

# Past and Future of Intercity and Commuter Rail Passenger Service in the U.S.

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## SHORT PROLOGUE

Rail passenger services in the U.S. have a distinct structure that evolved over many years. Railroads in the U.S. – freight and passengers – developed entirely in the private sector. In the latter part of the 19<sup>th</sup> century, railroads occupied a dominant position in the transport sector. This dominance, combined with the notorious image of the “robber barons” (many of whom were railroad investors who fully deserved their bad reputation), fixed in place a U.S. approach relying on private ownership and operation, but constrained by strong government regulation.

Facing this mix of politics and regulation, the U.S. railroads evolved into an uneasy balance of inward-looking management along with a tariff system that supported favored freight shippers and funded passenger losses from profits generated in areas where railroads had market power. This model began to erode shortly after World War I with the development of the U.S. highway system. The erosion was temporarily reversed between 1939 and 1945 as fuel rationing and military traffic demands focused heavily on the railroad system.

The ending of wartime controls, highway construction including the Interstate Highway System beginning in 1956 and the introduction of the jet aircraft accelerated the loss of market share in both freight and passenger markets. The impact of these changes was aggravated by government support for highway and airport construction while the private railroads had to be fully financed from their own resources.

Unfortunately, while the competitive situation changed rapidly against the railroads, the system of regulation remained frozen, forcing some freight tariffs to be higher than necessary in order to support politically favored shippers and, probably more important, forcing the private freight railroads to provide passenger services at a loss. By the early 1970s, earnings had badly eroded and many railroads were near (or in) bankruptcy. Intrusive regulatory controls prevented the freight railroads from competing with trucks and passenger service losses, combined with forced retention of a large number of routes, led to management neglect and lack of investment.

The government responded in three steps. First, in 1971, passenger services were separated from freight and a publicly owned and supported corporation (Amtrak) was created to run all intercity rail passenger services; second, in 1976, six bankrupt eastern railroads were combined into a single, publicly owned freight company (Conrail); and, 3) the highly restrictive regulatory framework was dismantled in the “Staggers Act of 1980.”<sup>1)</sup>

## OUTCOME OF REFORM

The freight part of the reform effort was highly positive. The railroad freight market share, which had fallen from 68.6% of ton-km in 1944 to 37.5% in 1980<sup>2)</sup>, stabilized and slowly increased to 40% by 2009<sup>3)</sup>. Between 1980 and 2012, rail freight ton-km grew by 86%, net income rose by nearly 4 times in constant terms and return on shareholders’ equity rose from 6% to 14.6%<sup>4)</sup>. In the 1980s, Conrail was rehabilitated, removed of any responsibility for commuter rail passenger services and eventually fully privatized. Remarkably, though profits increased, enhanced competitiveness and productivity also led to a reduction of more than 50% in average U.S. railroad freight tariffs<sup>5)</sup>. The net result is a highly productive and competitive, financially stable railroad freight industry – a successful reform effort by almost all measures.

Creation of Amtrak marked the divergence of passengers from freight. The driving objective in separating passenger services from freight companies was to save the freight railroads: if they did not have to carry the burden of passenger losses and if they were allowed to compete fully in the transport market the freight railroads could (and did) survive without further government assistance. Saving passenger services was a secondary objective driven as much by politics (especially labor unions) as by the economic value of passenger services. As a consequence, very little effort or investment went into planning Amtrak’s future.

At the creation of Amtrak, the U.S. began to emphasize the distinction between “commuter rail” and “intercity rail.” Though the distinction is not absolute, commuter services were generally defined as trains carrying mostly daily round-trip, local work-related passengers who purchase multi-ride fares or season passes. Commuter rail services are planned, managed and funded at the metropolitan or county level. They receive Federal funding assistance only for a share of their capital investment from the Federal Transit Administration (FTA).

Amtrak was created as a single federally owned, “as if for profit” corporation. Amtrak was given a monopoly on provision of **intercity** rail passenger services and has a right of access to the lines of the freight railroads in return for an access charge based on marginal (“incremental”) costs. The private railroads transferred responsibility for intercity services to Amtrak. Nearly two-thirds of all intercity passenger services were abandoned and Amtrak took over the remainder.

