

The damage of the Flood of '93: It could have been prevented

by Richard Freeman

Amid all the blithering generalities, occupying tens of millions of column inches spewed out by the nation's media about the Flood of '93 over the last nine weeks, a most crucial piece of evidence, available in the public domain, has never been reported: Most of the damage could have been prevented if the Army Corps of Engineers had been allowed to build the same flood control infrastructure in the Upper Mississippi, as is *already in place* in the lower part of that river.

America's press establishment has practiced a huge deception upon the American people, through a ploy that is best described as "fallacy of composition." The press reported that during the last four decades, the U.S. Army Corps of Engineers has spent \$8 billion in constructing flood control projects on the Mississippi River system as a whole. Yet, look at the destruction, the press intones, showing pictures of broken levees, washed-out cities, and destroyed businesses and cropland. Clearly, the flood control infrastructure didn't work, the press snidely notes; indeed, it even intensified the flooding. The United States should abandon all science and engineering, and let the river run free, the press triumphantly concludes.

Such "fallacy of composition" deception can only work if the American people remain ignorant about how the Mississippi really works. Though it is one river, the Mississippi contains two distinct flood control systems: the Upper Mississippi and the Lower Mississippi systems. The dividing line is Cairo, Illinois located at the latitude of 37.5°N. The Mississippi starts about 150 miles north of Minneapolis-St. Paul, Minnesota, at approximately the 46th parallel, and runs down to New Orleans, at which point the river empties into the Gulf of Mexico at approximately the 30th parallel.

Over the past 60 years, the U.S. Army Corps of Engineers has spent \$8 billion constructing flood control projects on the Mississippi River system, including its tributaries, the Missouri, Ohio, Illinois, Arkansas, Des Moines, Racoon, and other rivers, and another \$3.25 billion on operations and maintenance of the projects. But of the \$8 billion spent on constructing projects, \$5.5 billion was spent on the Lower Mississippi, and only \$2.5 billion on the Upper Mississippi. That is, 69% of the construction funds were expended on the Lower Mississippi. The Army Corps of Engineers, which is responsible for all phases of water management on the

Mississippi, completed one of the most spectacular infrastructure-water management jobs on the Lower Mississippi known to mankind. Working from the "Comprehensive Flood Control Plan" that the Corps developed starting in 1928, the Corps built a unified, system-wide flood control plan for the Lower Mississippi that could handle a hypothetical "project flood," i.e., a worst flood in 100 years. But because of restrictions imposed by financiers and environmentalists from the outside, the Corps of Engineers was not allowed to develop and implement a similar plan for the Upper Mississippi.

Just as an example, the Lower Mississippi, for its entire expanse, can now handle raging floodwaters traveling at the stupendous flow levels of 2.5-3 million acre-feet per second. The upper limit that most of the Upper Mississippi can handle, by contrast, is floodwater speeds of 250,000 acre-feet per second, and many stretches cannot handle maximum flows of more than 100,000 acre-feet per second. Yet the Flood of '93 deposited rains that caused the Mississippi to flow at 500-800,000 acre-feet per second. For the Upper Mississippi this spelled disaster, and caused massive damage of \$15-25 billion when the total bill is added up. Meanwhile, for the Lower Mississippi, this was just a drop in the bucket. That is why more than 97% or more of all the damage from the Flood of '93 happened on the Upper Mississippi. It was not a question of an act of nature; this was a question of man's deliberate decision not to build infrastructure.

If the correct projects had been built on the Upper Mississippi as they had on the Lower Mississippi, *at least one-third, and most likely, four-fifths or more of the damage would have been prevented.* The Army Corps of Engineers documents from its records that the \$5.5 billion it has spent on flood control on the Lower Mississippi has prevented \$125 billion in damages in the last 40 years. That is, every \$1 spent on flood control infrastructure saved \$23 in preventable damages.

