November 2003

INSTITUT D'ECONOMIE INDUSTRIELLE AND NORTHWESTERN UNIVERSITY TRANSPORTATION CENTER
FIRST CONFERENCE ON RAIL INDUSTRY STRUCTURE, COMPETITION AND INVESTMENT

New Rail Passenger Structures in the United States: Using Experience from the E.U., Japan and Latin America

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Toulouse, France
November 7-8, 2003

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RAIL PASSENGER STRUCTURES IN THE UNITED STATES: USING EXPERIENCE FROM THE E.U., JAPAN AND LATIN AMERICA

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Abstract.

The structure of rail passenger services in the U.S. has evolved both "from the top down" and "from the bottom up." The top down approach is embodied in The National Railroad Passenger Corporation, commonly called Amtrak, whereas the bottom up approach appears in the many state and local commuter rail authorities. The top down approach based on Amtrak has not been sustainable, requiring continuing attention by Congress and the Department of Transportation. New approaches are now being considered which modify the structure of Amtrak and attempt to establish (and fund) many Amtrak services using the bottom up rather than the top down model.

A Brief History Of Amtrak – The Top Down Model[1]

The halcyon days of intercity rail passenger service in the U.S. were in the mid to late 1930s; even then, the rail market share was gradually being eroded by competition from automobiles and buses (see Figure 1). World War II, with gas rationing and restrictions on personal travel, acted to promote intercity rail passenger demand above what it otherwise would have been, but not for long. Immediately after World War II, the pent-up demand for autos and personal travel began to be felt, and intercity rail passenger demand began to weaken.[2] In the mid-1950s, the initiation of the Interstate Highway program supported a rapid increase in highway capacity and quality, a change that was mirrored in the airline system by the introduction of the Boeing 707 and subsequently the Boeing 727, 737 and McDonnell Douglass DC-9.

After the wartime peaks, when the U.S. Class I Railroads believed they were earning profits from passenger service, apparent losses on passenger service began to mount rapidly (see Figure 2). While it was possible to argue about the exact allocation methods being used by the industry to calculate expenses attributable to passenger services, Figure 2 (based on then-current regulatory accounting rules) shows that, for many years, about half of the total Net Railway Operating Income (NROI) from freight operations of the private U.S. freight railroad industry was being absorbed by losses on passenger services. This was a serious drag on the ability of the industry to generate investment, especially given the rapidly growing Federal and State assistance to highway and airport

[1] I am indebted to JayEtta Hecker of the GAO for the "top down/bottom up" phraseology.

[2] Note that suburban rail passenger service was not affected by the trends affecting intercity rail travel.

construction. By 1970, industry experts were estimating that the railroads were losing over $470 million per year (NROI or Fully Allocated Basis) on passenger service (somewhat greater than half of their freight net income calculated on the same basis) and the financial viability of many individual freight carriers, and thus of the entire industry, was threatened. Equally important, at least in the minds of the proponents of rail passenger service, was the belief that the quality of passenger service had drastically declined, and that the predominant attention to freight by the existing private railway companies ensured that passengers would never receive adequate attention. The challenge was, thus, to rescue freight railroads from passenger deficits, and to rescue passenger service from freight management.

The freight railroads responded to the steep decline in passenger traffic by attempts to discontinue passenger services and to abandon many of the less promising routes served. Unfortunately for the industry, regulatory approval by the Interstate Commerce Commission (ICC) was required for changes in passenger services and the required permission to discontinue was usually the subject of strong opposition and considerable delay (though it was usually granted eventually). In the interim between a request to abandon and the final decision, traffic fell even more rapidly; each train deletion, once effected, weakened the traffic on its remaining connecting trains -- and losses mounted ever higher. By the end of the 1960s, even the ICC had concluded "… significant segments of the remaining intercity service, except for rail service in high density population corridors… will not survive the next few years without a major change in Federal and carrier policies."[3] Moreover, the ICC also stated "[s]hould the public need for such service warrant retention of these trains that cannot be operated without significant losses, we would support a program of Federal aid to the carriers."[4] These conclusions, and other similar findings by the ICC, were seen as an indication that the ICC had decided that the continuing passenger losses were no longer tenable for the private freight industry and as a clear threat by the ICC to allow an accelerated discontinuance of service unless a method for supporting the losses was found. Congress and the Administration got the message.

In very broad terms, three possible responses were considered:

- Do nothing and allow the regulatory discontinuance process to take its expensive and tedious course
- Provide support to the private freight carriers as suggested by the ICC
- Create a separate mechanism for providing passenger service and fund it directly.

Support for the first approach came primarily from the Office of Management and Budget (OMB) and from many transport economists who argued that long haul rail passenger

[3] -----, "Investigation of Costs of Intercity Rail Passenger Service," Interstate Commerce Commission, Washington, DC, July 16, 1969, page iii.

[4] ibid, page iv. It is interesting to note here that the ICC envisioned aid to the **carriers**, but did not mention the creation of an entirely new carrier solely to handle rail passenger services.

services were an unaffordable anachronism that should be replaced by bus and air service where needed. There was support, even from these quarters, for shorter haul passenger services such as the Northeast Corridor, but the support was accompanied by an argument for a high percentage of local, rather than Federal, funding. Eventually this approach was rejected because the political support for a "National System" was simply too strong and the need to rescue the freight carriers from passenger losses was too immediate: doing nothing was not a defensible approach. The original ICC suggestion of direct support to the freight carriers was rejected, partly because the railroads themselves were not interested, and partly because the supporters of rail passenger service were unwilling to allow the fox to continue guarding the hen house. Moreover, there was no time to develop the extensive series of state and regional compacts and agreements needed to support a policy of decentralizing rail passenger services. Effectively by default, for lack of time and alternatives, the idea of a single, Federal level, passenger-dedicated operator won out.

The design of the initial rail passenger system was the result of a two-stage bargaining process, each of which created problems and misconceptions that later came back to haunt Amtrak, the Administration and the Congress. In the first stage, the Department of Transportation (DOT) and the OMB clashed over the size of the network to be proposed and the budgetary impact to be presented to the Congress. The initial DOT proposal suggested a 60 percent reduction in the service provided (measured by train-miles operated) and forecast an operating profit of $24 million annually in the fifth year of operations (1975). The OMB response, which effectively constituted the Administration's initial proposal to Congress, proposed a 79 percent reduction in service and, even by the more conservative estimates of the OMB, was expected to earn an operating profit of $23 million in 1975. The DOT was thus in the position of presenting to the Congress a plan with which it did not fully agree and which it was unable to defend effectively. Perhaps more important, the (publicly) uncontested projection that the new rail passenger corporation would be profitable (and thus require little or no Federal support) created unrealistic expectations that Amtrak was never able to fulfill, but for which it has never been forgiven.

In late 1970, the Administration presented the preliminary plan[5] for the rail passenger system, which (as expected) drew criticism from the Congress and the ICC. The ICC concluded that the reductions in the preliminary system had gone too far and recommended that certain critical links be added back to the system.[6] The DOT reviewed the ICC's recommendations along with a large number of public comments and

[5] John A. Volpe, "Preliminary Report on Basic National Rail Passenger System," US DOT, Washington, DC, November 30, 1970.

[6] ----, "Review of Preliminary Report on Basic National Rail Passenger System," Interstate Commerce Commission, Washington, DC, December 29, 1970. It may not be coincidental that the links recommended by the ICC for inclusion effectively recreated the system that DOT had recommended in the first place.

issued the final system designation at the end of January 1971.[7] It is an indication of the political pressures at work that a period of only 60 days elapsed between the publication of the preliminary system and the promulgation of the final system structure.

The freight railroads were given the opportunity to transfer all of their responsibility for passenger services to the new corporation in return for a contribution calculated according to their losses suffered in passenger services. In total, these contributions amounted to about US $200 million, in return for which services were transferred or abandoned, and the freight railroads received the common stock of the new corporation in proportion to their contributions to the corporation.[8] Most of the railroad contributions were made as "in kind" transfers of passenger coaches and locomotives -- most of them old and in bad condition. In addition, the legislation gave Amtrak the right to run the passenger trains in the Basic System over the tracks of the freight railroads, for which Amtrak paid an access fee based on the "avoidable cost"[9] of the use of the track. Though it was not conceived as such at the time, Amtrak was (and remains) the largest (38,600 line Km served) infrastructure separated railway operator in the world.

Amtrak was born in May of 1971 as a Federally owned,[10] "as if for profit" corporation. When combined with economic deregulation of the freight rail industry in the early 1980s, the creation of Amtrak did succeed in shifting the passenger deficits to the (mostly Federal) public sector, and the private freight railroads have shown great improvement (See Figure 3). Amtrak, on the other hand, even after the expenditure of around US$ 25.6 billion to date (US$ 38.3 billion in 2002 constant dollars – see Figures 4 and 5) funded through the Federal Railroad Administration (FRA) in the U.S. DOT, has generated a continuing series of political and financial crises along with a number of different attempts at restructuring. A partial list of legislative change includes the Amtrak Improvement Act of 1973, the "3R Act" of 1973 and the "4R Act" of 1976, the Amtrak Improvement Act of 1978, the Amtrak Reorganization Act of 1979[11], the Amtrak

[7] John A. Volpe, "Final Report on Basic National Rail Passenger System," US DOT, Washington, DC, January 28, 1971.

[8] For the most part, the railroads surrendered their stock ownership rights in return for being allowed to take a tax deduction for the value of their contribution. Three railroads retained their stock because they had no profits against which to realize a tax deduction. One additional railroad was persuaded to retain its stock in order not to create a violation of the maximum share of ownership limitation in the law. Two railroads refused to "join" the system and continued to run their trains and absorb the losses. Both railroads were subsequently permitted to transfer their operations to Amtrak when they concluded that their losses had become too large.

[9] "Avoidable cost" and "incremental cost" are U.S. regulatory terms that are roughly equivalent to short term marginal cost.

[10] Technically, Amtrak was originally a shareholder-owned corporation. However, the need for Federal support, and the strings attached thereto, immediately converted Amtrak into a corporation that was effectively Federally controlled.

[11] For a thorough review of the issues as they evolved over time, see ----, "Final report to Congress on the Amtrak Route System," US DOT, Washington, DC, January 1979, in which the

Improvement Act of 1981, and the Amtrak Reform and Accountability Act of 1997. None of these Acts resolved the problem.

Amtrak's role in the U.S. passenger transport system

Many observers argue that there is no clear mission for Amtrak. A look at Amtrak's role in the U.S. transport network today shows the source of the confusion. Table 1 compares the passenger travel modes in the U.S. in terms of revenues per passenger-Km, variable cost/passenger-Km, average (total) cost/passenger-Km and passenger-Km (and percent of total and common carrier passenger-Km). It also gives an indication of the average length of trip by each mode.

