

# Bush transportation plan is a blueprint for extinction

by Laurence Hecht

Perhaps one of the major differences between George Bush and Adolf Hitler, is that Hitler, in his moment of glory, envisioned a 1,000-year Reich. Bush, it would seem from looking at his Surface Transportation Act of 1991, would be glad to scrape through the next five years. While the administration's new five-year plan for transport is no grand plan for anything, the issues it does not address are so serious for our nation's and the world's economy, that it is no exaggeration to call it a blueprint for extinction for America as we know it, if not the world.

We will begin by looking more closely at the Bush administration proposal, "Moving America into the 21st Century," reporting what it does do, and then turn to the more interesting and important question of what is left out.

To summarize the weaknesses of the proposal, unveiled Feb. 13 at a White House press conference by Transportation Secretary Samuel Skinner, the Bush plan:

- proposes federal spending on highways at 25% below breakeven levels, and pushing off more of the burden onto bankrupted states;
- almost entirely leaves out the question of freight movement;
- ignores the problem of the railroads, even though rail-way freight is five to six times cheaper and more fuel efficient than long-distance trucking;
- gives short shrift to mass transit.

## More restructuring than repaving

The \$105 billion administration proposal is a five-year program that reauthorizes the Transportation Department's federal-aid highway, mass transit, and highway safety programs at very inadequate levels. It also proposes a restructuring of the highway system bureaucracy.

The existing 42,000-mile interstate system, officially the National System of Interstate and Defense Highways, is to be incorporated into a new, larger 150,000-mile system to be known as the National Highway System. But this is largely a reshuffling of the existing deck. What is currently known as the federal-aid system includes almost 850,000 miles of highways, about 22% of the total road mileage in the United

States, and carries nearly 80% of the vehicle miles driven. These federal-aid system roads had previously been classified into four subcategories: the interstate, primary, secondary, and urban systems. The administration bill will rename and juggle these definitions a bit. But don't expect any greater federal responsibility.

Under the bill, the federal-aid highway programs would be restructured into the National Highway Program, the Urban and Rural Program, and the Bridge Program. The Federal Highway Administration would administer the \$87.5 billion which takes up the lion's share of the entire funding of the bill's five-year term. The other major chunk is \$16.3 billion to go to mass transit over a five-year period, but with provisos. The remaining \$1.5 billion is to go for highway safety.

To see how little these amounts are, we have to compare them first to the accumulated deficit of needs on our nation's highways, and then turn to the even bigger problem of what is not addressed by the bill, the drastic need for improvements in our rail and water freight transport capabilities.

## Falling bridges

Lip service, at least, is paid to the dangerous state and growing number of structurally deficient and obsolete highway bridges—about 260,000 at last count, 75,000 of them on the federal-aid system. To some this might seem remarkable, considering that not one of these quarter million-plus bridges has collapsed directly on the White House, nor even on the presidential bedroom. But the proposed increase in funding for bridge repair, though a claimed 70% increase over the last authorization period, only scratches the surface.

The five-year spending figure for bridges is just short of \$10.7 billion. Were the \$10.7 billion to go entirely to repair work on the 75,000-plus "troubled" bridges (that is an understatement, since some have been shut down altogether) in the federal-aid system, it would come to \$142,000 per bridge. That might be enough to keep up with pothole repair on some roadways.

Clearly this is not a serious program, even for maintaining the equipotential of the nation's highway system. In 1985, the American Transportation Advisory Council

(ATAC) proposed a 10-year plan for capital investment needed to maintain the highways at a little better than deteriorated 1983 levels—not necessarily to meet full needs or anticipated growth. The figure for replacing and rehabilitating bridges came to \$54 billion over the 10 years 1987-96. That would have meant \$27 billion for this five-year period. However, since the proposal was not adopted, and most of what should have been done since 1987 was not done, we now have to pick up the old cost plus whatever new damage has accumulated. That means spending at least \$10 billion a year on bridge repair, just on the federal aid system bridges which are 29%, by number, of the whole problem.

That figure coheres with the 1988 estimate of the American Association of State Highway and Transportation Officials, which adds that over 140,000 bridges should be load posted to lower levels. If present spending levels continue, the association study estimates, by the end of the century, the added cost from additional deterioration will exceed total tax payments for roads and highways. By 2020, time lost because of deterioration would equal the labor hours of 4 million workers.

