

Intercity Rail Passenger Systems Update



No. 21

Summer 2013

Current Research and Development in Intercity Rail Passenger Systems

Intercity Rail Passenger Systems Update is published exclusively on the Internet. The table of contents offers links directly to each article, or you can scroll down to read the entire newsletter. Please keep your bookmark at www.trb.org/Publications/PubsStandingCommitteeNewsletters.aspx for upcoming editions.

The Transportation Research Board's Committee on Intercity Passenger Rail (AR010) is concerned with research that will lead to better planning and implementation of intercity rail passenger systems, with particular emphasis on the full range of high-speed systems including new technology. This research will include demand analysis, financial considerations, economic impacts (including consideration of user and social benefits), and institutional arrangements including public-private partnerships. The research should also address impacts on other rail operations, coordination with other modes, rail-highway interfaces, corridor versus system concerns, technology assessment, environmental impacts, and implementation strategies.

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Intercity Rail Passenger Systems Update is published intermittently by the Transportation Research Board to disseminate information about current research and development in intercity rail passenger systems. Penny E. Eickemeyer, Editor; David P. Simpson, Chair, TRB Committee on Intercity Passenger Rail; Scott Babcock, Senior Program Officer, Rail and Freight. Any findings and conclusions are those of the authors and not of TRB. TRB Publications Office: Lea Camarda, Editor; Paul deBruijn, Design. Submit news items to Scott Babcock, Transportation Research Board, 500 Fifth Street, NW, Washington, DC 20001, telephone 202-334-3208, or e-mail sbabcock@nas.edu.
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FROM THE CHAIR

Dear Friends and Colleagues:

Many of you have likely seen it, but if not, you should check out the report from U.S. PIRG—the federation of state public interest research groups—on automotive use trends, particularly among millennials, at www.uspirg.org/resources/usp/new-direction-driving-trends.

The study seems to confirm what many of us have suspected for some time—that the disaffection with auto travel may be a serious, long-term trend that has the potential to influence transportation policy for many years to come. What does this mean for intercity passenger rail? I offer two observations:

- The “lifestyle” elements that appear to be a major influence on travel behavior for short distances—the ability to socialize, easy and unrestricted access to social media, and multitasking opportunities while traveling to a destination—also work in favor of intercity rail travel.
- Increasing local and regional public transit use brings into sharp focus the need to improve the multimodal interface capabilities that complement intercity rail transportation.

On the multimodal front, Eric Peterson will lead the charge for the Intercity Passenger Rail Committee (AR010) as he becomes chair of the Multimodal Interface Subcommittee at our midyear meeting. Such interface issues also are a key interest of BNSF's D. J. Mitchell, one of our 12 new members for 2013.

I hope your summer is going well!

—David Simpson, Chair
David P. Simpson Consultants
simpsonconsult@comcast.net

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EDITOR'S INTRODUCTION

The more things change, the more they stay the same. On the intercity and high-speed rail front, there is no question that some things are staying the same—as Congress addresses the future of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) this year, long-term federal funding remains an issue. Other issues that will need to be addressed include higher- vs. high-speed rail, the level of private and public involvement, alternative financing options, passenger and freight shared rights-of-way, and more.

Nevertheless, things are changing. Several projects paid for by funding from the American Recovery and Reinvestment Act of 2009 (ARRA) and PRIIA are advancing either to implementation or construction. At the 92nd TRB Annual Meeting in January 2013, U.S. Secretary of Transportation Ray LaHood indicated that in only 4 years, \$12 billion have been invested in 152 places in the United States. Continuing with his keynote speech at a workshop on Economic and Social Impacts of High-Speed Rail Systems—sponsored by AR010 and the Mineta Transportation Institute (MTI)—LaHood praised work in several parts of the country. This newsletter's lead article presents a summary of his address and of the six panel discussions at the day-long workshop.