However measured, Amtrak does not play a significant role in overall intercity passenger transport in the U.S., carrying only 0.11 percent of all passenger-Km (autos and light trucks between them carry about 85 percent of intercity passenger-Km and thus dominate the market).[12] Eliminating autos and trucks, Amtrak carries less than one percent of **common carrier** intercity passenger-Km, with 71 percent carried by air and 22 percent by bus.

To some extent, the low Amtrak share is explained by simple lack of service: though Amtrak does serve many of the major cities, air service, and especially intercity bus, are far more ubiquitous: there are 635 certificated airports in the U.S., 515 Amtrak stations (many small) and over 3,500 intercity bus stations. See Figures 6,7 and 8, and Appendix Table 1 for maps and descriptions of the Amtrak network. This disparity is further aggravated by the fact that, even where Amtrak service exists, a frequency of only one train per day or less (often arriving and/or departing at night) reduces the actual usefulness of the service. To be fair, Amtrak shares can and do rise above 20 percent in markets, such as those in the NEC, where population density is high, distances are short to mid-range, and auto congestion is significant.

Table 1 shows also that Amtrak has a price and cost of service problem. Not only are Amtrak's system-wide revenues per passenger-Km significantly higher than its competitors (including the costs of auto travel), but also its costs are far higher. As an example, Amtrak's long haul **revenues** are about the same as those of airlines (and the length of haul is comparable) but Amtrak's **costs** are almost 2.5 times as high. Bus costs are not available, but bus revenues (approximately equal to average costs since the intercity bus companies are private and not highly profitable) are less than one-quarter Amtrak's system wide average total costs. Even on the shorter haul corridors, Amtrak's

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DOT revisited the rationale for intercity passenger services and proposed cutting the size of Amtrak's system by about 43 percent.

[12] This low share for Amtrak includes all auto travel (local and intercity) in the auto traffic base. If only intercity auto passenger travel is included, estimates have suggested that the Amtrak share of all **intercity** passenger travel might rise as high as 0.5 percent.

costs (and revenues) are higher than the costs of the comparable commuter rail transit operators.

Trends over time are also challenging. Figure 9 shows that Amtrak's traffic (measured in passenger-Km) has not kept pace with competitors: in fact, though passenger trips are still rising, Amtrak's traffic in passenger-Km has actually fallen below its peak in 1991. Figure 10 shows that Amtrak's labor productivity (measured in passenger-Km per employee) has lagged behind that of competitive modes. Figure 10 highlights two other interesting observations: 1) that the productivity of the deregulated U.S. freight railroads exploded after 1981, far faster than other modes; 2) that (surprisingly) the productivity of all the passenger modes followed roughly the same trajectory after 1980, but the absolute levels differ considerably as shown in Figure 11. The disparity in output per worker is further amplified by the fact the average annual wage of an airline employee in 2001 was $51,653 whereas the average annual wage of a rail employee was $82,557 and the average wage in local and interurban passenger transit was $26,229.[13]

A summary, in the U.S. context, is that Amtrak is not a significant factor in the overall passenger transport market, though it does play a role in some individual markets. It faces real challenges in finding a purely market-based niche: without support from government(s), few Amtrak services would survive. Government policies and funding – and not the market -- are thus the determinants of which rail passenger services Amtrak (or other operators) will provide.

International comparisons

Table 2 provides an international comparison for Amtrak's operation. Measured by route-Km served, Amtrak ranks with the larger carriers (though, as discussed, Amtrak is a tenant on all but 800 Km of line in the Northeast Corridor between Washington, DC and Boston, MA). Ranked by passenger-Km, however, Amtrak falls between Hungary and Austria, and Amtrak would rank much lower in passengers carried. What has been seen as a major rail passenger carrier in the U.S. context is not so large by international standards.

An important difference is seen in the average length of a passenger trip, where Amtrak (390 Km) ranks only behind China (433 Km). In fact, Amtrak is actually made up of three parts – the Northeast Corridor, other short haul trains, and the long haul ("National System") trains.[14] The average trip on an Amtrak long haul train is the longest in the world, and even the average trip on Amtrak's short haul trains is more than twice as long as most other railways (excepting only Russia, Thailand and Canada). By comparison

[13] See Rosalyn A. Wilson, "Transportation in America," 19th edition, Eno Foundation, Washington, DC, 2002. The Amtrak 2001 Consolidated Financial Statements show wages and benefits in 2001 of $1,667,293, which, at an estimated employment level of 24,000, would yield an annual average wage of $69,471, which is less than freight railways, but may not include all benefits.

[14] See Appendix tables 1 through 4 for Amtrak route descriptions and performance data.

with Europe and Japan, for example, Amtrak operates a larger percentage of overnight trains (with sleepers and diners) and these have an effect both on Amtrak's performance and its market position. In addition, partly as a result of restrictions in its charter, Amtrak operates fewer of the high density interurban and suburban trains than many European systems provide, which has tended to limit its role in the one market area which all would agree is the most potentially promising for the rail mode in competition with the auto. Amtrak is thus an amalgam of different services and operations that are distinct from those of most other railways.

The Bottom Up Model For Shorter Haul Rail Passenger Services

The bottom up approach is seen in most of the U.S. transit systems (subways, light rail systems, and heavy rail suburban systems, as well as buses). There are 6,000 such systems in the U.S. and Canada, most of which provide only bus service. There are 19 commuter rail operations, 14 heavy rail (subways) and 25 light rail operations (trams and trolleys). The 19 commuter rail operators serve 12 States, mostly in single states though a few (around Chicago, New York City, Philadelphia and Washington, DC) provide service from suburbs in one State to a major city in another. The largest operators are in Boston, Chicago, Los Angeles, New York and Philadelphia. They operate a total of 11,700 line Km with 1,153 stations. The estimated total commuter rail traffic in 2000 was 413 million passengers and 15.1 billion passenger-Km. The average passenger trip length was 36.7 Km and the average trip time was 59 minutes.[15]

These systems are predominantly planned, managed and funded at the local, State and regional level. Over the past decade, Federal capital assistance has averaged around 50 percent of total capital funding for local transport, with around 10 percent coming from State government sources, 15 percent from local governments, and 25 percent generated by the systems, themselves. Around half of the Federal funding goes to buses, with the remainder to all other public transport. It is difficult to relate Federal capital assistance specifically to commuter rail, but it is indicative that total capital allocated to commuter rail averaged around 20 percent of the total (buses averaged around 35 percent) from all sources.

There is very little Federal support for public transit operating deficits. Of the $24.2 billion generated in support of public transport in 2000, 53.5 percent came from passenger revenues, 21.9 percent came from local sources, 20.5 percent from State sources and only 4.1 percent from Federal programs. It is difficult to relate this directly to commuter rail activities, but an indication can be found in the fact that the total cost of public transit in 2000 was reported at $28.2 billion, of which $22.6 billion was operating expense and the remainder depreciation and other fixed items. Of the $22.6 billion in operating expense, $2.7 billion was attributable to commuter rail systems and $13 billion to bus operations. Buses generated about $4.4 billion from passengers versus their operating

[15] See ----, 2002 Public Transportation Fact Book, American Public Transportation Association, Washington, DC, February 2002.

costs of $13 billion whereas commuter rail received $1.4 billion in revenue from passengers versus their operating costs of $2.7 billion. Clearly bus operations are a larger claimant on public support (in **percentage** as well as absolute terms) than are commuter rail operations.

This said, it is significant that the scale of the locally managed commuter rail operations is actually significantly larger than Amtrak's short haul operations. As shown in Appendix Table 2, Amtrak's short haul trains outside the NEC carry about 7.5 million passengers and generate about 1.6 billion passenger-Km annually, which is 1.7 percent of the passengers and 10.6 percent of the passenger-Km that the local and State agencies are **already** carrying. The total avoidable loss for these Amtrak routes is about $95 million and the total "Full Loss" is $249 million, compared with what appears to be an operating loss of $1.3 billion on existing commuter rail services provided by local and State agencies. Eight of the Amtrak short haul routes are in a single State, and the rest are effectively bi-State, with their focus in a major metropolitan area in one State: for example, services to and from Chicago include a number of States (Illinois, Michigan, Indiana, Wisconsin, Missouri and Kentucky), but the focus is on Chicago traffic.

Given the linkages and, in some cases, overlaps between many of the Amtrak short haul services outside the NEC and those of the local and State commuter rail authorities, the existence of different models for serving the two transport needs may need reexamining. It is not clear why there should necessarily be dissimilar Federal approaches (the Federal Railroad Administration administers Amtrak funding whereas the Federal Transit Administration administers the local and State transit funding) available to support such similar activities. It is also significant that, while no individual locality is seen as a critical part of the national transport network, the collective sum of the individual systems has received national attention because of the importance of the major urbanized areas in the national economy (and politics). A similar argument can be made about the national significance of the collection of local, short haul Amtrak services.

The Challenge Of Change

There is virtual unanimity among observers of the Amtrak scene that the current Amtrak model for providing intercity rail passenger services has failed. Kenneth M. Mead, the Inspector General of the DOT concluded recently: "We want to start today by reiterating a point we made … last spring which is that the current, overall approach to designing, governing, and funding the intercity passenger rail system in this country is broken."[16] The Amtrak Reform Council (ARC) was established by Congress to make recommendations as to how to restructure Amtrak. The ARC, in its final report to Congress, concluded that: "The Council believes that there is a bright future for passenger rail in America. But Amtrak, as it is structured, managed and operated under

[16] Kenneth M. Mead, "The Future of Intercity Passenger rail Service and Amtrak," statement before the Committee on Commerce, Science and Transportation, United States Senate, October 2, 2003.

existing law, cannot achieve that promise." [17] The Congressional Budget Office, an impartial agency that advises the Congress on budget and policy issues stated that "More than three decades after the Congress and the President created the national Railroad Passenger Corporation (known as Amtrak), federal policies toward intercity passenger rail service remain unsettled."[18] JayEtta Z. Hecker, the Director of Physical Infrastructure Issues for the General Accounting Office (GAO), an independent agency that advises Congress on financial and program issues testified that "…[I]nter city passenger rail in the United States is at a critical juncture. As has become increasingly clear … the current approach to intercity passenger rail is not likely sustainable."[19] She also stated that "...[T]here is a growing consensus that the current approach to providing [the] intercity passenger rail system needs revision."[20] The Federal Railroad Administrator, Allan Rutter, summarized the Administration's belief as follows: "Any objective analysis of intercity passenger rail today leads to the conclusion that this form of transportation is slowly withering away under the current system."[21]

Amtrak's 32 year history also establishes that, to paraphrase an old dictum, "After all is said and done, there is usually a lot more said than done": the diagnosis is easy, the prescription is difficult. The problem seems to have many roots:

- A system that touches nearly all States and many major urban areas inherently includes many different, often conflicting interests that are hard to reconcile.
- A service that has many different justifications – transport efficiency, socio-political bargains, environmental and congestion alleviation, urban efficiency, historical and cultural preservation – is not conducive to forming or maintaining a stable support coalition.
- Public misconceptions about what Amtrak can or should accomplish (especially the argument that rail passenger service can or should be "profitable" without public support) make defending it difficult and reduce its ability to compete for resources with agencies that have clearer missions and stronger coalitions of support.

