

ROLE OF WATERWAYS IN THE NATION'S TRANSPORTATION SYSTEM

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The significant role that inland waterways play in the domestic transportation system is discussed. The influence of federal agencies is examined. The unregulated status of the waterway system and the attempt by the U.S. Congress to impose user charges on the carriers of bulk commodities are emphasized.

•THE PUBLIC frequently overlooks inland waterways partly because most waterway freight traffic is bulk rather than final consumer goods and partly because relatively little commercial service on inland waterways moves passengers. Because the public has limited contact with the nation's inland waterway system, except perhaps for recreation, they sometimes find it difficult to understand how significant this mode is to the nation's flow of commerce. Statistics reveal that this is an impressive industry. The United States has over 25,000 miles (40 000 km) of commercially navigable waterways. Fifteen thousand miles (24 000 km) of these are deeper than 9 ft (2.7 m). The inland waterway and Great Lakes systems carry about 16 percent of the nation's total intercity traffic. Approximately 300 billion ton-miles (168 billion metric-ton-km) of freight move on these systems annually. Eighteen hundred different companies operate 21,000 barges and more than 4,000 towboats. Approximately 80,000 persons are employed onshore in jobs directly related to waterway navigation.

The proportion of total intercity traffic carried by the inland waterways in relation to other modes increased from 9.9 percent in 1967 to 10.9 percent in 1971. Of all the major freight modes, only pipelines grew at a faster rate during this period. During the same period, however, ton-mile (metric-ton-kilometer) freight movements on the Great Lakes fell from 6.1 to 5.5 percent of all intercity freight movements.

A few bulk items make up most waterway traffic. Coal and petroleum and their products account for about 58 percent of total traffic. Sand, gravel, and building cement account for 14 percent, and grains and soybeans account for about 6 percent. Almost 90 percent of all inland waterway cargoes consist of bulk items.

Although the number of tows and tugboats in use on the inland waterway system has remained relatively constant over recent years, there has been a large growth in total tugboat horsepower. Other factors, such as better communications, radar, and automatic steering arrangements, also have increased the hours of barge operation. Combined with increases in the quantity and cargo capacity of barges, these factors have helped increase the productivity of the industry. The future technologies of containerization, lighter-aboard ships, and Seabee and shallow-draft oceangoing vessels also are expected to affect the capacity and productivity of the nation's inland waterway system.

FEDERAL INTEREST

Federal interest in the use of the nation's lakes and rivers for public navigation became apparent early in U.S. history. After independence was achieved, the United States was concerned with preserving navigational freedom against restrictions imposed by foreign powers and the individual states. For example, western farmers worried about continued use of the Mississippi River in the face of Spanish control of its mouth. Maryland merchants, too, were concerned about Virginia's ability to restrict ships going to Baltimore because it controlled access to the lower Chesapeake Bay.

Conflicting navigation policies of the individual states helped lead to the Constitutional Convention of 1787. During the drafting of the Constitution, fears of state trade rivalry and discrimination on the nation's waterways played a part in framing the Constitution's commerce clause. Free navigational policies for both the Potomac River and the rivers of the Northwest Territory were major issues at the 1787 convention.

Since then, numerous acts of Congress have reaffirmed the importance of open navigation on American waterways by making interstate rivers "public highways" that are to be available to all citizens "forever free." Most historians view "forever free" as prohibiting private control over inland navigation, but it has often been construed by opponents of cost sharing to mean that all navigation improvements to waterways should be paid for by the taxpayer rather than by the immediate beneficiaries who are the users of these improvements.

Albert Gallatin (1) presented the first American attempt at comprehensive transportation planning in a report to Congress in 1808. His 10-year plan called for constructing a \$20-million intracoastal waterway along the Atlantic Ocean with a series of canals and roads to connect the seaboard with the interior. Gallatin's report recognized the importance of transportation to the nation's development and recommended that the government select routes to ensure harmony with the geographic features of the country. Congress, however, left waterway development in the hands of private and state interests until 1824. Then, Congress authorized federal improvement of rivers and harbors to be carried out by the U.S. Army Corps of Engineers.

The individual states engaged in extensive canal building during the first half of the 19th century with a small amount of federal assistance through land grants. During this period, major canals were built in New York, New Jersey, Pennsylvania, Maryland, Virginia, Ohio, Indiana, and Illinois. Canal traffic began to decline after the introduction of railroads and the Panic of 1837.

