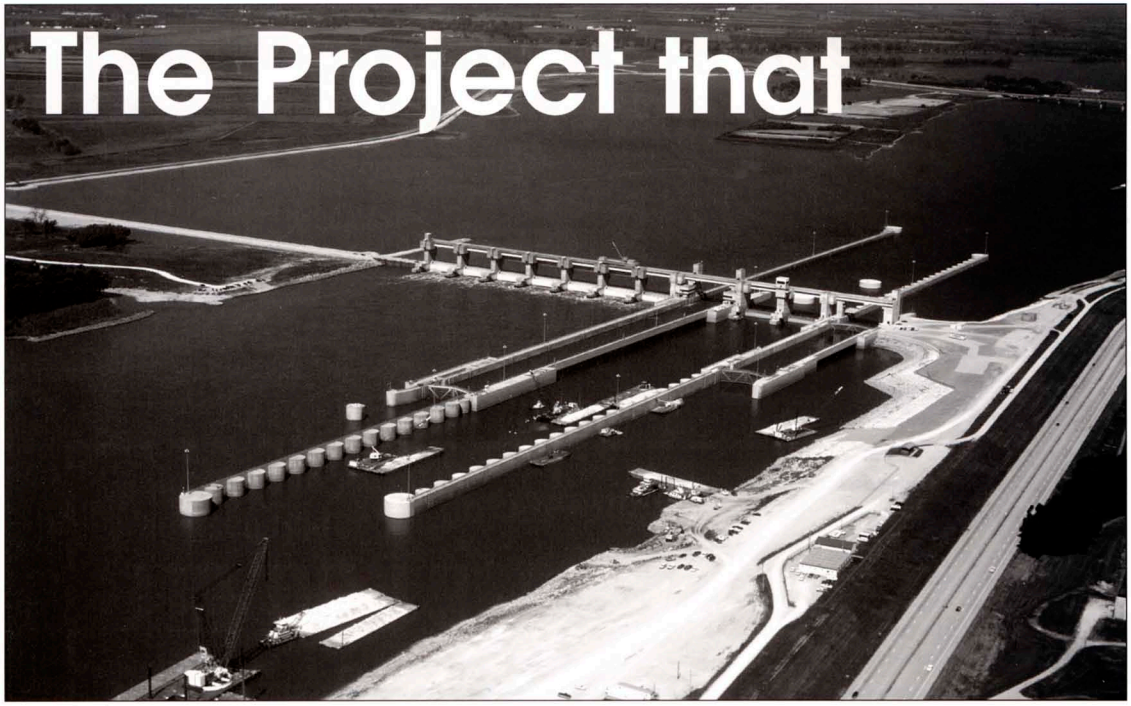

The Project that Changed the River

THE MELVIN PRICE LOCKS AND DAM

By Mi Ae Lipe-Butterbrodt

For those accustomed to the smaller locks and dams of the Upper Mississippi, the colossal size of the Melvin Price Locks and Dam, near Alton, Illinois, is startling.

The air trembles with clanking machinery, voices directing locking operations through loudspeakers some 40 feet above the river, and roaring tows slipping through two massive lock chambers.

A control tower looms above the state-of-the-art structure, which is flanked by a temple-like river museum. Even more expansive is the Mississippi: broad-shouldered, powerful, the color of mud, bearing a stream of barges.

More than 20 years ago the unformed shape of this structure was the focus of a battle that lasted years and involved shippers, farmers, government agencies, environmentalists, hunters, anglers and boaters. They all thought the results would affect the river for a long time to come.

A Multiuse River

Balancing the river's ecological, shipping and recreational interests is probably more of a shoving match than a balancing act. As early as the 1920s, transportation and agricultural industries pressured Congress to deepen the entire river to at least nine feet so barges could transport grain and other goods unhindered. In the 1930s Congress authorized a nine-foot navigation channel and a series of locks and dams that resculptured the upper river.

The burgeoning shipping traffic stirred up sediment that filled in and clouded up backwaters and side channels, wiping out fish and vegetation. Maintaining this channel required constant, intrusive dredging, which in

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turn destroyed more river habitat.