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1) Trucks and airlines were deregulated at essentially the same time.

2) AAR, Railroad Facts, 1990 edition, p32.

3) AAR, Railroad Facts, 2012 edition, p32.

4) See U.S. Surface Transportation Board, “Statistics of Class I Railroads,” for years 1980 and 2012 and U.S. Bureau of Economic Analysis.

5) See, OECD, “Peer Review of Freight Railway Development in Mexico,” February 2014, Paris, France, page 16, Figure 3,5

Amtrak's intercity rail covers about 25 short-haul services (generally 150 to 600 km) along with 15 "National System" long-haul trains that typically have sleeping and dining service aboard with routes ranging from 1400 to 4000 km. Amtrak also operates the Northeast Corridor services (Acela and Northeast Regional) from Washington, DC to Boston, MA via New York City<sup>6</sup>. In total, Amtrak's routes cover about 40,000 km of lines.

**Figures 1 and 2** provide a broad profile of rail passenger service in the U.S. The picture supports the discussion above -- intercity passenger services began to fall rapidly after World War I, were propped up during World War II, and then collapsed thereafter. Amtrak inherited only about 5% of the passenger traffic of the peak years. Growth in passengers and passenger-km since then has averaged around 2% annually, significantly less than air and auto traffic growth. Commuter rail traffic has shown similar growth trends but from a much larger base of passengers.

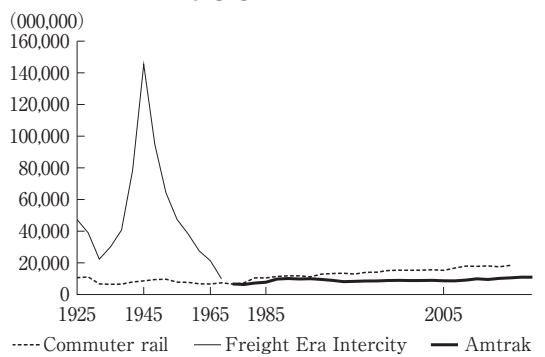
**Figures 3 through 5** look at the individual Amtrak services<sup>7</sup>. Amtrak has four distinct business activities: short haul trains, long haul trains, Northeast Corridor (NEC) Regional trains (the short haul trains in the NEC), and Acela (high-speed service in the NEC).

The short haul trains represent most of Amtrak's passengers and passenger-km, and have grown faster than other services. The average trip length has been stable at around 210 km. The NEC Regional trains are Amtrak's second largest market and have also experienced significant growth. Their average trip has remained around 250 km. Long

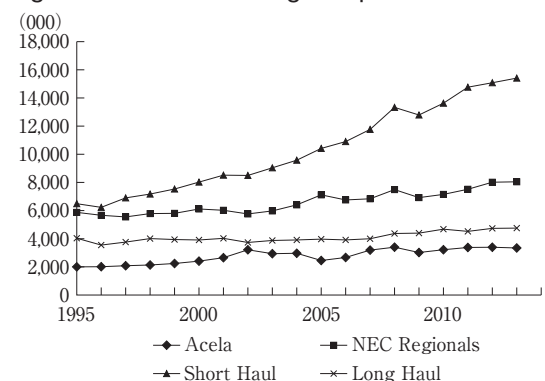
**Fig. 1** Commuter and Intercity Rail Passengers in the U.S



**Fig. 2** Intercity and Commuter Rail Passenger-Km in the U.S



**Fig. 3** Amtrak's Passenger Trips



6) A full listing of Amtrak's routes and services can be found at <http://www.amtrak.com/train-schedules-timetables>.

