

The Virginia NEWS LETTER

Can Public Investment in Freight Rail Deliver the Goods?

By Richard L. Beadles

Rail transportation is gradually emerging from the shadowy recesses of policy deliberations after decades of indifference to its potential. But just how much relief of overburdened highways can be expected from public investment in freight rail enhancement? The answer is, probably not much in the near term.

A recent *Wall Street Journal* article speaks of a freight “railroad renaissance under way across much of the U.S.”¹ Yet not many transportation planners, or even rail advocates, seem to fully appreciate the negative ramifications of the radical transformation that has occurred over the past forty years in the U.S. rail infrastructure network. Today the rail freight network is smaller in size, less flexible, and focused on serving fewer, but larger customers, often with slower, and less frequent, service. There are, of course, some significant exceptions to this assertion and some railroads are indeed making large new investments, but overall it is a fair characterization.

The explanation for this dramatic shift in business strategy is that it was a matter of survival. Faced with intense highway competition, a changing industrial base in the nation, and numerous other challenges, not the least of which

¹ Daniel Machalaba, “New Era Dawns for Rail Building,” *Wall Street Journal* (February 13, 2008).

was public policy indifference, self-help dictated draconian steps.

Yet rail transportation has some clear advantages over highway transportation in reducing highway congestion, promoting public safety, conserving energy, and protecting the environment. To reverse this freight-rail retrenchment process will likely be a difficult, long-term, and costly undertaking. The private freight-rail companies have stated clearly that they cannot do it alone and that public funding will be necessary.

Providing public funding may be a matter of necessity for the general welfare of the nation. The Commonwealth of Virginia appears to think so, having put in place a regular, albeit very limited, funding program for rail-freight infrastructure. An example is the Virginia Department of Rail and Public Transportation (DRPT)’s recent announcement of a \$40 million grant to Norfolk Southern for infrastructure improvements and modernization on its line between Manassas and Front Royal.

But such public grants alone are likely to disappoint the general public, because they are unlikely to result in a dramatic drop in the number of big, long-haul trucks on our interstates. Success will require much more contentious policy and funding shifts to place rail on, or near, the



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same competitive basis as highway transportation of freight. And that's not likely to happen soon, if ever.

The "railroad renaissance" mentioned above refers primarily to railroads' investment in profitable long-haul and ocean-container shipments, to the neglect of improving service for highly important domestic mid-range shipments of 200 to 500 miles. Medium-distance freight now carried by millions of trucks in our interstate corridors might be well served by high-performance rail lines.

Moving Freight: Rail and Trucks

In almost all cases, freight railroads own and maintain their basic rights-of-way, tracks, bridges, signal systems, and equipment. They also pay local real estate taxes on this transportation infrastructure.

Truckers generally have unlimited access to roads built, paid for, and maintained by the general public. While there are numerous and substantial taxes and fees paid by truckers, most studies have concluded that large trucks, the principal competitors of rail, do not pay the share of highway costs for which they are responsible.²

These points raise a key question relevant to emerging public efforts to provide financial assistance to private rail operators. Initiatives providing for assistance of rail operators are deemed to be justified if such action is clearly found to be in the public interest. This usually means that a determination must be made that rail development assists in providing some measure of incentive to convert some portion of cargo movement from highway to rail, in order to minimize congestion and to reduce publicly-funded highway construction and maintenance expense.

Some Economic Comparisons for Consideration

Freight railroads are capital intensive, starting with the basic right-of-way, tracks, bridges, signal systems, and train equipment. Barriers to entry are daunting. But once in place, railroads can dominate certain segments of the freight transportation market. Pricing power can be

² Federal Highway Administration, *Addendum to the 1997 Federal Highway Cost Allocation Study Final Report* (Washington, D.C. May 2000) Table 7.

<http://www.fhwa.dot.gov/policy/hcas/addendum.htm> (2/8/08); Virginia High Speed Rail Development Committee, *Virginia Rail Plan* (Richmond: September 2001), pp. 38-39. <http://www.vhsr.com/RailPlan> (2/11/08)

brought to bear on certain shippers who have limited alternatives, with lucrative financial results to the railroad companies. But the potential for rail dominance of the total transport market is quite limited. In most cases, railroads are at a significant disadvantage relative to highway transport.