In 1873 the federal government began assuming responsibility for private and state canals, and in 1879 the Mississippi River Commission was formed primarily to coordinate flood protection measures on the lower Mississippi River. When the federal government took over the bankrupt canals from the states, it continued to collect tolls. In 1882, the Erie Canal, a state agency, stopped assessing tolls because of rail competition, and Congress enacted a toll-free navigation policy for all federally provided inland waterways. This was an attempt to save a declining industry and compete with the rail monopoly. The federal government has been the major force in water development ever since then. Today, several federal agencies have an interest in domestic water transportation.

U.S. ARMY CORPS OF ENGINEERS

The U.S. Army Corps of Engineers has been responsible for 151 years for planning, constructing, operating, and maintaining improvements on the nation's waterways. Their undertaking is one of the greatest public works programs ever undertaken by any country in the history of the world. From 1824 through 1970, the Corps of Engineers spent more than \$3 billion on inland waterway navigation construction. This sum does not include federal appropriations for seacoast harbors or Great Lakes channels and harbors. It also excludes local participation in waterway projects, and this amounts to millions of dollars annually. The Corps of Engineers, moreover, spends \$200 million annually on operation and maintenance of inland and Great Lakes navigation waterways.

INTERSTATE COMMERCE COMMISSION

Inland water carrier transportation was brought under Interstate Commerce Commission (ICC) regulation by the Transportation Act of 1940, but certain bulk and liquid commodities were exempted from regulation. As a result, only about 10 percent of commodities transported in vessels on inland channels is regulated currently by ICC. The other 90

percent is either exempt for-hire service or private transportation.

MARITIME ADMINISTRATION

The Maritime Administration of the U.S. Department of Commerce has a congressional mandate to promote all segments of the domestic shipping industry and a merchant marine to serve the industry. It also offers financial assistance to private industry for mortgage and marine insurance and construction-reserve and capital-construction funds. An Office of Domestic Shipping was established in October 1971 to promote all segments of the domestic shipping industry.

U.S. DEPARTMENT OF TRANSPORTATION AND U.S. COAST GUARD

Congress, in the 1966 Department of Transportation Act, gave the U.S. Department of Transportation (DOT) broad responsibility to:

Provide general leadership in the identification and solution of transportation problems; and to develop and recommend to the President and the Congress for approval of national transportation policies and programs to accomplish these objectives with full and appropriate consideration of the needs of the public, users, carriers, industry, labor, and the national defense.

DOT, the U.S. Coast Guard, and the Saint Lawrence Seaway Development Corporation play an important part in domestic waterway navigation. The Coast Guard is responsible for waterway safety, which includes boating safety, cargo security, and port safety. The Coast Guard also has a significant responsibility to provide extensive navigation aids to facilitate vessel traffic, protect and enhance the marine environment, and enforce antipollution laws. In recent years, the Coast Guard has been spending over \$300 million annually on inland and Great Lakes navigation operations.

TRANSPORTATION POLICY

Secretary of Transportation Claude S. Brinegar in May 1974 issued a report setting forth the principles that guide DOT in formulating national transportation policy (2). Several of the policy principles in this report are relevant to this discussion:

The overriding thrust of Federal policy is to see that the nation has an overall transportation system that reasonably meets its essential needs. To the maximum feasible extent, this system should provide transportation that is efficient, safe, fast, convenient, and limits negative impacts on the environment.

The nation's transportation system should, as much as possible, be provided through the competitive forces of the private sector, or, if the private sector is inappropriate, by the state and local governments. Direct Federal financing of transportation investments or operations should be limited to those few cases where there is a clear and widely accepted requirement for concerted action in areas of high national priority, and where the private sector or state and local governments are obviously incapable of adequately meeting this requirement.

When Federal expenditures are used to finance transportation investments or operations, these expenditures should be recovered from the users and other beneficiaries in a manner that is appropriate to the degree of benefits received, unless widely accepted national policy directs otherwise. The lack of user charges or cost sharing on the inland waterways that have been developed and are maintained with Federal funds is not consistent with this policy.

The economic regulation of interstate transportation needs to be thoroughly reexamined to determine which parts are necessary, as a minimum, to protect the public interest, and those

which, through the passage of time, have become more of a burden than a help. We believe that a significant streamlining of this regulatory process is in order, directed to greater reliance on the forces of open market competition. A particular effort is needed to eliminate restrictions on intermodal competition.

The policy report concluded as follows:

We well recognize that many aspects of the above policy statement—especially those that are rooted in the concepts of the desirability of promoting more freedom of choice, greater economic efficiency, and allocation of costs to users—are controversial. Some will praise them; others will damn them. It must be understood that we do not put them forward as final answers (for there are none), but rather as what appear to us to be the proper future directions for the nation as a whole.