This has been the consistent argument of *EIR* founding editor Lyndon LaRouche, one of the world's leading economists. LaRouche has stated that next to the role of scientific discovery and its implementation, infrastructure is the most important element in the economy. Each time that he has run for President, starting in 1976, LaRouche has sharply



Davenport, Iowa on July 10, during the flooding of the Mississippi River. The City Fathers did not think it politic to build levees to protect the town, because this would be bad for the casino gambling tourist trade.

focused on infrastructure a pivot of his program. (See his 1992 platform, *The LaRouche-Bevel Program to Save the Nation*, "Solving the Fresh Water Crisis," pp. 9-16, and "Building New Railways, Waterways, and Highways," pp. 17-24. Also see the 1984 LaRouche platform, *A Program for America*, pp. 290-303.) Tragically, he has been a lone voice, crying in the wilderness, as Americans, instead of voting for him, choose Presidents as if they were buying a soap powder, based on advertising "image" and saleability. Americans have been acting according to the principles of Greek tragedy: By disregarding LaRouche for 17 years, they are now paying an awful price.

The overriding importance of the Mississippi

Since the European settlement of North America, man has reclaimed 15 to 20 million acres of overflow lands in the Mississippi alluvial valley, and has perfected approximately 20,000 miles of previously precarious navigation. The Mississippi had to be tamed. The Mississippi lowland flood plains are immense, reaching within 250 miles of the East Coast and within 500 miles of the West Coast. Without flood control, cities such as New Orleans and Monroe, Louisiana, Vicksburg and Natchez, Mississippi, and St. Louis, Missouri

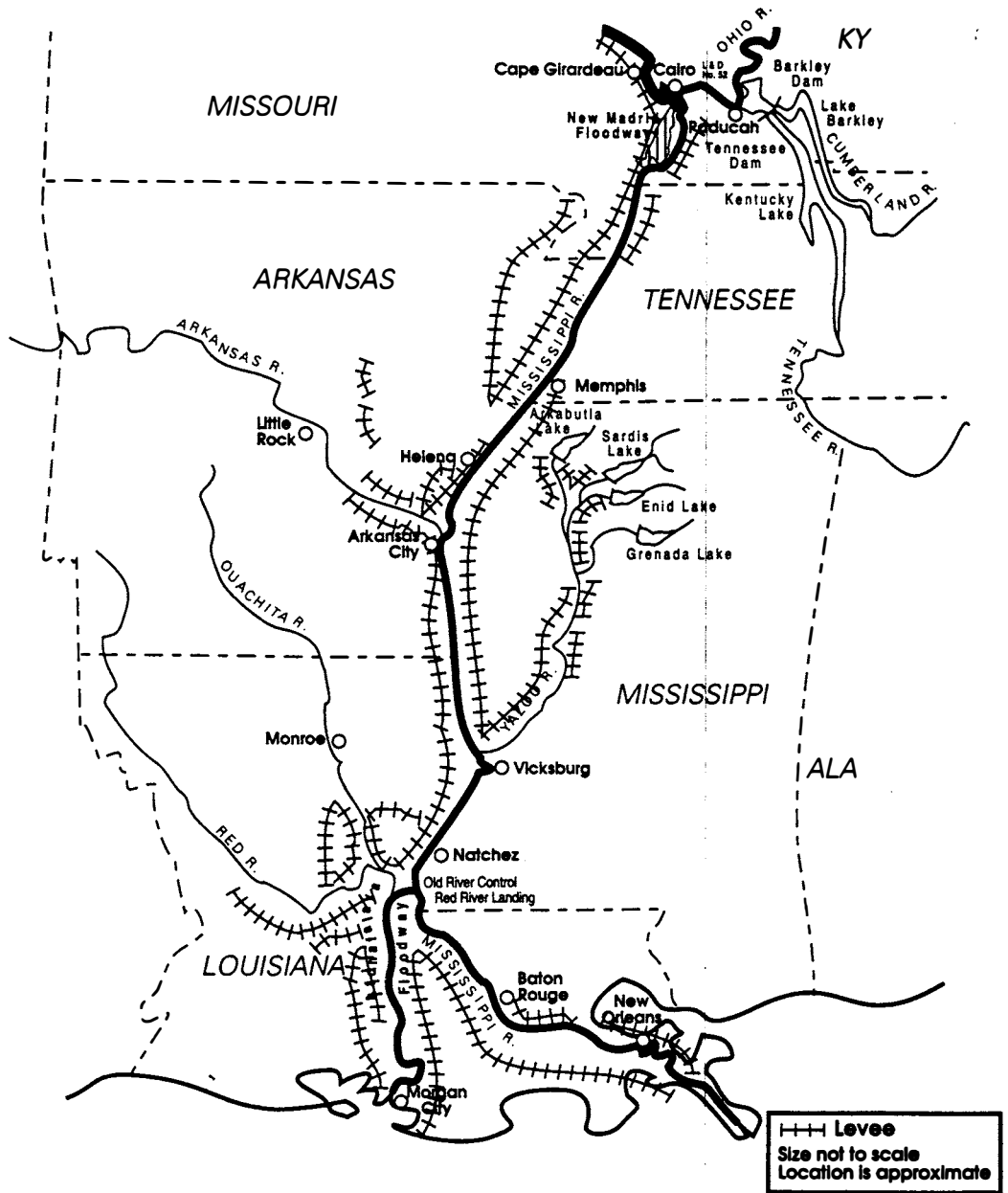
would not exist.

