin and destination terminals, and to enhance the comparability of the lane by lane assessments, lanes involving the western gateways of Chicago, Kansas City, St. Louis, and Memphis were excluded from the analysis. This was done to exclude transcontinental traffic not tied to the local market that is often "re-billed" at these gateways, thus giving the appearance of a "local" move.⁹ Attachment PJK-9 summarizes the results of the analysis of Conrail's and Norfolk Southern's market performance vis-à-vis trucks for lanes in the interior of their respective systems. Compared with trucks, Norfolk Southern averaged a 27 percent market share for the period, while Conrail averaged a 14 percent share, for an overall share differential of 13 percent in favor of Norfolk Southern.

The greatest share differential -- 26 percent -- occurs when comparing the carriers' performance in lanes longer than 700 miles, as Attachment PJK-10 shows.

The presence of such a performance differential suggests a potential for truck diversions in those current Conrail lanes where Conrail's market share is below that of Norfolk Southern in comparable lanes. How might the difference in actual intermodal business approach between these two carriers change after the transaction such that this potential could be converted to actual diversions?

Reflecting an increasingly decentralized U.S. economy, freight scatters widely among a large number of origins and destinations. These fragmented flows lend themselves to truck

transport unless a rail carrier adopts a comparably extensive service network. Norfolk Southern's strategy of operating a web-like intermodal network provides a greater incentive to penetrate the truck market than does Conrail's long-haul terminal-to-terminal strategy. Norfolk Southern runs trains among 32 intermodal terminals that not only deliver freight to the terminal, but in many cases deliver freight to connecting trains. Conrail's intermodal traffic, in contrast, is dominated by transcontinental traffic moving between a few major terminals. (See the testimony of Thomas L. Finkbiner, Norfolk Southern Vice President Intermodal for a more thorough treatment of the differences between the intermodal marketing and operating strategies of Norfolk Southern and Conrail.)

The comparison of Norfolk Southern's and Conrail's relative market shares vis-à-vis trucks (as shown in Attachments PJK-9 and PJK-10) suggests that Norfolk Southern has demonstrated the willingness and ability to compete more effectively with trucks in its interior than has Conrail. This is, in my opinion, not so much an issue of comparative management effectiveness, but more a comparison of different marketing philosophy and focus, driven from different sets of limited choices and priorities now facing each carrier separately.

The Conrail intermodal operation might naturally cause more focus on the transcontinental market by virtue of the competitive routes between western gateways and large northeastern markets. Norfolk Southern, on the other hand, does not serve the Northeast directly, and has a much smaller transcontinental franchise. The local domestic market in the East is dominant in Norfolk Southern's intermodal business, although Norfolk Southern also serves a smaller transcontinental and port based market. The two respective intermodal businesses represent different priorities, which, when combined upon merger, can result in new priorities taking shape.

I believe it is reasonable to expect that, as Conrail interior markets are integrated into the northern tier of the current Norfolk Southern intermodal network, Conrail market shares would

move in the direction Norfolk Southern experiences in its current territory. As the merged intermodal organization applies Norfolk Southern's connecting train service network for Conrail lanes (as outlined in the commercial and operating plans presented in Mr. Finkbiner's and Mr. Mohan's testimony), significant diversion from truck to rail is likely.

Truck traffic in CS lanes (those lanes now served by Conrail that would be served by Norfolk Southern/Conrail) is estimated at about 70 million tons in 1995. If market shares in these lanes were to increase to Norfolk Southern's 1995 levels, 13 percent of that total, or over 500,000 truckloads per year, would divert from the highways running parallel to the current Conrail network to the combined Norfolk Southern/Conrail system.

III. DETAILED DIVERSION ESTIMATION

Using the overall SLS and CS diversion analyses set forth in Section II as the outer bound of likely total diversions resulting from the Norfolk Southern/Conrail transaction, I developed detailed estimates for applicable BEA-to-BEA pairs for both SLS and CS diversions. The detailed diversion estimates were constrained, however, by commercial and operational guidelines, as outlined in Mr. Mohan's verified statement regarding the Norfolk Southern/Conrail operating plan and in Mr. Finkbiner's verified statement describing the intermodal plan.

The 1995 TRANSEARCH truck traffic estimates for the lanes applicable to the four diversion categories (0 to 1 SLS, 0 to 2 SLS, 1 to 2 SLS, and CS) were reviewed with the assistance of expert personnel within the Norfolk Southern commodity and intermodal freight marketing organizations. Focusing on the commodity, length of haul, and market characteristics represented by each lane, and considering the proposed service to be implemented by the Norfolk Southern/Conrail system, detailed diversion estimates were developed on a lane-by-lane basis. In addition, while the SLS diversion analysis was used as a guide, it was not used to specifically bind

the diversion estimate for any individual lane/commodity observation under review, as discussed below in Section D.

A. SLS Diversions to Non-Intermodal Service

I conducted a commodity-specific review of the truck traffic in the SLS territory, in consultation with Norfolk Southern personnel responsible for marketing unit-train or mixed-freight merchandise service (non-intermodal equipment) for specific commodity groups. Diversion estimates were developed based on my judgment and that of Norfolk Southern marketing experts, of the viability of boxcar, center beam flat car, hopper car, or other conventional equipment offered on an SLS basis in a given lane. Route circuitry and service factors were also taken into account on a lane by lane basis. Diversion estimates ranged from zero to 48 percent of the estimated truck market, and averaged about 4 percent. In total, 1.9 million tons are expected to divert to mixed freight or unit train operation, representing 1.3 percent of the 151 million-ton SLS market identified.

This relatively modest expectation for diversion to non-intermodal is reasonable in my experience, as intermodal is the more effective technology in competing with motor carriage and as such is the more natural beneficiary of truck-to-rail diversions when SLS is created. This inclination should be enhanced in this case, due to the presence of Triple Crown Service and the additional terminal startups contemplated in the Norfolk Southern/Conrail operating plan.¹⁰

B. SLS Diversions to Intermodal Service

To estimate SLS diversions to intermodal service, I first assigned BEAs to each of the Norfolk Southern/Conrail conventional intermodal or Triple Crown terminals assumed in the operating plan.¹¹ These assignments identify the BEA-to-BEA pairs defining the origin and

destination market limits in which a given terminal-to-terminal pair competes. With these assignments in place, truck volumes for given terminal-to-terminal markets were tallied. Lane truck tonnage estimates were reduced by any diversions accounted for in mixed freight or unit train service.

Within the limits of the operating plan, and based on my own business experience, consultations with Norfolk Southern intermodal marketing and operating experts, and results from the SLS modeling analysis, the following diversion guidelines were developed:

- truck traffic in lanes with terminal-to-terminal distance less than 500 miles was assumed non-divertible to intermodal service;
- lanes of 500 miles or greater were judged divertible on a sliding scale relative to distance, roughly approximating the relationship suggested in the SLS model.¹²
- Lanes along the I-95 corridor were reduced to 50 percent of the level that otherwise would have been estimated.¹³
- Diversion percentages were increased for lanes in which both conventional intermodal service and TCS service are available or planned.

The rationale for these guidelines is as follows:

- In keeping with the SLS model, it is to be expected that longer-haul truck markets are more susceptible to intermodal diversion than short haul markets. In practice, longer haul lanes would be targeted first and most aggressively for diversion opportunities. Difference in the cost structures of truck versus intermodal service support this. Intermodal line-haul costs are lower per unit-mile than truck, while originating and terminating costs are higher by virtue of dray and lift on/lift off expense. Further, intermodal terminal handling produces delays at origin and destination, which reduces intermodal transit time competitiveness with trucks. The longer the length of haul, the

greater the likelihood that rail line-haul cost advantages can offset originating and terminating cost and service disadvantages vis-à-vis truck. Additionally, while I suspect that in actuality some diversion will occur in SLS lanes of less than 500 miles, this guideline adds conservatism to the overall diversion estimate and reasonableness to the operating plan.

- The 50 percent discount on diversions for terminal-to-terminal pairs, such as New York and Miami, along the I-95 corridor accounts for the greater circuitry and, therefore, weaker competitive position of these Norfolk Southern/Conrail routes compared to the CSX/Conrail route and the truck route on I-95.
- Assuming diversion percentages would be higher in lanes with both conventional intermodal and TCS service is reasonable. Consider the diversion estimates developed herein as the product of two components:
 - 1) the portion of the total truck market for which available SLS intermodal service is expected to compete effectively, and
 - 2) the percentage of the competitive portion actually diverted.
- Given this construct, the presence of both conventional intermodal and TCS service tends to increase the value of the first component. The wider range of service options and cost trade-offs attracts a broader scope of the truck market in any given lane. Thus, the total diversion estimate may reasonably be expected to be greater in lanes offering both conventional intermodal and TCS service than in lanes offering only one or the other.

As mentioned earlier, diversion estimates for any given lane were guided by, but not limited to, the SLS diversion model indications. Detailed SLS diversion estimates ranged from 48 percent to zero percent of the lane specific truck tonnage, averaging roughly 9 percent.

Lane-specific SLS diversion percentages were then applied to lane truck tonnage totals (less any diversions assigned to mixed freight or unit train service) to yield a lane specific intermodal diversion estimate. As Attachment PJK-11 summarizes, SLS diversions are expected to total 6.3 million tons, of which 4.3 million tons, or 68 percent, is assumed to be carried in intermodal service, while 1.9 million tons, or 32 percent, is expected to be handled in mixed freight or unit train service. As shown by Attachment PJK-12, the total estimated SLS diversion of 6.3 million tons (or 4.1 percent of the total SLS market) is within the bound suggested by the SLS diversion model.

C. CS Diversions to Intermodal Service

As the CS analysis described in Part II applies only to intermodal service, detailed CS diversion estimates were limited to the proposed conventional intermodal and TCS terminal networks on the former Conrail portions of the Norfolk Southern/Conrail system. The process for estimating lane-by-lane Changed Strategy diversions of truck traffic was similar to that for estimating lane-by-lane SLS diversions. Using the lane-specific CS analysis in Part II as a guide, CS diversions from truck to conventional intermodal and TCS rail service were estimated such that:

- no diversion is projected to occur in lanes of less than 500 miles;
- diversion estimates increase directly with lane distance; and,
- diversion estimates in a given lane were limited so as not to exceed 50 percent of the truck market in that lane.

These limitations were designed to produce a reasonable and conservative overall CS diversion rate, relative to the values suggested in the CS diversion analysis in Part II. In addition, lane-by-lane CS diversion estimates were made in light of an intermodal operating plan calling for expansion from three Triple Crown terminals to five in the Northeast. The Triple Crown network

was seen as a key opportunity for CS truck diversion, particularly in Conrail territory in the Midwest, where Triple Crown terminals exist on both Norfolk Southern and Conrail.

The results of the detailed assessment indicate that improved market penetration in the current Conrail territory will result in at least eight percent of truck traffic in CS lanes diverting to Norfolk Southern/Conrail, representing 3.7 million freight tons. Again referring to Attachment PJK-12, the total CS diversions resulting from the detailed estimates fall well within the results predicted by application of the CS analysis discussed in Part II.

D. Comparison of Lane-by-Lane and Overall Analysis

That the specific lane-by-lane diversion estimates for both SLS and CS diversions in Part III are lower than the level of diversions predicted by the overall CS analysis and SLS model assessment discussed in Part II is not surprising. Detailed diversion estimates were developed so as to be reasonable in light of planned service and market factors, as well as to support the need for fairly detailed traffic information in the Norfolk Southern/Conrail operating plan. The SLS model and CS analyses are designed to predict an overall upper bound of potential diversions across all SLS and CS related markets. The lane-by-lane diversion estimates are based on additional practical issues, such as the proximity of available or planned originating and terminating facilities, and on marketing judgments (i.e., type of rail service to which truck traffic would divert) made by the merged rail carrier. Comparing the actual expected diversion of ten million tons with the overall ceilings calculated in Part II indicates that the 10 million ton diversion estimate is reasonable and, indeed, quite conservative.

The truck diversion estimate is a significant but manageable increment to the Norfolk Southern/Conrail network on which it will move. (See Mr. Williams' testimony as to the estimated portion of current Conrail intermodal traffic contained in the Norfolk Southern/Conrail

system.) Restating this increase over the current Norfolk Southern intermodal traffic base, the transaction represents a 29 percent increase in containers and trailers handled, albeit on a significantly expanded system. As mentioned earlier, this expanded intermodal system, according to Mr. Mohan's and Mr. Finkbiner's testimony, is planned to be enhanced further with additional Triple Crown terminals. As Attachment PJK-13 indicates, when compared to this more appropriate base, the 476 thousand truck loads expected to divert to Norfolk Southern/Conrail intermodal service (comprising over 80 percent of the total expected diversion tonnage) represents a significant but certainly achievable increment in total intermodal business levels for the proposed system over a three-year transition period.

