Order Code RL31027

High-Speed Rail: Development and Investment Issues in the 107th Congress

Updated September 7, 2001

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Summary

Passenger train ridership in the U.S. has declined since the 1920s, as cars and planes made travel faster and more convenient. Amtrak was created in 1971 to take over passenger train service, freeing private railroad companies from that money-losing operation. Since its creation, Amtrak has been given enough financial support to survive, but apparently not enough to significantly improve service (except in the Northeast Corridor). Train ridership has declined in other countries too. However, the introduction of high-speed rail service–trains traveling at 125 miles per hour or faster–in some countries has increased train ridership on those routes and shown that fast trains can be competitive with auto and air travel. In the U.S., Amtrak's most successful route has been its only high-speed route, the Northeast Corridor.

Federal, state and local governments are interested in providing high-speed rail service to relieve congested highways and airports throughout the U.S. However, high-speed service of the type seen in Europe and Japan is based on a rail equivalent of the Interstate Highway System: a separate system of tracks, dedicated to passenger rail service, with gentle curves, shallow grades, and no at-grade road crossings. The High-Speed Rail Investment Act of 2001 (S. 250/H. R. 2329) does not provide for creation of dedicated high-speed routes. Instead, it would provide funds to upgrade existing rail lines. This approach is much less expensive than a dedicated high-speed rail system. However, the results are more modest: trains will not travel as fast as on a dedicated system because passenger trains will share the tracks with slower freight trains and will have to slow down at road crossings and on curved tracks for safety.

Amtrak's capital plan calls for $1.5 billion in capital spending annually over the next 20 years to maintain the current system and improve train speeds in designated corridors. S. 250/H. R. 2329 would enable Amtrak to issue $12 billion in bonds over 10 years to finance capital improvements needed to increase train speeds in eleven federally-designated high-speed rail corridors. No more than $3 billion could be spent on any one corridor.

The bonds, called tax-credit bonds, do not pay interest but allow the holders to claim a credit on their federal taxes in lieu of interest. The bonds do not require an appropriation, but would reduce total federal revenue. The General Accounting Office (GAO) estimates forgone revenues over the 30-year life of the program at $17-19 billion; they estimate that equivalent annual appropriations or a one-time equivalent appropriation are potentially cheaper alternatives.

Financing large-scale capital improvements with long-term debt (e.g., bonds) rather than direct appropriations is a common principle in public finance. The capital improvements provide benefits over time, thus, taxpayers who will ultimately be eligible to enjoy the benefits are the ones who will repay the bonds. Direct appropriations, conversely, have current taxpayers pay the cost for the improvements that provide future benefits. This report will be updated as needed.

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Amtrak was created in 1970 because Congress wanted to preserve passenger rail service. The railroad companies were losing large sums of money on passenger service and wanted out of the business. In the intervening decades Amtrak has received enough support to keep going but not enough to significantly improve the level of rail passenger service. The Amtrak Reform and Accountability Act (P.L. 105-134) requires that Amtrak operate without federal support of its operating expenses after FY2002, or face possible restructuring or liquidation.

Amtrak supporters argue that if given the resources Amtrak could offer a service that is competitive with auto and air travel: high-speed trains. With this service in place, supporters believe Amtrak would then have a chance of operating profitably. At the same time, the success of modern high-speed train service in other countries, and the growing congestion on our highways and in our airports, has led to interest at the federal, state and local levels in having faster trains in many areas of the country.

Assuming there is political support for expansion of high-speed rail service, the capital improvements necessary to allow for faster train travel would be easier to accomplish with a stable source of funding because of the long-term scale of the work. One proposed mechanism for providing this steady stream of funding for the capital investment is bond finance. The High Speed Rail Investment Acts of 2001 (S. 250/H.R. 2329) would allow Amtrak to issue $1.2 billion in tax-credit bonds each year for 10 years, with the proceeds spent on improving train speeds in federally designated high-speed rail corridors.

This legislation raises several questions: Why doesn't the United States have high-speed rail already? Is high-speed rail in the United States a good investment? How much would high-speed rail cost? How could it be paid for? This report examines the issues involved in providing faster trains in the U.S., then analyzes tax-credit bonds specifically. Finally, it reviews the provisions of S. 250 and H. R. 2329, the High Speed Rail Investment Acts of 2001. This report will be updated to include other legislative developments or Amtrak funding bills as warranted.

What is High-Speed Rail?

High-speed rail refers to two types of surface transportation: conventional trains, in which steel wheels roll on steel rails, and magnetic levitation (maglev) trains, in which superconducting magnets float the train above a guide track. Japan and Germany have developed prototype maglev systems on test tracks, but there is currently no commercial maglev route anywhere in the world. Several nations have

high-speed rail systems employing conventional trains. This report focuses on conventional trains.[1]

The U.S. government defines 'high-speed rail' as 'sustained speeds of more than 125 miles per hour' (49 U.S.C. 26105(2)(A), 'High-Speed Rail Assistance'). In selecting high-speed rail corridors for funding to eliminate rail-highway grade crossing hazards, however, the Secretary of the Department of Transportation (DOT) is directed to 'include rail lines where railroad speeds of 90 miles or more per hour are occurring or can reasonably be expected to occur in the future' (23 U.S.C. 104(d)(2)(C)).