As river shipping boomed in the 1950s and 60s, shipping and agricultural interests pressured for a 12-foot channel. Public frustration grew as federal bureaucracies and Congressional policies over the river's uses conflicted, while pollution and dredging continued.

All these issues boiled over when in the 1960s the Army Corps of Engineers' St. Louis District proposed a dam with twin 1,200-foot locks to replace the ailing Lock and Dam 26 at Alton.

Trouble from the Top

These huge locks could quadruple the number of barges passing through at Alton, an attractive proposition for shippers at a location between the Upper Mississippi and Illinois rivers to the north and the Missouri, Middle Mississippi and Ohio rivers to the south.

Environmentalists objected strongly, fearing that such a huge structure, the first of its kind on the upper river, would eventually lead to increased shipping traffic, expansion of all the locks and dams, a 12-foot channel and ultimately, the ecological death of the river.

On August 6, 1974, one day before the Corps was to open bids on the first construction contracts, the Sierra Club, Izaak Walton League and the Western Railroad Association filed lawsuits to stop the new lock, claiming that the Corps did not have proper Congressional authorization and that the project's environmental impact statement was faulty.

The St. Louis District poohpoohed the notion that the L&D 26 replacement foreshadowed the expansion of all the locks and dams. It also argued that the twin-lock project would not introduce any negative environmental impacts that did not already exist, since both L&D 26 and 27 already had double locks. Nonetheless it decided to scale back the project to a dam with a single 1,200-foot lock.

The Corps argued that opponents incorrectly assumed that a 12-foot channel was imminent because the proposed lock was designed with an 18-foot sill. The Corps claimed it was needed to accommodate barges with ice on their hulls, according to Corps historian Charles Camillo.

A ground-level view of construction activities within the cofferdam.

Several years later, Congress authorized a package bursting with compromises: a new dam with only one 1,200-foot lock; a commercial vessel fuel tax to help pay for the project; and a request that both the Upper Mississippi River Basin Commission and the Corps study the impacts of increased traffic and a second lock at Alton.

> *"...The Corps was under tremendous pressure to build the big new lock and dam — from the press, labor unions, the Coast Guard, the American Waterways Association and construction groups. It was a simple matter of politics."*

Meanwhile, the court continued to hear appeals from the original lawsuits, but pressure to build the lock won out. On April 25, 1980, the Corps drove the first piling for the new lock, and the Basin Commission's environmental studies were cut short.

Jerry Rasmussen, a fisheries biologist for the U.S. Fish and Wildlife Service, remembers this tumultuous time. He was the first chairman of the Environmental Work Team (EWT), which designed and conducted environmental studies under the Basin Commission. The EWT was keenly aware that the Corps was conducting its own study, estimated at $25 million.

The EWT, equipped with $3 million, planned to study the entire upper river at sites that represented diverse habitats. "But the Corps wanted to skip the field research and base its decisions on 'expert' panels," Rasmussen recalls. "They hated the sites we chose, because they were not what they would have chosen to reflect their goals. The Corps used ridiculous methods. They pulled a trawl behind their boat near St. Louis and claimed the number of fish they caught didn't warrant ecological study."

Once the EWT studies halted, the whole study was redesigned by shipping interests, according to Rasmussen. "The Corps representative voted against nearly every EWT recommendation. The Corps was under tremendous pressure to build the big new lock and dam — from the press, labor unions, the Coast Guard, the American Waterways Association and construction groups. It was a simple matter of politics."

James Harrison was Executive Director of the Minnesota-Wisconsin Boundary Area Commission, one of the many groups opposed to the L&D 26 replacement. He also

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remembers the iron will of the Corps to get, in its words, "the project done on time," its experts ("hired to make guesses") and the palpable tension at meetings between the Corps and environmental groups.

Wayne Hammer of Citizens for a Clean Mississippi says the conservation group fought the project for several years, but acquiesced after the Corps promised to do environmental studies. "Every time you compromise, you do so in hopes that you'll get what you compromised for."