E. Summary Description of Detailed Diversion Estimates

As restated in Attachment PJK-14, SLS is the main source of estimated truck diversion (62 percent of expected diverted tonnage, versus 38 percent for CS), and conventional intermodal service will be the primary recipient of the traffic (68 percent of expected tonnage versus 32 percent for TCS and Merchandise). The following provides a summary level description of the diversion estimates, with a particular focus on:

- length of haul market segments,
- major points of increased on/off system activity, and,
- major traffic lanes with reduced highway/increased rail traffic levels.

1. Length of Haul

The vast majority of truck traffic diversion, 86 percent, will fall in lanes with a length of haul in excess of 500 miles, in part due to the elimination of traffic with lesser lengths of haul from consideration for intermodal diversion. All of the 14 percent of diverted tonnage with less than a

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500-mile haul is expected to divert to Merchandise service. When the diverted tonnage is categorized by length of haul, as Attachment PJK-15 makes clear, tonnage in the lanes from 501 to 750 miles in length is expected to represent the largest (46 percent) share of the overall tonnage diverted. Traffic in lanes of 751 to 1,000 miles comprises 29 percent of the estimated diverted truck tonnage, while traffic diverted in lanes in excess of 1,000 miles accounts for the remaining 11 percent.

2. Major Points of Terminal Activity

Traffic now moving on the highway that is expected to divert to the proposed Norfolk Southern/Conrail system will enter and exit the rail system at one of three types of locations:

- a conventional intermodal terminal;
- a Triple Crown terminal; or
- an industrial siding, yard or other facility making up mixed freight or unit trains.

With the exception of approximately 400,000 tons of coal traffic concentrated in the West Virginia area, the truck traffic diversions assumed to be handled by a Norfolk Southern/Conrail system's general merchandise service is limited to the SLS territory of the new system and more widely dispersed across the proposed system than that expected for intermodal service. The following terminal activity review will be limited to diversions to intermodal service.

Attachment PJK-16 presents the amount of additional terminal activity at major points on the combined system. As Attachment PJK-16 clearly indicates, the Northern New Jersey intermodal terminal area will provide the largest single share of increased lifting activity, with an expected increase of nearly 180,000 units from truck diversion traffic. Philadelphia and Atlanta, the next most important centers for traffic coming from the highway, will see 76,000 and 63,000 additional units, respectively. Intermodal facilities at Allentown, PA, St. Louis, Chicago, Detroit

and Memphis are expected to see 30,000 to 50,000 additional units from truck diversions, while Toledo, Pittsburgh, Baltimore, New Orleans, Louisville, Charlotte and Kansas City will see between 10,000 and 30,000 units. The top 16 conventional intermodal terminal locations, those with over 10,000 additional units, represent over 90 percent of the 800,000 total increment.

Increased terminal activity in the Triple Crown network is expected to follow a similar geographical pattern to that of conventional intermodal service, as depicted by Attachment PJK-17. The New York metropolitan area will make up 23 percent of the total 152,000 expected incremental lifts from truck diversion. The planned terminal at Philadelphia is expected to be the second busiest source or destination for truck traffic diversions to Triple Crown on the Norfolk Southern/Conrail system, while current centers at Fort Wayne and Chicago are next with additional lifts in the 15,000 to 20,000 range. Atlanta, St. Louis and Detroit, along with planned facilities at Baltimore and Charlotte, are each expected to handle 6,000 to 12,000 additional units resulting from expected truck diversion.

3. Major Traffic Lane Summary

Viewing the detailed traffic diversions in transportation lanes provides another important characterization of truck diversion estimates. Lanes, for this purpose, are defined as groups of intermodal terminals (or BEAs for Merchandise traffic) in the same geographical proximity or regions. Nine such regions were defined and titled with respect to each region's position in the Norfolk Southern/Conrail network. Attachment PJK-18 provides a listing of these regions and the terminals/BEAs they incorporate. Attachment PJK-19 provides a map of the Norfolk Southern/Conrail territory and the regional subdivisions.

A pair of regions represents the *termini* of a traffic lane. Truck diversion estimates categorized into such lanes help to describe the freight market lanes in which I expect to see the

largest amount of truck traffic diverted from the highway. Attachment PJK-20 covers the top 15 lanes, which make up 90 percent of the expected truck diversions. As can be seen, either the Midwest region (i.e., western Pennsylvania, Ohio, Indiana, and Michigan) or the Northeast region (New York, eastern Pennsylvania and Northern New Jersey) is included in the lanes representing more than half of the total traffic diversions. This results mainly from the fact that these lanes, which include both current Conrail "local" and Norfolk Southern/Conrail interchange traffic, will experience truck to rail diversion from both SLS and CS sources after the transaction. Longer haul lanes appear prominently as the large contributors to the total diversion picture. Diversion estimates in these lanes, which include such markets as Chicago, St. Louis, Memphis and New Orleans to and from New York, Philadelphia and Baltimore, reflect the expected effects of Norfolk Southern's more aggressive approach to the "local" truck market. The interregional, shorter haul diversions in the Midwest-Midwest lane are dominated (86 percent) by Merchandise train service and indicate the anticipated improvement from what is now the non-competitive interchange offering involving the current Norfolk Southern/Conrail interchange in many otherwise rail competitive commodities moving relatively short hauls.

ATTACHMENTS, NOTES AND APPENDICES

ATTACHMENTS

Attachment PJK-1

Summary of Norfolk Southern/Conrail Truck Diversion Estimates

Type of Diversion	Millions of Tons	Percent
Single Line Service	6.3	63%
Changed Strategy	3.7	37%
TOTAL	10.0	100%

Attachment PJK-2.1

Diversion Estimates and Market Size			
Type of Diversion/Market	Millions of Tons		Percent of Market
	Truck Market	NS/Conrail Diversions	
Single Line Service	151	6.3	4.1%
Changed Strategy	70	3.7	5.4%
TOTAL	221	10.0	4.5%

Attachment PJK-2.2

Diversion Estimates by Length of Haul				
Length of Haul	Avg. Haul	Millions of Tons		% Diverted
		Truck Market	NS/Conrail Diversions	
<250 miles	199	23	0.7	3%
251 to 500 miles	391	17	0.6	3%
501 to 750 miles	617	132	5.1	4%
751 to 1000 miles	856	31	2.3	7%
> 1000 miles	1,135	17	1.3	7%
Total		221	10.0	5%

Attachment PJK-3.1

Summary of Truck Diversion Estimates By Service

Type of Service	Millions of Tons	Percent
Intermodal	8.1	81%
Conventional	6.8	68%
Triple Crown	1.3	13%
Mixed Freight (carload)	1.9	19%
TOTAL	10.0	100%

Attachment PJK-3.2

Summary of Truck Diversion Revenue Estimates

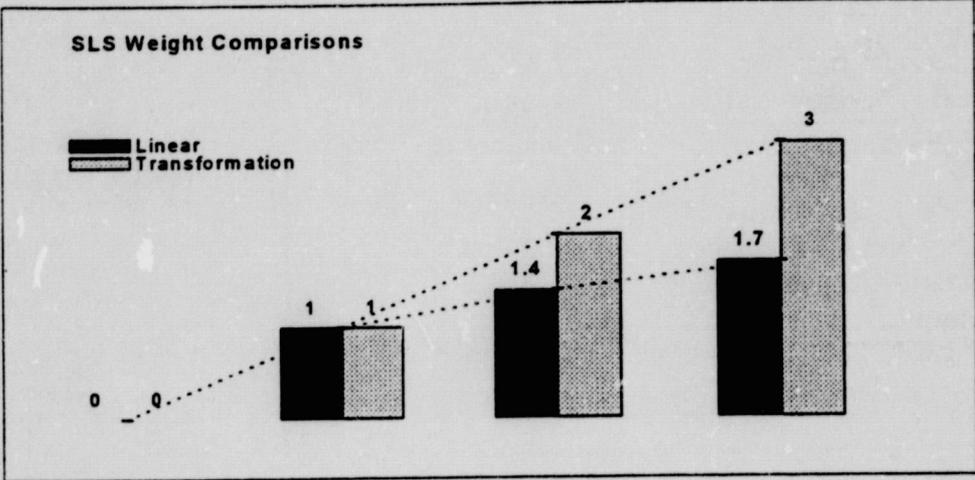
Type of Service	Revenues (\$ million)	Percent
Intermodal	240.4	89%
Conventional	185.2	69%
Triple Crown	55.2	20%
Mixed Freight (carload)	28.6	11%
TOTAL	269.0	100%

Estimated Truck Market in Single Line Service SLS Lanes

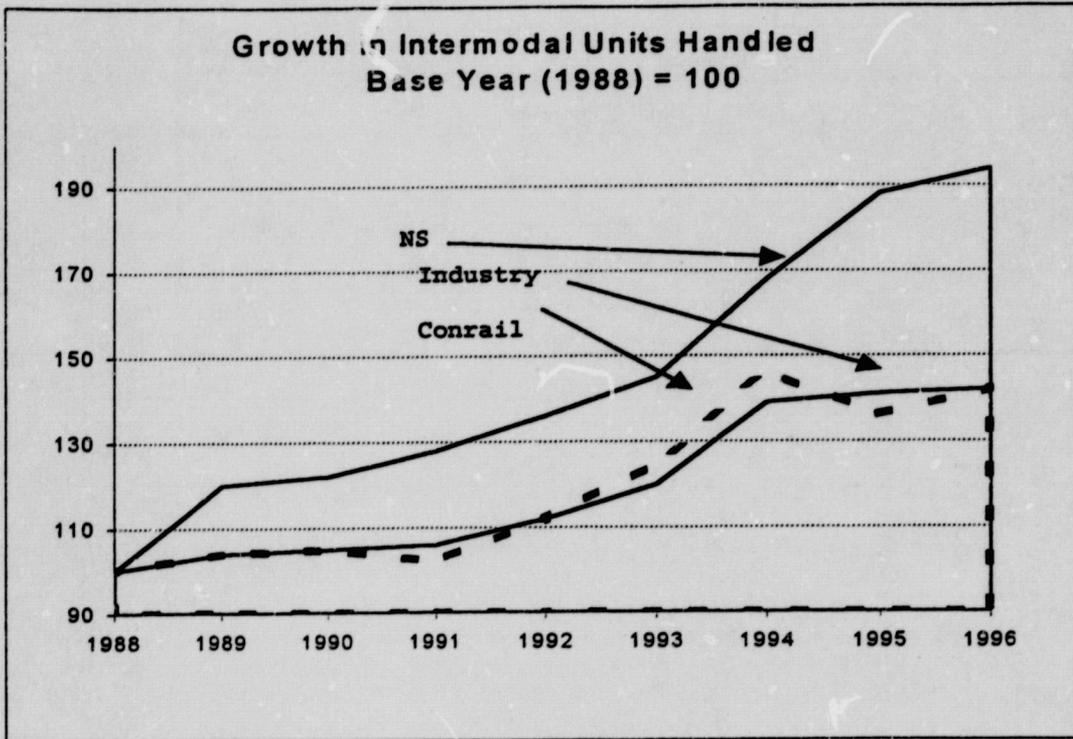
SLS Effect of NS/CSX/Conrail Transaction	Millions Truck Tonnage	Truck Loads	Percent
0 to 1 SLS	20.4	1.2	14%
0 to 2 SLS	22.0	1.3	15%
1 to 2 SLS	108.3	6.4	72%
Total	150.7	8.9	100%

SLS Model Commodity Groupings**Vector Model Commodity Category 2 Digit STCC's**

1	Farm	01
2	Minerals, etc.	10,11,14,32
3	Food, Apparel & Misc.	08,09,20-23,31
4	Lumber	24
5	Furniture	25
6	Paper, Pulp & Printed	26,27
7	Chemicals & Petroleum.	28,29,13
8	Machin., & Trans. Eq.	35,37,30,19
9	Steel & Fab. Metals	33,34
10	Elec. Eq. and Instruments.	36,38,39
11	FAK & Other Mslc.	40-50,60