Another notable change in intercity rail will occur in October, when PRIIA Section 209 legislation takes effect, calling for a single, nationwide, standardized methodology for establishing and allocating the operating and capital costs among the states and Amtrak for intercity passenger routes less than 750 miles. The second article, by David Kutrosky of the Capital Corridor Joint Powers Authority and Camille Tsao of HNTB, discusses how states' role supporting intercity passenger rail services will increase. This article is based on Kutrosky's Annual Meeting presentation, "New Options for Intercity Passenger Rail: Tailored Services, Unique Markets." AR010 plans to sponsor a workshop on this timely topic, hosting a discussion on the early experiences of several states at the 93rd TRB Annual Meeting in January 2014.

The third article highlights the benefits for one state of spending a small portion of federal intercity passenger rail dollars. Victoria Harris of Parsons Brinckerhoff recounts how \$53.7 million enabled service and ride quality improvements within Vermont and details the impact of leveraging the spending with projects in Massachusetts and Connecticut to improve regional connectivity in the Northeast.

The fourth article examines change from an international perspective. In "China Railway Reform Update," Zhenhua Chen of George Mason University discusses a significant recent institutional transformation in China that addresses issues such as safety, management, and debt relief.

—Penny Eickemeyer
Region 2 University Transportation Research Center
City College of New York
peickemeyer@utrc2.org

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HIGH-SPEED RAIL WORKSHOP AT TRB ANNUAL MEETING ATTRACTS INDUSTRY AND GOVERNMENT LEADERS

Donna R. Maurillo
donna.maurillo@sjsu.edu

Donna R. Maurillo is Director of Communications and Technology Transfer for the Mineta Transportation Institute, a public policy research organization affiliated with the College of Business at San José State University in California.

High-speed rail has received a significant boost lately, thanks to several transportation leaders who have not only appeared in the news media to make a strong case but also have organized and spoken at conferences around the United States.

One example is the day-long high-speed rail (HSR) workshop on the Economic and Social Impacts of High-Speed Rail Systems, Sunday, January 13, the opening day of the 92nd TRB Annual Meeting in Washington, D.C. As a symbol of HSR's importance to the current presidential administration, U.S. Secretary of Transportation Ray LaHood delivered the keynote address. He was introduced by Administrator Joseph Szabo, Federal Railroad Administration (FRA).

TRB invited the Mineta National Transit Research Consortium (MNTRC) and its lead organization, MTI, to organize the gathering in the Omni Shoreham Hotel's Blue Room. The program included six expert panel discussions of several facets of HSR—current status, financing options, unique front-end challenges, design and operational integration, benefits, and the status of international HSR. Seven videos—including the keynote and all six panels—are available at <http://transweb.sjsu.edu/MTIportal/events/gallery3.html>.

LaHood Delivers Keynote

David Simpson, AR010 chair, opened the meeting with a welcome and introductions. Rod Diridon, Executive Director of MNTRC and MTI, observed that the United States is approaching terminal gridlock on its highways, something that recently happened in China. To preserve its mobility, he noted, the nation needs another, more efficient, and cleaner transportation mode.

Introduced by Diridon, Szabo praised the leadership of President Barack Obama and of LaHood, who he said have worked diligently to ensure that high-speed and intercity rail remain on the table. Szabo noted that “the need to continue investing is clear. By 2050, America's transportation network will need to move more than 100 million additional people and more than 4 billion additional tons of freight.”

He also pointed out that the cost of that congestion has grown 500 percent in 30 years—it now costs the U.S. economy more than \$130 billion each year. Responding to those who cite a national car culture, Szabo pointed out that Americans have been driving less over the past 8 years, while the use of intercity passenger rail and transit has grown in record numbers. Szabo also suggested that these patterns are shifting fastest among young people, who during that time reduced their vehicle miles traveled by 23 percent and increased their rail and transit use by 40 percent.

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U.S. Transportation Secretary Ray LaHood (*right*) reports on the status of American intercity passenger rail at the 2013 TRB Annual Meeting, with panelists Joseph Szabo, FRA (*left*) and Rod Diridon, MTI (*center*).