Alongside flood control, the development of the navigation and transportation of the Mississippi has been quintessential for the progress of America as a nation. The freight carried on the Mississippi is a measure of this. In 1920 — before the 1928 Flood and Harbors Act, sometimes called the "Flood Emancipation Act," and its successor in 1936, made flood control a priority — waterborne freight traffic on the Mississippi was less than 5 billion ton-miles. In 1940, it was 14 billion ton-miles. By 1960, it had grown to 69 billion ton-miles, and in 1989, it was 238 billion ton-miles, a nearly 50-fold increase in 70 years.

Taming the Lower Mississippi

The 1928 Rivers and Harbors Act finally authorized the Army Corps of Engineers to develop a unified flood control system in its own name in the entire alluvial valley. Before then, free-enterprise budget balancers in the Congress had insisted that flood control was not a federal responsibility, and that local residents of the riparian plain should pay for it. The act set up the Mississippi River and Tributaries Project to shackle the mighty river. The Army Corps of Engineers and Mississippi River Commission, along with the subse-

FIGURE 1
**Lower
 Mississippi River**



The U.S. Army Corps of Engineers flood control system for the Lower Mississippi River is extensive.

quently established parallel commissions for the Missouri, Ohio, etc., were instructed to follow certain methods for flood control, which are generally used in combination: 1) levees; 2) floodways, diversion channels, and other outlets; 3) dams and reservoirs, bank and channel stabilization; 5) cutoffs; and 6) contour plowing and reforestation. As a result, the Lower Mississippi has been continuously shaped, dredged, embanked, shortened, and fortified for the last 70 years, as flood control legislation for the Mississippi have been updated and refined.

Before the flood control construction was started, the Lower Mississippi was tested from a unified hydraulic-hy-

drodynamic standpoint. A working scale model of the Lower Mississippi covering several acres was built at the Army Corps of Engineers Water Experiment Station at Vicksburg. It was calculated how the Mississippi would handle "a 100-year project flood," that is, a hypothetical flood that would be the greatest in 100 years. Hydraulic, pressure, sediment flow, and other readings were taken on each part of the Lower Mississippi. The hydrodynamic effect of each part of the river upon the whole, and of the whole upon each part, was carefully measured and projected. It was decided to build a system that could handle, up and down the length of the Lower Mississippi, a water flow of between 2.5 and 3 million

FIGURE 2
**Missouri-Upper
 Mississippi
 Rivers**



The flood control system for this region is for the most part yet to be built.

acre-feet per second. It was a magnificent engineering feat.

