The Waterways Are Aging and Neglected

by Mary Jane Freeman and Richard Freeman

The nation's network of waterway traffic is experiencing difficulties that range from significant problems, to obsolescence, to breakdowns.

This network has developed since the early decades of the 19th Century, to the point where, today, it encompasses 12,000 miles of commercially active inland and intracoastal waterways; 240 commercially active locks and dams on the inland waterways; and 300 inland and coastal ports with 3,700 terminals. Through this system flows 2 billion metric tons of domestic and foreign goods annually. Some 95% of U.S. foreign trade passes through its waterways and ports.

But it is hardly adequate. Parts of the network cannot even handle the current freight flow. Were the United States to increase its commerce by becoming a heavy capital goods exporter of machine tools, power plants, tractors, cranes, etc. to Ibero-America, Africa, and Asia—some of these goods produced in the interior of the country and moved by the inland waterways to the U.S. coastal ports—portions of the system would collapse under the stress.

Obsolescent Locks and Dams

The great weakness which can shut down a good portion of the waterway infrastructure, is typified by the age and obsolescence of the lock-and-dam network. The lock chamber functions to lower or raise the water level allowing a barge to continue along a river. Currently, of the United States' 240 active inland waterway lock chambers, 113—or 47% of the total—are 50 years old or more, which is past their life expectancy. By 2010, 138 lock chambers—58%—are projected to be 50 years old or more, according to the U.S. Army Corps of Engineers. The reason so many lock chambers are over 50 years old, is that the Corps of Engineers receives vastly insufficient funds. The Corps is able to plan replacement construction work on only seven of these aging lock chambers, and most of these projects won't be completed until the year 2010.

The crisis has manifested itself acutely for the last several years at the Montgomery Lock and Dam System on the Ohio River system. The Montgomery Lock and Dam was first constructed in 1936—it is currently 66 years old—and it has never been replaced. Instead, temporary repairs are made on the lock. Thus in late June it was closed for several days; reopened in early July; and then closed from July 15-30 for repairs. These temporary repairs wreak havoc on the transportation system of the Ohio River, one of the nation's most important and heavily travelled waterways. A tow made up of nine barges can normally go through the main 600 foot-long chamber of the Montgomery Lock and Dam in half an hour; but when the main chamber is closed, the tow has to be disassembled into its nine barges, and each barge goes through the adjacent, much smaller lock chamber, taking three and a half hours, after which the nine-barge tow must be reassembled.

The Montgomery system is but one lock/dam chamber on the Ohio River. The Ohio River Navigational System is essentially a 961 mile-long "staircase," making the river navigable. It starts at Pittsburgh, in western Pennsylvania (at more than 400 feet above sea level), and follows a course southwestward to Cairo, Illinois (at 250 feet above sea level) at the junction of the Ohio and Mississippi Rivers. The system has several locks that are more than 50 years old. As the chief executive officer of the largest barge company in the vicinity of the Montgomery Lock and Dam, Peter Stephaich, told the July 28 *Pittsburgh Tribune-Review*, "fixing one lock in itself doesn't do any good—you need to maintain the entire system."

Now, multiply the problem nationwide. The Army Corps of Engineers has calculated that queueing delays for ships and barges total 550,000 hours annually, and that this costs nearly $400 million in operating expenses; but the delay in time and goods movement far outweighs the mere monetary loss.

The Nation's Ports and Rivers

The U.S. port system also poses several problems. There are two parts to the system, which consists of 300 ports. Most of these are inland, and many have shallow drafts. The deeper draft ports are located largely along the coasts (and on the Great Lakes). The top 50 ports handle 82% of America's water-borne trade, which totals 922 million tons for internal-domestic trade, and another 1 billion tons for foreign-overseas trade.

Some of the biggest ports handle containers, which is a more advanced system than loading and unloading separated cargo. But the big ports have several reported problems:

- Only five of the nation's ports have a draft depth of 50 feet or more, required by the new class of container vessels, which carry more than 6,000 twenty-foot containers or double-stacked trains.
- Half of them report that they have limited availability and location of turning lanes and multiple access routes.
- Half of the containerized ports report that they lack near-dock rail terminals—these are terminals at the docks where the ports interface directly with the rail system. The ports of Los Angeles and Long Beach in California built a 20-mile Alameda corridor where the port and the rail system can connect, using many advanced loading/unloading procedures. Unfortunately, that is more the exception than the rule.

FIGURE 1

Major U.S. Harbors Handling Over 10 Million Tons in 2000

Source: U.S. Army Corps of Engineers.

• Nearly one-third of all ports report bridge impediments resulting from highway access to the ports.

The Army Corps of Engineers, which supervises and constructs much of the nation's water infrastructure, is itself under attack from Wall Street and the environmentalists. On April 29, the Corps had to suspend work on 150 Congressionally approved, essential water projects. For the first time in the nation's history, every vital Federal water project is now suspended.

Flood Control

In 1993, the mid-section of the United States was hit with heavy rains, particularly along the Mississippi River Valley. Something very telling happened: The Mississippi is divided, at Cairo, Illinois, into the Upper and Lower Mississippi River systems for purposes of river and flood control. Under Franklin Roosevelt's New Deal, the Army Corps of Engineers began the process of providing complete flood control on the Lower Mississippi River, which was completed in the 1950s. The grand project included building levees, dams, floodways, etc. Due to opposition by financial and financier-dominated rail interests, the Army Corps never built the same effective flood control system on the Upper Mississippi. When the heavy rains of 1993 struck, the Upper Mississippi suffered billions of dollars of damage, loss of life, homes, businesses, and livestock. The Lower Mississippi, facing the same "500-year flood," underwent comparatively little of that damage.

The nation's dams are critical infrastructure for power generation, flood control, and agriculture. According to the Association of State Dam Safety Officials and the Army Corps, between 1998-2001, the number of "high-hazard dams," defined as those "whose failure would cause loss of human life," grew by 7%, from 9,281 to 9,921.

The need to complete the flood control systems—which are simultaneously river navigation systems—according to excellent plans that the Army Corps of Engineers drew up in the 1940s and 1950s, but never completely implemented, is still very great. Such undertaking begins with the Upper Mississippi, but includes also the James River in North Dakota and the Red River in Minnesota. It also includes Army Corps and local flood control district plans for cities, such as an excellent plan that exists for the City of Houston. Had it been instituted, it would have spared Houston much of the wreckage and loss of life in the year 2000 flooding.