(Photo: Risdon Photography)

In his keynote address, LaHood commented that he had traveled to 15 countries to study their HSR systems and that the one common denominator of successful systems was the commitment of the country's government. He also stated a goal to connect 85 percent of America by intercity rail within the next 25 years. "We will not be dissuaded by the naysayers," he said. "We are moving forward."

LaHood praised the work happening in several parts of the country, particularly in California; he gave special credit to California governor Jerry Brown, who is committed to the HSR project in his state. He also commended the leadership in New York, Connecticut, the Northeast Corridor, and in the Midwest. In only 4 years, \$12 billion have been invested in 152 places in the United States, he noted, emphasizing that plans should not be derailed by governors who do not have a vision for the future.

LaHood said that he has encouraged foreign investment in HSR for America with the stipulation to hire American workers and to build the equipment in the States; the program is about jobs as well as about mobility, he added, predicting that thousands of jobs would be created in every region of the country.

During the panel sessions, several other key points were addressed (see sidebar, page 6). Among them were the following:

- With 2 million annual trips, the Northeast Corridor is one of the densest rail corridors in North America, making it ideal for HSR.
- Air traffic density is reaching its limit and highways are becoming overloaded in major metropolitan areas of the United States, with no additional room to expand. California, for example, has three of the five most heavily traveled air corridors in the United States.
- The most effective HSR distance is about 300 miles, which allows people to do business in another city and return home in the same day.
- HSR is an investment in the nation's future. In California alone, 2.5 million jobs could be connected to HSR.
- Workforce development issues are only now coming into focus. More specific than previous estimates, these issues address the particular needs of HSR.

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- Approximately 74 percent of young people are interested in traveling by HSR or by transit, considering it to be “productive time.” These are the people who should be courted and corporate America should understand that market.
- Members of HSR regions are collaborating to become part of the whole network because they see the long-term potential benefits of system coordination. They do not view this as a competition. Standardized interconnectivity with transit—along with integrated fare systems—has the potential to be a major asset for HSR and will make end-to-end travel much more attractive.
- Europe and Asia have had HSR for decades. Even developing nations now are building systems.

Panel Sessions

Current Status of HSR in the United States
Financing HSR Panel Discussion
Unique HSR Challenges—The Front End
Design and Operational Integration of HSR Panel Discussion
Describing the Benefits of HSR Panel Discussion
Status of International HSR Programs

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PRIIA SECTION 209 POLICY PRICING FRAMEWORK: OPPORTUNITIES TO ENHANCE STATE INTERCITY PASSENGER RAIL SERVICES

David B. Kutrosky and Camille Tsao
davidk@capitolcorridor.org, ctsao@hntb.com

David B. Kutrosky is Managing Director, Capital Corridor Joint Powers Authority, and a member of AR010. Camille Tsao is Associate Vice President, HNTB Corporation, and Secretary of AR010.

When PRIIA was passed in October 2008, it included Section 209 (S209), which required states and Amtrak to develop and implement a single, nationwide, standardized methodology for establishing and allocating operating and capital costs for intercity passenger rail service in corridors that are 750 miles or shorter and are partially or fully supported by a state or group of states. The intention of the S209 pricing policy is to provide a methodology for fair and equitable allocation of costs and transparent pricing for state-supported intercity passenger rail services operated by Amtrak. It will also provide a stable platform for future budget planning. The affected routes are shown in Figure 1 (below).