Upper Mississippi neglected

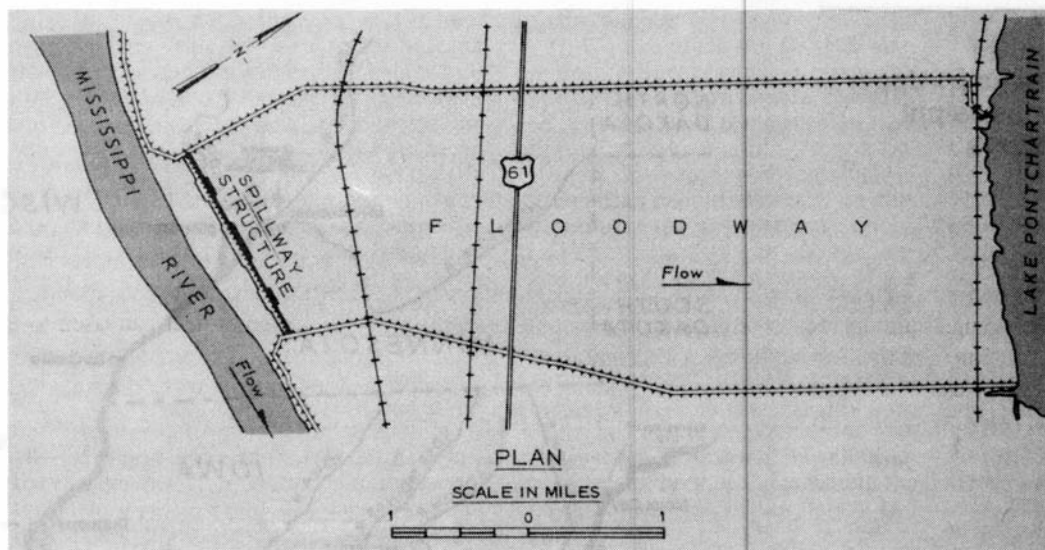
None of this was ever done for the Upper Mississippi, which runs above Cairo, Illinois.

The development of levees and of floodways, two critical elements of flood control, alone demonstrate the superiority of the Lower Mississippi over the Upper Mississippi.

- **Levees:** The picture of the levee systems on the Upper and Lower Mississippi, respectively, begin to give the story away. Levees are earthen embankments or ramparts, frequently composed of sand and clay, that can be placed on

either or both banks of a river to prevent its overflowing. They can be 10-15 feet high, or where needed, can range to heights of 60 feet. Compare the map of the Upper Mississippi River system (Figure 1) with the map of the Lower Mississippi system (Figure 2). Notice on each map the cross-hatches which designate the levee system. The Lower Mississippi has 1,608 contiguous miles of levees on the main stem of the river from Cairo, Illinois to the Gulf of Mexico, and 2,700 largely contiguous miles of levees when the tributaries are counted. This includes levees on the Arkansas River, the Red River, the Yazoo River, the Ouachita River — any place where there could be trouble.

FIGURE 3
**Schematic of the
 Bonnet Carre
 Floodway and
 Spillway**



Now look at the Upper Mississippi. Start with the head of the Mississippi, north-northwest of Minneapolis-St. Paul, and follow its flow. *There are no significant levee systems for 260 miles, until one reaches Dubuque, Iowa.* This is not an act of nature; it is deliberate neglect. Levees were not built on the tributaries of the Upper Mississippi: the Missouri, Illinois, Raccoon, Des Moines, and Iowa rivers. In fact, of the 1,576 levees built on the Upper Mississippi, 85% of them were built not by the Corps of Engineers, but on a “free enterprise” first-come, first-serve basis. Some are well-constructed; most are small and inadequate. They are not standardized as they are on the Lower Mississippi. During the Flood of '93, only two of the Corps of Engineers levees were breached or disintegrated, whereas hundreds of others gave way.

- *Floodways and spillways:* These are diversion channels or outlets which relieve the alluvial region of the Mississippi of excess water. An opening in the Mississippi is created—this is called the spillway—and then the water is diverted through the channel, called the floodway. The floodway can be relatively short or long, and will usually lead into another body of water, which either already exists, such as Lake Pontchartrain, or is man-made. In the case of the Atchafalaya River, into which a floodway from the Mississippi pours excess water, it takes excess water more than 100 miles to the south, and dumps it safely into the Gulf of Mexico.