Implied Diversion Percentages Based on SLS Model and SLS Market Category				
SLS category	SLS Model Implied Percent		Market Weight	Implied Avg Weight
	To NS/CSX	To NS/Conrail		
0 to 1 SLS	13%	13%	14%	1.8%
0 to 2 SLS	18%	9%	15%	1.4%
1 to 2 SLS	5%	2.5%	71%	1.8%
Total SLS	-	-	100%	4.9%

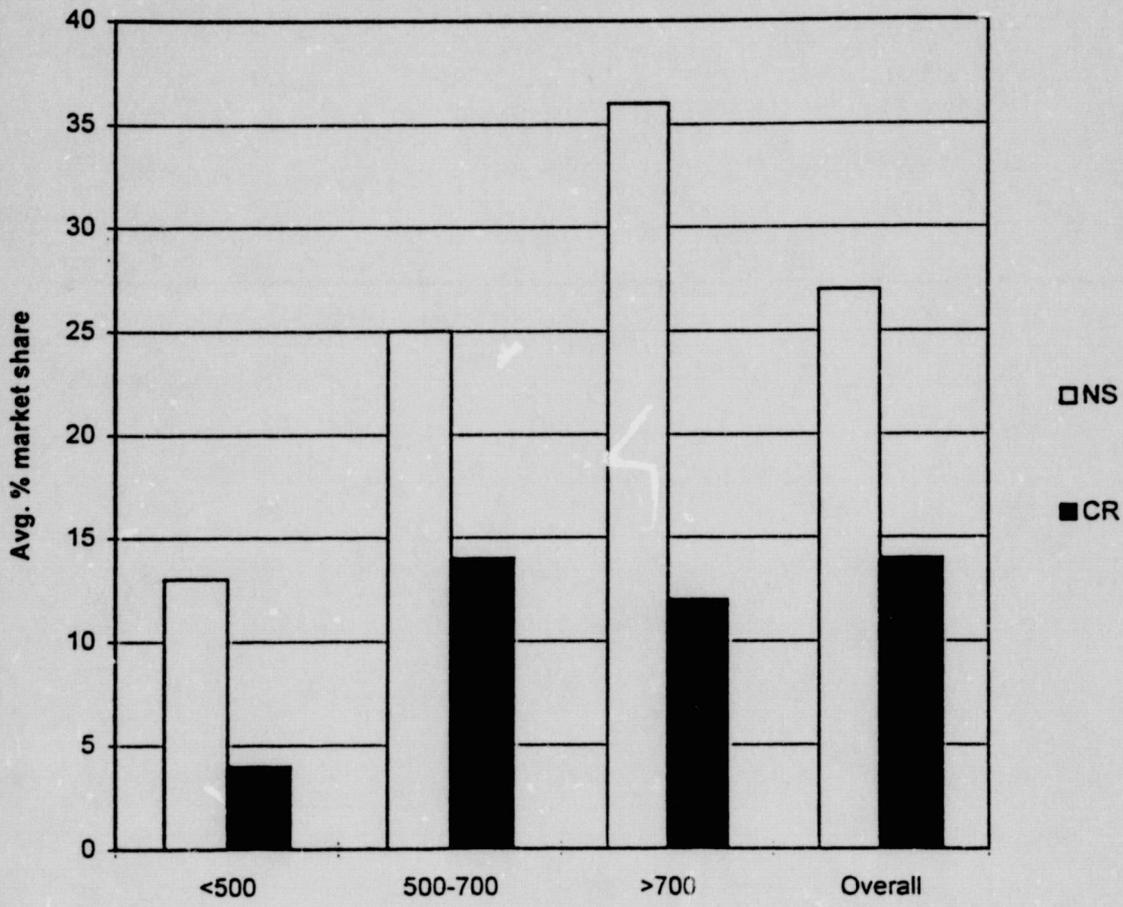


Norfolk Southern - Conrail Market Share Comparisons										
Lanes	CONRAIL				NORFOLK SOUTHERN				Avg. Difference %Mkt.	
	Origin Term	Dest. Term	Mls.	%Mkt	Origin Term	Dest. Term	Mls.	%Mkt	13%	All Lanes
1	Boston/Woicester	Indianapolis	893	18%	Cincinnati	Miami	1,087	22%	23%	700+ miles
2	Boston/Woicester	Columbus	731	14%	New Orleans	Alexandria	1,058	9%		
3	Columbus	Boston/Woicester	731	15%	Jacksonville	Buffalo	1,014	33%		
4	Boston/Woicester	Toledo	724	22%	Detroit	Jacksonville	975	23%		
5	Toledo	Boston/Woicester	724	16%	Norfolk	Peoria	916	80%		
6	New York	Indianapolis	707	18%	Peoria	Norfolk	916	93%		
7	Indianapolis	New York	707	42%	Buffalo	Atlanta	865	11%		
8	Toledo	Springfield MA	660	10%	Miami	New Orleans	847	22%		
9	Springfield MA	Toledo	660	24%	Columbus	Jacksonville	790	15%		
10	Detroit	New York	622	9%	Jacksonville	Columbus	790	35%		
11	Boston/Woicester	Cleveland	613	12%	Jacksonville	Cincinnati	746	45%		
12					Cincinnati	Jacksonville	746	35%		
13					Miami	Birmingham	744	6%		
14					New Orleans	Charleston	715	72%		
15					Charleston	New Orleans	715	74%		
16					Jacksonville	Louisville	714	11%		
17					Louisville	Jacksonville	714	29%		
1	Springfield MA	Columbus	672	26%	Birmingham	Norfolk	680	17%		
2	Columbus	Springfield MA	672	9%	Norfolk	Louisville	649	39%		
3	Philadelphia	Indianapolis	638	9%	Louisville	Norfolk	649	44%		
4	New York	Detroit	622	15%	Detroit	Norfolk	689	91%		
5	Columbus	New York	622	5%	Norfolk	Detroit	689	48%		
6	New York	Columbus	622	40%	Atlanta	Miami	647	10%		
7	New York	Toledo	566	11%	Miami	Atlanta	647	4%		
8	Toledo	New York	566	10%	Savannah	Louisville	624	25%		
9	Indianapolis	Harrisburg	541	16%	Louisville	Savannah	624	53%		
10	Philadelphia	Toledo	525	3%	New Orleans	Savannah	615	40%		
11	Detroit	Baltimore	520	3%	Savannah	New Orleans	615	58%		

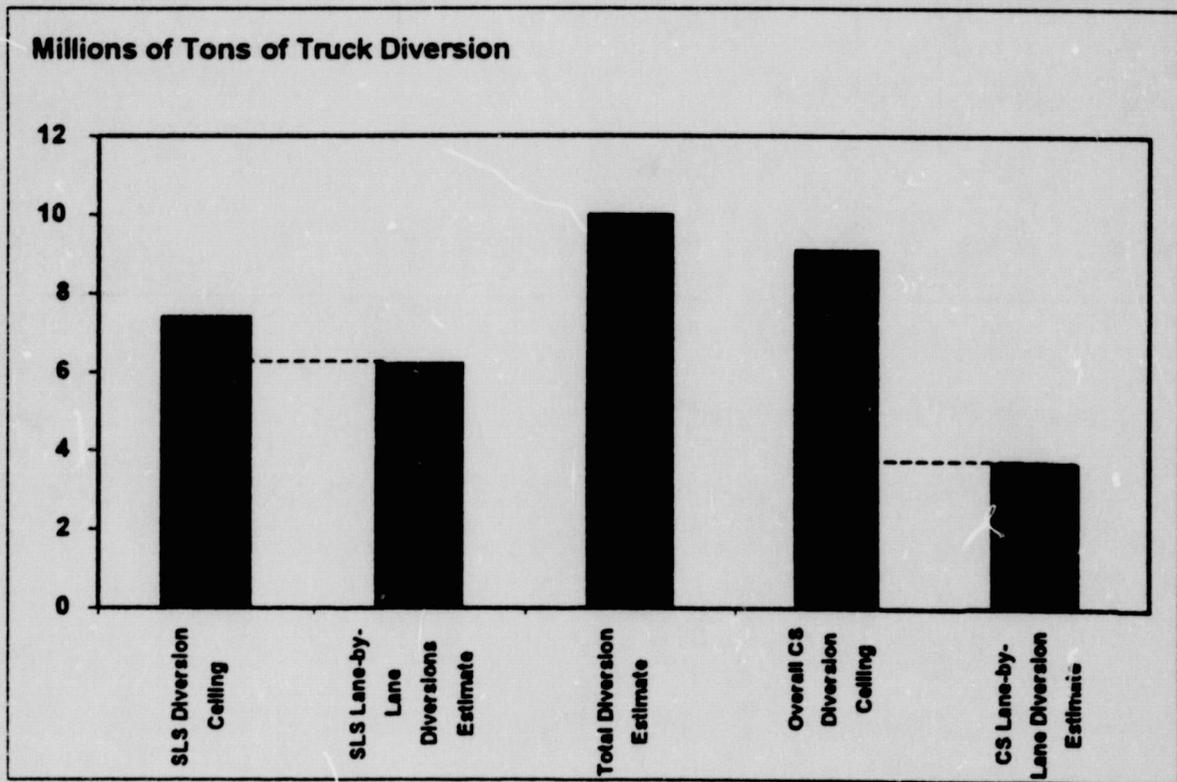
Norfolk Southern - Conrail Market Share Comparisons

Lanes	CONRAIL				NORFOLK SOUTHERN				Avg. Difference %Mkt.	
	Origin Term	Dest. Term	Mls.	%Mkt	Origin Term	Dest. Term	Mls.	%Mkt	13%	All Lanes
12	Baltimore	Detroit	520	20%	Charleston	Louisville	595	52%	21%	500 TO 700 miles
13					Louisville	Charleston	595	80%		
14					Norfolk	Cincinnati	595	47%		
15					Cincinnati	Norfolk	595	28%		
16					Alexandria	Atlanta	594	62%		
17					Atlanta	Alexandria	594	18%		
18					Columbus	Norfolk	558	19%		
19					Norfolk	Columbus	558	26%		
20					Columbus	Atlanta	543	16%		
21					Norfolk	Atlanta	535	7%		
22					Norfolk	Cleveland	533	16%		
23	Cleveland	Norfolk	533	4%						
1	Cleveland	New York	459	2%	Savannah	Miami	477	9%	9% < 500 miles	
2	New York	Cleveland	459	12%	Atlanta	New Orleans	465	10%		
3	New York	Syracuse	271	1%	Norfolk	Savannah	462	84%		
4	New York	Boston/Woicester	247	1%	Savannah	Norfolk	462	54%		
5					Greensboro	Jacksonville	450	6%		
6					Charleston	Birmingham	443	52%		
7					Atlanta	Cincinnati	435	17%		
8					Charleston	Norfolk	394	15%		
9					Jacksonville	Charlotte	362	8%		
10					Atlanta	Greensboro	327	2%		
11					Greensboro	Atlanta	327	1%		
12					Atlanta	Jacksonville	306	1%		
13					Jacksonville	Atlanta	306	2%		
14					Charleston	Atlanta	287	6%		
15					Atlanta	Charleston	287	6%		
16					Atlanta	Savannah	243	1%		
17					Savannah	Atlanta	243	1%		
18					Atlanta	Charlotte	236	1%		
19					Charlotte	Atlanta	236	2%		
20					Columbus	Louisville	211	2%		
21					Charlotte	Charleston	199	1%		
22					Savannah	Jacksonville	138	7%		