HOW TRANSPORTATION POLICIES APPLY TO INLAND WATERWAYS

Congress, in Public Law 91-590, directed DOT to undertake a comprehensive study of the present system of economic regulation of dry-bulk commodity transportation. The conclusions and recommendations of this study that apply these policies are contained in The Barge Mixing Rule Problem (3), which focused on several conditions that the 1940 amendment to the Interstate Commerce Act required be met to exempt dry-bulk-commodity barge movements from ICC regulation.

The study found that there have been vast technological and scale changes in both the barge industry and the shippers using it since enactment of regulation in 1940. The legal constraints of the 1940 act are no longer compatible with the operating conditions and practices of a modern barge industry. The custom-of-the-trade provision, which stipulated that only those dry commodities being carried in bulk on or before June 1, 1939, were to be exempt from regulation, is relatively unimportant to total dry-bulk barge trade. The 3-commodity restriction, which stipulated that no more than 3 exempt commodities could be carried in 1 tow, and the no-mixing rule, which held that exempt dry-bulk commodities could not be mixed with regulated cargo in the same tow and retain exempt status, would not serve any relevant or beneficial purpose for the water carrier industry or the shipping and consuming public. Effective application and enforcement of these restrictions on the exemption at this late date would severely hamper transportation flexibility, raise shippers' costs, and create operational difficulties in water transportation of dry-bulk commodities. Congress agreed with the DOT finding and enacted Public Law 93-201, which extended the exemption of dry-bulk commodities.

The inland water carrier industry is a prime example of how effective competition and efficient transportation can exist in a relatively unregulated environment. When one compares the various other modes, all of which have substantially more economic regulation, one concludes that the economic strength and efficiency of the water carrier industry are a tribute to both the industry and the American system of free competition.

COST SHARING

Cost sharing is a major issue facing waterway navigation today. The estimated fiscal year 1972 federal expenditures for commercial navigation and recreational boating are \$266 million for new construction and \$596 million for operation and maintenance, which totals \$862 million.

In the early days of the United States, government development of waterway navigation paid great benefits in the development of the national economy. After the federal government took over bankrupt canals from the states, toll collection was halted and

Congress enacted a toll-free navigation policy for all federally provided inland waterways. The federal policy of public financing of waterway development made sense at the time because it was designed to save a declining industry and provide competition to existing rail monopolies.

Since World War II, however, there has been a reversal in the productivity of the barge industry. During the postwar period, the volume of traffic on major inland waterway routes rose by more than 300 percent. Technological advances and reductions in staff requirements continue today. Because of this increase in productivity, barge rates have remained low.

The average cost to the carrier until 1974 was approximately 0.3 cent/ton-mile (0.5 cent/metric ton-km) of freight, which compares favorably with rates in effect almost 20 years ago. Recently, inflation and increasing fuel costs have caused an increase in this figure to almost 0.5 cent/ton-mile (0.9 cent/metric ton-km).

It appears that most, if not all, high-priority opportunities for developing our rivers and coastal areas already have been exploited. The capacity of the present system, except for a few bottlenecks, is many times its present level of use. The inland waterway transportation system is, today, a mature industry. It no longer demands full federal subsidy. DOT, with its responsibilities for all modes, believes in evenhanded, across-the-board, federal treatment. At present, both pipelines and railroads pay all costs of constructing and operating their modes. Most of the other modes also contribute through user charges to the costs of federally constructed modes.

The Federal-Aid Highway Act of 1956 specified that a study be carried out to aid Congress in setting highway user charges. The Airport and Airway Development Act of 1970 extended cost sharing to this mode. Internal waterways, ocean shipping, and port facilities seem to be the only exceptions to a definitely accepted policy of imposed user charges.

Every U.S. president since 1940 has proposed cost sharing for inland waterway navigation because each has recognized the arguments of equity and efficiency. In a pre-Thanksgiving speech to Congress in 1974, President Ford called for a tax plan under which users would be required to pay the full costs of operating and maintaining 20 major segments of the inland waterway system. The Ford proposal would subject cargo-carrying vessels using the waterways to user charges based on ton-miles (metric-ton-kilometers) of freight transport. A separate schedule of lockage fees was proposed for other vessels. Legislation to carry out these proposals was sent to Congress.

SUMMARY

In summary, the inland waterway industry is extremely important in the national transportation system, and it has demonstrated that effective competition and efficient transportation can exist in a relatively unregulated environment.

REFERENCES

1. A. Gallatin. Report of the Secretary of the Treasury to Congress on the Subject of Public Roads and Canals. 1808.
2. C. S. Brinegar. A Progress Report on National Transportation Policy. U.S. Department of Transportation, May 1974.
3. The Barge Mixing Rule Problem. U.S. Department of Transportation, Vols. 1 and 2.