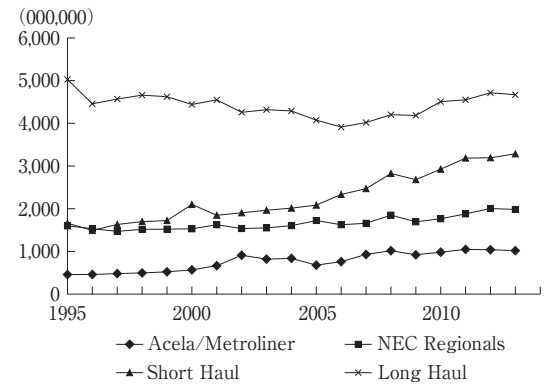
7) Figures 3 through 6 cover only the period 1995 to 2013. Data for individual Amtrak services are not available before 1995. In addition, minor changes in route structure, and changes in definitions mean that all numbers should be seen as indicative rather than exact.

haul services are Amtrak's third largest market, though their traffic has been stagnant or actually shrinking. They had an average trip length of about 1,000 km in 2013, down by about 20% since 1995. Acela services were the fourth largest in passenger and passenger-km terms, though traffic has been growing. Acela passengers have an average trip of 300 km, up slightly since 1995.

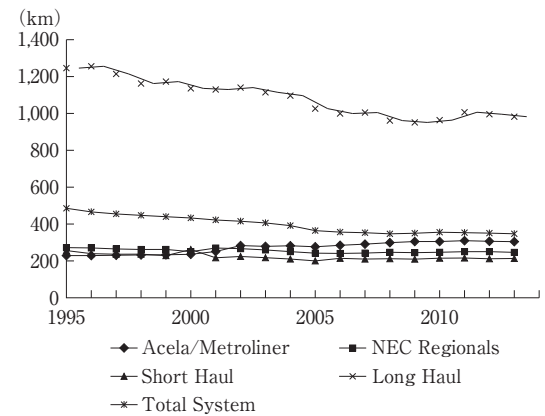
**Figure 6** shows pronounced differences among the services. Acela tariffs (over 52 cents/passenger-km and rising) appear to be very high, and this average conceals the fact that the "first class" fare on Acela can be as high as 82 cents/passenger-km while the "business class" fare can be as low as 40 cents/passenger-km. These have to be compared with air fares between New York and Washington or Boston that average around 90 cents/passenger-km. Very high air fares caused by constrained capacity at the Washington, DC, New York and Boston airports serve as an umbrella over the prices of the Acela services. The NEC Regional fares are also quite high (and gradually rising), for the same reason, but mostly cover tourist class travel and have a trip time of about 30 minutes longer than Acela from Washington, DC to New York City. The conventional short haul fares appear to be much lower; however, as noted, these are just the ticket prices. If state operating support were included, the fares would be about 50% higher, still below NEC Regional. Average long haul fares are the lowest, even though they include the revenues from sleeping car and private cabin services. Short haul and long haul fares have been stable in real terms for many years.

**Figure 7** provides additional key information for assessing future reform options, showing: average ticket revenue; average total revenue including state support along with other sources such as food and concessions in stations; and, "contribution," which is the difference between total revenue and the total allocated costs of the services<sup>8)</sup>.

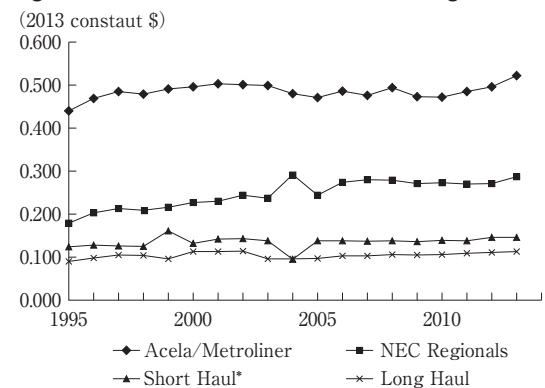
**Fig. 4 Amtrak's Passenger-Km**



**Fig. 5 Average Trip Length for Amtrak Trains**



**Fig. 6 Amtrak's Fares: U.S. \$/Passenger-Km**



\*The Short Haul revenues include only ticket revenues. When state support is added, average short haul revenues would be about 50% higher

Within the accuracy of the estimates, Acela services are profitable, NEC Regional services are marginally profitable, the state-supported short haul services are marginally unprofitable, the non-state supported short haul services are unprofitable, and the long haul trains are very unprofitable.