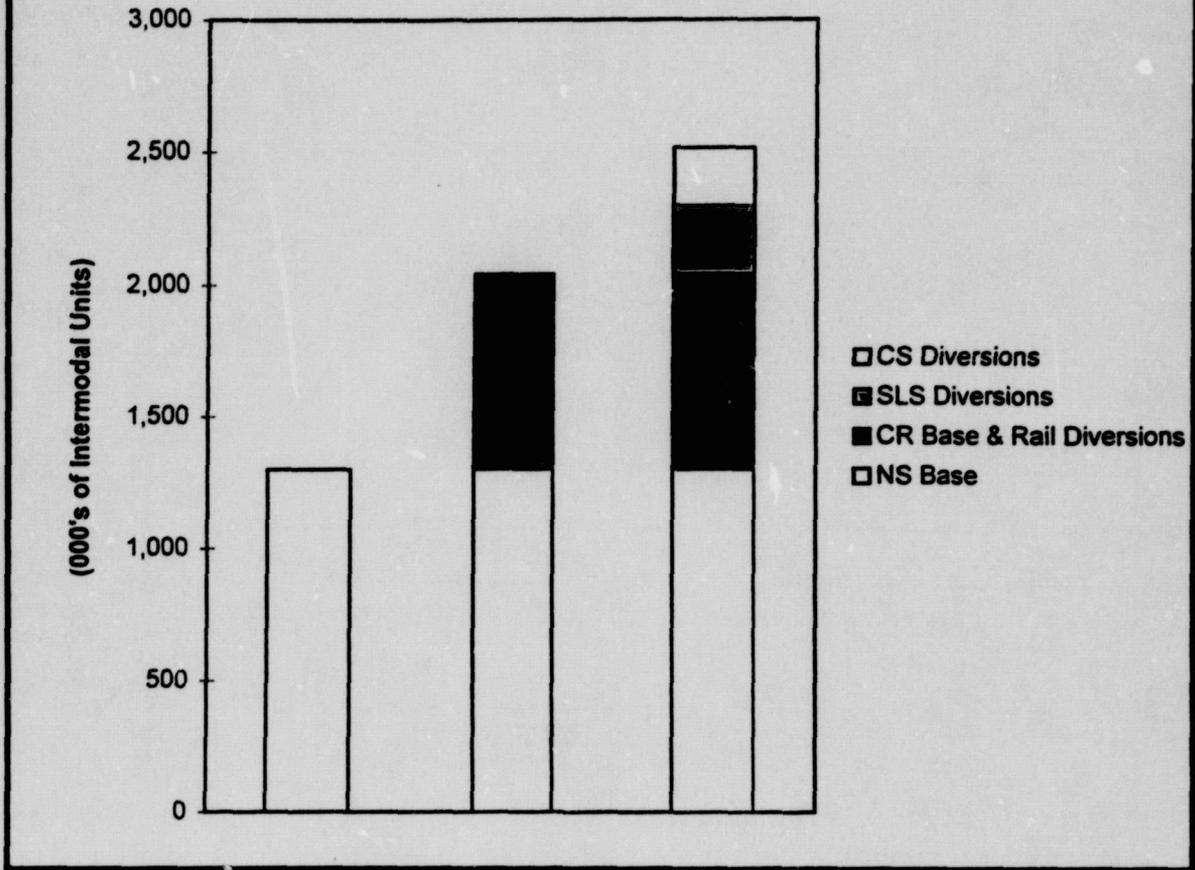
Lane Specific Performance Comparisons
By Major Mileage Grouping



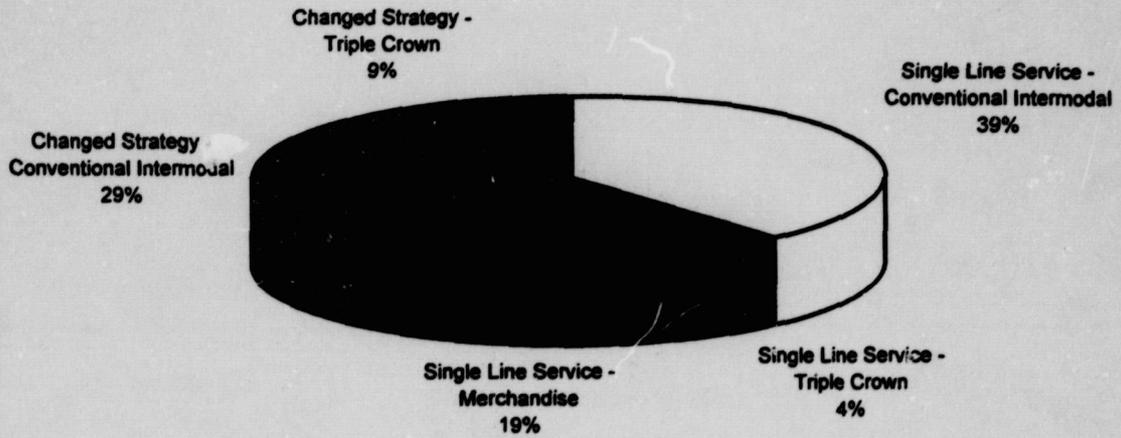
Estimated Tons Diverted by Source and Type of Rail Service					
	Millions of Tons				
	Total	Intermodal Total	Conventional Intermodal	Triple Crown	Mixed Freight or Unit
Single Line Service	6.3	4.3	3.9	0.4	1.9
Changed Strategy	3.7	3.7	2.9	0.9	-
Total	10.0	8.1	6.8	1.3	1.9

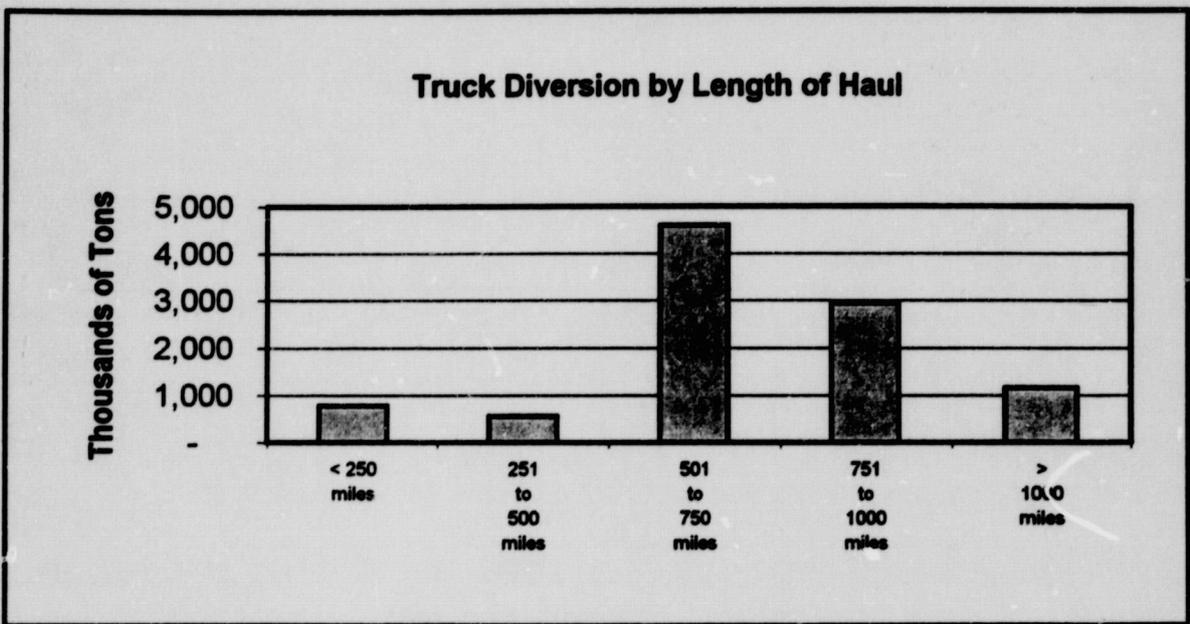


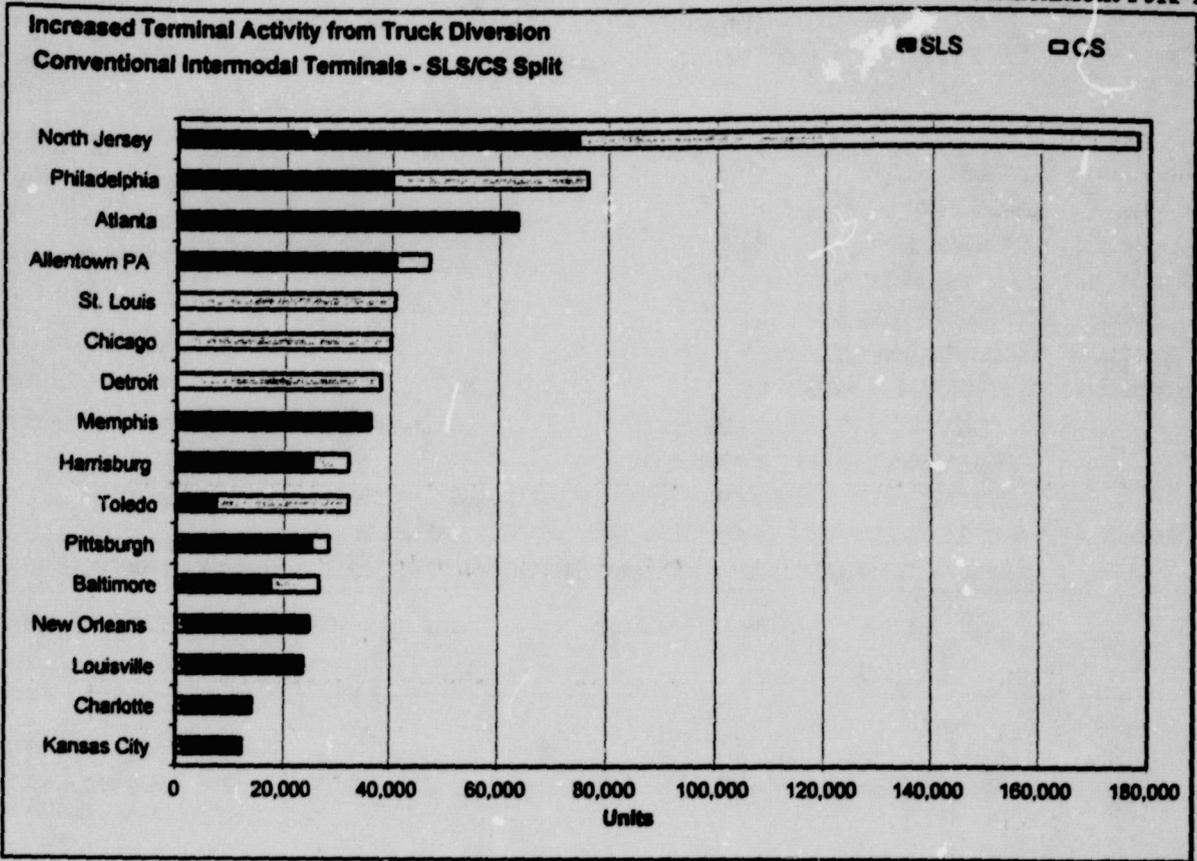
Truck Diversion Comparison to Base, 1995



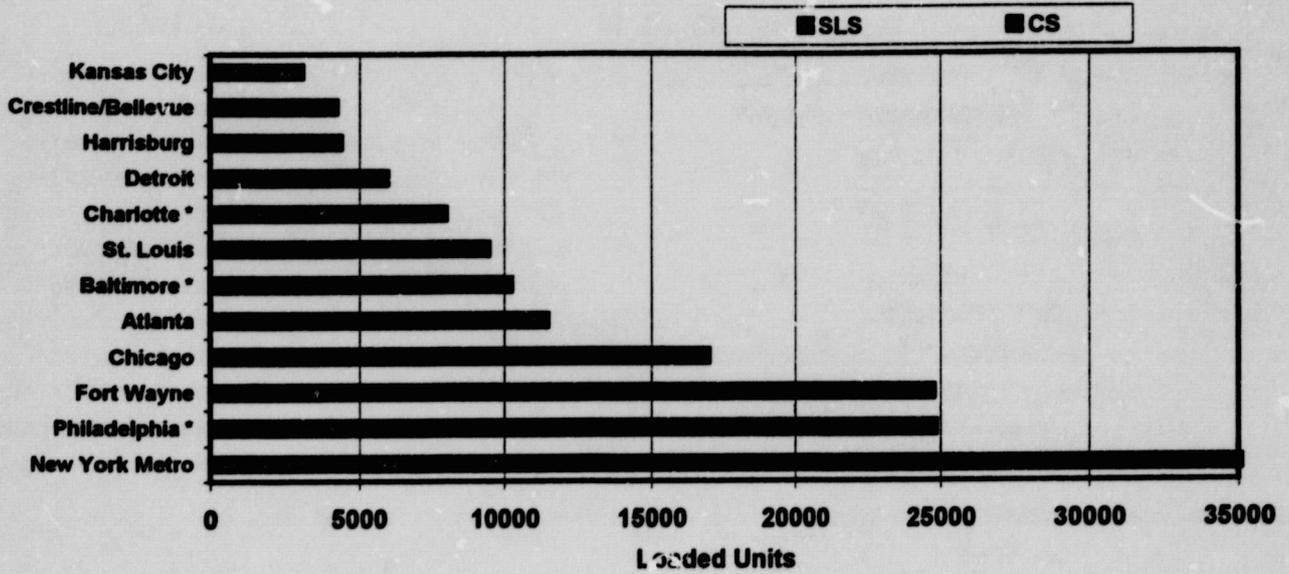
Share of Total Truck Diversion Estimates by Source of Diversion and Type of Rail Service