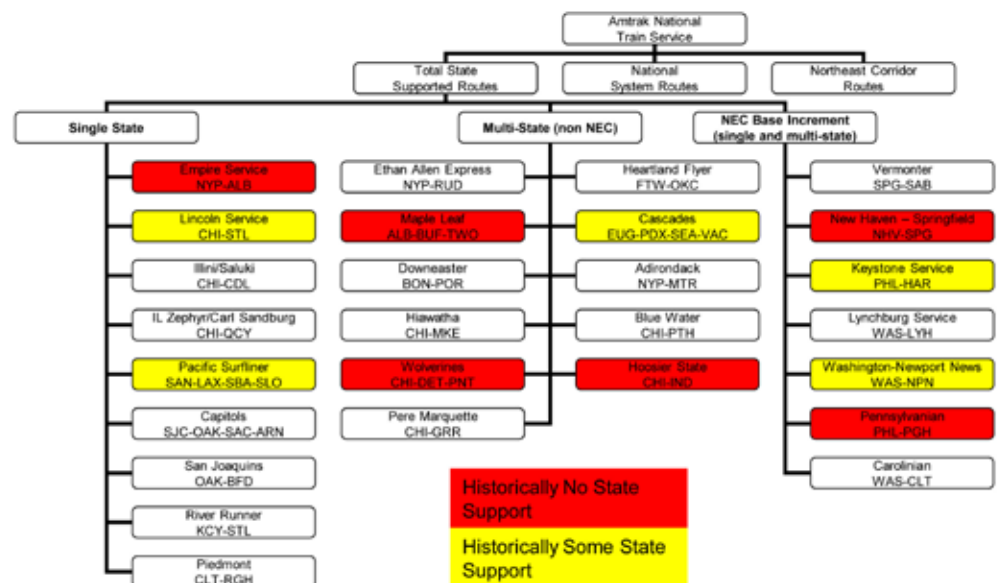


FIGURE 1 Routes affected by S209 pricing policy. (Image: Amtrak)

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The S209 policy stipulates that allocation of these costs are based on (1) costs that are directly incurred for the benefit for that route; (2) any proportionate share of those costs shared by more than one route; and (3) capital charges for any Amtrak-owned equipment, such as passenger rail cars, and assets, such as stations and track or signal infrastructure, that are used to support these state intercity passenger rail services. In April 2010, Amtrak unveiled the new Amtrak Performance Tracking methodology for accounting and cost allocation, which formed the basis for S209. From October 2010 to May 2011, members of the State Working Group (SWG), made up of representatives from all of the states to which S209 applies, worked with Amtrak on a methodology for developing operating cost estimates, an operating contract outline, and the concept of capital charges. The policy was adopted by the Amtrak Board in June 2011 and approved by all states except Indiana in fall 2011. The Surface Transportation Board confirmed its approval of the policy in March 2012. Later that year, Amtrak began to develop its Fiscal Year (FY) 2014 operating budget forecasts for state intercity passenger routes for the start of S209 in October 2013.

Operating Costs

Before S209, the services provided by Amtrak to states or agencies and the prices for their services differed across states and were therefore unpredictable and difficult to plan. To address this issue, members of the SWG developed a “menu of services” for planning operating costs. This standardized methodology for pricing Amtrak services allows agencies to customize the services they need, offering more flexibility and potential cost savings. It also provides consistency in structuring and pricing Amtrak services to agencies.

The effort to improve the predictability of costs also included standardizing a template for the operating contract with Amtrak, establishing payment schedules for Amtrak's provision of these services, and allowing the inclusion of contractual performance incentives and penalties for nonperformance.

Capital Charges

Amtrak provides a 5-year capital program for Amtrak assets—e.g., rail vehicles, equipment, and stations—that are used by states' intercity passenger rail agencies. Under S209, the states are the sole financiers of the state of good repair projects on the Amtrak assets used on the state-supported intercity passenger rail routes based on this 5-year plan, but capital charges will be assessed on an annual basis. Federal assistance opportunities for capital matching funds also need to be explored.

There are several other important policy elements of S209 worth noting. First, states that accept FRA's High-Speed Intercity Passenger Rail Program (HSIPR) grant funds must use S209 pricing methodology to support subsequent recurring operating costs along any route that has benefited from HSIPR funds. Second, S209 policy is standardized to be consistent for use by current and future state HSIPR partners.

