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# Federal Freight Policy: In Brief

**John Frittelli**
Specialist in Transportation Policy

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# Freight System Components

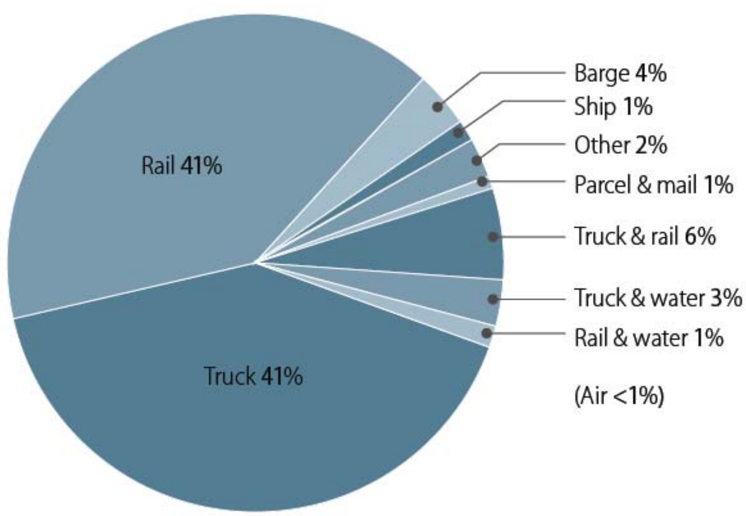
The U.S. freight system is a complex network including four principal modes of transportation:

- The National Truck Network comprises 209,000 miles of highways that can accommodate large trucks, including the 47,000-mile Interstate Highway System.
- Railroads, largely in private ownership, carry freight on 140,000 miles of track.
- Barge and ship lines utilize 12,000 miles of shallow-draft inland waterways and about 3,500 inland and coastal port terminal facilities.
- Air carriers provide cargo service to more than 5,000 public use airports, including more than 100 airports that handle all-cargo aircraft.

About two-fifths of freight within the United States, measured in ton-miles, moves by truck, and another two-fifths moves by rail (**Figure 1**). About 11% moves by multiple modes. Measured in ton-miles, air transportation is a minor mode because it is expensive to ship goods this way. Goods moving by air tend to be of high value compared to their weight. About three-quarters of U.S. imports and exports, measured by weight, arrive or depart by ship. Most of the rest goes by truck (10%), rail (8%), or pipeline (5%). International air shipments account for less than 1% of U.S. foreign trade by weight, but 37% by value.[1]

**Figure 1. Modal Shares of U.S. Freight**

Ton-miles




**Source:** Commodity Flow Survey 2007, Table 1a, U.S. Census Bureau and Bureau of Transportation Statistics. Survey covers U.S.-based shippers' outbound freight; it therefore excludes imports.

**Note:** One ton-mile equals one ton of freight shipped one mile.

[1] For additional freight statistics, see U.S. Department of Transportation, Office of Freight Management and Operations, *Freight Facts and Figures*, issued annually, http://ops.fhwa.dot.gov/freight/.

# The Federal Role in Planning

The federal government does not have a direct role in freight infrastructure planning and project development. Decisions about investment in public freight-oriented infrastructure are made by state departments of transportation (state DOTs), metropolitan planning organizations (MPOs), and state or local entities such as port authorities. Private infrastructure decisions, such as construction of new railroad yards, are largely made by the companies themselves. Congress has long been concerned that state and local institutions have difficulty providing a comprehensive approach to improving freight movement: unlike commuter trips, which generally begin and end within a metropolitan area, freight trip lengths often exceed the jurisdiction of a single MPO or even a state, so action to relieve a freight bottleneck in one jurisdiction may merely shift the problem to another.

Allocating resources to freight at the federal level is difficult politically, for two reasons. First, it entails concentrating federal dollars in relatively few geographic areas. According to the American Trucking Associations, just 5% of the U.S. road system carries 75% of the nation's truck traffic.[2] One-third of all rail traffic passes through Chicago,[3] and while there are more than 40 U.S. container ports, 90% of the volume of containerized imports and exports is handled at just 10 ports.[4] Second, federal funding decisions in freight transportation have the potential to create winners and losers. For example, a federal expenditure to deepen one harbor but not another could shift the flow of freight and the location of business investments and jobs.