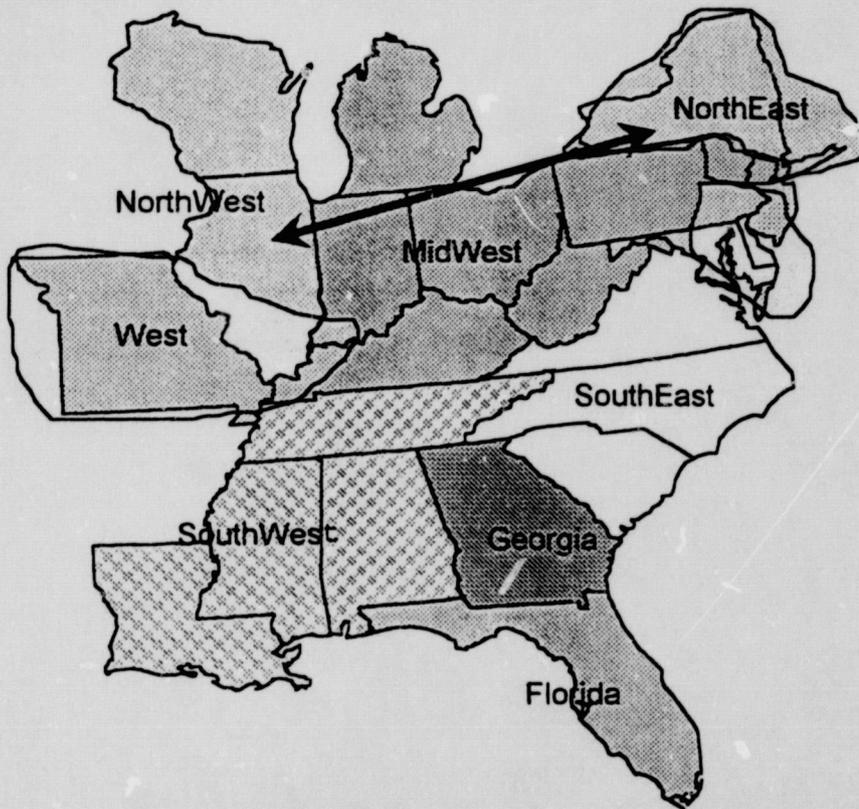


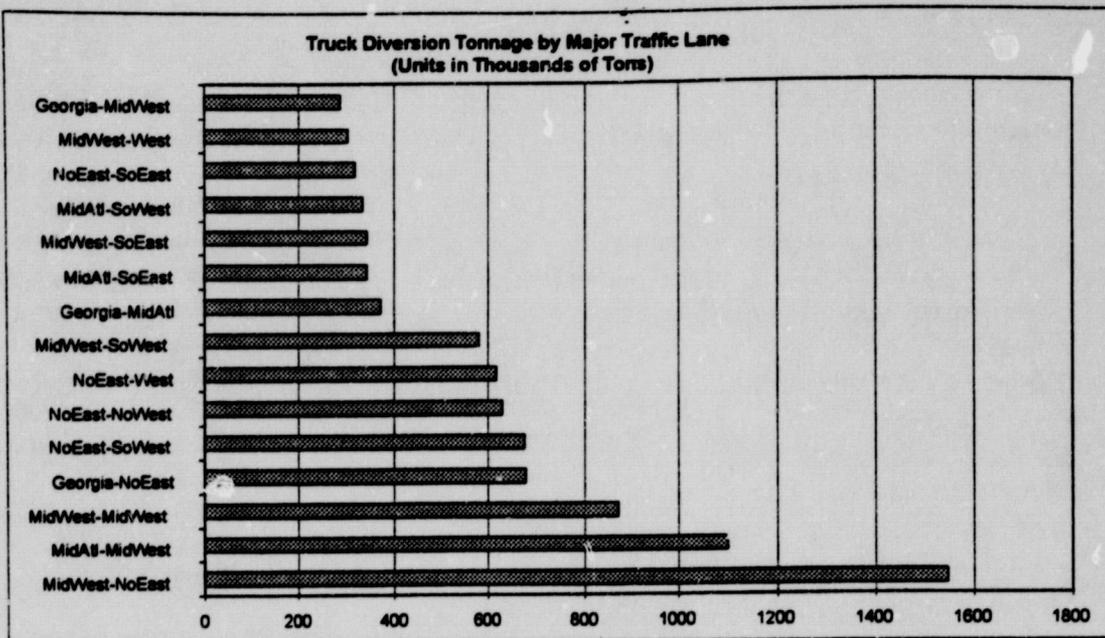
**Increased Terminal Activity from Truck Diversion
 Triple Crown Terminals- SLS/CS Split (*=planned)**



Intermodal Terminal and BEA make up of Regions used for Lane Analysis					
Region	Included Terminal Locations of BEA Territory				
Florida	Jacksonville	Miami			
Georgia	Atlanta	Dalton GA	Savannah		
MidAtl	Baltimore MD	Georgetown	Philadelphia		
MidWest	Cleveland	Columbus	Crestline	Detroit	Fort Wayne
	Grand Rapids MI	Harrisburg	Huntington WV	Johnson City TN	Knoxville
	Lansing MI	Lexington KY	Louisville KY	Morgantown WV	Pittsburgh
	Toledo	Wheeling WV	Williamsport PA	Youngstown OH	Cincinnati
NoEast	Allentown PA	Buffalo	New York Metro	North Jersey	Scranton PA
NoWest	Chicago	Peoria			
SoEast	Asheville NC	Charleston SC	Charlotte	Chattanooga TN	Columbia SC
	Fayetteville NC	Greensboro NC	Greenville SC	Norfolk VA	Raleigh NC
	Richmond VA	Roanoke VA	Rocky Mount NC		
SoWest	Birmingham	Huntsville AL	Memphis	Mobile AL	Montgomery AL
	New Orleans				
West	Evansville IN	Kansas City	St. Louis		

**Regions Comprising Major Lane Summary
(NoEast-NoWest Lane Demonstrated)**





NOTES

1. See Mr. Mohan's verified statement regarding the NS/Conrail operating plan for more detailed description of the application of truck diversion traffic in the transportation and system operating plans.
2. Triple Crown Services® Company (Triple Crown), which is jointly owned by NS and Conrail, provides a special form of intermodal service using bi-modal RoadRailer® units in lieu of conventional intermodal trailers or containers. The equipment configuration in this service combines the functionality of a highway trailer with the capability of riding directly on the rails. Unlike conventional intermodal service, use of a flat car is not required.
3. See Appendix I containing documentation on TRANSEARCH®.
4. The carrier profile and intermodal terminal assignment of each BEA in the eastern half of the US is contained within Appendix IV.
5. The traffic data used to calibrate the model were drawn exclusively from the eastern half of the U.S. to ensure that the statistical measures were based on distances and traffic densities within ranges to which the model would be applied. For example, the longer lanes in the West (say from 1,000 to 2,000 miles) would influence the value of the mileage parameter in the regression model, even though those longer lengths of haul are not as prominent in the East.
6. Model specification and equation restatement are fully documented in Appendix II.
7. See Appendix III for a thorough review of the Norfolk Southern/Conrail lane specific intermodal market share assessment methodology.
8. See Appendix IV for BEA assignment to specific intermodal or TCS terminals in Conrail or NS territory.
9. It is estimated that as much as 400,000 of Conrail's intermodal unit count in 1995 is "re-billed." Such traffic would, for example, appear as a Chicago origin when it actually was a joint move originating at some point west of Chicago, moving on to an eastern location on Conrail. This type of transcontinental, or gateway, traffic is not derived from the "local" truck market on the interior portions of Conrail or Norfolk Southern and is, therefore, eliminated from the comparison by excluding those truck lanes which involve a gateway city, such as St. Louis, Memphis, Chicago, and Kansas City. As a proportion to its total intermodal mix, Conrail's "re-bill" activity is estimated to be five to six times higher than that of NS.
10. See Appendix IV for a listing of conventional and TCS terminals assumed to be in operation for Norfolk Southern/Conrail, and the BEA origin and destination market assignments for each.

11. See Note 10.
12. As shown in Appendix II (detailed description of SLS regression model), the SLS regression model suggests that, when mileage increases 12%, all other factors being equal, truck volume falls 1%. This relationship was used as a guide (not necessarily a rule) in estimating truck diversion at the individual lane level for both SLS and CS lanes.
13. See Appendix V, which lists the terminal pairs for which diversion estimates were discounted for Norfolk Southern/Conrail circuitry versus I-95 or CSX/Conrail routes.

APPENDIX I

TRANSEARCH DOCUMENTATION

TRANSEARCH® is a traffic flow estimating file which is produced by Reebie Associates of Greenwich, Connecticut. Annual tonnage of freight moving by truck, rail, water and air modes is estimated by commodity and by origin and destination Business Economic Area (BEA). A BEA is made up of contiguous counties, not bounded by state borders, and generally having a city, urban or economic center in common. There are 183 BEAs making up the U.S., as listed in Appendix V.

APPENDIX II
SINGLE LINE SERVICE REGRESSION MODEL

The objective or dependent variable of the SLS model is truck tonnage for a given BEA-to-BEA pair and commodity combination and is defined by four factors:

(Eq. 1) $TK_{bc} = f(T_{bc}, C_{bc}, M_b, SLS_b)$ where,

- TK_{bc} = estimated truck tonnage in BEA-to-BEA b, for commodity type c
- T_{bc} = estimated total tonnage in BEA-to-BEA b, for commodity type c
- C_c = adjustment factor 1 through c, depending on commodity type c
- M_b = mileage distance between BEA-to-BEA b
- SLS_b = factor for single line rail carrier service between BEA-to-BEA b

Applying theoretically expected relationship signs to each independent variable yields:

(Eq. 2) $+TK_{bc} = f(+T_{bc}, +/-C_c, -M_b, -SLS_b)$

Analysis of test regressions indicated a more curvilinear than linear relationship, so a natural log transformation on the TK, T, and M variables was performed prior to regression.

The commodity factor (C_c) was represented in the regression data as a series of eleven Boolean vectors (C_1 through 11). Each of these vectors indicates whether the 4-digit STCC for each of the observations drawn falls into any of the eleven commodity categories each particular vector represents. These categories were designed to segment commodities into those with similar traits with respect to conveyance equipment, and are described in Attachment PJK-5, above.

The SLS vector was valued at:

- 0 if no single line service existed for the BEA-to-BEA pair,
- 1 if 1 single line rail service was indicated,

- 1.4 if 2 single line rail services were indicated, and
- 1.7 if 3 single line rail services were indicated.

Applying the data transformations itemized above to Equation 2 yields:

$$(Eq. 3) \ln(TK_{bc}) = x_1 + [x_2 \ln(T_{bc})] + [\Sigma[x_{3,c}C_c]] - [x_4 \ln(M_b)] - [x_5 SLS'_b]$$

where,

- \ln stands for a natural log transformation,
- SLS' is the transformed value representing the number of single line service rail carriers, and
- C_c is a vector of 10 0's and a 1 such that the 1 is in the "c" position depending on whether the observation has a STCC falling in the "c" commodity category.

Since each observation has a unique 4-digit STCC, and therefore must fall into only one of the eleven designated commodity groupings, the $\Sigma[x_{3,c}C_c]$ term will reduce to $x_{3,c}$, where "c" is the unique commodity grouping for a given observation. As a result the x_1 term and the $\Sigma[x_{3,c}C_c]$ term can be combined such that:

$$(Eq. 3.1) \quad x'_{1c} = x_1 + \Sigma[x_{3,c}C_c] \quad \text{or,}$$

$$(Eq. 3.2) \quad x'_{1c} = x_1 + x_{3,c} \text{ so that Eq. 3 can be simplified to:}$$

$$(Eq. 4) \ln(TK_{bc}) = [x_2 \ln(T_{bc})] + [x'_{1c}] - [x_4 \ln(M_b)] - [x_5 SLS'_b]$$

Incorporating the actual regression coefficients to Eq. 4 yields:

(Eq. 5)

$$\ln(\text{TK}_{bc}) = [0.93 * \ln(\text{Tt}_{bc})] + \begin{pmatrix} 1.62 \text{ if } C_c = C1 \text{ or} \\ 1.55 \text{ if } C_c = C2 \text{ or} \\ 1.51 \text{ if } C_c = C3 \text{ or} \\ 1.52 \text{ if } C_c = C4 \text{ or} \\ 1.68 \text{ if } C_c = C5 \text{ or} \\ 1.54 \text{ if } C_c = C6 \text{ or} \\ 1.54 \text{ if } C_c = C7 \text{ or} \\ 1.57 \text{ if } C_c = C8 \text{ or} \\ 1.53 \text{ if } C_c = C9 \text{ or} \\ 1.53 \text{ if } C_c = C10 \text{ or} \\ 1.52 \text{ if } C_c = C11 \text{ or} \end{pmatrix} - [0.12 * \ln(\text{Mb})] - [0.13 * \text{SLS}'b]$$

where each coefficient value x'_{ic} (i.e., 1.62, 1.55, etc.) is the result of reducing the regression model constant (x_1) and the coefficient of each Boolean commodity vector ($x_{3,c}$).