The challenges that states face under S209 include the need for a state to secure funds to support intercity passenger rail services previously supported by Amtrak, to assign the resources necessary to assume the management of these intercity passenger rail routes, to cover liability and insurance costs outside of those currently provided by Amtrak, to understand Amtrak's right of access to host railroads at incremental costs, to assume limitations on third-party use of Amtrak-owned assets (PRIIA Section 217), and to take on the institutional ownership of operating slots for each of these intercity passenger rail

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routes. S209 also presents opportunities and benefits that did not previously exist. The transparency allows states to control costs and periodically revisit cost elements. States may enter into separate, direct costing with the host railroads and may secure services from other vendors for non-Amtrak assets—for example, stations, on-board food service, call center, or rail vehicle acquisition and maintenance—and opportunities also exist to enhance delivery and performance of route services if performance incentives are used.

In conclusion, S209 levels the playing field among state-supported intercity passenger rail routes; it is hoped that this will lead to sustainable, successful state intercity passenger rail services and programs. States seem poised to be in a stronger position to enhance service delivery and optimize service performance, but will also need dedicated resources to ensure the success of intercity passenger rail programs. States now should thoroughly review the total costs of the service against affordability and should perform due diligence on institutional operational matters so that their intercity passenger rail train services are an integral, viable, and safe component of the nation's transportation network.

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VERMONT HIGH-SPEED RAIL PROJECT IMPROVES TRAVEL CONNECTION CRITICAL TO VERMONT'S FUTURE

Victoria Harris
harrisvl@pbworld.com

Victoria Harris is Transportation Planner I, Parsons Brinckerhoff.

Introduction

The author gained firsthand experience with the *Vermont*—the intercity rail line operated by Amtrak that replaced the truncated *Montrealer* in 1995—while traveling north from Hartford, Connecticut, in 2011. The ride past Springfield, Massachusetts, meant a 30-minute detour to Palmer to switch to the right track into Vermont. The train made significant noise as it crept along the rough track; as it continued, it lurched, swayed, and leaned, causing beer purchased from the train café to slosh all over the table. Frequent bouncing allowed travelers to imagine being airborne. If a visitor rode the train just to see what the ride was like, the quaintness could be appreciated, but the trip took time and patience. At its scheduled 3 hours, the ride took twice as much time as driving—a deterrent to the many people who visit Vermont to take advantage of year-round recreational activities, a staple of the state's economy.

Amtrak's ability to make upgrades is limited because the *Vermont* travels on tracks owned by Amtrak and used by freight operators; north of Springfield, the track is owned by freight railroads. The split ownership and shared-use nature of the *Vermont*'s route creates limitations for Amtrak to improve speed, reliability, or ride quality between New Haven, Connecticut, and Springfield.

The Vermont Agency of Transportation (VTrans) applied for ARRA funds to provide for track improvements on the state's portion of the *Vermont* line "to improve the conditions of the track, roadbed, and bridges along the current route of the Amtrak *Vermont* Service in Vermont and New Hampshire."¹ These funds were disbursed to VTrans in 2010.

A Link the Economy Needs

A critical transportation link, the *Vermont* connects people to the rest of New England and the Northeast (see map, page 11). In Vermont and a portion of New Hampshire, the train runs on the New England Central Railroad (NECR), a regional railroad owned by RailAmerica that carries the freight that keeps the state's mining, logging, extraction, and manufacturing industries connected to their markets.² Freight train weights were restricted to 263,000 lbs and passenger train speeds were restricted to 55 mph from St. Albans to White River Junction, Vermont, and 59 mph from White River Junction to the Massachusetts state line, limiting capacity and regional freight connections and making both modes less competitive—though demand for both had been growing.

¹ www.recovery.gov/Transparency/RecoveryData/Pages/RecipientProjectSummary508.aspx?AwardIdSur=114025. Accessed July 19, 2013.

² Regional railroads, as defined by the American Association of Railroads, have "revenue of between \$40 million and the Class I threshold or operate at least 350 miles of road and have revenue of at least \$20 million."

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Vermont route map.