Japan, France, Germany and Spain have high-speed rail systems capable of top speeds of 175 miles per hour or more and average speeds of 125 miles per hour or more. All such systems have two essential characteristics:

- separate tracks dedicated to high-speed passenger trains, with gentle curves and shallow grades, and no road crossings–the railroad equivalent of the Interstate Highway System; and

- trains powered by electricity (i.e. these lines have overhead electric wires, or catenary, along their entire length to feed power to the trains).

Without dedicated tracks–that is, traveling on tracks shared with slower trains and/or with road crossings–trains must travel more slowly for safety reasons. For example, on non-dedicated tracks, the French and German high-speed trains travel from 90 to 140 miles per hour. Electric-powered engines are lighter than internal-combustion engines, enabling the trains to accelerate and decelerate faster as well as operate at higher speeds. This is an important point for high-speed rail in the U.S. because, of Amtrak's 22,000 route-miles, the 400-mile route between Washington, D.C. and Boston (the Northeast Corridor) is virtually the only section with overhead electric lines to supply electricity to a train.[2] All other trains in the United States rely on internal-combustion engine locomotives for power. There are no dedicated high-speed tracks in the U.S.

Fast Trains in the U.S.

In the 1930s there were dozens of trains in the U.S. reaching speeds of 100 miles per hour or more. In the 1940s, the Federal government instituted safety regulations that imposed speed limits on railroad tracks based on their characteristics and the type of signaling system in use. The railroad companies decided that the necessary improvements needed to operate trains at high speeds were not worth the cost. As

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[1]For more information on maglev, see *Maglev as a high speed ground transportation alternative: background and developments*, by John Fischer (CRS Report RS20613, June 28, 2000).

[2]To address this, the Federal Railroad Administration is working with a train manufacturer to develop a high-speed diesel locomotive–i.e., one not requiring electricity as a power source–capable of traveling at 150 miles per hour.

a result, with few exceptions, the maximum speed limit for railroad tracks in the U.S. has been 79 miles per hour since then.

Only on Amtrak's Northeast Corridor has the necessary investment been made to reach high speeds[3], and even on that corridor there are still places where trains must slow down. The Northeast Corridor is owned by Amtrak; virtually all the rest of Amtrak's routes operate on tracks that are owned by freight railroad companies. Amtrak has spent well over $3.3 billion to upgrade the Northeast Corridor for high-speed service, and that work is not finished.

Congress has been interested in faster trains since at least the 1960s. The High-Speed Ground Transportation Act of 1965 led to studies which identified the Northeast Corridor as the most promising route for high-speed rail. In the 1980s Congress funded studies of other potential high-speed corridors. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (P.L 102-240) discussed high-speed rail as part of an intermodal transportation system for the U.S. ISTEA directed the DOT to

> lead and coordinate Federal efforts in the research and development of high-speed ground transportation technologies in order to foster the implementation of magnetic levitation and high-speed steel wheel on rail transportation systems as alternatives to existing transportation systems.(P.L 102-240, Section 1036(a)).

ISTEA also authorized up to $1 billion in federally-guaranteed loans for construction of high-speed rail corridors, though no money was ever appropriated for this loan program. ISTEA also authorized the designation of five high-speed rail corridors by the Secretary, and authorized $30 million for elimination of at grade crossings in these corridors. The Transportation Equity Act for the 21st Century (TEA21) (P.L.105-178) continued ISTEA's limited support of high-speed rail by authorizing $35 million annually for FY1998-2001. The direct appropriation from general funds is for general assistance and planning for the technical development of high-speed rail service.

Generally, the U.S. Government promotes high-speed rail, but has not appropriated sums comparable to the tens of billions of dollars that other nations have spent to construct and maintain their systems.[4] To date, no private group has built any high-speed rail segments in the United States.

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[3]New York State is upgrading the line between New York City and Buffalo to 125 mph.

[4]49 USC 302: Policy standards for transportation

(d)(1) It is the policy of the United States to promote the construction and commercialization of high-speed ground transportation systems by -

(A) conducting economic and technological research;

(B) demonstrating advancements in high-speed ground transportation technologies;

(C) establishing a comprehensive policy for the development of such systems and the effective integration of the various high-speed ground transportation technologies; and

(D) minimizing the long-term risks of investors.

Does the U.S. Need High-Speed Rail?

The nation's highways and airports are increasingly congested, while the cost to maintain the existing infrastructure has been rising. Expanding the capacity of these modes is constrained by costs, by local opposition, and in some cases by environmental restrictions. The same might be said of building new railroad tracks. However, proponents of passenger rail argue that increased investment in passenger rail service would diversify the transportation system and relieve the congestion on airports and highways. While it is probably true that the implementation of high-speed rail between large U.S. cities would increase the number of travelers opting for rail travel, many observers question whether high-speed rail would noticeably decrease congestion on other modes. At best, they believe that high-speed rail travel might slow the growth in demand for air and highway travel in high-speed rail corridors.