APPENDIX III

LANE SPECIFIC CHANGED STRATEGY/MARKET SHARE ANALYSIS

The lane specific market assessment proceeded on the basis that a carrier's market performance in a given lane "L" was measured as:

$$(Eq. 6) \quad MP_{RRL} = \frac{RR_{UL}}{TRK_{UL} + RR_{UL}}$$

where:

MP_{RRL} = Carrier RR's market performance in lane L

RR_{UL} = Carrier RR's intermodal unit count in lane L, per
1995 Waybill sample

TRK_{UL} = TRANSEARCH estimate of truck units in lane L

Carrier unit counts were derived by tallying intermodal unit counts between various intermodal terminals on the CR and NS systems for 1995. Truck unit counts were derived by first defining one or more BEA's to each terminal in the CR and NS network. TRANSEARCH truck volumes were then totaled for all BEA-to-BEA pairs assigned to a given terminal-to-terminal pair and converted to unit counts. The ratio of the intermodal count to the truck volume plus the intermodal count served as an indication of the market share performance of each carrier in each lane. To enhance the comparability of the lane-by-lane assessments, lanes involving western gateways such as Chicago, Kansas City, St. Louis and Memphis were excluded from the analysis. Since the market share assessment is focused on the "local" area around the terminal, excluding these lanes eliminates the problem of carrier traffic which is re-billed at the gateway and not applicable to the local market around the gateway intermodal terminal.

APPENDIX IV

Business Economic Area Of U.S. (BEA) Assignments To NS/CR Conventional Intermodal and TCS Terminals

BEA-----		Intermodal Terminal-----		BEA-----		Intermodal Terminal--	
<u>No.</u>	<u>Name</u>	<u>Conv.</u>	<u>TCS</u>	<u>No.</u>	<u>Name</u>	<u>Conv.</u>	<u>TCS</u>
1	BANGOR ME			58	LEXINGTON KY	Georgetown	
2	PORTLAND ME			59	HUNTINGTON WV		
3	BURLINGTON VT			60	CHARLESTON WV		
4	BOSTON MA			61	MORGANTOWN WV	Pittsburgh	
5	PROVIDENCE RI			62	PARKERSBURG WV	Pittsburgh	
6	HARTFORD CT			63	WHEELING WV	Pittsburgh	
7	ALBANY NY			64	YOUNGSTOWN OH	Pittsburgh	
8	SYRACUSE NY			65	CLEVELAND OH	Cleveland	Crestline
9	ROCHESTER NY			66	COLUMBUS OH	Columbus	Crestline
10	BUFFALO NY			67	CINCINNATI OH	Cincinnati	
11	BINGHAMTON NY			68	DAYTON OH	Toledo	
12	NEW YORK NY	North Jersey	North Jersey	69	LIMA OH	Toledo	Crestline
13	SCRANTON PA	Allentown		70	TOLEDO OH	Toledo	Crestline
14	WILLIAMSPORT PA	Harrisburg	Harrisburg	71	DETROIT MI	Detroit	
15	ERIE PA	Buffalo		72	SAGINAW MI	Detroit	Detroit
16	PITTSBURGH PA	Pittsburgh		73	GRAND RAPIDS MI	Detroit	Detroit
17	HARRISBURG PA	Harrisburg	Harrisburg	74	LANSING MI	Toledo	Ft. Wayne
18	PHILADELPHIA PA	Morrisville	Philadelphia	75	SOUTH BEND IN	Toledo	Ft. Wayne
19	BALTIMORE MD	Baltimore	Baltimore	76	FORT WAYNE IN		Ft. Wayne
20	WASHINGTON DC	Alexandria		77	KOKOMO IN		Ft. Wayne
21	ROANOKE VA	Greensboro		78	ANDERSON IN		Ft. Wayne
22	RICHMOND VA	Norfolk		79	INDIANAPOLIS IN		Ft. Wayne
23	NORFOLK VA	Norfolk		80	EVANSVILLE IN	Louisville	
24	ROCKY MOUNT NC	Charlotte		81	TERRE HAUTE IN		Ft. Wayne
25	WILMINGTON NC	Charlotte		82	LAFAYETTE IN	Chicago	Chicago
26	FAYETTEVILLE NC	Charlotte		83	CHICAGO IL	Chicago	Chicago
27	RALEIGH NC	Greensboro		84	CHAMPAIGN IL	Chicago	Chicago
28	GREENSBORO NC	Greensboro		85	SPRINGFIELD IL		
29	CHARLOTTE NC	Charlotte		86	QUINCY IL		
30	ASHEVILLE NC	Greenville		87	PEORIA IL		
31	GREENVILLE SC	Greenville		88	ROCKFORD IL		
32	COLUMBIA SC	Greenville		89	MILWAUKEE WI		
33	FLORENCE SC	Charleston SC		90	MADISON WI		
34	CHARLESTON SC	Charleston SC		91	LA CROSSE WI		
35	AUGUSTA GA	Atlanta	Atlanta	92	EAU CLAIRE WI		
36	ATLANTA GA	Atlanta	Atlanta	93	WAUSAU WI		
37	COLUMBUS GA	Atlanta	Atlanta	94	GREEN BAY WI		
38	MACON GA	Atlanta	Atlanta	95	DULUTH MN		
39	SAVANNAH GA	Savannah		96	MPLS-ST. PAUL MN		

APPENDIX IV CONTINUED

Business Economic Area Of U.S. (BEA) Assignments To NS/CR Conventional Intermodal and TCS Terrinals

BEA-----		Intermodal Terminal-----		BEA-----		Intermodal Terminal	
<u>No.</u>	<u>Name</u>	<u>Conv.</u>	<u>TCS</u>	<u>No.</u>	<u>Name</u>	<u>Conv.</u>	<u>TCS</u>
40	ALBANY GA	Atlanta	Atlanta	97	ROCHESTER MN		
41	JACKSONVILLE FL	Jacksonville	Jacksonville	98	DUBUQUE IA		
42	ORLANDO FL	Jacksonville	Jacksonville	99	DAVENPORT IA		
43	MIAMI FL	Miami		100	CEDAR RAPIDS IA		
44	TAMPA FL	Jacksonville	Jacksonville	101	WATERLOO IA		
45	TALLAHASSEE FL			102	FORT DODGE IA		
46	PENSACOLA FL			103	SIOUX CITY IA		
47	MOBILE AL			104	DES MOINES IA		
48	MONTGOMERY AL	Birmingham		105	KANSAS CITY MO	Kansas City	Kansas City
49	BIRMINGHAM AL	Birmingham		106	COLUMBIA MO	St. Louis	St Louis
50	HUNTSVILLE AL	Huntsville		107	ST LOUIS MO	St. Louis	St Louis
51	CHATTANOOGA TN		Dalton GA	108	SPRINGFIELD MO		
52	JOHNSON CITY TN	Knoxville		109	FAYETTEVILLE AR		
53	KNOXVILLE TN	Knoxville		110	FORT SMITH AR		
54	NASHVILLE TN			111	LITTLE ROCK AR		
55	MEMPHIS TN	Memphis		112	JACKSON MS	Birmingham	
56	PADUCAH KY	Louisville		113	NEW ORLEANS LA	New Orleans	
57	LOUISVILLE KY	Louisville					

APPENDIX V

I-95 Terminal Pairs

-----From-----		-----To-----	
<u>BEA</u>	<u>Terminal</u>	<u>BEA</u>	<u>Terminal</u>
39	Savannah	12	New York
39	Savannah	18	Philadelphia
39	Savannah	19	Baltimore
41	Jacksonville	12	New York
41	Jacksonville	18	Philadelphia
41	Jacksonville	19	Baltimore
43	Miami	12	New York
43	Miami	18	Philadelphia
43	Miami	19	Baltimore
12	New York	39	Savannah
12	New York	41	Jacksonville
12	New York	43	Miami
18	Philadelphia	39	Savannah
18	Philadelphia	41	Jacksonville
18	Philadelphia	43	Miami
19	Baltimore	39	Savannah
19	Baltimore	41	Jacksonville
19	Baltimore	43	Miami

APPENDIX VI

AVOIDED HIGHWAY MAINTENANCE COST METHODOLOGY

As my analysis shows, 10 million tons of freight currently moving by truck are expected to divert to the new Norfolk Southern/Conrail system. Diversion of freight from highway to rail will eliminate a significant volume of truck miles per year from the highway system in the eastern half of the United States.

Two effects of this reduction in truck activity are key in deriving the net public benefit that will accrue as a result of truck diversion:

- Avoided highway maintenance cost that, but for diversion of truck traffic, would have been required on the affected highway network, and
- Reduced state and federal revenue resulting from the user fees and diesel fuel tax receipts that would have been collected by governments, but for diverted truck traffic.

To the extent that avoided maintenance costs associated with truck diversions is greater than the associated lost public revenue from eliminated tax and fee receipts, reduced truck activity will result in a net public benefit equal to the difference.

Publicly and privately conducted studies which have investigated highway maintenance cost responsibility of various vehicle types provide consistent and clear evidence that vehicles with operating weights (maximum freight carrying capacity plus the tare weight of the vehicle) in the 50 to 80 thousand pound range cause more maintenance cost to be required due to pavement damage and other highway expense than their contributed tax and fee receipts.¹ The entire 588,000 diverted truck loads would involve vehicles in this range of operating weight, given an average lading weight of 34,000 pounds (or 17 tons of freight per truck load) and a rig tare weight ranging between 20,000 and 30,000 pounds. As a result, we can conclude that a "net"

positive public benefit will arise from the diversion of traffic from highway to rail as a result of the NS/Conrail transaction.

To estimate the value of this public benefit, a four-step process was used:

1. Defining highway routes - Detailed diverted traffic data at the origin-destination level from my study were augmented to assign a likely highway route for each unique origin-destination pair. This was done using a standard routing algorithm tool.² Route miles of each route were broken down by county and state. This enables eliminated truck miles and subsequent public benefits to be summed to the state level.

2. Route miles for routes assigned to each origin-destination pair by county and state were multiplied by diverted truck loads estimated for each accompanying origin-destination pair to arrive at loaded truck miles.³ A net highway maintenance savings factor can then be applied to the loaded truck miles.

3. Based on highway maintenance and cost responsibility studies, it was determined that empty truck miles result in highway damage and use cost that is equal to associated fuel tax and user fee receipts. As such, the empty mileage portion of eliminated truck activity due to transaction-related diversion is expected to offer no net public benefit regarding net highway maintenance savings.⁴

As shown in the following table, more than half of the mileage reductions will come from highways in the states of Pennsylvania, Virginia and Ohio, such as I-80 and I-81, as well as state and federal routes which run parallel to them. Traffic coming off of Pennsylvania highways alone will generate one quarter of the total. Another one fifth of the net reduction in mileage will be from avoided truck activity on routes in Tennessee, South Carolina, Georgia and Indiana. Truck traffic eliminated from routes running through the remaining 16 states will contribute the other 25 percent of the estimated reduction.

Reduction in Highway Miles Due to Truck Diversions

State	% of Total	Truck Miles Diverted
-------	---------------	----------------------------

Totals	100%	379,198,372
PA	25%	95,003,970
VA	15%	58,450,983
OH	14%	53,716,594
TN	6%	23,704,699
NC	5%	18,767,740
GA	4%	15,961,885
IN	4%	15,668,053
SC	4%	15,400,315
NJ	4%	15,149,988
MD	3%	10,986,386
WV	3%	10,623,448
AL	2%	8,388,575
KY	2%	7,626,660
IL	2%	7,236,764
IA	1%	5,383,471
FL	1%	4,836,745
MO	1%	4,063,135
MI	1%	2,977,067
MS	1%	2,131,838
DE	0%	1,063,532
LA	0%	978,474
NE	0%	858,574
NY	0%	219,476

APPENDIX VI NOTES

1. Final Report on the Federal Highway Cost Allocation Study, USDOT, May 1982. See page 1-3, Table 17, wherein ratios of user charges to allocated cost were reported at 0.6 for vehicles with gross weight (gvw) of 70 to 75 thousand, and 0.5 for truck with gvw greater than 75 thousand.