Trucking, on the other hand, is a business that is relatively easily entered with minimal capital investment, at least in comparison to railroading. Highway users have a great advantage over their rail competitors in both access to infrastructure and cost of using public roads. But this very circumstance makes for fierce competition among commercial motor carriers, and such cutthroat competition usually severely constrains revenue and profit margins. Consider how difficult it is for rails to compete with truckers in this environment.

As of March 2007, the eight largest rail freight railroads in the country had total annual revenue of \$62.6 billion, generated on assets of \$155.2 billion, according to an analysis by Stifel, Nicholas and Co., Inc., a regional investment firm in St. Louis. Thus it required \$2.48 of rail asset capital to generate \$1 of rail revenue. However, rail's earnings margin before taxes was an impressive 32.3 percent.

In contrast, sixteen of the largest publicly traded highway carriers had revenues of \$18.5 billion, generated on assets of only \$10.9 billion. Thus only \$0.59 of assets were required to generate \$1 of revenue. However, these truckers' mean earnings margin was only 9 percent.

The 2006 annual report of Heartland Express, a respected publicly traded motor carrier, describes the trucking industry as "... highly competitive and fragmented, with thousands of carriers of varying sizes."³ Only a small portion of highway freight is transported by publicly traded commercial truckers. Far more is moved by private truckers, manufacturers and distributors, owner-operators, and others. Think of Wal-Mart and Food Lion, whose trucks are ubiquitous. There is no rail equivalent.

The \$62.6 billion of rail revenue, and the \$18.5 billion of truck revenue, cited above, would represent only 8.5 percent and 1.5 percent, respectively, of the total domestic freight transportation market. These percentages, even if approximate, cast doubt on claims that even a multiple expansion of U.S. rail freight infrastructure could absorb any significant frac-

³ *Heartland Express 2006 Annual Report*. <http://yahoo.brand.edgar-online.com/fetchFilingFrameset.aspx?dcn=0000799233-07-000016&Type=HTML> (1/30/2008)



Photo courtesy of Virginia Department of Rail and Public Transportation.

The rail freight industry's growing strength in tonnage is largely explained by the growth in long-haul movement of low-sulfur coal from the Powder River Basin in Wyoming to electric power generating stations in the Midwest and the East.

tion of the domestic cargo business, which is today largely moving via highway. This is not to suggest that rail cannot do more, nor that policy makers should back away from their current interest in facilitating the diversion of some freight from highway to rail.

Rails loom larger in comparisons when cargo handling is quantified in "revenue ton-miles" (the equivalent of one ton of freight moved one mile). In 2003, the last year such a comparison was made, railroads handled 42.3 percent of such transportation, with trucks at 33.2 percent, Great Lakes and inland waterways at 8.6 percent, and oil pipelines at 15.5 percent. Air came in at less than 1 percent by this measure.⁴ Why rails rank so high by the revenue-ton-mile measure is partially explained by the fact that in 2006, coal accounted for 43.5 percent of tons originated.⁵

The rail freight industry's growing strength in tonnage is largely explained by the growth in long-haul movement of low-sulfur coal from the Powder River Basin in Wyoming to electric power generating stations in the Midwest and the East. Prior to the 1970s, most coal movements were 200 to 300 miles in length. Today's

Wyoming coal often moves 1,000 miles and more. Revenue-ton-mileage statistics are driven up proportionately.

The other great driver of rail revenue-ton-miles in recent years has been the handling of international shipping containers from Asia, mostly imported through West Coast ports. Many of these boxes are transported 2,000 miles or more across the American continent.

Truly remarkable has been the growth of intermodal (IM) traffic, the term now applied to what used to be called "piggyback," or the movement of truck trailers and containers on rail cars. In 2007 intermodal units accounted for 43 percent of all railroad freight units (carloads plus trailers and containers).⁶ About one half of these involved international traffic handled to, and mostly from, ports.

Can Public Financial Assistance Make Rail More Competitive?

Recalling the question posed at the outset of this paper—to what extent can we expect public financial assistance to freight railroads to result in any significant shift in the movement of cargo from highway to rail—what preliminary conclusions can we draw?