Passenger rail currently carries less than 1% of travelers in the U.S. Critics note that the proportion of travelers using trains has steadily declined, while air travel and auto use has increased. They argue that the sprawling residential development patterns of the U.S. are not suited to rail travel, which works best when carrying large numbers of people between large population centers. They conclude that the government should put its money into improvements to the air travel and highway systems, not passenger rail service.

Proponents of passenger rail observe that highway and air travel have benefitted from technological improvements and infrastructure investment in the past few decades that have increased both speeds and capacity, while rail travel has not. Passenger trains in the U.S. are no faster–and in most cases slower–than they were 60 years ago, and there are many fewer of them. They argue that if trains were time-competitive with air travel, more people would ride trains. As evidence, they note that the introduction of high-speed rail service in other countries has led to increased ridership on those routes, and that Amtrak's most successful route has been its fastest service (between Washington, D.C. and New York City, 226 miles).[5]

The most promising market for passenger rail service in the U.S. appears to be high-speed service between large cities that are 100 to 500 miles apart. At that distance, high-speed trains are time-competitive with flying. Thus the focus of Amtrak and the federal government on developing high-speed corridors between other large cities.

Improving the Existing Passenger Rail Infrastructure

The overall speed of a train is a function of the train's maximum speed, track conditions, and signaling systems. This is true for automobiles too; a car can maintain a higher average speed on a well-paved, well-signed Interstate Highway than on a country road. In the past 35 years, Japan, France, Germany and Spain have built the

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[5]Even before the introduction of Amtrak's new Acela high-speed train, Amtrak carried 37% of travelers who used either trains or planes to travel between these two cities

equivalent of Interstate Highway systems for their rail networks: dedicated high-speed rail lines separate from the conventional rail network. The new tracks have gentle curves and no at-grade road crossings. These dedicated networks not only allow high speeds (175 miles per hour or more), but also high average speeds (125 miles per hour or more). These dedicated tracks have come with a price; these nations have spent, cumulatively, well over $100 billion on their high-speed rail infrastructure.

The U.S. does not have a dedicated high-speed rail route, nor has the federal government shown any inclination to provide funding on the scale necessary to build such a route. Private proposals to build high-speed lines in Florida and Texas were abandoned, calling into question the financial viability of a private, independent rail service in the U.S. Rather than build a new network of track, federal and state governments and Amtrak want to improve existing sections of the rail network to allow passenger trains to run faster than their current maximum of 79 miles per hour. To achieve this goal, the Secretary of Transportation has designated eleven high-speed rail corridors in addition to the Northeast Corridor.[6] The railroad tracks in these corridors are owned by freight railroad companies.

This incremental approach has inherent limitations. The existing rail network was built in the 19th century for trains with top speeds of much less than 100 mph. To accommodate high-speed travel, curves must be straightened, road crossings eliminated, and the quality of rail lines upgraded. These improvements must be made by Amtrak or the federal or state governments–to the private property of freight railroads. Investing public money in private property raises a variety of public policy issues: e.g., What is the return to the taxpayer on this investment?

There is also a cost to the freight railroad companies. As private property, the rail infrastructure of the U.S. is subject to state and local property taxes. The improvements needed to allow high-speed travel will likely increase the value of that property and could increase the property tax liability of the owners, the freight railroads. While the freight railroads will benefit some from the improvements, that benefit may not exceed the increased tax liability. The increased tax liability of the freight railroad would then be passed on in part to the consumers of their services, including Amtrak.

Improvements to the existing tracks will be costly, and are not the only change needed to accommodate high-speed travel. Amtrak has spent nearly $5 billion over the past 25 years maintaining and improving the 400-mile Northeast Corridor for high-speed service. But there are still road crossings and relatively sharp curves which have not yet been eliminated, forcing trains to slow down. In addition,

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[6]California Corridor (San Diego-Los Angeles-San Francisco-Sacramento); Chicago Hub (Chicago-Cincinnati, Chicago-Detroit, Chicago-Milwaukee-Minneapolis/St. Paul, Chicago-St. Louis); Empire Corridor (New York City-Albany-Buffalo); Florida Corridor (Miami-Orlando-Tampa); Gulf Coast Corridor (Houston-New Orleans-Birmingham-Atlanta); Keystone Corridor (Philadelphia-Harrisburg-Pittsburgh); Northern New England (Boston-Montreal, Boston-Portland); Pacific Northwest Corridor (Eugene-Portland-Seattle-Vancouver BC); Southeast Corridor (Washington D.C.-Richmond-Charlotte-Atlanta-Jacksonville); South Central Corridor (Dallas-San Antonio, Dallas-Tulsa, Dallas-Little Rock). For a map of these corridors, see http://www.fra.dot.gov/o/hsgt/states/index.htm.

Amtrak's high-speed trains have to share the tracks with slower freight and commuter trains. As a result, while the Acela can reach 150 miles per hour in places between New York City and Boston, its average speed is only 55 miles per hour. Between New York City and Washington, D.C., track conditions are more consistent; top speed in that section is limited to 125 miles per hour, but its nonstop service averages 90 miles per hour for the trip.