The Lower Mississippi is lined with a series of continuous, successive major floodways for constantly relieving pressure and over-concentration of water. The floodways are: the Bonnet Carre, Birds Point-New Madrid, Boeuf, Eudora, and Atchafalaya. The floodways serve to take water flow, where it is traveling at 3 million acre-feet per second, and divide it in two, so that only 1.5 million acre-feet per second would flow on the main-stem Mississippi and the remainder

would flow through the floodway into the alternative channel, much like the functioning of a parallel circuit in electricity.

By contrast, the Upper Mississippi does not have a single major spillway to divert water. If it did, such spillways could easily be integrated with the North American Water and Power Alliance (Nawapa) which was developed by the Ralph M. Parsons Co. and later promoted by Lyndon LaRouche and others to bring water from the MacKenzie River in Alaska to the lower 48 states. The spillways and Nawapa together could provide desperately needed irrigation for the Midwest and Southwest, such as the Ogalalla Aquifer in Nebraska and Oklahoma.

Figure 3 is a schematic depiction of the famous Bonnet Carre Floodway and Spillway, a great achievement by the Corps of Engineers, which in case of need can carry 1.5 million acre-feet of water per second out of the river and through Lake Pontchartrain to the sea, sidestepping and saving New Orleans. The Bonnet Carre Spillway and Floodway was built as part of the great flood control infrastructure building project of the 1930s. The book *Amazing Mississippi* by Willard Price describes the test under fire of the Bonnet Carre in 1937: “In 1937 . . . the largest flood of historical times poured down the Mississippi. The Army was ready to evacuate a million people if the levees broke. . . . The river was three miles wide at Memphis and climbing into the town [of New Orleans]. The Bonnet Carre Spillway, completed only two years before, was opened, a gate at a time. . . . It was a near thing. In many places, the water was levee-high. [Newsman] Hodding Carter looked from his newspaper office window in Greenville [Mississippi] to see Coast Guard cutters moored 20 feet above street level. But the levees held, and through the Bonnet Carre enough water was drawn off to cover 1,250,000 acres 10 feet deep. *This lowered the river level for more than a hundred miles, and New Orleans was safe*” (emphasis added).

What went wrong?

Many wild explanations crop up when one seeks the answer to why a unified flood control plan was built on the Lower Mississippi, but not the Upper Mississippi. The real reason is that a combination of forces systematically sabotaged such a unified plan. Rabid environmentalists, maniac budget cutters of the Sen. Phil Gramm (R-Tex.) stripe, and the Morgan banking interests which operate in both the railroad and power utility sectors, functioned separately, but often ganged up together to do most of the blocking of the development of the Upper Mississippi.

One school of "experts," however, denies that the reason has anything to do with the activity of human beings. They say the issue only concerns the "natural" differences, and thus advantages and disadvantages, in geography, geology, and physics between the Upper and Lower Mississippi.

Let us test their argument. Now, the Lower Mississippi is a good deal wider than the Upper Mississippi — an average width of 1 to 1.5 miles versus an average 0.5 miles — and it is also deeper. On the other hand, the Upper Mississippi is on a slightly steeper gradient than the Lower Mississippi, and more confined between natural bluffs which should provide more "natural" flood control. While different points could be made either way for the relative strengths and weaknesses of the geography of these two halves of the Mississippi, in reality, these are nothing more than starting points for engineering studies to find the appropriate flood control solution. Competent engineers could find flood control solutions for either half.

Nor can it be said that during the last two and a half centuries, because the Lower Mississippi has had more violent floods and much greater resulting damage, therefore flood control was more of a necessity on the Lower Mississippi. For example, the April 1965 flood on the Upper Mississippi was the greatest one of record for a 700-mile stretch from Royalton, Minnesota 100 miles upstream of Minneapolis, to just below Hannibal, Missouri. Likewise, the 1973 flood on the Upper Mississippi was terrible. The Flood of '93 exceeds the floods of '65 and '73, but the earlier two floods certainly were fair warning, if any be needed, of the extreme vulnerability of the Upper Mississippi.