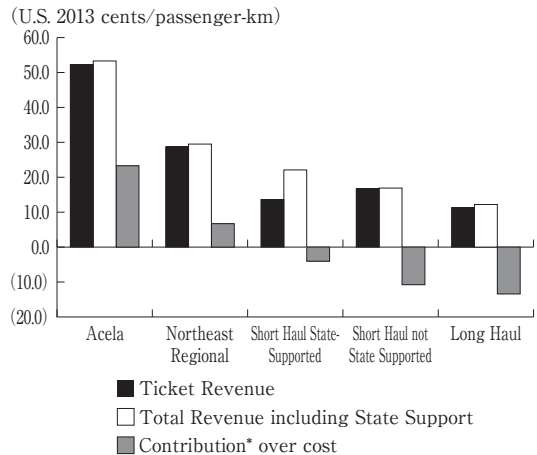
In summary terms, Amtrak operates an uncomfortable mix of disparate services. Since inception it has cost the U.S. taxpayer nearly \$70 billion (2013 \$) , but very few observers would argue that it has done anything well<sup>9)</sup>. Some of its services have a clear transportation rationale (Acela and NEC Regional) , some may have an economic rationale when all benefits and costs are taken into account (short hauls) and some services – the long haul trains – appear to have primarily a political justification. Over its lifetime, Amtrak has had just enough political support to survive but never enough to invest properly or to prosper in any single market and there is no convincing reason to think this will change significantly with the existing organizational structure.

## DIRECTIONS FOR CHANGE

In broad terms, railways can take a number of possible institutional forms: fully public ownership and operation; private management contract under control of a separate owner; private franchises with public support and decision-making as to investments and tariffs (“gross cost” franchise) ; private franchises with limited public support and significant private control over services, tariffs and investment (“net cost” franchise or concession) ; and, fully private ownership and management. In practice there can be combinations, like Amtrak, which is a public operator on private infrastructure, or the Japan Rail Freight Company, which is a public operator on privately owned infrastructure, or in the E.U. where infrastructure is separated from all operators and the operators can be public or private<sup>10)</sup>.

**Commuter Services.** There are 28 rail commuter services in the U.S., many of which began years ago as private companies. Most of the operations were eventually taken over by local entities in order to retain the

Fig.7 Economic Performance of Amtrak’s Routers in Fy 2013



8) A detailed listing of each Amtrak route along with performance statistics can be found at <http://www.amtrak.com/ccurl/931/771/Amtrak-Monthly-Performance-Report-September-2013.pdf>. See particularly pages A-3.5 and C-1. The cost figure used is “total costs” including OPEBs (other post-employment benefits). The total cost estimates reflect the best available allocation of operating and fixed costs: they do not include capital charges such as interest and depreciation. The total cost numbers are subject to all of the normal problems of allocation of direct, indirect and joint costs, but they are useful in comparing the relative performance of the Amtrak routes.

9) Federal Railroad Administration, “History of Amtrak Appropriations through FY 2013,” restated in 2013 \$.

10) See, e.g., European Conference of Transport Ministers (now the International Transport Forum), “Competitive Tendering of Rail Services,” Paris, October 2007, for a detailed discussion of this terminology and of the experience of competitive tendering of rail services up to that time.

public benefits even though road competition had rendered them financially unprofitable. Over the past few decades, many of these agencies have moved from direct operation to contracting-out (management contracts). The primary motivation has been to reduce costs and improve services: the primary opposition to change has been labor unions.