Capacity of the Rail Lines. Freight railroads in the U.S. are now facing capacity limits on their remaining track. Track improvements would make it possible for freight trains to travel faster as well, thus potentially increasing the capacity of the existing rail network.

However, observers note that the capacity impact of track improvements is unclear because of the speed differences between fast passenger trains and much slower freight trains. Allowing passenger trains to run faster on tracks shared by slow freight trains could, in fact, reduce the overall capacity of the tracks because of scheduling. For example, imagine traffic on an Interstate Highway with only one lane in each direction: the fast drivers would stack up behind the slow drivers. In order to allow passenger trains to travel at high speeds, freight trains would have to scheduled in a way that left long stretches of track open ahead of the departure of passenger trains. This problem can be mitigated by adding additional lines of track, analogous to the passing lanes on mountainous roads, to allow slower trains to get out of the way of faster trains.

Even if Amtrak and federal and state governments spend the billions of dollars necessary to upgrade existing tracks for high-speed service, coordinating high-speed trains with slow freight trains on high-traffic lines will be challenging.

Funding Options for High-Speed Rail

Amtrak has estimated the cost of developing a nationwide high-speed rail network, based in improvements to the existing rail network, at $50-100 billion over 20 years.[7] By way of comparison, total annual highway spending in the U.S. was $117 billion in 1999.[8]

Amtrak has estimated its capital investment needs over the next five years at $973 million each year in order just to maintain its current level of service, and an additional $584 million each year to begin developing high-speed corridors: a total of around $1.5 billion each year. Over the past several years, Amtrak has received $520 million annually in federal appropriations.

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[7]The GAO reports an Amtrak estimate of $50-70 billion (GAO-01-756R, High Speed Rail Investment Act of 2001, p. 2); the Amtrak Reform Council reports an Amtrak estimate of $80-100 billion, which includes both high-speed rail development and improvements to the non-high-speed rail corridors (Amtrak Reform Council , *2nd Annual Report*, March 20, 2001, p. 52).

[8]Federal Highway Administration, *Highway Statistics 1999*, Table HF-10, p. IV-9.

There are several options for paying for the improvements needed to provide high-speed rail service. The options include: 1) direct appropriations from general revenue; 2) creating a trust fund for passenger rail, similar to those for highways and mass transit; 3) allowing states to use their federal highway funds for rail; and 4) allowing Amtrak to issue tax favored bonds. These options share the assumption that investment in high-speed rail will not occur without some degree of federal financial support.

Direct Appropriation. A direct appropriation from general funds is the funding method preferred by some, who value its transparency: the amount of financial support going to a project is more easily seen than when tax credits are given. Also, this approach does not intrinsically commit the government to long-term funding.

However, direct appropriation levels are unpredictable from year to year. Appropriations that are unpredictable make planning for large, long-term capital improvements difficult. The Amtrak Reform Council observes that Amtrak's ability to provide high-quality service has been hindered by unreliable and likely inadequate funding. Thus, they call for a stable and adequate source of federal funding for Amtrak's capital needs.[9]

The direct appropriation would also be politically vulnerable. A direct appropriation would require Amtrak's high-speed rail projects to compete with many other programs each year for its funding. And, while the federally-designated high-speed rail corridors include most of the large metropolitan areas of the country, they only cross portions of 33 states, limiting the potential support for high-speed rail appropriations.

Since the public benefits of large capital improvements usually are not seen for several years, due to the years required for construction, many public finance experts maintain that funding those improvements with long-term debt rather than up-front appropriations better matches those who pay for the improvements and those who are eligible to receive the benefits. Financing through direct appropriation has the costs paid up-front by taxpayers, some of whom may never have the opportunity to ride the faster trains.

Trust Fund. There have been repeated efforts over many years to dedicate a portion of the federal fuel tax to an Amtrak trust fund, either by increasing the fuel tax by a penny (currently set at 18.4 cents per gallon of gasoline and 24.4 cents per gallon of diesel) or diverting one cent per gallon from the existing tax.[10] One cent per gallon could raise approximately $1.6 billion annually. However, increasing the fuel tax and designating the increase to a non-highway use would be very controversial. Also, like direct appropriations, this method has current taxpayers funding future projects.

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[9]Amtrak Reform Council, *Second Annual Report*, March 20, 2001.

[10]The federal fuel tax is currently 18.4 cents per gallon on gasoline, 24.4 cents per gallon on diesel.

An argument against dedicating a portion of the fuel tax to rail is that funding rail capital improvements from the federal fuel tax would violate the principle of the fuel tax. After all, opponents note, the original purpose of the fuel tax was to pay for highway improvements; they characterize it as a "user fee" rather than a tax.

However, in 1982, public transit supporters succeeded in creating a Transit Account within the Highway Trust Fund, and having a portion of the fuel tax dedicated to that account. Supporters of this move argued that mass transit is complementary to highway use in urban areas. Similar efforts by rail supporters have been unsuccessful. Railroads also pay a separate fuel tax which is levied at a much lower rate than that paid by highway users (4.4 cents per gallon). The revenue, about $160 million annually, goes to the U.S. Treasury General Fund. Amtrak's contribution to that total is approximately $3.4 million annually.