The real culprits are not geography and geology, but such people as:

- *Anti-growth environmentalists:* In 1962, the Army Corps of Engineers recommended for the Kickapoo River — a tributary of the Wisconsin River — a multipurpose reservoir and dam system above LaFarge, Wisconsin that would provide flood control, a reduction of deposition of sediment in the main channel, along with recreation and fish conservation. Nine communities of between 100 and 700 people would be affected. The townsfolk, who were subject to periodic flooding, were strongly in favor of the project. The project was started in 1967. But by April 1975, after \$14.8 million had gone into the project and the dam and lake were

36% complete, environmentalists led by the Sierra Club, using provisions of the Environmental Protection Act, halted the project's construction. It was never built. This is only one of many examples.

- *Wall Street budget balancers:* Only one of hundreds of instances will suffice. In 1972, Iowa Rep. Neal Smith had lined up an appropriation of \$7 million for building a dam on the Skunk River in Iowa, which had flooded the city of Ames. But opponents of the project killed it. By 1982, the price of the proposed project had risen to \$38 million, and it could not be built. The overflow of the Skunk River contributed to the total inundation of the state of Iowa during the Flood of '93.

Overall, congressional appropriations for flood control have been kept on a tight leash. In Fiscal Year 1994, the Army Corps of Engineers' flood control construction budget will be down more than 20% in inflation-adjusted terms from its level in 1980. It is kept at the scandalously low level of less than \$1 billion per year.

- *Morgan-controlled railroads:* From 1880 through 1940, the railroads and power companies were much more powerful institutions than they are today. In the 1930s, the Nine-Foot Canal, a magnificent system of 24 (later 27) locks and dams, was built for navigation purposes by the Corps of Engineers on the Upper Mississippi, starting in Minneapolis. But flood control was not built in as a natural feature of the system, because the railroads, run by such banking interests as Morgan, Kuhn Loeb, Hill, and Vanderbilt, had lines at many points, running inside the Mississippi on rail beds barely above the river channel's water level. The levees and other flood control measures would have raised the water levels, forcing the railroad companies to move their tracks. But rather than incur that expense, the rail lines such as the Burlington Northern and Union Pacific moved with others to crush the flood control plans.

- *Riverboat gambling interests:* The town of Davenport, Iowa, did not build previously identified and desperately needed levees to protect itself, because the levees would have made the downtown riverfront area "look ugly," thereby deterring tourists from coming to the riverboats to gamble there. As a result of this "free enterprise" decision, the city of Davenport was swamped by the Flood of '93.

The net effect of this combined opposition, has been that for the past 50 years, the Upper Mississippi's flood control system has been built on a hodge-podge, locality-by-locality "project basis," rather than system-wide unified approach. On hundreds of miles of the Upper Mississippi and its tributaries, nothing at all was built. As a result, during the Flood of '93, in addition to all the other destruction, 24 people died.

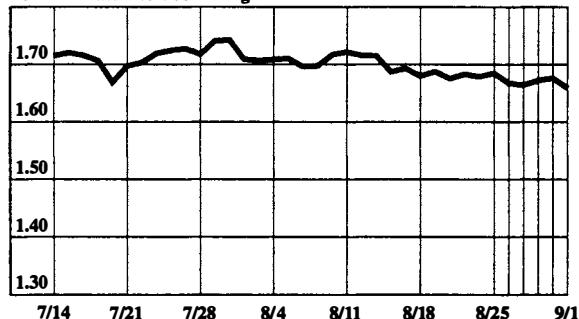
The anti-infrastructure mob

Unfortunately, we have not heard the last from the environmentalists and budget-slashers, who seem to have joined more closely together during the aftermath of the flood. Lead-