The train's passengers are residents, business travelers, and leisure visitors. Increasing travel among all these types of travelers is important to the future of Vermont's economy. Leisure and hospitality is the third-largest economic sector in Vermont, supporting approximately 34,000 direct jobs—one out of every 10 jobs in the state.³ The state's mining, logging, extraction, and manufacturing industries depend heavily upon rail to move their bulk cargo, as transportation costs make trucking prohibitively expensive.⁴ These industries create approximately 33,000 direct jobs—another one out of every 10 in the state.⁵

Proven Demand

Demand for increased and improved passenger service has grown tremendously in the past decade—Amtrak ridership grew 39 percent from FY 2003 to FY 2012.⁶ While Amtrak's systemwide ridership has grown more or less steadily year after year—except in 2008 and 2009—growth of the *Vermont*'s ridership has been less predictable. Passenger demand and freight tonnage on the rail was affected by snowstorms, wash-outs, and rail damage, notably from Hurricane Irene in 2011, which forced service interruptions or bus substitutions. For years, slow orders kept trains from reaching top speed and from arriving on schedule while various repairs were under way. Despite all these challenges, however, ridership growth on the *Vermont* still kept pace with the national trend. More than 78,000 people rode the *Vermont* in FY 2012.⁷

³ Bureau of Labor Statistics, U.S. Department of Labor. "Economy at a Glance: Vermont." www.bls.gov/eag/eag.vt.htm. Accessed May 15, 2013.

⁴ Vermont Legislative Research Service of the James M. Jeffords Center, University of Vermont. 2012. "Vermont Rail Dependency." www.uvm.edu/~vlrs/Transportation/rail%20dependency.pdf. Accessed May 10, 2013.

⁵ Bureau of Labor Statistics, U.S. Department of Labor. "Economy at a Glance: Vermont." www.bls.gov/eag/eag.vt.htm. Accessed May 15, 2013.

⁶ Amtrak Fact Sheet FY 2003, State of Vermont, and Amtrak Fact Sheet FY 2012, State of Vermont.

⁷ Amtrak Fact Sheet FY 2012, State of Vermont.

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The Project

In 2010, Vermont received \$52.7 million in ARRA funds to improve train speeds on the *Vermont*. Massachusetts was granted \$72.8 million in ARRA money to resolve the Palmer connection problem and to create a direct connection from Springfield to the NECR tracks.

Work began on the *Vermont* High Speed Rail Project in late 2010 and was completed in late 2012, providing an immediate boost to the economy with the creation of approximately 250 full-time jobs. RailAmerica contributed an additional \$5 million to the project and recycling the old track added \$14 million. The project included a full overhaul of the rail line with benefits for both Amtrak passenger trains and for the NECR's freight customers.

More than 190 miles of track were replaced with continuous welded rail that provides a smoother, gentler ride—no more sloshing of beer—and faster train speeds. More than 135,000 ties were replaced to stabilize the rail and allow freight trains to carry heavier loads. The project upgraded 53 rail crossings to allow faster trains and increase train crossing safety. A new signal system also was put in place to allow trains to travel faster and 50 bridges were replaced or upgraded. The track bed and ballast were upgraded, improving water drainage and preventing floods and hurricanes from washing out track or forcing slow orders. The project also will increase the reliability of passenger trains by eliminating slow orders resulting from poor track conditions.

Results

From St. Albans to White River Junction, train speeds increased by 4 mph to 59 mph. From White River Junction to the Massachusetts state line, train speeds increased by 20 to 79 mph; at 79 mph, the train in Vermont reaches the maximum speed allowed before a different set of safety rules takes effect. Vermont residents and visitors now experience the same travel speeds as Philadelphia's fastest commuter trains—a speed that is competitive with driving and that improves trains' ability to attract new riders. When Amtrak unveiled the official new *Vermont* timetable in March 2013, the trip from St. Albans to Brattleboro, Vermont, was reduced by 39 minutes, shaving more than 16 percent off what had been a 4-hour journey. This is a major improvement that will make the train a viable option for more travelers and provide a better, more convenient, and more reliable connection from Vermont to New York City.