Thirty years of political debate, and $26 billion in financial assistance, have not yielded a way to square this circle, and Amtrak is in another crisis. The question is whether there

[17] Amtrak Reform Council, "An Action Plan for the Restructuring and Rationalization of the National Intercity Rail Passenger System," February 7, 2002. See: http://www.amtrakreformcouncil.gov/ transmittal letter. See also page 1 of the report "The current Federally-chartered organization for providing intercity rail passenger service, Amtrak, needs major structural improvement.."

[18] Elizabeth Pinkston, "The Past and Future of Passenger Rail Service," Congressional Budget Office, Washington, DC, September 2003. page ix.

[19] JayEtta Z. Hecker, "Intercity Passenger rail: Congress Faces Critical Decisions in Developing a National Policy," Statement before the Subcommittee on Railroads, Committee on Transportation and Infrastructure, House of Representatives, April 11, 2002.

[20] Hecker, op cit, page 28.

[21] STATEMENT OF THE HONORABLE ALLAN RUTTER, FEDERAL RAILROAD ADMINISTRATOR, BEFORE THE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION, UNITED STATES SENATE, OCTOBER 2, 2003, PAGE 1

is any way, if not to resolve the crisis, at least to make it less threatening and to give intercity rail passenger services a more stable existence.

Proposals on the table

There have been four more or less comprehensive recent proposals for restructuring Amtrak: a legislative proposal submitted by the Bush Administration in September of 2003[22], a set of alternatives described in the CBO report of September, 2003 ("The Past and Future of U.S. Passenger Rail Service"), the ARC proposals made in February of 2002, and "The American Rail Equity Act" (AREA) introduced by Senator Kay Bailey Hutchinson of Texas. These run the gamut from offering choices but no solutions (CBO), to expanding funding for Amtrak along with some specific institutional reform (AREA), to suggesting more thoroughgoing structural reform (ARC and Administration proposals). Table 3 summarizes the features of the four approaches.

This paper will not venture a prognosis as to the likelihood of implementation of any of these approaches. Each has supporters, but each may also have opponents who can prevent change. Perhaps, as in the past, a likely short term outcome is a continuation of the existing situation that is satisfactory to none and performing in a mediocre way for all, but not quite bad enough (yet) to force change.

It is interesting to see, though, that there are a number of features common to all four, which may reflect more underlying agreement than the parties themselves realize. These could be synthesized as a way of highlighting what might emerge over the next few years.

First, the "no change" option is getting harder to defend. While the Congress may still be wary of revolutionary change proposals, the acceptance of at least evolutionary change is growing. Second, there is growing agreement that Amtrak is providing three, or possibly four, quite distinct functions: NEC infrastructure access (a common service across 8 States and the District of Columbia for Amtrak high speed and conventional operations, 7 commuter rail operators and three freight carriers); long haul, "National System" passenger trains, provided over the tracks of the freight railroads; and, a collection of short haul trains in many corridors in a number of States (again, mostly provided over the tracks of the freight railroads). If the NEC high speed operations are considered important enough to be defined separately (Appendix Table 4 shows that the NEC high speed trains (Acela) carry about 38 percent of all Amtrak passengers), then Amtrak would have four functions: if not, then NEC operations could be considered as a part of the short haul or long haul operations.

NEC Infrastructure. The potential parallels between the NEC infrastructure and the current E.U. approach to rail infrastructure management are quite close. In fact, an approach in which the proposed NEC Infrastructure Compact would contract with Amtrak

[22] "The Passenger Rail Investment Reform Act of 2003"

to manage and dispatch the infrastructure would roughly match the SNCF/RFF relationship. An alternative in which the NEC infrastructure remained a subsidiary of Amtrak but with a separate Board of Directors including State officials and freight railroads would also accomplish much the same objectives. Either would also maintain the same degree of operation and infrastructure integration as pertains today, and either would retain the integrated dispatching and scheduling responsibility in the hands of the high speed, end-to-end user.

The issue of continued integration of operations with infrastructure dispatching is potentially as important in the NEC as in Europe because of the wide mix of traffic on the NEC. Measured by gross ton-km, freight has been a major user of the NEC, and usage by freight is likely to grow in importance as congestion grows on all of the highways in the NEC; measured by train-km or passengers handled, the commuter rail operators are the majority users; measured by passenger-km and passenger revenue produced, Amtrak is likely the majority user. In addition, the ARC proposal to charge each user the incremental cost of its use, with government(s) paying the fixed costs and the cost to rehabilitate the NEC, would match the policies of the European Commission for efficient use of the infrastructure. This would also offer continuity of policy (and contribution) to the commuter operators who are currently paying Amtrak on an incremental basis. If the NEC is maintained and dispatched under the policy control of all its users, neutral access can be assured. If Federal funding (FTA) remains available to the commuter operators at an appropriate level, then the needs of commuter agencies for capacity expansion can also be met at least as well as they are today. It should be added, however, that Europe has little experience with multi-jurisdictional Compacts to control rail infrastructure, and the difficulty of organizing nine independent U.S. State jurisdictions into an effective organization, even in the U.S. federal context, is daunting. The theory seems hard to argue with, but the complexities and the risks argue strongly for an evolutionary approach in implementation.

It is tempting to argue that the NEC **operator**, by itself, might not require significant operating support **if** it, too, were charged only incremental cost for access to the NEC infrastructure. Appendix Table 2 shows a Fully Allocated loss for the NEC trains of around $376 million, which is roughly equal to approximate, independent estimates of the annual fixed costs for the NEC infrastructure. Moreover, the Acela Express and Metroliner trains are the only significant Amtrak trains that cover their “route” costs as well as their Avoidable Costs, so these trains seem likely not to need much operating support if they pay only incremental cost access charges. Unfortunately, accurate data do not exist to clarify this question.

The Short Haul Trains. The 21 State and regionally oriented short haul trains pose an issue which, as discussed in the bottom up section above, is similar to the funding and operation of commuter rail services. The primary focus point in planning these services should come from State and local authorities, and the funding mechanism (as suggested in the Administration Bill and the comments from the DOT Inspector General) might be based on an approach similar to that of the existing FTA authority. Given that this is a

collection of disconnected operations scattered across the country and serving mostly local needs, the longer time frame concept of bringing stronger State and local participation (and money) into the short haul train equation, as with the FTA programs, is appealing.

The issue of devolution of these trains to State and local control (as is already the case with the commuter rail operations) along with the Amtrak franchise for access to the tracks of the freight railroads, remains under intense discussion. There are good arguments for devolution, but there are several reasons why at least some of the systems may remain under Amtrak operation, at least on a contract basis. In cases where the States do not already have commuter rail operations, they may not wish to acquire the capability, especially where only a few trains are being operated (the Virginia Railway Express trains are an example). Second, Amtrak legitimately may generate economies of scale and expertise that would be unduly expensive for some (or all) of the potential operators to duplicate. Also, the freight railroads (on whose tracks most of the short haul trains operate) have argued for Amtrak to remain the single operator of the short haul (and long haul) trains because they prefer the convenience of having only one, experienced operator to deal with. In addition, the issue of operator liability is very significant in the U.S., and the insurance coverage needed to cover potential liability exposure is very costly; it is possible that the economies of insurance liability alone could drive the choice of a single operator in many cases. Taken together, these issues argue for a pragmatic approach, but they also argue that devolution to States and local authorities could go farther in the short haul train arena than for the long haul system.

It is also likely that the concept of the role of the shorter haul trains in the U.S. will change in the next decade or so as the seemingly inexorable process of highway and airway congestion develops. The existing short haul trains may then serve as the nucleus for an expanded program of rail passenger corridors in the major urbanized areas, a need that will be created by population densities and environmental concerns similar to those that are already evident in Europe.

The Federal Railroad Administration (FRA) in the US DOT has conducted many studies of the potential for rail corridors outside the NEC.[23] The earlier studies[24] covering some

[23] Studies of the potential benefits of improving rail passenger services **in** the NEC are numerous, beginning in the late 1960s and continuing through very recent analyses. The NEC was also the beneficiary of the Northeast Corridor Improvement Project, a $2.5 billion (eventually $3.9 billion) project to upgrade and improve NEC infrastructure and stations. For a particularly interesting and comprehensive example of the early analysis of possible NEC investments, see "Northeast Corridor Transportation Project Report NECTP-209," Office of High Speed Ground Transportation, US DOT, April 1970.

[24] See, for example, "Rail Passenger Corridors: Final Evaluation," U.S. Department of Transportation, Federal Railroad Administration and Amtrak, April 1981. This study did not look at high-speed rail but, instead, focused on improving the service quality and frequency on essentially conventional (80 to 130 Km/Hr) terms.

20 potential corridors concluded that there was no demonstrable market for such services. Fifteen years later, high speed rail corridor studies began to reach a more positive conclusion, arguing that there were likely to be some corridors in which higher speed (approximately 150, 180, 200 and 250 Km per hour) and higher frequency rail passenger services would indeed be economically viable if operated efficiently.[25] Subsequent updates continue to suggest the potential economic feasibility of improved rail corridors in increasingly congested urbanized areas.[26]

These studies concluded, however, that the investment requirements of the potential projects would range between $9 billion for uniform upgrade to 180 Km/Hr to over $35 billion for 250 Km/Hr speeds. Taken together, these projects would be far beyond the capability of any single, national agency to manage, and logically would be best managed by each of the State agencies involved. The DOT assumed that the operators for each corridor would be chosen separately and that individual, private operation of each corridor would be the premise for purpose of projections. The DOT legislation provides for a 50 percent Federal matching share for the capital costs of any such corridors that States develop, and encourages formation of multi-State Compacts for planning and operation.