⁴ Association of American Railroads, *Railroad Facts, 2007 Edition* (Washington, D.C., November 2006), p. 32.

⁵ Association of American Railroads, *Railroad Facts, 2007 Edition*, p. 29.

⁶ Association of American Railroads press release, January 3, 2008, "U.S. Rail Freight Traffic Second-Highest in History in 2007" http://www.aar.org/ViewContent.asp?Content_ID=4132 (2/7/08)

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First, since the 1980s deregulation, railroads have shrunk their capacity to the point where they have, in the face of growing demand, created scarcity of supply of rail infrastructure, yielding an unprecedented pricing power. This has been reflected in recent years by the stock prices of the major freight rails. It should be noted that rail management's drastic abandonment and removal of infrastructure has largely occurred outside public view, and without much public participation, as a result of deregulation. Whether this was in the best interest of the public, from a broad national transportation perspective, is an open question.

Relatively few markets have lost freight-rail access, but most rail routes have lost capacity by shearing off multiple trackage, which is what, like multiple highway lanes, provides the capacity to accommodate more traffic on a particular route. "Redundancy" became a bad term in the minds of those making rail business decisions from 1980 forward. But now the lack of redundancy is constraining not only the volume of freight (and passenger) traffic on the rails, but equally important, the quality, reliability and consistency of such service.

The rail capacity situation, while good news in the short term for rail executives and shareholders, has adverse public-interest ramifications, which extend far beyond the reduction in rail mileage. Freight rail operations and maintenance practices, which have evolved over the last twenty-five years, each in the name of greater efficiency, have often been achieved at a cost in available rail network capacity. One example is track maintenance. With more freight traffic and heavier car loadings concentrated on fewer miles, the need for major track maintenance increases. Yet the methods now generally used by the freight rails often result in long "curfew" periods of hours, or even days and weeks, when essential trackage is not available for service.

The Association of American Railroads reports that railroad freight traffic density is now more than double the 1991 level, based on ton-miles per mile of track.⁷ This is one proxy for the intensity of track utilization, or congestion, affecting the track maintenance requirement and track time available for freight service.

The big freight rails detest the term "captive shipper." And in theory, perhaps there is almost no such thing. But the term suffices to describe those cargo shippers for which there is no readily available, economically feasible, transportation

alternative to rail. This segment of the domestic surface transportation market is dominated by coal, grain, construction aggregates, chemicals, paper, forest products, and long-haul lumber. It is the largest, and arguably the most profitable, component of the freight rail business. This is the transportation segment which has been pursued and served by the freight rails in the recent past. It generally tolerates the downsized rail infrastructure network better than other major components of the market. However, the "captive-shipper" group is increasingly unhappy with the current state of rail industry capacity and pricing. Yet it is vital to the national economy that the rails continue to offer this traditional service, and that they earn a sufficient return on this business to sustain their plant and equipment needs. Railroads may already control most of the market in this sector. Consequently, public money, or tax credits, for rail infrastructure may not be as effectively utilized for public benefit as would funding for intermodal capacity enhancements.

Another key point here is that a large component of the transportation market is containerized international cargo. The freight rails have done a remarkable job of gaining a major share of international cargo arriving at and departing from U.S. ports, moving it in high-volume lots over long distances. Although revenue derived from the international containerized cargo business is generally less than for domestic cargo, the rails compete for it and apparently find it to be profitable because of the efficiencies in large trainload movements. While the growth of this rail business has been nothing short of spectacular, it is quite possible that this international-cargo segment is being handled by the freight rails at the expense of having much larger flows of domestic cargo.

Meanwhile, the overwhelming share of U.S. domestic cargo transportation occurs in corridors, often shorter than 100 miles, and certainly within a range of 500 miles or less. And here the rails are almost out of the game, because they are non-competitive in speed, service, and cost. This is due in large part to their public-policy-driven economic disadvantages, as well as their own operating practices. Even if the rails could come close to being competitive, they are currently disinclined to pursue such business because of their deliberate creation of infrastructure scarcity. Why bother seeking to compete in these short-haul corridors when you have all the business you can handle in easier, more lucrative, longer-haul corridors?