Allow States to Use Federal Highway Funds for Rail. Many states are interested in having faster trains for their citizens, and have been spending state funds for this purpose. The largest source of transportation funds for most states is their federal highway formula grants, but states are explicitly forbidden to use these funds for intercity rail transportation; they are allowed to use some of these funds for public transit. Many state officials argue that state governments are better judges of their transportation needs than is the federal government. Thus, giving states the flexibility to spend federal highway funds for rail projects would allow them to maintain a more balanced transportation system.[11] Total federal highway formula funding is around $30 billion annually.

Opponents of more state flexibility argue that the capital investment needs of highways are so great that even the current federal funding for highways is insufficient. Therefore, states should not be allowed to divert funds from highway projects. Also, opponents argue that the highway funds come from the federal fuel tax, so spending them for non-highway projects would violate the "user fee" concept behind the fuel tax.

Tax-Favored Bonds. Most public finance experts agree that issuing bonds is the preferred way of funding long-term capital improvements. The projects typically provide benefits well into the future and bond finance, where the payments are also spread well into the future, better matches the financing cost to those who are eligible to benefit from the project.

Financing high-speed rail improvements with bonds requires selling bonds to willing buyers. However, Amtrak already has significant debt and Amtrak bonds may be seen as a high-risk investment. In June 2001, the Secretary of Transportation allowed Amtrak to mortgage part of Pennsylvania Station in New York City to raise $300 million to cover operating expenses between June 2001 and the beginning of FY2002. The Secretary has said that Amtrak faced very serious financial problems,

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[11]The National Governor's Association supported S. 1144 (106th Congress), which would have given states this flexibility. See http://www.nga.org/nga/legislativeUpdate/1,1169,C_LETTER^D_1872,00.html

and that Amtrak is not going to be self-sufficient by 2003.[12] Under the Amtrak Reform and Accountability Act, if Amtrak is unable to covering its operating expenses by FY2003, Congress will vote on whether to restructure or liquidate Amtrak.[13] Given these circumstances, the demand for Amtrak bonds may not be strong.

Of the various funding options, bond finance has been the most popular with lawmakers. Bills to give Amtrak bonding authority were introduced in the second session of the 106th Congress and received considerable support: H.R. 3700 had 167 sponsors; S. 1900 had 57 sponsors. The House approved passenger rail bonds legislation as part of another bill, though the Senate excluded it from the Omnibus Appropriation Act in December 2000. Acknowledging the significant support for Amtrak bond legislation, Senate leaders promised to bring the legislation to the floor in the 107th Congress. S. 250 currently has 57 sponsors. A similar House bill, H. R. 2329, has also been introduced; it has 170 sponsors.

S. 250/H. R. 2329: The High-Speed Rail Investment Acts of 2001

These bills would enable Amtrak to raise $12 billion over 10 years by issuing up to $1.2 billion in tax-credit bonds annually for passenger rail projects. At least $11 billion must be used for improvements to the 12 federally-designated high speed rail corridors. No single rail corridor can receive more than $3 billion of bond proceeds. No more than $1 billion of bond proceeds may be used for non-high-speed rail corridors.

Bonds cannot be issued until the following requirements are met: Amtrak must have a qualified project approved by the Secretary of Transportation, including a finding by the DOT Inspector General that the project will produce a profit; it must have a 20% State match in hand; and for projects outside the Northeast Corridor, it must have an agreement with the appropriate freight rail carriers. The matching funds would be deposited into a trust fund, and the proceeds from these funds would be used to pay back the principal to the bondholders over the life of the bonds.

There are three categories of qualified projects: 1) those affecting the Northeast Corridor (Amtrak's Washington D.C.-New York City-Boston high-speed corridor); 2) those affecting any of the other federally-designated high-speed rail corridors; and 3) those affecting any other non-high-speed intercity passenger rail corridor.

Both bills require an annual independent assessment of the costs and benefits of the qualified projects, including an assessment of Amtrak's investment evaluation process (S. 250 requires Amtrak to contract for this; H. R. 2329 requires the Secretary of Transportation to issue the contract).

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[12]Don Phillips, "Amtrak Wants to Mortgage Penn Station," *Washington Post*, June 6, 2001, page E1.

[13]P.L. 105-134, Sections 204 and 205.

Differences between S. 250 and H. R. 2329.

While the general purpose of both bills is similar, there are some significant differences in their treatment of various issues.

Qualified Projects. The language describing qualified project expenditures is virtually identical for all three categories: "the acquisition, financing, or refinancing of equipment, rolling stock, and other capital improvements..." Significant differences are:

- H. R. 2329 includes "the introduction of new high-speed technologies such as magnetic levitation systems" as a qualified capital improvement; S. 250 does not. This is probably inconsequential, since, given the relatively small amount of money that would be raised by this bill, any significant improvements to train speeds would require incremental improvements to the existing rail network; the construction of a new network based on a completely different train technology is not within the economic power of this bill.