# Federal Initiatives Affecting Freight Flows

## Truck Chokepoints

The current federal freight transportation program is mainly a loose collection of highway-oriented programs embedded in a larger framework aimed at supporting both passenger and freight mobility. Highway-related programs are authorized by the Moving Ahead for Progress in the 21st Century Act, enacted in July 2012 (MAP-21; P.L. 112-141).[5]

Highway congestion frustrates trucking's ability to provide precise and reliable scheduling. Unreliability is costly because it requires manufacturers and retailers to carry buffer stock, reducing an efficient "just-in-time" (JIT) logistics strategy to a "just-in-case" strategy. The importance of predictability was highlighted in an article in *Public Roads*:[6] "From a freight perspective, the quintessential requirement for succeeding in a global, just-in-time economy is the ability to plan trips, deliveries, and transactions down to hours and minutes—rather than days and

[2] ATA, *Transport Topics*, December 8, 2008, p. 28.

[3] TRB, Rail Freight Solutions to Roadway Congestion—Final Report and Guidebook, NCHRP Report 586, 2007, p. 49.

[4] The Ports of Los Angeles and Long Beach and the Port of Seattle and Tacoma are counted as one port city. U.S. Department of Transportation, Maritime Administration, based on 2007 data.

[5] For further information on highway programs see CRS Report R42762, *Surface Transportation Funding and Programs Under MAP-21: Moving Ahead for Progress in the 21st Century Act (P.L. 112-141)*, coordinated by Robert S. Kirk.

[6] U.S. Department of Transportation, Federal Highway Administration, "Reliability: Critical to Freight Transportation," *Public Roads*, vol. 68, no. 3, November/December 2004, p. 2.

weeks. This makes reliability one of the single most important performance measures from a private sector perspective."

Most of the highway congestion points are at urban interchanges and at land border crossings. MAP-21 seeks to sharpen the focus on freight use of the highway system by identifying segments with the heaviest truck traffic, identifying truck chokepoints, regularly reporting on the condition and performance of these segments, and lowering the local cost share for freight-specific improvements.

## Railroad Improvements

Railroads' decisions to invest in their infrastructure to improve transit times and schedule reliability are made on a commercial basis and do not always please shippers. Congress has sought to encourage investment in rail infrastructure through the Rail Rehabilitation and Improvement Financing (RRIF) program, which provides loans and credit assistance to sponsors of public and private rail projects. Eligible projects include acquiring, improving, or rehabilitating rail equipment, refinancing existing debt for these purposes, or developing new rail facilities. The 2005 transportation authorization act, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (P.L. 109-59), authorized $35 billion to provide direct loans and loan guarantees, with $7 billion of that amount reserved for railroads other than the seven Class I carriers.[7] Loans can be used to finance 100% of project costs with repayment up to 25 years. To date, almost all of the loan recipients have been shortline or regional railroads.[8]

In the past, Class I railroads proposed an infrastructure tax credit to allow them to reduce their tax burden for building new capacity. Shortline railroads seek a tax credit to rehabilitate existing facilities. Another legislative proposal that has been debated is the creation of a rail trust fund that would include a cargo waybill and passenger ticket tax as a means of generating revenue for railroad infrastructure investment. Freight railroads have opposed a rail trust fund arguing that taxing railroad use would not generate additional revenue for rail investment.

### Positive Train Control

The Rail Safety Improvement Act of 2008 (RSIA08; P.L. 110-432) requires implementation of positive train control (PTC) on railroads that carry passengers or have high-volume freight traffic with toxic or poisonous-by-inhalation hazardous materials. PTC is a communications and signaling system that has been identified by the National Transportation Safety Board as a technology capable of preventing incidents caused by train operator or dispatcher error. PTC is expected to reduce the number of incidents due to excessive speed, conflicting train movements, and engineer failure to obey wayside signals. It would not prevent incidents due to trespassing on railroads' right-of-way or at highway-rail grade crossings, where the vast majority of rail-related fatalities occur.

Under RSIA08, PTC is required on about 60,000 miles of railroad track by December 31, 2015. Many railroad companies are uncertain of their ability to fully implement PTC by this deadline,

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[7] Class I railroads are the seven large, "mainline" railroads in North America. Class II railroads are regional railroads and Class III railroads are shortline railroads.