A particularly complex aspect of these corridors is the need for higher speed and frequency passenger trains to operate on the tracks of the existing freight railroads, a challenge that is ever more serious because the density of traffic on the freight system continues to increase (it has tripled since Amtrak was established, and is, on average, about 2.5 times higher than in Europe). Given the freight traffic levels and the speed differences between freight and passenger trains, each corridor will pose a distinct and intricate planning, investment and operating challenge probably best solved by negotiation at the State and local level.

The National System Long Haul trains. While there are widely diverging opinions as to the need and justification for the "National System" long haul trains, the issue of how they should be provided is less controversial: a single management company is needed to provide efficient management and integrated scheduling and reservation services. A particularly significant conclusion of both the DOT and ARC reports is that this company should be under a Public Service Obligation (PSO) contract with a Federal agency for provision of services (in fact, Amtrak is now operating under a "grant agreement" with DOT that has many aspects of a PSO contract).[27] One of the generally agreed failings of the system up to one year ago is that, because Amtrak effectively worked directly with

[25] "High-Speed Ground Transportation For America," US DOT/FRA, August 1996, reprinted September 1997

[26] "Update on State Projects in High-Speed Ground Transportation," USDOT/FRA, January 2003.

[27] PSO contracts convert subsidy funding by annual budget into a contractual commitment between government and rail operator. Government defines the services to be provided and sets tariff policies: the operator provides the services as required. The contracting relationship increases the confidence of both that the other will meet its obligations.

the Congress without DOT control, there was no administrative agency capable of holding Amtrak accountable for delivery of services against a budget and quality commitment. Conversely, of course, this had the effect of allowing DOT to avoid becoming embroiled in the stressful issue of which long haul trains to run (and which to cut). In future, the institutional arrangements proposed by ARC would have DOT/FRA (or an independent Federal agency) working with Congress to decide on the right service and funding combination and then contracting with Amtrak, or other providers, for the services. The DOT proposal would gradually shift both funding and system planning to State Compacts.

For the long haul trains, the underlying question is whether the Congress will be willing to let the States define the "National System," and then make them pay for it. The DOT proposal (and, interestingly, the DOT Inspector General) argues that shifting such responsibility to the States is both feasible and desirable.[28] Many States are concerned about both the rapid timing and the funding implications of such a shift during a time when State budgets are unusually strained. More fundamentally, States have argued that definition and support of the "National System" is inherently a Federal responsibility similar to that of defining and funding (most of) the cost of the Interstate Highway system or the Air Navigation system in the U.S. In addition, Amtrak supporters have argued that the long haul trains are the political glue that holds the entire system together: without these trains, the NEC and short haul and corridor trains would never be able to achieve the kind of national political coalition needed to generate Amtrak's funding.[29]

It is also not clear whether the continuing debate over the makeup of the "National System" route structure is still on track. In 1970, after a great deal of public discussion and expert advice, Congress and the Nixon Administration defined a National System. Despite a continuing stream of analyses and policy reexaminations, that system continues nearly unchanged up to today. Few would dispute that many of the long haul trains have only a limited justification in purely transport terms. Higher income passengers, whose need for Federal subsidy is easy to question, occupy most of the sleepers on the long haul trains. Even the coach passengers are being hauled at a cost that is far above that of alternative modes, and the levels of service being offered are not adequate for many potential users. And yet, through the years, Congress, for a variety of reasons has consistently demanded that the long haul trains be maintained because their constituents want the trains and are willing to pay (though perhaps not enough) for them. From this perspective, the appropriate metric to use for the best organization of the long haul operator is cost effectiveness, not a benefit/cost ratio.

[28] It would be interesting to compare the organization and funding of the long haul TEE trains in Europe. How many, from where to where, who pays, and by what allocation formula?

[29] It seems reasonable to comment that the coalition has never actually been able to deliver on this promise. According to most observers, Amtrak has survived from year to year, but it has never had stable or adequate funding.

The contracting or grant agreement relationship between DOT and Amtrak could serve to clarify the role of each – DOT to work with the Congress to define the system to be run and obtain funding (Amtrak as an active participant in the discussion) and then Amtrak or a successor operating company (or companies) to run the system with contractual commitments as to cost and performance. This approach would be in line with prior European contracting between railways and Governments (which, to be fair, was not notably successful), and would be consistent with the Commission's more recent Directives for contracted operation of social rail services.[30]

Institutional Changes Needed

Given the broad objectives of the various restructuring proposals, a number of surprisingly common institutional changes appear needed.

- Creation of a better interface between Congress and the US DOT to determine national system service requirements and funding. In fact, this suggests a triangular relationship among Congress, DOT and Amtrak to discuss and agree on policies and funding: it also suggests further strengthening of the capability within DOT/FRA for rail planning and analysis.
- Creation of a stable funding mechanism for the fixed costs of the NEC infrastructure as well as for the Federal role in funding the capital contribution and train operating support for national, regional and local trains (linking the top down and bottom up approaches). The DOT proposal would set the Federal role at 50 percent of capital costs in future (plus the full cost of rehabilitating the NEC infrastructure) and would in effect shift entirely from a top down to a bottom up approach. Other proposals would create a continuing role for Federal funding in the capital and rehabilitation costs of the NEC infrastructure and the operating costs of the National System and, to a lesser extent, in the short haul system.
- Possible transfer of some of the existing Amtrak operating rights to regional, state or local authorities, if those authorities would like to take responsibility for providing services. This would entail careful study of the financial, institutional and legal issues involved, another potential justification for deeper analytical capabilities at DOT and at Amtrak, as well as at the State and local level. It would also involve discussion with the freight railroads to resolve their concerns about multiple, and possibly inexperienced, operators on the freight tracks.
- Establishing the Amtrak operating function as an entity that contracts with DOT/FRA to operate all trains at the outset, but which may in turn contract with other entities to operate some (or all) of its trains on its behalf if it finds it more efficient to do so.
- Amtrak's existing role as a contract operator of short haul and commuter rail trains for state and local authorities could be continued or even expanded, but should be subjected to more transparent financial reporting to ensure, as in the E.U., that funding is being spent as targeted. Amtrak is currently prohibited from operating commuter services if there is any risk of losing money (it must have a risk-free, cost-

[30] See, for example, Commission Orders 2001/12, 2001/13, and 2001/14.

plus contract). If State and local authorities decide that their revised operating contracts should involve cost risks on the part of the contractor, Amtrak may be precluded from bidding. If Amtrak is to continue as an operating contractor, the ability to undertake cost or revenue risks will need to be resolved.

- A critical issue is the lack of reliable and detailed public information about Amtrak's operating costs and revenues. This has hindered analysis by all parties, including the DOT, Congress, and States that might wish to take a larger role in the services provided for them. While it might not be necessary or desirable for Amtrak to be divided into separate **entities**, development and publication of detailed revenue and cost data by line of business (NEC infrastructure, NEC operator(s), short haul corridors and long haul trains) will be important as restructuring proceeds. This kind of information will be required of E.U. railways if they are to conform to Commission Directives to separate infrastructure from operations and confine state support to contracted social services.[31]
- The issue of a greater role for the private sector in providing passenger services is controversial and often mischaracterized in the U.S. The question tends to be formulated as total "privatization" versus the present situation without acknowledging the deficiencies of the present approach or accepting the idea of management contracts or of concessions as mid-way alternatives to total privatization.[32] The issue is often stated in "either/or" terms without acknowledging mixed approaches in which some routes could be privately operated and others by public operators (though, in fact, the bottom up systems already have some contract private operators). Moreover, the concept of competition for minimum subsidy is still not commonly understood in the U.S., where public operation of passenger rail systems is prevalent (though there are long-established examples of private management available in the U.S. – e.g. the recent MBTA contract for suburban services replacing Amtrak's contract operation of the services[33]). The clear implication in the Administration's bill is that there should be broader use of these types of management contracts or concessions, as well as privatizations, particularly on the part of State and local agencies taking over management of short haul rail passenger services.[34] Latin American experience (Buenos Aires suburban rail and the Metro as well as the Rio de Janeiro commuter and Metro services) was useful in establishing the issues and utility of integral concessions for suburban and metro services. Concessioning and franchising experience in the U.K., Germany and Sweden established the issues and

[31] With refinements, the kind of route-by-route profitability analyses developed by Amtrak would be a good model in support of public evaluations of rail services in Europe.

[32] In a management contract, the private sector manages a public facility to meet requirements of its public client: generally the contractor carries only cost risk. By comparison, in a concession or franchise, the operator provides services within limits as required by its public client, but the operator will often carry the commercial risk as well.

[33] It is interesting that the concept of Amtrak as a contract operator is less controversial than the concept of private operators competing with Amtrak to provide the same services.

[34] In fact, it is not clear from the DOT legislation whether the preferred approach would be management contracts, concessions/franchises, or privatization – or perhaps all three.

techniques of private operation of shorter haul and high capacity services on separated infrastructure (public and private). There is, however, little experience anywhere in the world with contract or concession operation of trains such as those in the Amtrak "National System." Japanese experience of actual privatization is relevant and interesting in the approach of selling stock in ongoing companies and in the intimate relationship between urban rail operations and the related real estate development; however, the volumes of passengers in Japan are so far beyond Amtrak experience (or most European experience either) that the economics of railways in Japan are distinct. Table 4 displays comparative data for a number of rail passenger systems in Latin America, the U.S., the U.K. and Japan, with all but the U.S. systems being privately operated. The major Japanese passenger companies (East, West and Central Japan Railways) were privatized, the U.K. systems are franchised, and the Latin American systems concessioned. There is nothing in the scale of operations that distinguishes the U.S. systems, nor is there anything in the performance measures that would support a dogmatic argument in favor of, or against, either private or public ownership or operation. Given what has been accomplished elsewhere, a more thorough examination of an expanded role for the private sector in providing rail passenger services deserves consideration.