⁷ Association of American Railroads, *Railroad Facts*, 2007 Edition, p. 6.

Truck and Rail Transport in Virginia

Virginia's truck flows are predominantly north-south, not east-west, a fact that has long captured the public's attention. Reducing or at least limiting the growth of truck traffic on I-95 and I-81 is of great concern to the general population. However, both the railroads and transportation policy-makers have been slow to respond. The issue of truck congestion is a national concern in other corridors as well. In 2006, the Harris Polling Organization monitored public opinion about who should have an increased share of cargo movements. The respondents favored freight trains at 63 percent over trucks at 24 percent.⁸

There is obvious justification for public rail initiatives in the short-haul eastern Virginia Urban Corridor, but this is a challenging situation because of a lack of continuity of rail corridor ownership, especially in interstate connections, as well as capacity issues. Success will require innovation and creativity. Yet for resulting public benefit, this tough challenge warrants our attention.

The Virginia Department of Rail and Public Transportation took a significant step forward in January with the announcement of an agreement for I-81 rail corridor improvements. The project was made possible through \$40 million in one-time general fund support. The contract signed with Norfolk Southern will help divert trucks from highway to rail by increasing capacity for freight rail service and providing the potential for passenger rail capacity improvements in the Gainesville/Haymarket area. It requires Norfolk Southern to deliver specific public benefits, including an increase in freight rail shipments that would replace a substantial number of long-haul trucks on highways. In 2009, an estimated 7,000 trucks would be diverted to rail, which currently carries about 300,000 truckload equivalents per year in that area. By the conclusion of the project's performance period in 2023, some 76,000 trucks per year would be diverted, on top of current levels.⁹ The project also promises to yield substantial

⁸ Respondents were permitted multiple responses so the percentages so the percentages for rails, trucks, and other categories add to more than 100 percent. "Americans Would Like to See a Larger Share of Passengers and Freight Going By Rail in Future," The Harris Poll® #14, February 8, 2006 http://www.harrisinteractive.com/harris_poll/index.asp?PID=638 (2/4/08)

⁹ Phone conversation with Kevin B. Page, Chief of Rail Transportation, Virginia Department of Rail and Public Transportation (2/21/08).

cost-savings to Norfolk Southern in its handling of existing freight traffic.

Most ambitiously, Norfolk Southern wants to improve its network from the New York metropolitan area to New Orleans, mitigating congestion on highways such as I-81. It is seeking funding from the federal government and states along the corridor for much of the proposed \$2 billion project.¹⁰

The Role of Rail Passenger Service

Running parallel in the minds of the general public are twin goals: to see rail used to constrain the growth of truck traffic and to have access to high-performance, inter-city passenger train service in major urban corridors. Polls have indicated strong public support for passenger rail, both for commuting as well as longer-haul. And more importantly, the public is demonstrating its support of passenger rail in numerous corridors around the country. Most of these emerging corridors, although operated by Amtrak, are financially sponsored by the states they serve. Among the urban corridors where intercity rail passenger service is growing:

Eugene-Portland-Seattle-Vancouver
 Sacramento-Oakland-San Jose
 San Diego-Los Angeles-Santa Barbara
 Milwaukee-Chicago
 St. Louis-Springfield-Chicago
 Detroit-Chicago
 Albany-New York City
 Portland-Boston
 Harrisburg-Philadelphia-New York City

An important question is whether it is possible to accommodate short-haul rail freight and high-performance inter-city passenger trains in the same corridor. Some Virginia rail advocacy groups, including Rail Solution and Virginians for High-Speed Rail, apparently believe that the characteristics of high-performance rail passenger service operating in urban corridors are, or should be, operationally compatible with short-haul freight operating in the same corridors. Neither group necessarily is suggesting that traditional rail freight trains, carrying coal for example, nor even extraordinarily long, heavy, intermodal trains, are likely to be able to co-exist with high-performance passenger trains on the same tracks, during the same time window of operation. This is not so much a function of safety as it is the incompatibility of resulting

¹⁰ Daniel Machalaba, "New Era Dawns for Rail Building," *Wall Street Journal* (February 13, 2008).