[8] For information on RRIF, including a list of loan recipients, see http://www.fra.dot.gov/rpd/freight/1770.shtml.

and some contend that PTC implementation may divert resources from capacity expansion. The Federal Railroad Administration estimates full PTC implementation will cost approximately $14 billion. Although the larger freight railroads are well along in planning for PTC, some smaller railroads have not yet identified sources of funding for implementation. Congress is reevaluating the costs and benefits of PTC and the implementation deadline.[9]

## Lock Maintenance

Locks on the inland waterways have become increasingly unreliable due to their age. Many were built in the 1930s and 1950s and require more frequent maintenance or major rehabilitation work by the Army Corps of Engineers. Federal funding for inland waterway infrastructure has not kept pace with increasing capital demands. Barge operators pay a 20-cent-per-gallon federal fuel tax that covers about one-tenth of the federal cost of providing inland navigation infrastructure. This user charge amounts to about 2% of the barge industry's freight revenues. A handful of waterway segments generate negligible traffic but consume about a third of the operating and maintenance budget.[10] Congress has been reluctant to require the waterway industry to provide more capital for the system's upkeep or to terminate federal support for uneconomic portions.[11]

## Port Dredging

Enlargement of the Panama Canal, expected to be completed in early 2015, has spurred interest in deepening U.S. ports to accommodate larger ships. Yet only a handful of "load center" ports can realistically expect to see the larger ships. Under the present financing method and planning process, each port deepening project is initiated at the local level and evaluated in isolation from other port projects—no regional or national port rationalization strategy is part of the process. Ship operators pay none of the cost of dredging, so they do not consider this cost when calculating the costs and benefits of larger ships. Deepening projects are paid from the general fund. Maintenance dredging is financed by a federal tax primarily on imported waterborne cargo; however, only about a third of the revenue is used for cargo ports, with the remainder spent to maintain recreational and fishing harbors or on other government activities.[12]

# Regulatory Points of Contention

## Truck Size and Weight Limits

Current federal truck weight regulations restrict the maximum gross vehicle weight to 80,000 pounds.[13] An empty "18-wheeler" (five-axle tractor semi-trailer) typically weighs about 35,000 pounds, limiting the maximum cargo load to about 45,000 pounds. In addition to a maximum

9 See CRS Report R42637, *Positive Train Control (PTC): Overview and Policy Issues*, by John Frittelli.

10 See Figure 5, p. 16 of CRS Report R41430, *Inland Waterways: Recent Proposals and Issues for Congress*, by Charles V. Stern.

11 For further information, see CRS Report R43101, *Inland Waterways: Financing and Management Options in Federal Studies*, by John Frittelli.

12 For further information, see CRS Report R43222, *Harbor Maintenance Finance and Funding*, by John Frittelli.

13 Weight limits are promulgated at 23 U.S.C. §127; 23 C.F.R. 658.

gross vehicle weight, trucks also must comply with the “bridge formula,” which sets weight limits on each axle depending on its distance to the next axle. Federal truck weight regulations apply only to the Interstate Highway System and to the roads that provide reasonable access to and from that system. Truck weight limits on all other highways and roads are regulated by the states.

Federal truck size regulations apply to the “National Network,” a system of approximately 209,000 miles, which includes the Interstate Highway System plus principal arterial highways designated by the states and incorporated in federal regulations (23 C.F.R. §658). Federal regulations prescribe a width standard and minimum length standard, but no maximum length or height restrictions.[14] “Longer combination vehicles” (LCVs), which are trucks pulling two or more trailers with a gross vehicle weight exceeding 80,000 pounds, are allowed according to some states’ broad interpretation of their “grandfathered” permit authority.

Large trucking firms and shippers support increasing truck size or weight limits, while small trucking firms, truck drivers, railroads, and highway safety groups are generally opposed. In MAP-21, Congress instructed the U.S. Department of Transportation (U.S. DOT) to perform a study of truck size and weight limits.[15]

## “Captive” Rail Shippers

Some bulk rail shippers, particularly those that are served by one railroad, object to what they perceive as poor rail service and exorbitant rail rates. These “captive” shippers claim that the railroad serving them acts like a monopoly, charging excessive rates and providing less service than they require, because the railroad is aware that the cargo cannot be moved economically by truck. Some shipper interests want new federal laws or regulations requiring railroads to interchange cargo with one another at switching terminals so as to potentially increase competition. Currently, railroads interchange traffic at terminals only where they find it mutually beneficial to do so.