Currency Rates

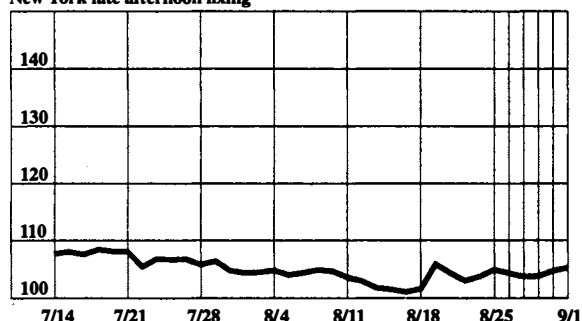
The dollar in deutschemarks

New York late afternoon fixing



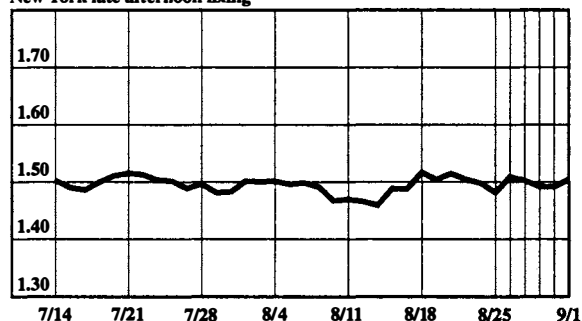
The dollar in yen

New York late afternoon fixing



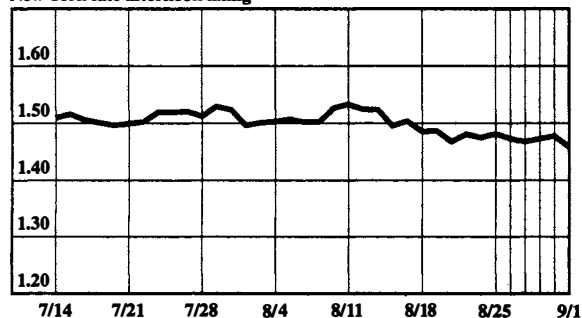
The British pound in dollars

New York late afternoon fixing



The dollar in Swiss francs

New York late afternoon fixing



ing the way, is the fanatically anti-science *New York Times*, which in earlier days denounced Thomas Edison's light bulb and ridiculed the Wright brothers because, in the *Times*'s view, airplane flight was impossible. On July 18, only three weeks after the flood started, the *Times* was pumping out the line that levee building was wasteful and destructive of nature, headlining its article, "Like Flood, New Policy Could Inundate Levees."

A feature story in the July 26 *U.S. News & World Report*, weighed in with one of the most vehement attacks to date on the Army Corps of Engineers and flood control policy. The story, entitled "Nowhere to Run, Nowhere to Hide," argued that "Dams and levees can never tame the Mississippi. The war between human ingenuity and nature is not a fair fight." In particular, "The Mississippi River and Tributaries Project, the [Army Engineers] Corps' crown jewel, designed to handle the largest flood imaginable on the giant river, stood last week as a vast monument to human hubris. The herculean engineering project, a 65-year struggle to bully, tame and confine the Mississippi River, to turn it into nothing so much as a vast plumbing system . . . all \$8 billion worth was no use when the rain fell on a part of the river the system was never designed to handle." Blithely ignoring the fact that the "system" was never built in that part of the Mississippi, it goes on to cite the damage which the alleged tons of U.S. government money supposedly did not prevent. Here we have a classic "fallacy of composition," constructed on an assumed lie. The magazine then cites what it calls the theory of "flood plain management," according to which "the idea is to step back from absolute control" of the Mississippi, and let it run freely.

This so-called policy would destroy farmlands and businesses, displace homes, slash waterborne freight traffic, and generally uproot civilization along the Mississippi River. It is the equivalent of the kind of subsistence-level "sustainable agriculture" which is being pushed upon Third World countries as an alternative to modern technology-intensive cultivation.

The White House seems to have swallowed the lies. On Aug. 23, it announced that the United States will consider no longer building levees, and will look instead at "flood plain management." Behind this policy is Kathleen McGinty, the head of what was the old Environmental Quality Administration, who is a former aide to Vice President Albert Gore, and who attended the Eco-92 environmentalist summit in 1992 in Rio de Janeiro. If this policy is allowed to go forward, no important water infrastructure project will be possible for America in the foreseeable future.

Far better that we as a nation learn the lessons of the Flood of '93. Let us build the unified infrastructure flood control plan on the Upper Mississippi that already functions on the Lower Mississippi, so we shall not have to ever worry again about significant flood damage anywhere along the river.