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service-quality standards. The advocates assume that the infrastructure required to sustain corridor intermodal service is much the same as for passenger service, and that public investment in such rail infrastructure can, or should be able to, satisfy unmet needs of both services.

Others, particularly in the freight community, have reservations. The concept has never been adequately tested, nor objectively monitored, in a pilot project. Given the projections regarding the future need to move cargo as well as people, a demonstration rail project in the Hampton Roads-Richmond-Washington, D.C. corridor would be an ideal test of a mixed-use—both freight and passenger—project using the same rail lines.

Hurdles to Increasing Rail Service

There are numerous hurdles, some quite large, on the path to improving freight rail services.

1. Wall Street

Major freight railroads live and die by the market price of their publicly traded shares. Financial analysts who follow railroads do not applaud the making of big bets of a speculative nature. Each chief executive officer is in a position of having to demonstrate that his latest proposal for capital investment is fully justified. Therefore railroads generally will not anticipate the need for much additional capacity, and they will seem to be always behind the curve. If rail is going to play a larger role in U.S. transportation, only the public sector can make it happen.

2. Little Voice for Public

The public has the largest stake in transportation issues. Yet special interest groups, including airlines, ports, truckers, and railroads, consistently manage to have greater access and influence in public-policy decisions. If citizens want transportation policy changes, they will have to organize and articulate their message.

3. Federal Policy Neglect

No other mode of transportation, except perhaps pipelines, operates without a federal mandate or funding formula. Rails will not likely achieve their full potential without a strong federal role. There are currently some encouraging legislative proposals awaiting action by Congress, but the outcome is, at best, uncertain. The National Surface Transportation Policy and Revenue Study Commission's recently released report calls for better integration of highway and rail planning and more investment in freight and passenger rail, pointing out that on a per-ton

basis, trucking uses more than 10 times as much energy to transport freight than rail does.¹¹

4. State Policy Neglect

Official neglect has led to an absence of adequate state transportation agency organization, staffing, and funding, often without a clear mandate to promote and develop intercity rail infrastructure and services. In addition to strengthening Virginia's Department of Rail and Public Transportation, the commonwealth needs a statewide Rail Development Authority. Airports, ports, toll roads, bridges and tunnels all have authorities, but publicly-sponsored intercity railroad projects do not, at least in Virginia. Past efforts to obtain legislative approval for a statewide Virginia rail development authority have failed due to—among other reasons—DRPT apprehension about “turf” issues, as well as sincere, but misplaced, concern by General Assembly finance committee leadership about debt-capacity issues. But in the long run, a rail authority will be required for the very same reasons that the highly successful Virginia Port Authority was created years ago. The sooner it is created, the better for the public.

5. State Funding Methods

Virginia appears at first glance to have a public-policy commitment to raise the necessary revenues from users of highways via fuel taxes, supplemented by other fees and charges. In 1986, a landmark transportation funding package brought the “half-cent for transportation” supplement to the state sales tax. With the effect of inflation over two decades, the “half-cent” has become a major component of highway funding revenue. Thus even a senior citizen in a retirement community, without an automobile, is now paying something on each purchase that finds its way into the state transportation revenue pot. And now, with the 2007 General Assembly “solution” to future transportation requirements, part of the funding package includes General Fund money.

This practice means that everybody in the commonwealth is pitching in to pay for highways, whether he or she uses them directly or not, ultimately helping trucks (and to a much lesser extent railroads). The practice of using the General Fund for transportation financing

¹¹ National Surface and Transportation Policy and Revenue Study Commission, *Transportation for Tomorrow*. Vol. II (Washington, D.C., December 2007), pp. 3-21.
<http://www.transportationfortomorrow.org/> (2/5/08)

further distances our society from the user-tax principle, and if carried to its ultimate extreme, it could someday place most of the burden on the public. If that becomes the case, policy makers could, conceivably, have more latitude in distributing funds where they might do the most good.

6. State Lack of High-Level Discussion

Virginia has shown little commitment to high-level transportation “diplomacy” between the public sector and the private freight rails or with Amtrak. In contrast with other states, such as North Carolina, Pennsylvania, and Maine—to name just a few East Coast examples—discussions between the commonwealth and the railroads have generally been at a low level of authority. None of the participants have had the clout to resolve the really tough issues such as liability, long-term financing commitments, governance, and accountability. In contrast, governors in several other states have taken steps, personally, to forge principles of agreements with railroads, leading to major public investment and mutually beneficial commitments.