- S. 250 requires that projects for intercity passenger rail corridors that are not federally-designated high-speed rail corridors must increase railroad speeds to at least 90 miles per hour; H. R. 2329 does not.

- S. 250 provides two additional selection criteria for the Secretary of Transportation in choosing projects for approval: State matching contributions of greater than 20%, and promoting a regional balance in infrastructure investment. H. R. 2329 adds three more criteria: impacts on air traffic congestion, improvement of commuter rail operations, and profitability.

State Matching Funds. Both bills require that states match 20 percent of the cost of qualified projects. H.R. 2329 requires that Amtrak have that money in hand before issuing bonds for a project; S. 250 requires only a binding commitment from the states for the money. Both bills exempt the Alaska Railroad from the requirement of providing a local match; H. R. 2329 also exempts improvements to the railroad station at the James A. Farley Post Office Building in New York City. Both bill forbid the use of federal Highway Trust Fund moneys by states as part of their match, though S. 250 allows states to donate land purchased with federal transportation funds as part of their match. This is a controversial item and is likely to be dropped; when the substance of S. 250 was offered as an amendment (SA 676) to H. R. 1836, this provision was omitted.[14]

Alaska Railroad. Under S. 250, the Secretary of Transportation would have the authority to allocate part of the overall bond limitation for any year to the Alaska Railroad, which would be allowed to issue its own bonds; under H. R. 2329, Amtrak would agree to issue bonds for Alaska Railroad. No specific limit is placed on the amount that the DOT Secretary could allocate to the Alaska Railroad; presumably, this would be limited to no more than $100 million a year, or a maximum of $1 billion, since any Alaska Railroad projects would fall into the third category of qualified

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[14]Congressional Digest, May 17, 2001, S5173.

projects (non-high-speed rail corridor), which are limited to no more than $100 million a year. However, Alaska Railroad projects would not be required to produce a speed of 90 miles per hour; and the requirement for a 20% state match is waived. Since the funds to repay the principal to the bondholders is to come from the state match, this means that the issuance of bonds for Alaska Railroad projects might well result in a shortfall in the trust account used to repay the bond holders; presumably the federal government would have to provide funds to make up the difference.

Property Tax Consequences. To address the issue of increased property taxes from upgrading the rail lines, S. 250 exempts rail carriers from any federal, state or local taxes on rail lines in high-speed corridors leased by Amtrak, and on any improvements funded by qualified Amtrak bonds or any State or local bonds. This provision is controversial. State and local officials are concerned that this provision preempts their authority to tax property within their jurisdictions; also, the tax revenues lost might be significant for some communities. State and local officials suggest that there are other options for dealing with the tax consequences of these improvements. Also, the provision appears overly broad; as written is appears to exempt improvements funded by any state or local bond, whether or not those improvements were made as part of qualified projects as defined in this legislation. It appears likely that this provision would be amended. H. R. 2329 does not have any provisions dealing with property tax consequences.

Tax Credit Bonds Generally

Tax credit bonds are financial instruments that offer the bondholder tax credits rather than interest payments. Typically, the bondholder is allowed to claim a tax credit equal to a fixed percentage of the amount loaned to the bond issuer for a fixed number of years (or term). Because the credit is included in the bondholder's income, the credit rate must yield a rate of return close to alternative taxable investments of equal risk and term.

For example, the credit rate on Qualified Zone Academy Bonds (QZABs) – to date the only available tax credit bonds – is a blend of the prevailing interest rates on a mix of ten-year, *taxable* bonds. The term of QZABs fluctuates with prevailing interest rates and is currently set at 14 years. For more on QZABs, see CRS Report RS20606, *Qualified Zone Academy Bonds: A Description of Tax Credit Bonds*.

Tax Credit Bonds for Amtrak as Proposed in S. 250/H. R. 2329

The Amount. S. 250/H. R. 2329 proposes an annual debt limit of $1.2 billion for fiscal years 2002 through 2011. If the entire $12 billion of Amtrak bonds were floated at an annual credit rate of 7%, the total federal revenue loss might be approximately $11 billion over the 30-year life of the program. If interest rates increase, the size of the decrease in Federal revenue resulting from the program would increase as well.

The Credit. The annual credit rate on Amtrak bonds would be equal to an 'average market yield (as of the day before the date of the issue) on outstanding long-term corporate debt obligations.'[15] In practice, Amtrak bond holders take one-fourth of the credit on the 15th day of March, June, September, and December. The quarterly credit, which is meant to roughly coincide with corporate tax filing requirements, is a departure from the QZAB practice of providing credits on an annual basis. The tax credit is non-refundable which means the bondholder cannot claim credits that exceed annual tax liability, though any unused credits can be carried forward to the following year. The carryforward provision makes the bonds more attractive to investors.

Amtrak bond tax credits could be 'stripped' from the bond principal. The stripping provision allows the bondholder to separate and sell the stream of future tax credits while retaining the rights to the bond principal repayment. This provision makes the bonds more attractive to potential bond investors because the risk associated with credits is separated from the risk associated with principal repayment. Generally, the stripping provision for Amtrak bonds makes the bonds comparable to other bond instruments, thus improving the bond's marketability.