The Surface Transportation Board (STB), an independent agency organizationally housed within the U.S. DOT, has jurisdiction over railroad competition issues.[16] The STB has undertaken various investigations of captive shipper issues, but has not proposed broad changes in regulation.[17] Addressing the complaints of “captive” shippers may involve policy trade-offs, as railroads’ freight revenues are a significant means of financing rail capacity, and a legislated or regulatory solution to the “captive shipper” problem could therefore affect the level of investment in the railroad system.[18]

## The Jones Act

The Jones Act requires that cargo transported by water between two U.S. locations be carried in U.S.-built vessels, owned by and crewed by U.S. citizens.[19] The law, enacted in 1920 in response

[14] Size regulations are promulgated at 49 U.S.C. §§31111–31115; 23 C.F.R. 658.

[15] For further information on truck size and weight law, see http://ops.fhwa.dot.gov/freight/sw/index.htm.

[16] The STB was created in the Interstate Commerce Commission Termination Act of 1995 (P.L. 104-88).

[17] The STB has begun a proceeding examining competitive switching rules; see docket no. EP 711.

[18] See CRS Report RL34117, *Railroad Access and Competition Issues*, by John Frittelli.

[19] It is codified at 46 U.S.C. chapters 81, 121, and 551; 19 C.F.R. §§4.80 – 4.93; 46 C.F.R. §§67.19, 67.95-67.99.

to a surplus of U.S.-built cargo ships from World War I, is intended to encourage U.S. shipbuilding and protect the jobs of U.S. merchant mariners. The United States is the only industrialized nation that has domestic build requirements for ships, and there is no similar requirement for most other modes of transportation.[20] The law's supporters contend it preserves shipbuilding capacity essential to national defense. Its critics say it has made the U.S. shipbuilding industry internationally uncompetitive: U.S.-built oceangoing cargo ships are said to be two to three times more expensive than foreign-built ships.[21]

Most shipping along the coasts of the mainland United States is conducted in oceangoing barges rather than in tankers or containerships that can carry far more cargo. Bulk shippers complain that high coastal water freight rates due to the Jones Act relieve competitive pressure on the railroads, raising transport costs on some routes. In 2013, oil industry representatives told a Senate committee the Jones Act was raising the cost and constraining the movement of crude oil from new domestic sources to U.S. coastal refineries.[22] Barges are widely used for coastal movement of crude oil and petroleum products, but they tend to be slower and less efficient than tankers. According to the Maritime Administration, the capacity of tanker vessels eligible for Jones Act service fell by half between 2000 and 2013.[23]

The Jones Act may also facilitate collusion among carriers because the lack of available U.S.-built vessels inhibits entry by potential competitors. In 2011 and 2012, a U.S. Department of Justice investigation resulted in three container carriers paying $45 million in criminal fines and several executives receiving prison sentences.[24]

The President may waive the Jones Act when there is a sudden need for ships and no suitable U.S.-built vessels are available. Waivers were granted when hurricanes disrupted pipeline service in 2005 and, more recently, when the government released oil from the Strategic Petroleum Reserve.[25] In December 2012, Congress required the U.S. Maritime Administration and any federal agency requesting a Jones Act waiver to provide additional information, including an explanation of why the use of U.S.-built vessels is not feasible.[26]

## Author Contact Information

John Frittelli
Specialist in Transportation Policy
jfrittelli@crs.loc.gov, 7-7033

[20] For instance, trucks, locomotives, and airplanes need not be domestically built. Certain domestic content requirements apply to federally funded purchases of mass transit vehicles and Amtrak rolling stock.

[21] "Can the Jones Act be Protected?," *Journal of Commerce*, December 5, 2011.

[22] Senate Committee on Energy and Natural Resources, Hearing to Explore the Effects of Ongoing Changes in Domestic Oil Production, Refining and Distribution on U.S. Gasoline and Fuel Prices, July 16, 2013.

[23] U.S. Maritime Administration, "2000-2013 U.S.-Flag Privately-Owned Fleet Summary," http://www.marad.dot.gov/library_landing_page/data_and_statistics/Data_and_Statistics.htm#Fleet%20Statistics.

[24] U.S. Department of Justice press release, "Florida-Based Crowley Liner Services Inc. Pleads Guilty to Price Fixing on Freight Services Between U.S. and Puerto Rico," http://www.justice.gov/opa/pr/2012/August/12-at-962.html.

[25] The waiver process is codified at 46 U.S.C. §501.

[26] P.L. 112-213.