As of 2006, the Government Accountability Office (GAO) reported that 15 of the services had adopted contracting-out in one form or another. Of the 15 contracts, 9 were for train operations<sup>11)</sup>. By 2013, GAO reported 19 commuter rail contracts that included train operations<sup>12)</sup>. Interestingly, although Amtrak was acting as a contract operator for four of the services in 2006, it has since lost two of the contracts in competition with private providers<sup>13)</sup>. There are now 8 private contract operators (three are freight railroads providing contract operations on their own track) in competition with Amtrak and there is every reason to believe that competition will increase. It is quite possible that all commuter services will be operated by management contracts in future, and that Amtrak will actually be driven out of the contract operation of rail passenger commuter services because of its high and rigid cost structure.

**Short Haul Services.** Amtrak's 1971 route structure included 8 short haul routes, originally with no state support<sup>14)</sup>. The original legislation also included a provision in which states could ask for added routes or services if state support were provided. By 2013, there were 15 states providing about \$200 million in support on 21 routes that carried over 80 percent of the short haul passengers and there were only 6 routes left with no state support. In 2008, Congress passed legislation (the "Passenger Rail Investment and Improvement Act of 2008," or PRIIA) that required Amtrak and the states to work together to develop a uniform cost-sharing methodology intending that all short haul routes receive state support<sup>15)</sup>. The methodology was finally agreed in 2012, and implementation in FY 2014 may eventually put all short haul routes on the same financial basis where states cover the operating losses. If so, the financial difference for short haul services shown in Figure 7 will be reduced and these trains will effectively be operated as management contracts. States will determine the passenger fares, but total revenue including state support will have to be enough to cover the full allocated costs.

Another implication of full cost compensation is opening the routes up for competition from other operators as provided in Section 217 of PRIIA. Three states have indicated their intent to ask for indications of interest from potential operators, and several other states already contract-out maintenance services. It is likely that many of the states that have large short haul operations (California) will begin the process of seeking competition because, once they have to pay full costs, it will be in their interest to minimize those costs. Amtrak's poor experience competing for commuter services suggests that private operators may well be able to offer better service and lower costs.

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11) GAO, "Commuter Rail Service contracts," GAO-06-820R, Washington, DC, 2006, page 6.

12) GAO, "Transit Agencies' Use of Contracting to Provide Service," GAP -13-782, Washington, DC, September 2013, page 7.

13) Amtrak is prohibited from including commuter routes into its route structure, but it can operate commuter services under contract so long as it receives full compensation for all costs involved.

14) There were also 15 Long Haul routes and 6 NEC routes. See <http://www.timetables.org/full.php?group=19710501&item=0004>, accessed April 28, 2014

15) See PRIIA, Section 209.

Opponents to enhanced competition will clearly include the labor unions, but may also include the freight railroads over which the services operate. The freight railroads may prefer a single, fully experienced operator rather than a multiplicity of operators that may, or may not, have full capability at the outset.

**Long Haul Services.** These services pose a dilemma because they have not been growing steadily and offer no obvious route to breakeven. Unlike commuter, short haul and corridor services, where rail can offer superior trip times and competitive modes face congestion and higher costs, airline fares for long haul service are actually cheaper than Amtrak, and auto travel with several passengers in the car is cheaper and faster, as is bus travel<sup>16)</sup>. There may well be a transportation rationale for these trains, especially between smaller markets along the routes, but it is constrained by cost and limited service frequency.

It would be possible for Amtrak to operate these trains by management contract, but there have been no companies thus far that appear to want to operate over the distances involved. There are also a few “cruise” operators providing luxury experiences on limited, scenic routes, but these are not an alternative for most long distance services. Given that these routes constitute the “National System” and that they do have a national (as opposed to local or regional) transportation rationale, continuance of Amtrak as a national managing agency may be the only available option.

**The Northeast Corridor and High-Speed Rail.** The NEC is a distinct entity within Amtrak. NEC Regional trains cover at least their operating costs while Acela trains are fully profitable without any outside support. Amtrak’s reports do not show how this picture would change if the full costs of building and maintaining the NEC infrastructure were included; but, it is critical to acknowledge that the NEC infrastructure carries a very high level of commuter rail traffic in most areas and a significant amount of freight traffic in some areas. As the E.U. countries have discovered in setting track access charges for multiple users, deciding who should pay what share of costs is difficult enough at the marginal cost level, and nearly impossible if full costs are to be recovered from users<sup>17)</sup>.