Heavy Vehicle Cost Responsibility Study, USDOT, November 1988, page iii. "The study concluded that, as a group, trucks with taxable vehicle weights over 80,000 pounds do not pay a fair share of highway costs compared to other vehicles."

Road Work: A New Highway Pricing and Investment Policy, Kenneth A. Small, Clifford Winston, and Carol A. Evans, Brookings Institute, Washington D.C., 1989. See page 46, Table 3-5, indicating that trucks with gvw of 80 pounds generate maintenance cost 1.7 to 12.2 times higher than tax receipts depending on number of load bearing axles and rig configuration.

2. ALK Associates established highway routes for each origin destination pair in the detailed diversion estimation. ALK maintains a routing model which, when given an origin-destination input, will generate a highway route based on least distance.
3. Truck traffic earmarked for diversion was developed from TRANSEARCH. Specific point-to-point highway miles are not provided, but centroid BEA-to-BEA miles are. The highway route mileage between the intermodal terminals serving any affected BEA pair was used as a representative of the truck miles eliminated due to truck diversion to rail, rather than using a centroid-based total truck distance. This approach allows for the fact that most of the diverted traffic will go to intermodal rail and thus some truck activity, namely that required to and from the intermodal facility, will still occur.
4. Heavy Vehicle Cost Responsibility Study, USDOT, November 1988, see pages IV-3 and IV-4 indicating minimal pavement cost for single and tandem axles when bearing weight equal to that of trailer/container and chassis.

VERIFIED STATEMENT

OF

THOMAS M. CORSI

I. INTRODUCTION

My name is Thomas M. Corsi and my business address is The College of Business and Management, 3433 Van Munching Hall, University of Maryland at College Park, College Park, Maryland, 20742. I currently hold the title of Professor of Logistics and Transportation, College of Business and Management, University of Maryland at College Park. I joined the faculty in Logistics and Transportation at Maryland in 1976 and was Chairperson of the group between 1987 and 1993. One of my primary research directions has been developing a better understanding of how the U.S. transportation and logistics system has adapted to the fundamental deregulation of the surface freight industry. In developing this focus, I, along with several of my colleagues, have examined the economic impacts of surface freight deregulation in a book published by the Brookings Institution.¹ This book looked closely at impacts of deregulation on both carriers and shippers. For the past several years, I have been a member of the University of Maryland's "Best Practices in Logistics Study Team." Our team has been working for the U.S. Department of Energy (DOE) to identify the current best logistics practices in the private sector and to apply those findings to logistics practices in DOE.² My full academic vitae and list of

¹ Winston, Clifford; Corsi, Thomas M.; and Grimm, Curtis M. **The Economic Effects of Surface Freight Deregulation**, 1990, The Brookings Institution, Washington, D. C.

² Corsi, Thomas M.; Boyson, Sandor; Dresner, Martin M.; et. al. "Logistics Challenges and Opportunities in the 1990s: A National Survey of Corporate Logistics Best Practices," Council of Logistics Management, **Annual Conference Proceedings**, 1995, pp. 61-80.

publications (over 75 professional articles in academic journals and numerous presentations at professional meetings) is included as Appendix A.

It is my purpose here to discuss the addition of portions of Conrail operations to Norfolk Southern from the perspective of a qualitative and quantitative assessment of logistics benefits to shippers. My conclusion is that this transaction will result in approximately \$92 million in logistics cost savings to shippers. Part of those savings will result from diversions of truck traffic to rail resulting from new single-line service and from application to the Conrail-served territory of a changed intermodal strategy; and part will result from improved transit times and lower inventory costs for current rail shippers.

The remainder of my statement is divided into three parts. Section II deals with a summary of the "best logistics practices" identified in research by the University of Maryland's Best Practices Study Team; Section III quantifies and evaluates the benefits of the NS/Conrail portion of the transaction for the shipping community; and Section IV is a concluding summary.

II. LOGISTICS BEST PRACTICES

For purposes of this statement, "logistics" is defined as "the flow of materials and services and the communications necessary to manage that flow."³ Through my work as part of the University of Maryland's Best Practices Study Team, I have identified a number of "best practices" in transportation and logistics management. I believe that operation of portions of Conrail by Norfolk Southern will facilitate the application of these best practices among shippers.

The DOE's Office of Transportation, Emergency Management and Analytical Services commissioned the University of Maryland's Best Practices Study Team to evaluate the logistics environment at DOE and to highlight opportunities to transfer to DOE some of the "best

³ James C. Johnson, Donald F. Wood, Contemporary Logistics, 1996.

practices" identified and benchmarked by the study team. The study team accomplished its mission through a systematic scan of structural and procedural innovations in transportation and logistics management throughout the U.S. economy.

The study team conducted interviews to identify emerging best practices in logistics and the companies implementing the practices. Approximately 20 such in-depth interviews were conducted with companies identified by this process as well as through an extensive literature review. Once the study team identified a set of "best logistics practices," the results were presented to a panel composed of high-level logistics representatives from the companies participating in the survey. This meeting served as a forum to present study findings in order to validate and/or modify them, based on input from logistics experts. The following paragraphs briefly summarize the study results.

A. Summary of Best Practices Study Team's Results

In order to remain competitive as the marketplace becomes increasingly global in nature, companies have identified their logistics function as a means of differentiation, a value-added center or a source of cost reduction. Companies have determined that a more flexible and efficient logistics function, promoting quality, responsiveness, and value can be a significant strategic asset. As a result, **best practice companies have integrated their logistics activities into overall organizational strategic planning. Furthermore, they conduct strategic planning within the logistics function itself.** The integration of logistics is most directly manifested by its inclusion as a component in the overall corporate mission statement as well as in the mission statements of the individual strategic business units. The most often mentioned goals

in the missions of the best practice companies surveyed were: quality in operations, customer focus, value, safety, and integration with and service to other internal business units.

Long ignored as an area of opportunity in organizations, logistics has now emerged to a level of importance equal to other primary organizational functions such as manufacturing, sales, marketing, research and development, and finance. **Indeed, the best practice companies have structured their logistics management unit as a single, dedicated function operating at or near the organization's center.** Many logistics functions are organized centrally. These include: carrier management, including rate negotiations, long-term partnerships, and aggregating shipping demand to create economies of scale; risk management; integrated information systems, including rate and routing control, freight payment systems, bills of lading and electronic data interchange (EDI), and shipping tracking and monitoring; and regulatory and safety compliance.

While the logistics function is centrally located, effective and open communications must exist between the central unit and the strategic business units of the organization. The central logistics unit must incorporate the needs and requirements of each strategic business unit as well as achieve commitment from them. **For most best practice companies, functions and responsibilities that require or benefit from a coordinated approach are allocated to a central logistics management unit. Functions and responsibilities requiring significant interaction with customers and carriers are allocated to decentralized or field units.** Decentralized functions include: materials management; warehousing operations; material handling; private fleet management; and customer problem-solving.

Along with the centralization of the logistics function comes the responsibility to fund its activities through charges to the business units in proportion to the actual volume, service, or sales conducted on behalf of the unit by the centralized logistics management team. **The best**

practice organizations were able to keep their internal financing of logistics units simple and clearly understood by the business units. Best practice organizations ensured that their logistics management units were cost effective by having the business units monitor the ability to gain competitive rates and by benchmarking other logistics management units in the industry for comparisons.

The University of Maryland study team summarized the critical success factors most often identified by logistics managers. Critical success factors are those core capabilities or processes that are crucial to ensure the achievement of an organization's mission. The critical success factors receiving top priority in most best practice companies are the following: (1) **Establishing long-term partnerships between carriers and shippers.** This reflects the trend in logistics away from transactional exchanges and toward relational exchanges. (2) **Establishing carrier quality programs.** Quality programs operate through pre-qualification and on-going performance measures to incorporate safety, performance, value, compliance and process improvement into logistics management. (3) **Establishing safety risk management programs.** This factor includes safety risk identification; analysis; reduction; and communication. (4) **Establishing information systems management programs.** Information flow is the key to many other factors, including quality programs, risk management, performance measurement, and relational exchange.

Performance measures are considered a critical tool in management of processes today. **Leading-edge logistics companies have been termed "compulsive performance measurers," monitoring a diverse and broad based set of operational and strategic parameters.**

In short, the University of Maryland's documentation of logistics best practices confirmed the growing importance of the logistics function in the overall success of the corporation.

Companies operating in an increasingly competitive and global marketplace recognize the need to achieve higher quality service and performance from logistics operations. They are placing significantly more emphasis on achieving logistics excellence.

B. Logistics "Best Practices" Overview of Norfolk Southern Control and Operation of Portions of Conrail

It is most instructive to view operation of portions of Conrail by Norfolk Southern within the context of the emerging best logistics practices in order to show how it will assist shippers in achieving complete conformance with these practices.

As noted above, best practice logistics companies have identified a number of critical success factors needed to achieve logistics excellence. One identified factor is the move toward establishing "quality carrier programs." In this area, Norfolk Southern has a recognized leadership position. In his verified statement, L. I. (Ike) Prillaman, Norfolk Southern's Executive Vice President-Marketing, notes that *Distribution* magazine's "Quest for Quality" survey has ranked NS number one for six consecutive years in terms of on-time delivery, customer service, equipment and operations, and administration. It is this excellence in service quality across the entire expanded NS/Conrail System (i.e., NS including the portions of Conrail to be operated by NS) that will provide its shippers with new opportunities to achieve logistics savings and implement best practices.

Another identified critical success factor is the focus on risk management. Increasingly, the logistics best practices companies demonstrate definite programs and actions to guarantee that they deal only with carriers with a proven record of safety excellence. Once again, NS has a demonstrated leadership position with respect to this critical success factor. Stephen C. Tobias, Norfolk Southern's Executive Vice President-Operations, points to NS's record of repeatedly

winning the railroad industry's Harriman medal for safety. NS safety excellence will be an asset in serving shippers committed to achieving best practices in logistics.

A third critical success factor for shippers to initiate in their movement toward best practices is the establishment of long-term partnerships with their carriers. For shippers to make commitments for the long term, however, they have to be convinced that the carrier is willing to make improvements that will guarantee service that is consistent with the goal of achieving a more efficient logistics system. In order to win partnerships with shippers, carriers must initiate changes that will demonstrate their willingness to meet shipper needs. In my opinion, the transaction represents a significant enhancement of railroad service that will go a long way toward meeting the needs of the "best practice" logistics companies. As noted in the verified statement of John H. Williams, of The Woodside Consulting Group, the operation of Conrail by Norfolk Southern will increase single line service, particularly between the Northeast and Southeast regions. Thus, the transaction is consistent with the objectives of companies implementing logistics best practices. It provides justification for shippers that are looking for carriers with whom they can develop long-term partnerships.

In general, Norfolk Southern has already shown its interest and willingness to help customers achieve improvements in their logistics costs. In one such case NS is working with Ford Motor Co. to develop and implement a mixing center concept and strategy, as described in the verified statement of Donald W. Seale, Norfolk Southern's Vice President-Merchandise Marketing. He notes that, in addition to providing the rail transportation, NS will operate the mixing centers and eventually hold itself out to be a complete supply chain logistics provider to automobile manufacturers. Clearly, it is this type of solid, long-range planning and investment that is totally consistent with the identified concepts of logistics best practices. NS has

demonstrated an understanding of the level of commitment and planning needed to establish long-term partnerships with shippers to achieve logistics savings and efficiencies.

As noted in the discussion of logistics best practices, the need to respond to both domestic and global competitive challenges has led companies to improve logistics supply systems to coordinate deliveries with production needs. As discussed in Mr. Seale's verified statement, NS has developed a partnership with a shipper to respond to that shipper's need for a coordinated supply parts delivery system to meet its just-in-time production requirement.

Despite these already achieved efficiencies, there is no question that global competition dictates the need for continued improvements and additional efficiencies that NS is clearly pursuing through the Conrail transaction. In fact, the transaction will open up a great many opportunities to serve the shippers in ways that are consistent with the identified "best practices" in logistics. NS has demonstrated a number of attributes that are in accordance with the needs of shippers that are taking steps to make sure that their logistics practices are consistent with those identified as "best." These include service reliability, safety excellence, and a commitment to long-term relationships through direct investment. Shippers stand to realize cost savings and greater efficiency from the transaction.