Alternatives for Policy-Makers

Transportation policy-makers face two broad options with regard to freight rail: respond to requests or initiate and lead.

Respond to Requests

Simply responding to grant requests from private railroads will allow them to set the priorities and enjoy most of the economic benefits from investment of public funds. In such cases there may be limited, and possibly inadequate, public benefit. Some, if not all, of the first-round grants recommended by the Virginia Rail Advisory Board, and subsequently approved by the Commonwealth Transportation Board in 2005, fit this pattern.

Initiate and Lead

If the public agency having full responsibility for inter-city rail is empowered and endowed with appropriate resources, it could function as the master rail-planning organization for the use of public funds in its region. The only satisfactory alternative to having public funding nibbled away by non-strategic grant applicants is for the responsible public agency to take the initiative. Not all public initiatives will be sound, particularly those that are motivated more by political reasons rather than solid economic or social justification. A process will be required to systematically reduce the public sector “wish list” projects to those which meet rigid tests of prac-

ticality and demonstrable public benefit. While the private railroads should be able to do things better, faster, and with greater cost-effectiveness, the history of great public-works projects, including the interstate highway system, argues in a most compelling way for a strong public role in rail infrastructure and service planning, augmented with commensurate public funding. Virginia’s early rail development in the 19th century was largely financed with state funding.

If society decides that an extraordinary amount of rail development is desirable for meeting the transportation requirements of the nation and Virginia, then substantial public funding is inevitably going to be essential. This public funding requirement is, to a major extent, the direct result of transportation policy decisions carrying over from the previous decades. To accomplish sound, clearly communicated, and beneficial public purposes involving the private railroads, that effort should be organized, funded, and monitored by a public-sector body. That group must possess the professional competence and financial resources to get the job done and to vigilantly protect the public interest. Although there are some hopeful signs, we are not there yet.

Summary and Conclusions

In recent years there have been major changes in railroading associated with deregulation and new technologies. Today’s freight rail network is smaller than in the past and focused primarily on serving large, long haul customers. Although the rail business requires tremendous capital, it can serve certain shippers easily, profitably, and with less environmental impact than trucks. But today’s rail is generally not competitive with trucking for short hauls, and in its zeal to reduce the amount of track redundancy and idle equipment, the industry has complicated future steps to enhance freight and passenger rail. There are many hurdles to success, but sound master planning and commitment of substantial public funding can strengthen our state and national transportation network.

Many people feel intuitively that our rail network could and should be more fully developed and utilized. To do that will require large capital investment in rail by both the private and public sectors. But to achieve any significant degree of shift of freight and passenger traffic from highway to rail will require much more than building new tracks.

A major change in public transportation policy at all levels of government will be

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necessary to enable the service qualities of rail freight to resemble that of our publicly-sponsored highway freight model. Equally critical to the success of any such shift would be the role of the private rail-freight operators. Today, expensive privately owned infrastructure in the rail system is often under-used because of business strategies that place more emphasis on train crew cost-control than on overall asset utilization. To effectively compete with the highway freight, more and better rail service will inevitably have to be delivered in the marketplace.

The rail enhancement issue is not only complex; it is highly sensitive to political ramifications, as well as boardroom concerns at private rail corporations. It is an issue that affects the widespread concern with highway congestion, sprawl, the environment, energy efficiency,

economic competitiveness, public safety, and quality of life. As with all such challenges, exceptional leadership will be required on both sides, public and private. Taking some progressive steps to meet this challenge could be of lasting benefit to the nation and the Commonwealth of Virginia.

ABOUT THE AUTHOR: Richard L. Beadles is a former railroad executive who has maintained an active interest in rail and transportation issues for more than 50 years. He is a founder of the Virginia Rail Policy Institute, a non-profit group dedicated to enhancing public understanding of inter-city rail as a cost-effective and environmentally friendly mode of transportation for both people and cargo. He currently serves as a member of Virginia's Rail Advisory Board and lives in Richmond.

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