The *Vermont* High-Speed Rail Project also benefits freight. The improved rail, ties, and bridges will allow rail cars to carry the standard 286,000-lb carloads, up from the previous limit of 263,000 lbs. This will improve freight logistics for goods traveling in and out of Vermont and will increase cost competitiveness for Vermont's rail-dependent industries.

Future Work

The *Vermont* High-Speed Rail Project is part of a nationwide effort to improve rail speeds and safety across the United States. Each project has independent utility in speeds, safety, reliability, and economy, but the sum of each project is greater than its parts. The Palmer Connection project in Massachusetts will construct a direct connection from Springfield to Vermont and save almost 1.5 hours between Vermont and Springfield. The State of Connecticut is currently working with Amtrak on major track improvements on the New Haven–Hartford–Springfield (NHHS) Corridor to

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decrease congestion and increase capacity and speeds for freight and passenger trains to make room for regional rail passenger service. This project will cut an additional half-hour off Amtrak trip times south of Springfield. Combined, the *Vermont* High Speed Rail Project, the Palmer Connection fix, and the NHHS Rail Project will save travelers nearly 2.5 hours on the *Vermont* trip to New York City, a time savings of nearly 30 percent. For travelers coming from central and southern Vermont, the Amtrak *Vermont* will be time-competitive with driving to New York City.

Conclusion

Without the investment in the project, shippers and travelers still would be experiencing delays and slow orders and uncertainty would have continued to dog the *Vermont*. The project enhanced the safety, attractiveness, and reliability of an important connection to the Northeast that aids the state and local economies and increases travel options within the state and region.

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CHINA RAILWAY REFORM UPDATE

Zhenhua Chen
zchen7@gmu.edu

Zhenhua Chen is a Ph.D. candidate and Research Assistant at the George Mason University School of Public Policy.

China Railway Corporation has experienced a historic transformation in the past year. The Chinese Ministry of Railways (MOR), a bureaucratic, quasi-private institution responsible for railway planning, regulation, construction, and operations, recently was dismantled by the National People's Congress—the most powerful decision-making organization in China. This symbolized major progress in institutional reform, since the MOR is widely regarded in China as the last fortress of the planned economy. It also was a response to high cost overruns, poor internal supervision, and the powerful internal operational silos that led to little external review and, in 2011, culminated in a major accident on MOR's primary high-speed line.

The plan for institutional reform divides the previous MOR into three elements, each managed by a different governmental entity. The functions of railway planning and policymaking now are assigned to the Ministry of Transportation. The administrative responsibilities and functions of railway management are borne by a newly formed National Railway Bureau, a division of the Ministry of Transportation. All railway construction, maintenance, and operations now are incorporated into the newly formed China General Railway Corporation. The reform of MOR is regarded as long overdue but, by solving a series of fundamental financial and service-related issues, also as essential to improving the efficiency of the Chinese railway system.

For more than 60 years, MOR played a dual role as both a market regulator and a market participant. Established under the planned economic system, this hybrid organizational structure had become a major obstacle for railway operations under the market economy. For instance, because passenger rail travel is treated as a public service and because of strong public opinion, the ticket prices are firmly mandated at a relatively low level that has not been adjusted for many years.

In addition, because of the monopolistic character of MOR, the railway regulations and management authority has been repeatedly exploited for rent-seeking activities by a few railway bureaucrats and officials, from gathering profits through collaboration with ticket scalpers to earning benefits from railway equipment suppliers or railway project contractors by implementing preferential policies to help them obtain contracts. The lack of institutional transparency further exacerbated the spread of bribes and corruption, particularly among HSR projects such as the Zhengzhou–Xi'an HSR line, the Shanghai–Beijing HSR line, and the Harbin–Dalian HSR line.^{8,9}

⁸ Jasmine Wang. "China Charges Former Railway Chief in Corruption Crackdown." *Bloomberg News*. www.bloomberg.com/news/2013-04-10/china-charges-former-rail-chief-with-corruption-abuse-of-power.html. Accessed May 3, 2013.