- A significant concern over Amtrak restructuring in the U.S. comes from the potential impact on rail labor. This is at least partly a result of the long and continuing decline in the U.S. rail labor force overall: since the end of World War II, the Class I railroad labor force has declined from above 1 million (471,000 in 1980) to less than 162,000 in 2001. Although the labor force decline has been driven by competitive forces (especially deregulation) outside the rail industry, it has strained labor-management relations and has put considerable financial stress on the rail system's retirement system. Table 2 suggests that Amtrak's output per employee is relatively low by international standards for publicly operated railways. Table 4 suggests that Amtrak's output per worker is relatively low by comparison with concessioned international suburban and intercity passenger operators. Figure 11 shows that Amtrak's output per employee is significantly lower than the airlines (and its average wages are higher). Figure 10 shows that the growth in Amtrak's output per employee has been significantly slower than for the U.S. freight railroads and slightly slower than airlines. Labor represents Amtrak's largest single cost category, and consumed in 2002 about 73 percent of revenues (62 percent of operating expenses before depreciation). No one of these measures is definitive, and Amtrak has a particular operating context that is different from any other railway. Nor is there any reason to think that the Amtrak labor force is less capable or committed than that of the freight railroads. This said, improved labor productivity would be one of the places to look (but not a panacea) in improving Amtrak's economics.
- A final area where European and Japanese experience is highly relevant is in dealing with "sins of the past" – unsustainable borrowing or imposed costs which contribute little to the actual operation of the company. Over the past 5 years, in a vain attempt to improve its apparent losses, Amtrak's borrowing grew by $3.1 billion, which now has a debt service burden of over $250 million annually (more than double the level 5 years ago). Amtrak's share of excess railroad retirement costs due

to the large labor overhang in the rail industry is around $160 million per year. These, and others issues (such as an expensive liability environment), are either problems that a future Amtrak cannot solve, or problems it did not cause in the first place (or both). The E.U. requirement of cleaning up a railway's accounts (hopefully only once) before putting the railway onto a better commercial footing and keeping it there will eventually need to be considered in the U.S. In addition, the Japanese approach of creating a Settlements Corporation to take over and deal with the unmanageable debt and other liabilities of the old Japanese National Railways (JNR) was an effective way of putting the new railways on a more sustainable basis rapidly while allowing the other problems to be managed separately and over an appropriate time frame.

Summary

Amtrak was created 32 years ago as a single, monolithic, Federal, "as if for profit" corporation. Twenty six billion dollars later, that model has not delivered on its original promises (which were, in some respects, unrealistic) and it seems likely that it will not be able to meet the diverse and costly challenges of developing strong rail passenger services in the future. The issue is not the need for rail passenger service in the U.S. – that need has been repeatedly demonstrated economically and politically: the issue, instead, is that Amtrak as currently structured does not define markets well, does not always assign operating, planning and funding responsibilities at the appropriate level (Federal versus State and local) and is too insulated from market forces. In short, by trying to do too much for too many with too little, it ends up doing a less than optimum job for all. This is **not** a criticism of Amtrak's management or employees: they are just as dedicated and as capable as their colleagues anywhere in the world. Railway experience worldwide shows that unclear missions and poorly defined performance measures inevitably lead to unsatisfying results and, all too often, to inadequate public support.

There is no magic recipe from outside the U.S. that will resolve Amtrak issues. At least in broad terms, though, the lessons from Europe, Latin America and Japan do have promise, if adopted in an evolutionary way. Clarify and measure what Amtrak does, and for whom – this implies better line of business accounting and, in some areas, possible institutional change as well. Shift Amtrak's operations further toward PSO-type contracts with the level of government(s) sponsoring the service – implying a higher degree of Federal support to NEC infrastructure and the long haul trains compared with a higher degree of State and local support for the short haul trains, and a further strengthening of the contract relationship between Amtrak and the government agencies it serves. Allocate more responsibility for planning and funding of the shorter haul trains from Federal to State and local level – implying also a choice by the dominant funding authority as to who actually operates the trains in question. On all levels, re-examine the boundary between the public and private sector in delivering passenger services to identify places where efficiency can be improved and costs reduced.

Figure 1

Rail Passenger-Miles in the U.S.

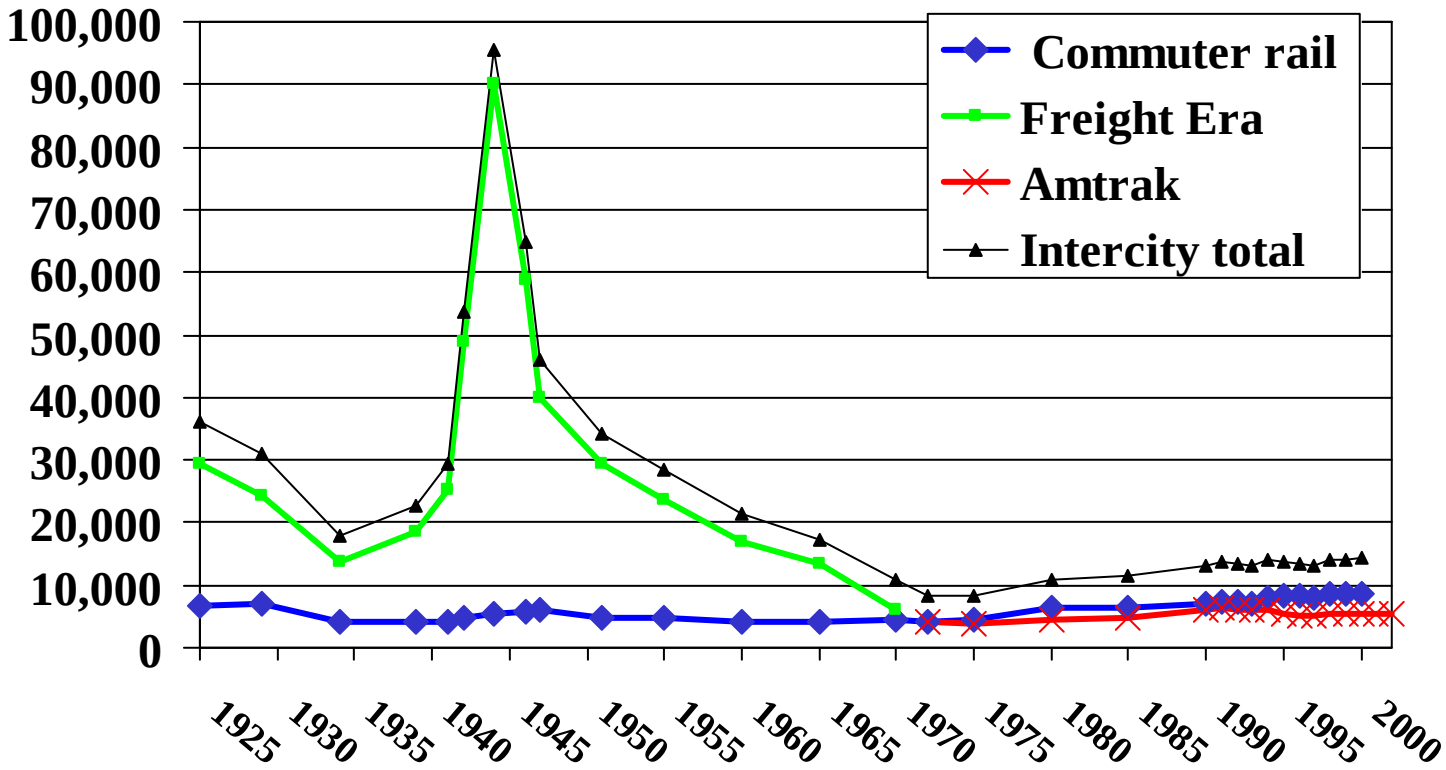


Figure 2

Financial Performance of U.S. Railroads:

Net Railway Operating Income (NROI) and Solely Related Passenger Losses (SRL) (constant 2002 $ millions)

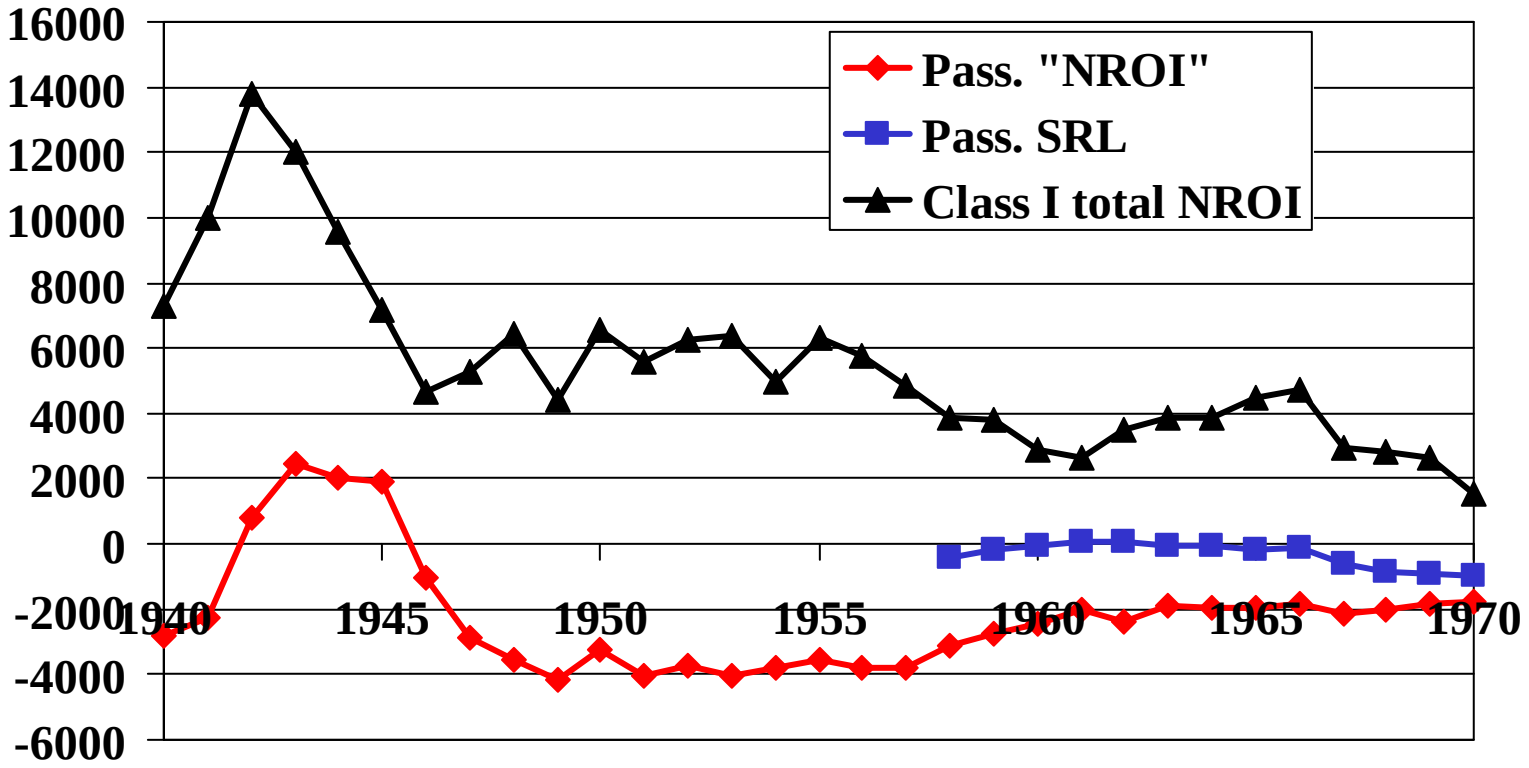


Figure 3

Financial Performance of U.S. Railroads:

Net Railway Operating Income and Solely Related Passenger Losses

(constant 2002 $ millions)

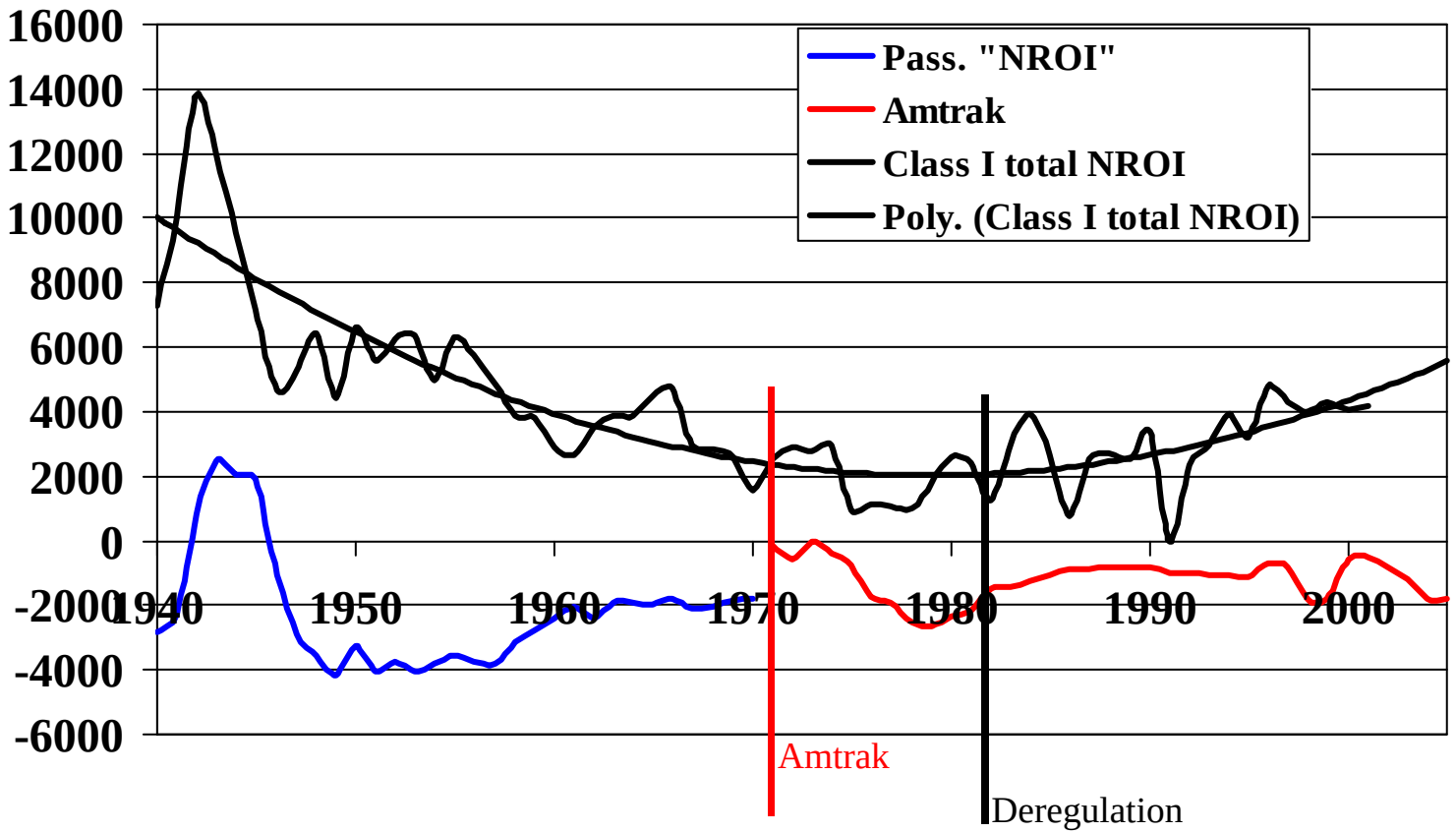
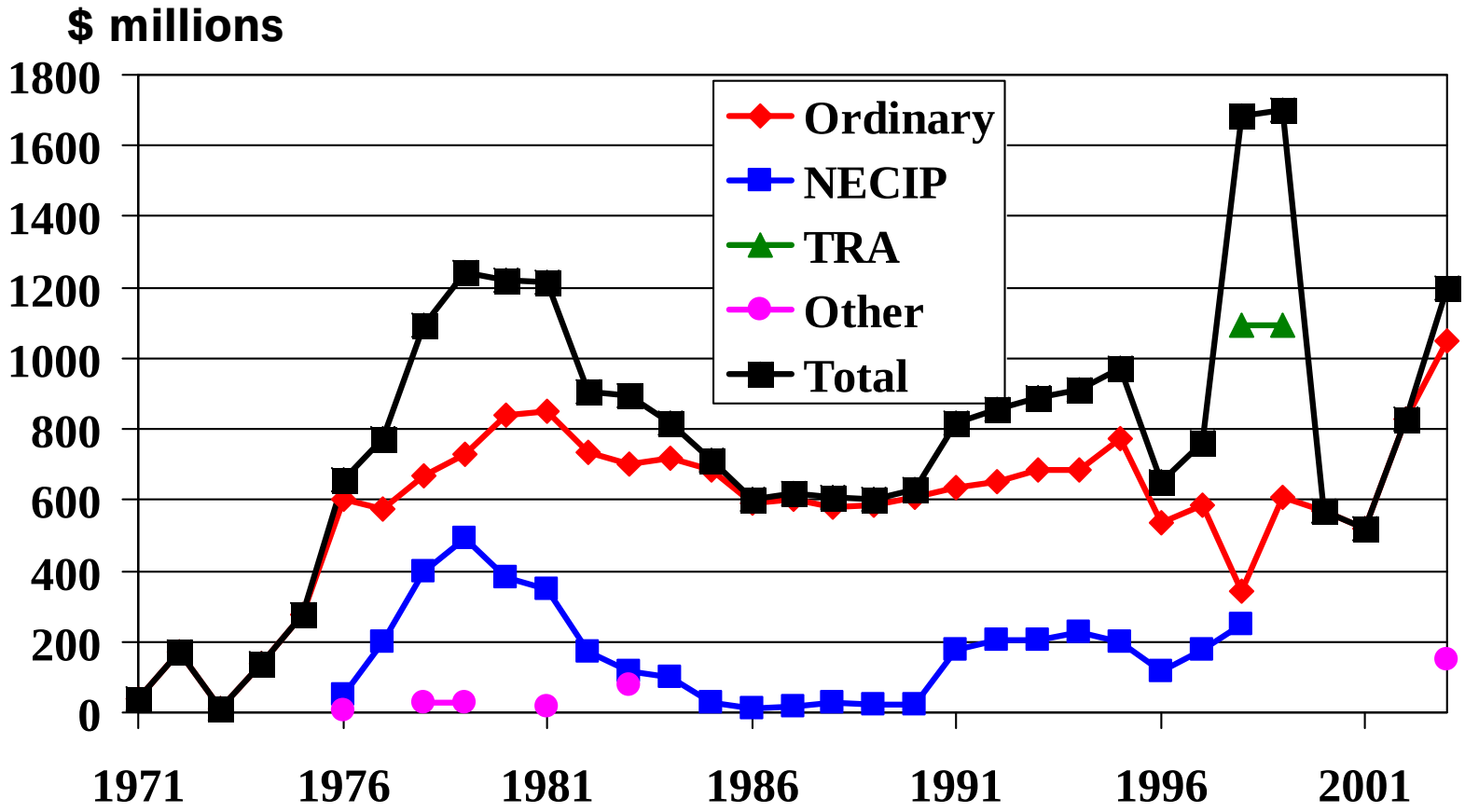


Figure 4

Amtrak funding by year
current dollars

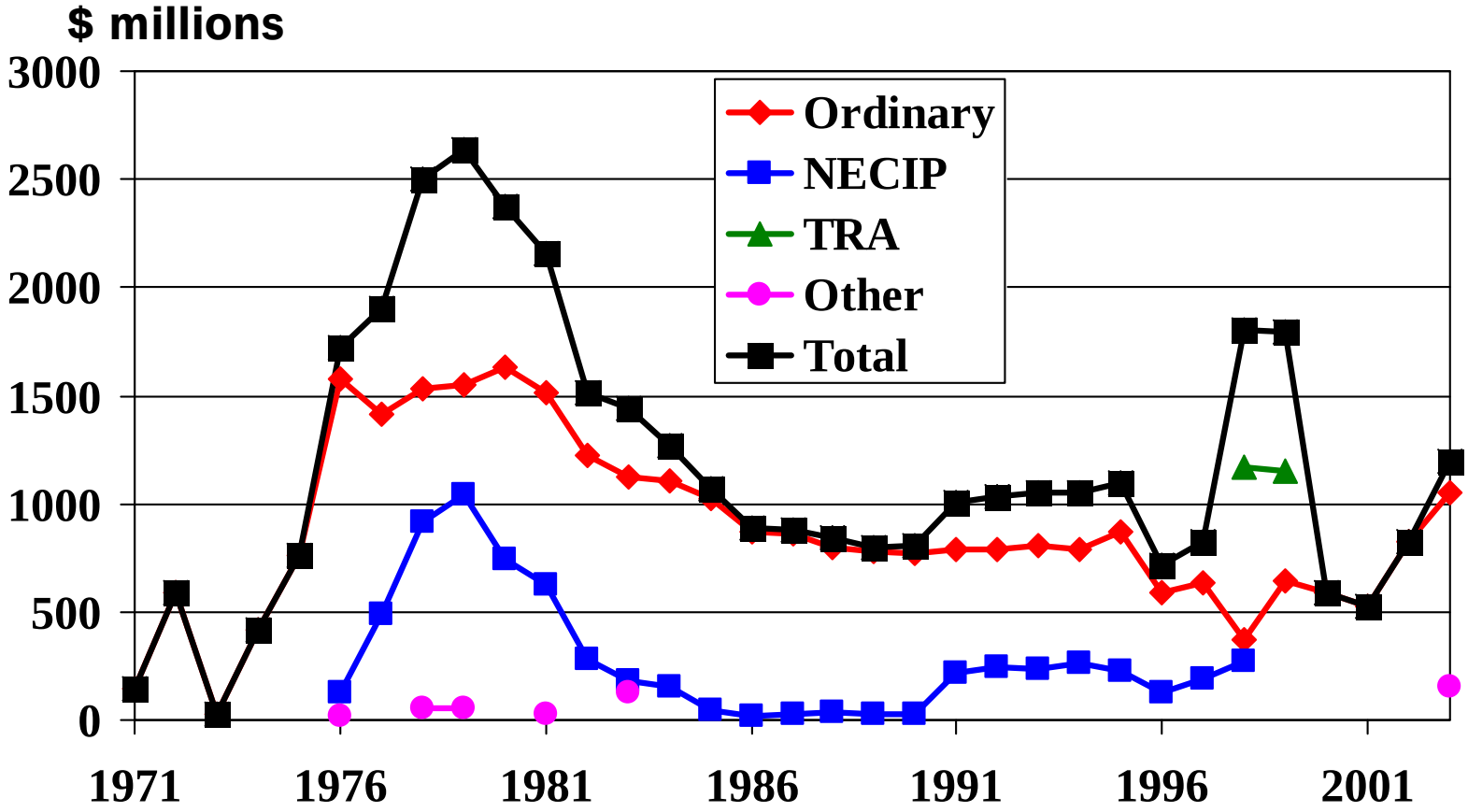


Total through FY2003: $25,596 million

Note: in addition, Amtrak's debt increased by over $3 billion between FY96 and FY2002.