The proceeds from Amtrak bonds are also subject to more generous bond arbitrage rules. Bond arbitrage occurs when an issuer uses the proceeds from a bond issue to invest in other assets unrelated to the bond's stated purpose. For example, if a state or local government sold tax-exempt bonds with a 5% interest rate to build a public building and immediately invested the proceeds to buy taxable bonds with an 8% interest rate, the state and local government would be engaging in bond arbitrage. The state or local government is earning 3% (8% less 5%) on every dollar of tax-exempt bond proceeds. Once construction begins on the public building, the state or local government would gradually liquidate its taxable bonds to pay for construction costs. Bond arbitrage is restricted by the federal government and any excess earnings from arbitrage must be remitted to the U.S. Treasury in most cases. Some particularly abusive cases are also assessed penalties. Current bond arbitrage rules are complicated, but the general rule is that at least 95% of the proceeds from tax-exempt bonds used for construction must be spent within two years.[16]

For Amtrak bonds, 95% of the proceeds of an issue must be spent within five years of the date of issue to maintain the bond's qualified status. If less than 95% but

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[15]Subpart H, Section 54(b)(3) of S. 250/H. R. 2329.

[16]26 U.S.C. 148(c).

greater than or equal to 75% of the proceeds are spent within the five-year window, the bond issue can still qualify. However, any excess arbitrage earnings accruing in the sixth year must be remitted to the Federal Government and 95% of the proceeds must be spent within 90 days after the end of the sixth year.

Amtrak Bond State Match and Trust Account. A qualified Amtrak bond must have a matching contribution equal to 20% or more of the project cost from one or more of the states where bond proceeds are to be spent. The state matching contribution cannot be from federal sources (with one exception: see next paragraph); however, states can sell traditional tax-exempt bonds to meet the matching requirement. Bonds issued for this purpose are excluded from the state's private-activity volume cap.[17] The matching fund payment, which is held in an independent trust for eventual repayment of bond principal, must be received before the tax credit bonds are issued. The trust account requirement helps ensure that Amtrak will have enough cash available to redeem outstanding tax credit bonds at maturity.

The exception for the use of federal revenue is that States may count the value of land contributed for right-of-way toward their match. This match could include land purchased with federal funds, including Highway Trust funds. This exception, which would allow the use of Highway Trust funds for intercity passenger rail, purposes, is controversial.[18] 23 U.S.C. 142(f) provides for joint use of federally-purchased rights-of-way by highways and rail facilities.[19] However, S. 250 would allow sole use of such land for rail facilities.

Amtrak Bond Disqualification. If a project financed by tax credit bonds ceases to qualify, Amtrak must repay the federal government the credits issued in the year the bond was disqualified and the credits from the two years before disqualification. The bondholders are the ultimate recipients of the tax credit; thus, if Amtrak does not repay the credits, the holders of the disqualified Amtrak bonds are levied a tax equal to three calendar years worth of credits "...which would have resulted solely from denying any credit under this section with respect to such issue for such taxable years."[20] This rule generally mirrors the current rules for traditional tax-exempt bonds.

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[17]The federal government limits the amount of tax-exempt bonds that each state can issue for certain private (non-governmental) activities.

[18]When the substance of S. 250 was offered as an amendment (SA 676) to HR 1836, the tax bill, the provision allowing States to use land purchased with Highway Trust funds was omitted. Congressional Digest, May 17, 2001, S5173.

[19]Where sufficient land exists for rail facilities within the public right-of-way of a highway built with federal funds, the Secretary of Transportation shall authorize a State to make that land available "with or without charge."

[20]Subpart H, Section 54(i)(2) of S. 250; Subpart H, Section 54(h)(2) of H. R. 2329.

Analysis of Amtrak Bonds

The tax credit bonds proposed by S. 250/H. R. 2329 would lower Amtrak's interest expenses[21] and subsidize Amtrak's capital investment. These capital investments, achieved with lower interest costs, could lead to increased revenue from improved passenger service and package delivery.

Comparative Cost. Tax credit bonds, and Amtrak bonds specifically, do not explicitly state the size of federal support; the size is dependent on tax and interest rates. The cost of the bonds are limited by size of issue, not the associated federal tax expenditure. In addition, part of the assistance is transmitted through Amtrak to some bond investors.

The cost to the federal government of Amtrak bonds is the tax revenue forgone to give bond holders the equivalent of interest on their investment. GAO estimated the revenue loss from S. 250 (and thus H. R. 2329) would be between $16.9-19.1 billion over the 30-year life of the program.[22]

The GAO also estimated the cost of two alternatives for providing Amtrak $12 billion over 10 years: an annual appropriation for 10 years, and a one-time appropriation that would be invested and draw interest until expended. In order to compare these three alternatives, GAO converted all three estimates into present value sums.[23] Due to a variety of assumptions that had to be made, all the results are in a range. GAO found that the bond bill was potentially the most expensive of the three alternatives ($7.7-10.0 billion), with an annual appropriation ($7.3-8.2 billion) and a one-time appropriation ($7.0-8.4 billion) roughly equal in cost.[24]

Repayment Risk. The question might arise as to whether Amtrak bonds might have a hidden cost to the government. Amtrak has never yet generated enough revenue to cover even their operating expenses, though it is required to after FY2002; if Amtrak were unable to repay bond holders their principle, would the federal government have to provide additional funds to Amtrak for that purpose?