⁹ Scott Lewis. "Opening of Harbin–Dalian High-Speed-Rail Line Postponed." *Engineering News Record*, September 26, 2011. <http://enr.construction.com/infrastructure/transportation/2011/0928-openingofharbindalianhighspeedrailinepostponed.asp>. Accessed May 3, 2013.

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Recent reforms to China's railway system address corruption and a growing debt. (Photo: Wikimedia Commons)

On July 23, 2011, two high-speed trains traveling on the Yongtaiwen Railway line collided on a viaduct in the suburbs of Wenzhou in Zhejiang province. The accident, which killed more than 40 people and injured at least 192, exposed the mismanagement and flaws in the organizational structure, as did a scandal involving former railway minister Zhijun Liu.¹⁰

Perhaps the fundamental trigger to implementation of reform, however, was MOR's railway debt of ¥2.6 trillion, or approximately \$424 billion. The leapfrog development strategy for China's rail system was implemented by former minister Liu, with HSR infrastructure being the high mark of this strategy. Funding for HSR construction came primarily from national railway bonds and state bank loans guaranteed by national credit. The lack of sufficient supervision and auditing, however, led to the overly rapid growth of HSR debt. Between 2007 and 2012, national HSR debt grew from ¥600 billion to ¥2.6 trillion. As a result, MOR's asset-liability ratio had reached the risky level of 61 percent.¹¹ Because of excessive political vanity projects and pursuit of personal interests, the HSR planning and market position had not been thoroughly discussed or studied; some believe that many of the newly developed HSR systems were designed not to serve the general public but rather to serve a small group of elite travelers who valued onboard luxury and fast speed.¹² Many services now are operating well below their design capacities; the lack of ridership, observable in several HSR lines, has resulted in enormous annual operating losses for these systems.¹³ In light of the reality that the ticket revenue could not cover the growing debt or its interest, MOR reforms became an unavoidable step toward a solution.

The new rail planning and policy formulation implemented by the Ministry of Transportation optimizes the comprehensive structure of the transportation system

¹⁰ "Ex-China rail minister Liu Zhijun charged with corruption." BBC News China, April 10, 2013. www.bbc.co.uk/news/world-asia-china-22089011. Accessed May 3, 2013.

¹¹ "China not yet decided on railways debt-official." Reuters U.S., March 11, 2013. www.reuters.com/article/2013/03/11/china-railways-idUSL3N0C311U20130311. Accessed May 3, 2013.

¹² Keith B. Richburg. "Are China's high-speed trains heading off the rails?" *Washington Post*, April 23, 2011.

¹³ Kor Kian Beng. "China's bullet trains still a controversial ride." *Asian News Network*, January 7, 2013.

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and will be conducive to multimodal planning in cooperation with roads, railways, waterways, and civil aviation. Meanwhile, the National Railway Bureau will be able to concentrate on railway safety and regulations as well as on administrative supervision. The reform will enable the General Railway Corporation to act more independently and to seek profitable operations under the market-oriented economy. Since the debt has been transferred to the railway corporation, its long-term objective becomes the improvement of railway operational efficiency to repay the debt using its revenue streams.

It is clear that the current reform is just the first step of large-scale railway system reform—several issues still need to be considered, such as determining an implementable strategy to repay the debt and ways to adjust pricing policies for railway services. Other questions include the role of rail in the overall Chinese transportation system, how to balance the railway investment and debt, how to address pricing and equity issues, and how to increase HSR ridership. Solutions to these issues will be critical to the future success of the Chinese rail system.

Newsletter Comments

We look forward to your feedback on the format and the content of this publication. Comments on this newsletter, and most especially, continued contributions by committee members, friends of the committee, and others can be sent to the editor.

Penny Eickemeyer
peickemeyer@utrc2.org