Figure 5

Amtrak funding by year in constant 2002 dollars



Total through FY2003: $38,273 million

Note: in addition, Amtrak's debt increased by over $3 billion between FY96 and FY2002.

Figure 6

Amtrak System Map

Figure 7

Amtrak's Long Haul Network

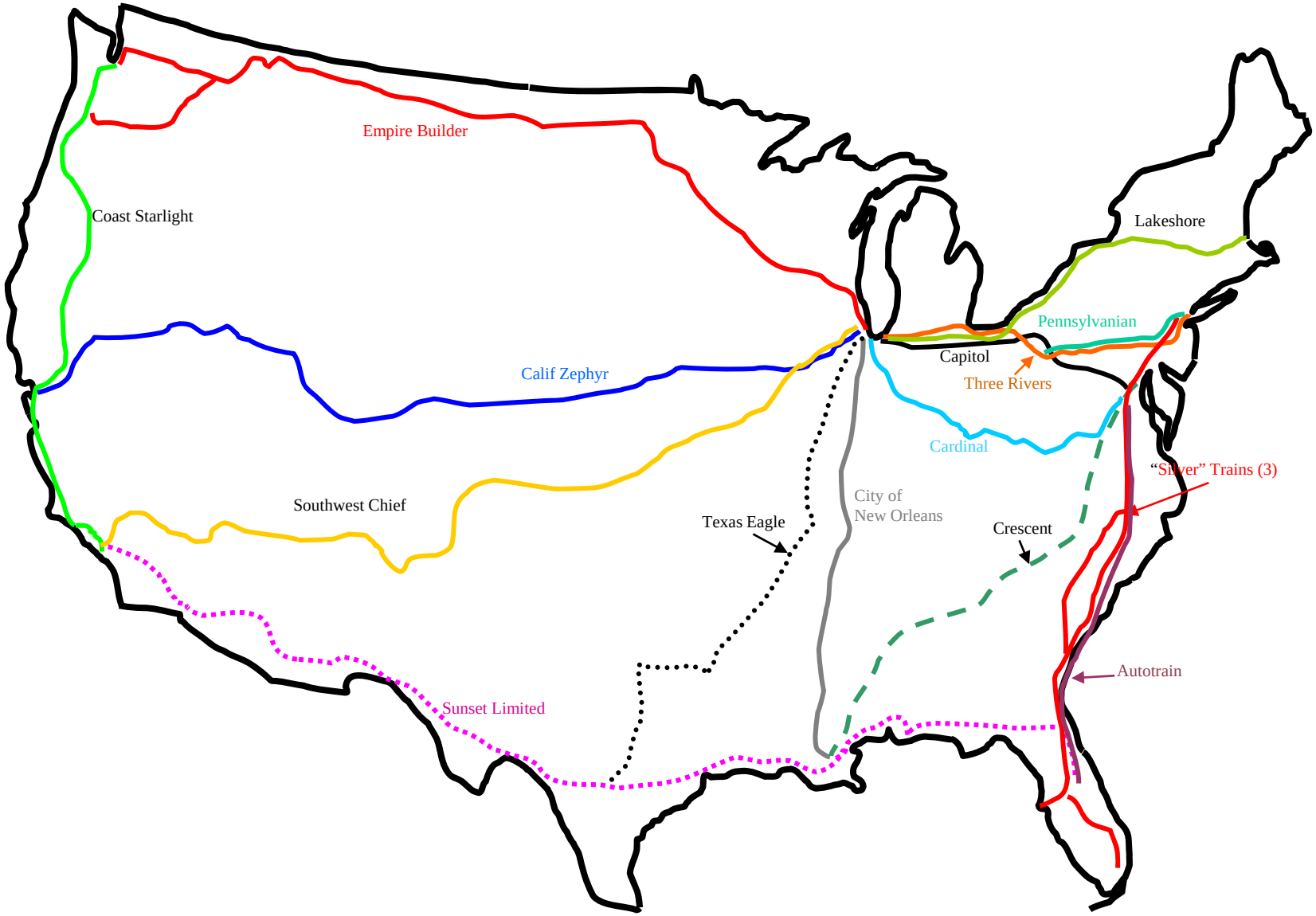


Figure 8

Amtrak's Short Haul Routes

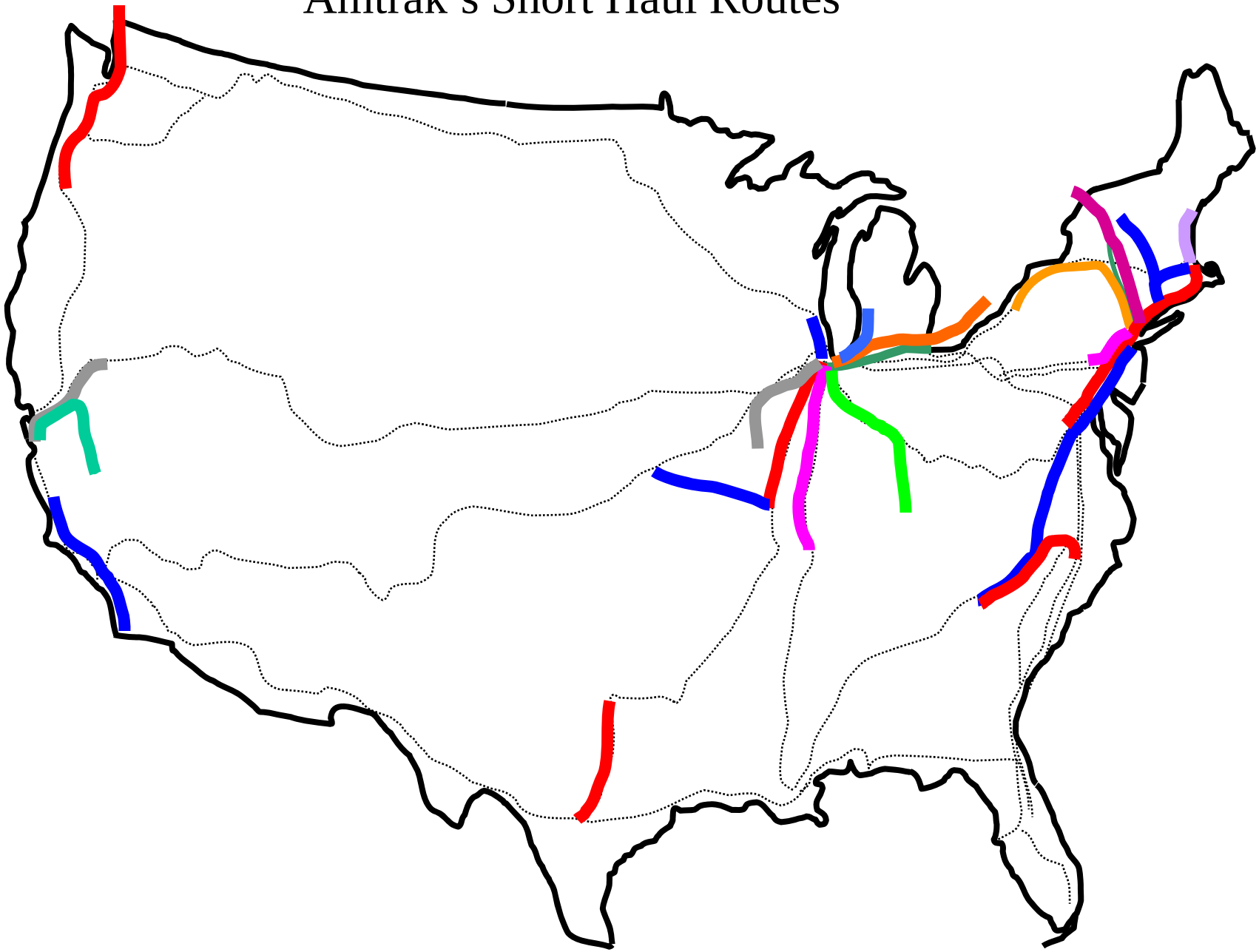


Figure 9

Passenger-Km Trends

1980=100

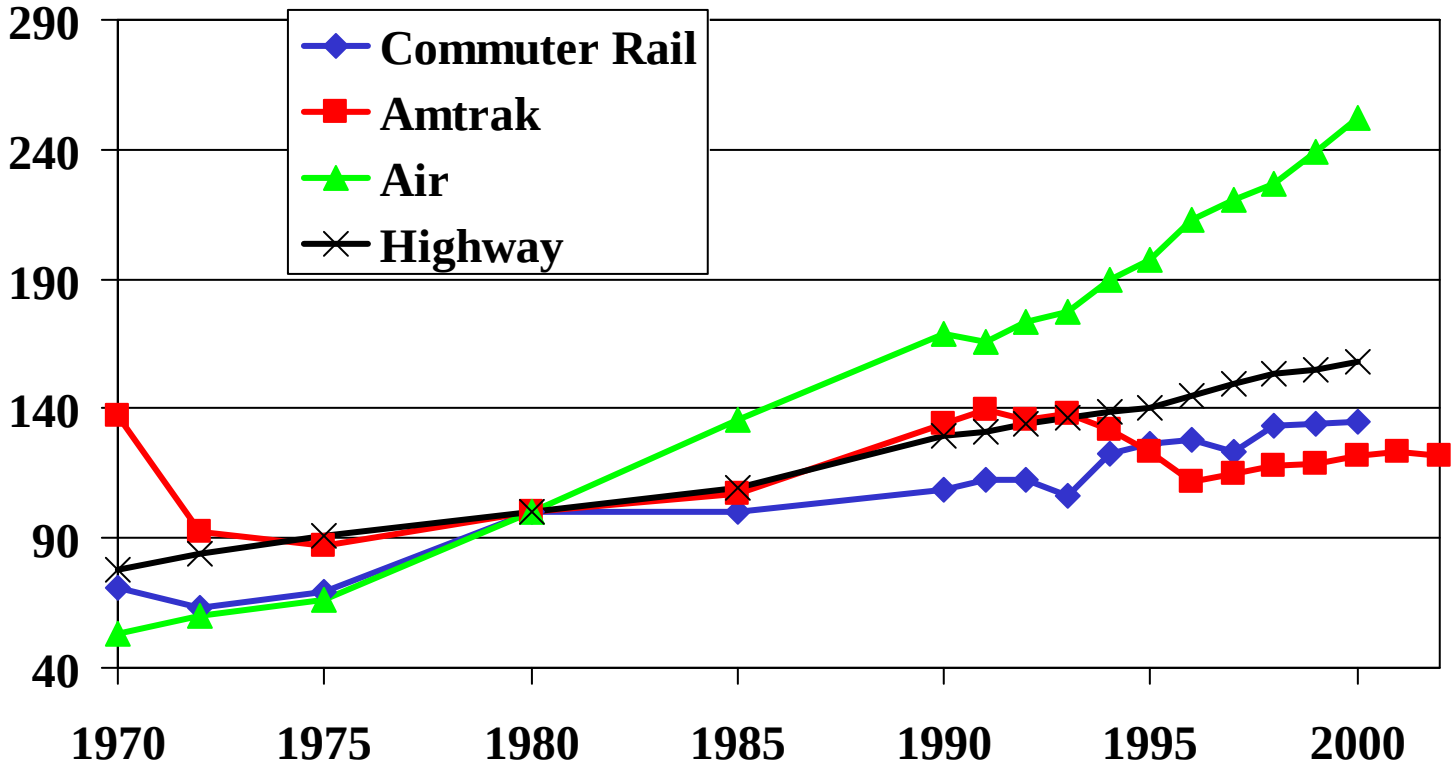