Section 212 of PRIIA required that an NEC Infrastructure and Operations Advisory Commission be established in order that all the state commuter operators and freight railroads would be able to work more effectively with Amtrak and the FRA to plan and manage the NEC infrastructure. If one outcome of this Commission’s work is an agreement on how to share the NEC infrastructure costs and investment and thus how to impute access charges, it seems likely that Acela and possibly NEC Regional services will be able to cover their access charges and make a profit. This would be especially likely if the NEC cost allocations are similar to the E.U. policy in allocating marginal costs to operators and letting the public agencies (states and the Federal Government, the underlying owner of the assets) retain responsibility for fixed costs<sup>18)</sup>.

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16) Southwest Airlines, a low cost air carrier, has average revenue of about 10 U.S. cents/passenger-km. See Southwest Airlines Annual Report for 2013, page 43.

17) See, for example, Thompson, Louis S., “Railway Access Charges in the EU: Current Status and Developments Since 2004” OECD (now ITF), Paris, December 2008.

18) See Thompson, Louis S. “Options for Federal Ownership of the Northeast Corridor (NEC) Infrastructure,” Federal Railroad Administration, January 2006, for a more detailed discussion of the ownership and operation of the Northeast Corridor infrastructure.

This approach would create the possibility of franchising the NEC intercity services. NEC Regional is lower cost and competes mostly in the auto and bus market (and carries more passengers), so the balance between public and passenger benefits might dictate a gross cost concession, with low fares and with most of the demand and investment risk remaining with Amtrak (backed by the U.S. DOT). By comparison, Acela competes with air for business travel and charges very high fares so a strong case can be made that Acela should become a net-cost franchise carrying full demand, operating cost and rolling stock investment risk. If Amtrak and the NEC states are able to persuade the Congress to finance Amtrak's vision for improved high-speed rail in the NEC, it will still be likely that a successor to Acela operations could be a net-cost franchise or concession.

Models for true high-speed rail outside the Northeast Corridor are still undefined. The California High-Speed Rail Authority (CA HSRA) is farther along than any of the other potential projects and analysis indicates that the San Francisco to Los Angeles market is the most promising outside the NEC. Even so, the economic analysis of the California project clearly demonstrates that the infrastructure cannot be built without public investment<sup>19)</sup>. While there is likely to be a surplus of revenues over operating costs, perhaps enough to pay for rolling stock, most of the infrastructure investment will have to come from public sources and will not be paid back over any foreseeable future period. At the same time, the economic benefits (pollution, congestion, safety) may be large enough to make the project economically feasible. The latest plans from the Authority envision use of a management contract when the first parts of the system are put into operation followed by a form of net-cost concession when demand projections have been established for the full operation from Los Angeles to San Francisco.

## **Summary of the Change Options.**

The original intercity passenger structure – a single national operator with Federal subsidy – never worked well. By trying to do all things in all markets, it ended up doing nothing very well anywhere. The key issue in future structures is the balance between public and private benefits and costs. Long haul services are heavily weighted toward public and political considerations and are limited in their potential by market competition: they are likely to continue to be planned and managed at a national level, probably by a part of the Amtrak that exists today. Commuter rail and short haul trains focus on local transportation issues such as congestion and emissions and will always require strong public involvement in planning, management and funding: they have increasingly been shifted to private operation under management contracts awarded by public authorities. In none of these cases is the operator required to collect all fixed costs of the infrastructure from passengers.

Corridor services, especially high-speed rail, are different because the full cost of the infrastructure has to be paid either by the operator (s) or by the public owner. In addition, high-speed services compete directly in a commercial market with private (unsupported) competitors. For these services, if we assume that a major part of the fixed cost of the infrastructure can be borne by the owner, gross-cost or even net-cost franchises will be a good model.

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19) See CA HSRA, "2014 California High-Speed Rail Benefit-Cost Analysis," February 2014.