But the Corps angered environmentalists and many state agencies with its claim that too little information existed on the impacts of shipping traffic on the upper river to bother preparing a final environmental impact statement before starting to build the second lock. The Fish and Wildlife Service and the Environmental Protection Agency also protested the Corps' initial exclusion of the upper river's tributaries in its studies and its steadfast refusal to pay to repair environmental damage caused by the new locks and dam.

Costs & Compromises

Undeterred, the EWT boldly asked Congress for a 10-year, $300 million environmental management program (EMP). The program would be a multistate, multiagency effort to collect long-term data on the Upper Mississippi, and a tool to provide managers with information to evaluate river projects.

In 1986, Congress again compromised between environmental and shipping interests, authorizing a second, 600-foot lock and the EMP. But the EMP's funding shrank to $183 million, equal to the second lock's construction costs.

The new lock and dam's price raised eyebrows. In the 1960s, the Corps estimated the entire twin-lock project would cost just over $200 million. But it was not required to account for inflation until 1979, when it put a $805 million estimate on the dam and one lock.

Opponents decried these increases as fiscal irresponsibility. Camillo says they resulted from long delays, as well as the Corps' failure to account for inflation. The second lock cost $226 million, bringing the total cost of Melvin Price to nearly $1 billion, five times original estimates.

Over 20 years after it was first proposed, the new lock and dam opened in October 1989, named in honor of retiring Congressman Charles Melvin Price. The second lock was completed in October 1993.

Echos of the Struggle

The future of the upper river remains uncertain. Many biologists and environmentalists feel that the political climate is "green" enough, even within the Corps, that full-scale lock-and-dam expansion will never happen.

But many folks who remember the struggles over Melvin Price still distrust the Corps, especially after its recent $50 million Upper Mississippi River-Illinois Waterway System navigation study scandal, when the study's chief economist, Don Sweeney, accused Corps higher-ups of pressuring him to generate phony numbers that would support river expansion.

Not surprisingly, agricultural companies and river shippers still push for more barge transportation. But independent studies show that lock-and-dam expansion costs will return less than 11 cents for every dollar invested, and these figures don't include environmental damage or river rehabilitation costs. And taxpayers continue to foot most of the bill to maintain the river for shipping.

Rasmussen remains optimistic about the upper river's future. He feels that the EMP "did change the world, as did the flood of 93. The environmental groups made a difference, and Sweeney made a difference." But he is less hopeful about human nature: "All I ever wanted was fair treatment. Our job is to take care of the critters because they can't speak for themselves. We should be allowed to do that job."

- *The Melvin Price Locks and Dam is located on Highway 143 in East Alton, Illinois, south of the Clark Bridge at river mile 200.78, two miles downstream from the original Lock and Dam 26.*
- *The dam is 1,160 feet long, with 9 tainter gates, each 110 feet by 42 feet high. The main chamber is 1,200 feet long by 110 feet wide. The auxiliary chamber is 600 feet long by 110 feet wide.*
- *The basic structure of the Melvin Price is similar to the original locks and dams constructed in the 1930s, but its colossal size dwarfs them. In a departure from traditional lock design, its steel H-piles are not driven vertically into the riverbed, but are battered at angles to form a web-like foundation. This makes a more fully integrated structure that is less susceptible to movement over time.*
- *A host of monitors, sensors, lasers and computers measured and analyzed virtually every aspect of the project's design and construction. The work refined numerous details, including the design and construction of cofferdams, the mixing and distribution of concrete and placement of guidewalls. This testing indicated that the steel sheet piling used to construct cofferdams did not have to be driven into the riverbed as deeply as previously thought, significantly reducing costs.*
- *In 2001, 75,870,386 tons of cargo passed through the Melvin Price in 9,483 lockages.*
- *The Melvin Price Locks and Dam is the first lock in the U.S. to test remote control operation. With this advanced computerized control system, a couple clicks of a computer mouse from 1,000 miles away can complete the lockage of a 15-barge tow.*
- *Tours are by reservation only. Call the Rivers Project Office at (636) 899-2600.*
- *The Melvin Price is also the site of the National Great Rivers Museum, one of 11 regional visitors centers operated by the Corps. Exhibits are expected to be completed by January 2003.*

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Photographs courtesy St. Louis District, Army Corps of Engineers.