III. NORFOLK SOUTHERN'S TRANSACTION: SHIPPER BENEFITS

Norfolk Southern's operation of portions of Conrail will produce significant and positive shipper logistics benefits. In this section, I will develop estimates of these benefits.

There are two main categories of shipper gains: (1) gains due to diversions from truck to rail due to the institution of single line rail service and to the implementation by Norfolk Southern of a changed intermodal strategy as a consequence of the transaction; and (2) gains to current rail

shippers as a consequence of improvements in rail service from the transaction. The section begins with a discussion of the basic approach I used in calculating these shipper gains.

A. Basic Approach to Calculating Shipper Gains

The basic approach used to calculate shipper benefits from the transaction involves a comparative assessment of logistics costs for shippers between their current mode of shipment (i.e., a truck movement or rail movement without single line service) and the post-transaction choice (i.e., rail single line service). The components of total logistics costs are the following: direct transportation charges, annual in-transit inventory carrying costs, annual in-storage carrying costs, safety stock costs, and order costs.

This analysis began with a series of corridor-specific annual traffic flows identified in the verified statement of Patrick J. Krick, of The Kingsley Group, as traffic divertible from truck to rail. In addition, there was a volume of current rail freight traffic identified in Mr. Williams' verified statement as divertible to or having extended hauls on the new NS/Conrail system due to improved rail service (i.e., transit time reductions) from initiation of new single line operations.

For the truck traffic identified as divertible to rail in Mr. Krick's diversion analysis, I collected information on both transit times and freight charges for each of the alternative modes. I contacted a major national truckload carrier to obtain rates for the specific corridors involved. Transit times were calculated based on driving 550 miles per day (55 miles per hour over a 10-hour service time, based on current U.S. Department of Transportation Hours of Service regulations). Comparative rail and drayage rates (under the proposed transaction) were obtained from Norfolk Southern. Rail transit times were calculated based on an estimated transit speed of 28 miles per hour for conventional intermodal, 34 miles per hour for Triple Crown (i.e.,

intermodal service using bimodal RoadRailer® equipment), and 19 miles per hour for merchandise traffic.⁴ Distances on specific corridors for both truck and rail were obtained from PC*Miler and PC*Rail.⁵ The total annual inventory carrying cost equation used in this analysis is adapted from Coyle, Bardi, and Langley and is shown in Figure TMC-1.⁶

Figure TMC-1
Total Annual Inventory Costing

TAC	=	$\frac{1}{2} QVW + T/360 * RVY$ where
TAC	=	Total Annual Inventory Carrying Cost
R	=	Annual Demand
W	=	Cost of Carrying Inventory in Warehouse
Y	=	Cost of Carrying Inventory in Transit
V	=	Value Per Unit
Q	=	Shipment Size
T	=	Transit Time in Days

For the purposes of this analysis, the cost ratio of carrying inventory in the warehouse was estimated at 25% and the cost ratio of carrying inventory in transit was estimated at 15%.⁷ The value per ton of freight carried was based on prices obtained from **Purchasing: Magazine of Total Supply Chain Management**.⁸ For the purposes of calculating in-transit inventory carrying costs, a shipment value per ton was developed as a weighted average value based on the distribution of existing rail traffic. In addition, NS gathered direct input from some of its shippers,

⁴ Intermodal and Triple Crown transit speeds are based on discussions with Norfolk Southern's intermodal department. Merchandise transit equals Norfolk Southern's 1995 system average -- NS Annual Report Form R-1, Schedule 755, Line 115, Col (b) total train hours in road service divided by Schedule 755, Line 5, Col (b) total train miles.

⁵ Routing and mileage software produced by ALK Associates, Inc.

⁶ John J. Coyle, Edward J. Bardi, and C. John Langley, Jr., **The Management of Business Logistics**, Minneapolis/St. Paul, West Publishing Co., 1996, p. 236.

⁷ Dick Morreale & Don Prichard, **Logistics Rules Of Thumb, Facts & Definitions III, Council Of Logistics Management**, Southern California Roundtable, 1995, p. 71.

⁸ **Purchasing: Magazine of Total Supply Chain Management**, June 20, 1996, p. 13.

representing a variety of commodities and shipping needs, regarding what drives their modal decisions. The results of these questionnaires confirm that introduction of single line service and, therefore, reduced transit times and increased reliability of service, will, indeed, place Norfolk Southern in a better position to compete for traffic that currently travels by truck. The following sections will present the approach to calculating overall shipper logistics benefits in each of the specific categories mentioned above.

B. Truck Diversions to Rail

As discussed in the verified statement of Mr. Krick, the transaction would result in new or significantly improved single line service and the opportunity to apply a common intermodal strategy across the combined network. These factors will result in a significant diversion of freight from truck to rail. Mr. Krick estimates that the diversions amount to a total of 10 million tons being shifted from truck to rail. Breaking down this total diversion into separate components results in an estimated increase of 6.8 million tons in conventional intermodal traffic, 1.3 million tons in Triple Crown, and 1.9 million tons in rail carload business.

Shippers making the shift from truck to rail as a result of improved single line service due to the Conrail transaction will experience substantial savings in direct transportation charges. Based on data from Norfolk Southern and Conrail as well as from truck rates obtained from a national truckload carrier, these direct transportation savings amount to the following in each of the three identified categories: \$44.9 million in savings from diversions to conventional intermodal; \$13.3 million in savings from diversions to Triple Crown; and \$17.1 million in savings from diversions to rail carload. In total, the direct transportation cost savings from the transaction due to diversions from truck to rail amount to \$75.3 million.

These savings are calculated based on actual truck rate data for the diverted traffic lanes compared to an estimate of direct transportation costs the shipper will incur by switching to rail. I have calculated the rail costs for conventional intermodal and merchandise traffic using average NS revenue data for comparable lanes extracted from NS's actual traffic data for 1995 plus origin and destination drayage expenses based on a sample of typical drayage rates for applicable origin to destination ramp locations. Triple Crown's rates are developed based on a relationship between the NS revenue for a similar lane and the 1995 Triple Crown average door-to-door revenue per unit mile.

Against these savings in direct transportation costs, I would expect small increases in other types of costs such as in-transit inventory carrying costs and in-storage inventory costs for shippers shifting from truck to rail due to longer rail transit times and larger shipment sizes for rail carload traffic. As a result of application of the formula cited above, I estimate \$1.9 million in increases, offsetting about three percent of the shippers' savings in direct transportation costs.

In sum, therefore, truck diversions to rail, as presented in Mr. Krick's verified statement, will bring about significant gains to shippers amounting to some \$73.4 million in net savings to total logistics costs.

C. Savings to Current Rail Shippers from Single Line Service

The second category of shipper benefits from the transaction revolves again around the concept of improved single line service resulting from the Norfolk Southern/Conrail implementation. In addition to gains due to diversions from truck to rail, improvements in railroad operations as a consequence of the transaction due to the initiation of new single line service will provide significant logistics cost savings for current rail shippers and produc:

diversions from other rail carriers. Indeed, single line service will improve railroad operating performance and may reduce rail miles traveled, which will generally reduce rail transit times as compared with current joint-line service. Reductions in rail distance and transit times will reduce direct transportation costs and in-transit inventory carrying costs for current rail shippers.

According to estimates from the verified statement of Mr. Williams, single line service from the transaction will benefit current rail shippers of a net number of 245,000 carloads. This total is made up of rail traffic that currently moves over the Norfolk Southern and Conrail Systems and rail traffic to be diverted from other rail carriers. The majority of these carloads are automotive, intermodal and coal.

Based upon the route mileage savings identified in the operating plan for each of these commodities, I have calculated reductions in direct transportation costs. I first multiplied the number of units or carloads affected (from the information provided by Mr. Williams) times the average rail revenue per unit mile (from NS's 1995 actual traffic data) times the mileage savings identified in the operating plan. These calculations produce an estimated savings of \$17.8 million in direct transportation costs.

Using the formula presented above for calculating in-transit inventory carrying costs and assuming a savings of one day in transit due to the elimination of an interchange switch results in a shipper savings of approximately \$856,000 in inventory carrying costs.

In total, the shipper logistics savings I have estimated for rail-to-rail diversion of current rail traffic benefiting from single line service will equal \$18.7 million.

IV. CONCLUSION

The estimated shipper logistics benefits from the proposed operation of portions of Conrail by Norfolk Southern are substantial, totaling \$92.1 million in all. These substantial logistics savings will result from many current truck shippers shifting to rail to take advantage of lower rates and improved single line rail service as well as from current rail shippers realizing improved transit times and lower in-transit inventory carrying costs.

VERIFICATION

State of Maryland)
)
County of Prince George's) ss.

I, Thomas M. Corsi, verify under penalty of perjury that the foregoing statement is true and correct. Further, I certify that I am qualified and authorized to file this statement. Executed on June 5, 1997.

Thomas M. Corsi
Thomas M. Corsi

Sworn to and signed before me this 5th day of June, 1997.

Cassie J. Jones
Notary Public

Subscribed and sworn to before me, in my presence, this 5th day of June 1997, a Notary Public in and for the State of Maryland
Cassie J. Jones
Notary Public
My commission expires May 31, 2000

CASSIE J. JONES
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires May 31, 2000

VERIFICATION

State of Maryland)
) ss.
County of Prince George's)

I, Thomas M. Corsi, verify under penalty of perjury that the foregoing statement is true and correct. Further, I certify that I am qualified and authorized to file this statement. Executed on June 5, 1997.

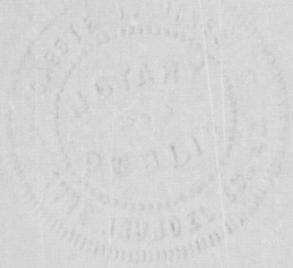
Thomas M. Corsi
Thomas M. Corsi

Sworn to and signed before me this 5th day of June, 1997.

Cassie J. Jones
Notary Public

Subscribed and sworn to before me in my presence, this 5th day of June 1997, a Notary Public in and for the State of Maryland
Cassie J. Jones
Notary Public
My commission expires May 31, 2000

CASSIE J. JONES
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires May 31, 2000



Appendix A

May 1997

THOMAS M. CORSI

PERSONAL DATA:

Date of Birth: June 4, 1949
Married (Susan Jeanne Formichella) 7/29/78
Four Children: Timothy Matthew 3/11/80
Daniel Joseph 3/6/82
Jeffrey Michael 4/11/84
Jill Marie 8/28/87
Current Address: 1008 Windmill Ln.
Silver Spring, Md. 20905
(301) 384-3375
Office Phone: (301) 405-2197

EDUCATION:

B. A. Case Western Reserve University, 1971, Cleveland, Ohio, double major in Political Science and Sociology, graduated Summa Cum Laude with Departmental Honors in Political Science, Phi Beta Kappa.

M. A. Kent State University, Kent, Ohio, Department of Geography, 1974. M. A. Thesis: Development At Interchanges Along the Ohio Turnpike: A Multivariate Analysis.

Ph. D. University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, Department of Geography, 1976. Ph. D. Dissertation: Household Response to Motor Fuel Shortages in Southeastern Wisconsin.

PROFESSIONAL EXPERIENCE:

Professor and Chairperson, Transportation, Business, and Public Policy, College of Business and Management, University of Maryland, College Park, Maryland, August 1990 to present.

Chairperson, Transportation, Business, and Public Policy, College of Business and Management, University of Maryland, College Park, Maryland, August 1986 to August 1990.

Associate Professor of Transportation, Business, and Public Policy, College of Business and Management, University of Maryland, August 1981 to August 1990. Affiliate Associate Professor of Geography, August 1981 to August 1990.

Assistant Professor of Transportation, Business, and Public Policy, College of Business and Management, University of Maryland, August 1976 to 1981.

Research Assistant, Center for Great Lakes Studies, University of Wisconsin-Milwaukee, 1974-1976.

Research Assistant, Center for Urban Regionalism, Kent State University, 1972-1974.

RESEARCH INTERESTS:

Research in my primary field, transportation and logistics, focuses on two closely related areas: (1) Impacts of deregulation and continuing public policy issues in the new competitive environment and (2) Overall carrier management strategies in the new environment, with particular reference to policies dealing with sales force personnel, drivers, and general safety/risk management issues.

PUBLICATIONS:

Books

(1) Winston, Clifford; Corsi, Thomas M.; Grimm, Curtis M.; and Evans, Carol A., The Economic Effects of Surface Freight Deregulation, 1990, The Brookings Institution, Washington, D.C.

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