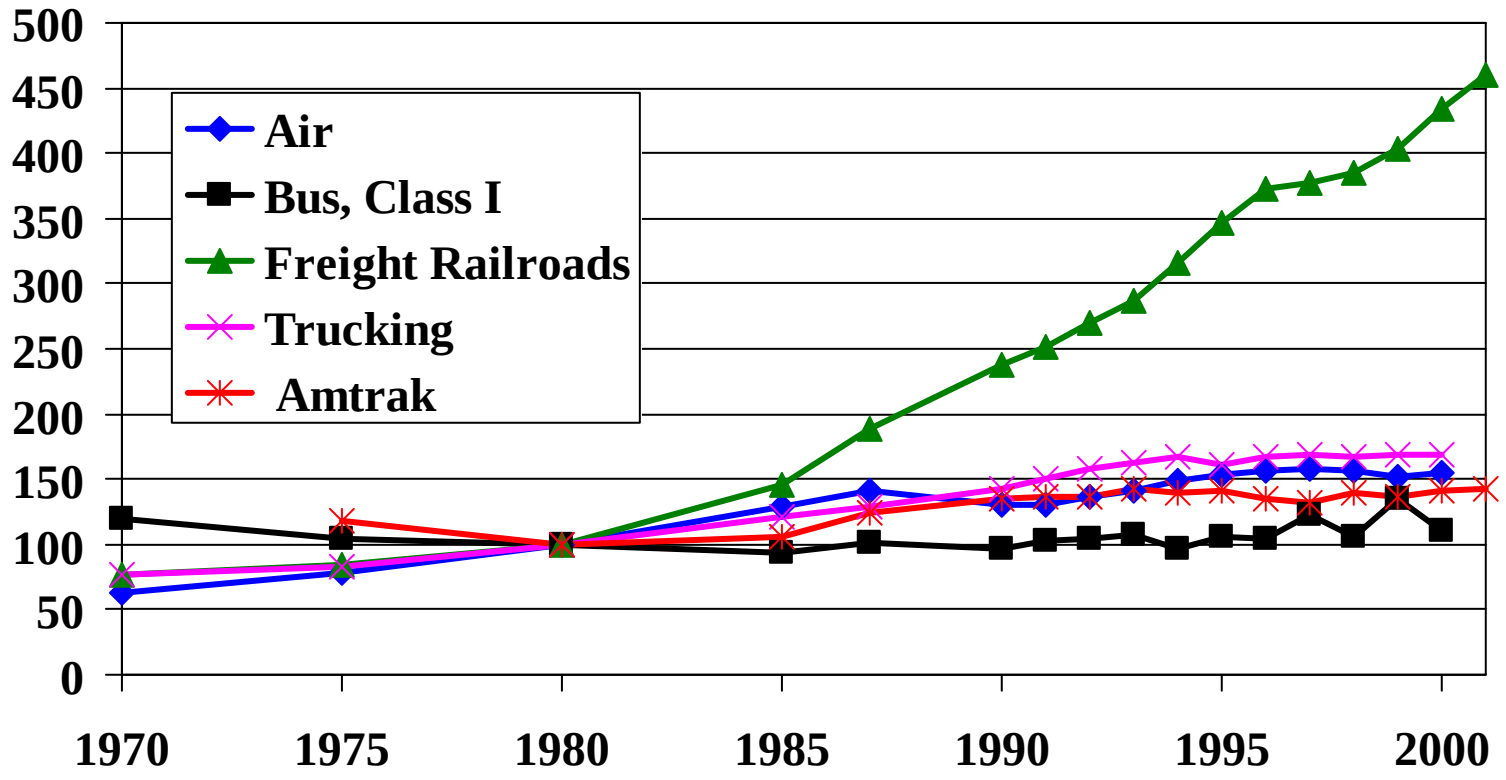


Figure 10

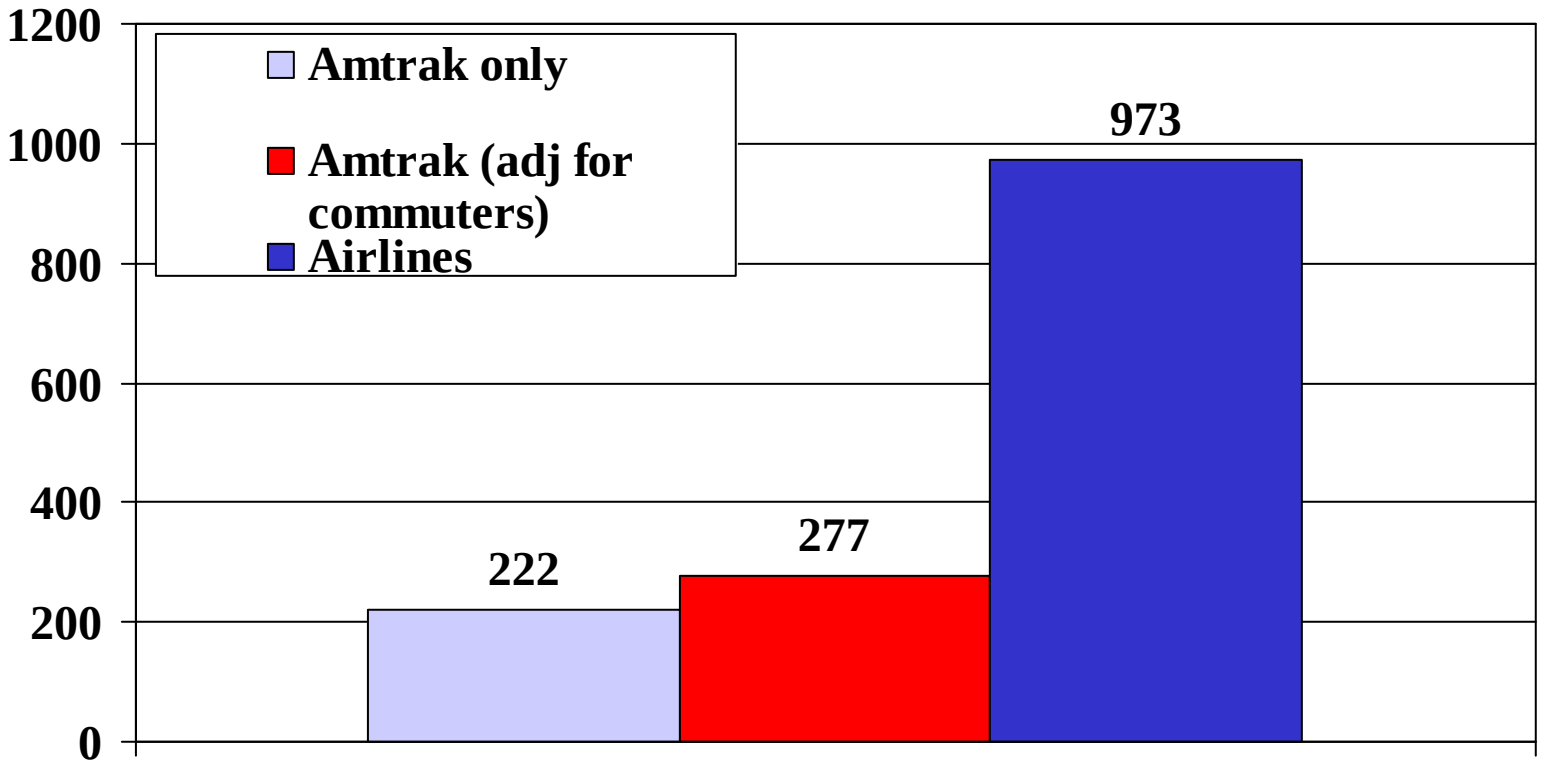
Labor Productivity Trends (pm/employee or ton-mile/employee) **1980=100**



Source: National Transportation Statistics 2002, Table 3-24 and AAR, Statistics of Class I railroads

Figure 11

Passenger-Miles/Employee (000) (2000)



Amtrak adjustment for commuters uses average 22 mi/commuter trip.
Probably overstates productivity slightly.

Figure 12

The “Emerging Corridors”