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[21]According to a 1998 Department of Transportation study, interest expenses were the 'second largest contributor to Amtrak expense increases over the past six years [1992 to 1997]'. Amtrak's interest expense increased from $32 million in 1994 to $76 million in 1997 and is projected to increase to $139 million in 2003. U.S. Department of Transportation, Office of Inspector General, *Summary Report on the Independent Assessment of Amtrak's Financial Needs through Fiscal Year 2002*, Report No. TR-1999-027 (Washington: November 1998), p. 13.

[22]General Accounting Office, *The High-Speed Rail Investment Act of 2001*, GAO-01-756R, June 25, 2001 (available at [http://www.gao.gov/cgi-bin/fetchrpt?rptno=GAO-01-756R]).

[23]The present value conversion allows one to compare the value of money spent or received in the future to the value of money spent or received today; generally, one dollar in hand today is more valuable than one dollar in hand a year from now.

[24]However, as noted earlier, the uncertainty of annual appropriations is a disadvantage in long-term capital projects; consequently, from Amtrak's perspective, the annual appropriation alternative has a greater risk than the one-time appropriation.

Legally, no. Bonds created by S. 250/H. R. 2329 are not backed by the "full faith and credit of the United States" guarantee. The legislation requires states to provide a 20% match for qualified projects funded with proceeds of Amtrak bonds; these matching funds are to be deposited in a trust account by a trustee independent of Amtrak. These funds and any earnings on them shall be used to repay the principal of the bonds. The Secretary of the Treasury is to report annually to the Congress whether the trust account has enough funds to repay the outstanding bonds at maturity.

If states provided their matches in cash, the fund would receive $2.4 billion. Combined with investment earnings, the state contributions would likely be sufficient to redeem the bonds, perhaps with a surplus. If there were not enough money in the trust fund to redeem the bonds, Amtrak would have to pay the difference, which would be an operating expense. If Amtrak is not able to repay all the principle, the bondholders may bring suit against Amtrak to gain possession of Amtrak assets.

There are several provisions in these bills which may result in the trust account receiving less than $2.4 billion from the states. For one, up to $1 billion of the bond authority could be given to the Alaska Railroad, whose projects do not require a state match; that would subtract $200 million from the trust account. For another, H. R. 2329 also allows spending on the Farley Post Office/Penn Station redevelopment without a local match, which could subtract another few dozen million dollars from the trust account. Finally, S. 250 allows states to provide at least part of their match in land rather than cash; this would also subtract money from the trust account.

In short, there is some risk that the trust account would not receive enough funding to fully repay the bondholders. It is unlikely that Amtrak could make up the difference out of operating revenues, since it has never yet generated enough revenues to cover all its operating expenses. In that case, the federal government might choose to bail out Amtrak by making up the difference, as it has chosen to rescue other government sponsored enterprises over the years. The government would have advance notice of this, since the Secretary of the Treasury would be reporting on the trust account balance each year. The bond period is 20 years, so the government would be faced with this expense in years 2022 through 2031, as the bonds come due. And the amount to be made up would probably be only a small portion of the $12 billion bond authorization.

Appendix: Comparison of High-Speed Rail Investment Acts of 2000 with High-Speed Rail Investment Acts of 2001

There are several differences between H. R. 3700/S. 1900 (The High-Speed Rail Investment Act of 2000), which received support in the 106th Congress, and S. 250/H. R. 2329 (The High-Speed Rail Investment Act of 2001). While all authorize the issuance of tax-credit bonds to fund improvements in passenger train speeds, the amounts, authorized issuers, and oversight mechanisms vary.

Significant Differences Between H. R. 3700/S. 1900 and S. 250/ H. R. 2329

Subject	H. R. 3700/S. 1900 (106th Congress)	S. 250/H. R. 2329 (107th Congress)
Issuer	H.R. 3700: Any intercity passenger rail carrier. S. 1900: Amtrak	S. 250: Amtrak; Alaska Railroad H. R. 2329: Amtrak
Amount	$10 billion	$12 billion
State match	20%	Both: 20%. S. 250: may be in the form of land, the land may have been purchased with Highway Trust funds. Both: No state match required for Alaska Railroad projects. H. R. 2329: No match required for Farley Post Office/Penn Station project in New York City.
Highway Trust Fund	No reference	Both: No Highway Trust Fund moneys can be used. S. 250: except that States may donate land that was purchased with Highway Trust funds.
Federal Backing of bonds	H.R. 3700: Explicit denial of any federal guarantee. S. 1900: no reference.	No reference
Project selection	DOT Secretary approval	DOT Secretary approval; DOT Inspector General must find a reasonable likelihood that a project will provide net revenue
Tax exemptions	No reference	S. 250: Exempts rail line improvements from State and local taxes; exempts high-speed lines leased by Amtrak from State and local taxes