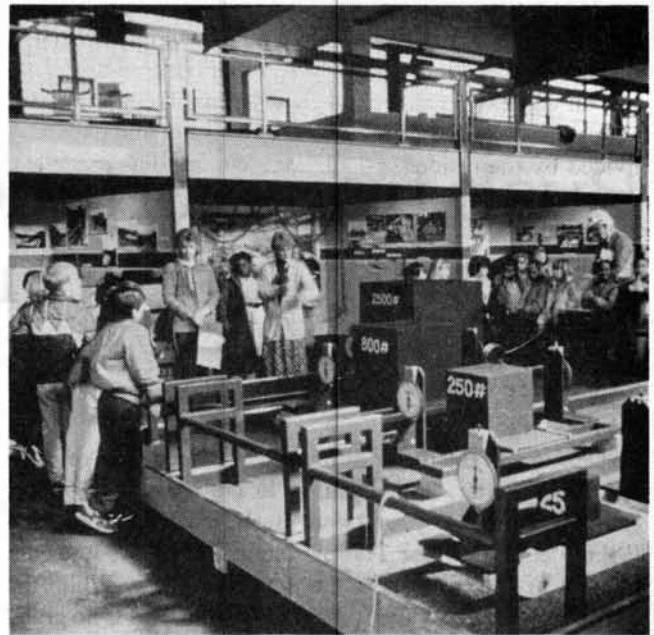
For the whole federal-aid highway system, we find at least \$100 billion a year will have to be spent on roads and bridges just to maintain some level of safety and efficiency, but without major expansion of capabilities. Recently the federal government has been putting up about 23% of the cost of highway spending on federal-aid roads. That would mean \$23 billion per year. But the Bush proposal calls for a total of only \$87.5 billion over five years, which comes to \$17.5 billion per year, a shortfall of \$5.5 billion. Bankrupt state governments and “user fees” are supposed to make up the difference. But they won’t, of course. So we can foresee an underfunding of the road system of between 25% and 50% of necessary breakeven levels.

A serious federal program for the nation’s roads, bridges, and highways would figure out where the half a trillion dollars (\$100 billion per year) needed just to maintain a breakeven level of functioning and safety would come from, and would focus on getting that job done.

## How to think about economics

Even that, however, would “buy us” nothing, or next to nothing, for the economy as a whole. To see why, we turn to the next topic, the U.S. transportation grid as a whole. Properly understood, this is itself a subcategory of the main topic which must be always under consideration in making any competent evaluation in the science of physical economy—that is, the integrated agro-industrial complex which we know as the national economy.

To understand the difference of our approach to that now pursued in Washington, consider the methodologically incompetent statement of Transportation Secretary Samuel Skinner in announcing the administration’s plan. After acknowledging the “deteriorated infrastructure” of our trans-



Virginia Museum of Transportation

*An exhibit at the Virginia Museum of Transportation demonstrates why rail is the cheapest mode of ground transport. An equivalent “pulling” effort moves 25 pounds by sledge, 250 pounds by iron wagon wheel, 800 pounds by inflated rubber tire, and 2,500 pounds by railway car on steel track.*

portation grid, Skinner says: “The stakes for the U.S. economy are high, since transportation accounts for 17% of GNP.” While even the figure is debatable, the deeper point is the method implied. “Transportation accounts for 17% of GNP.” Another significant portion of GNP consists of casino gambling and prostitution. Does that make it a national priority? One might as well say, “Sir, your brain is rotting away, and we think you should do something about it, since your head and what surrounds it accounts for 17% of your total body weight.”

What we must see is the function of transportation, particularly freight movement, in the purpose of economy, which is the reproduction, at improving standards of living, of human beings, as that process is mediated by the societal monad, the family unit or nuclear family. Understanding the causal connection between deteriorated railroads and other freight-handling infrastructure and the collapse of present and future living standards in our nation, we can begin to have some genuine emotion about the situation, and can perhaps even entertain a thought or two of our own. If we fail to see the causal connection, we are reduced to the state of moral imbecility of the Bush administration and Congress.

A few numbers help to bring the point into focus.

## Twenty-seven tons per person

The first number we examine is the yearly ton-cost of maintaining life per capita in the United States. In 1987, this

comes to just over 27 tons per man or woman and child, or 108 tons per family of four. The figure is simply the gross tonnage moved on all modes of transport (including truck, rail, oil and gas pipeline, and by water, including imports, domestic barge, and coastal traffic, but excluding exports), divided by the resident population. We are thus including most of the man-made and man-improved natural products consumed in a year, though excluding such primary needs as air and water, as well as home-grown or home-manufactured products.

These 27 tons are not all carried or delivered to your front door. The greater portion is raw materials and semi-finished goods of the production, construction, and energy generation process. Approximately 3 tons may actually pass through your door each year, not counting the door itself or the structure surrounding it.

A comparison of 1987 to a generation earlier, in 1967, is instructive. Roughly the same weight of total product (27.37 tons in 1967, and 27.22 tons in 1987) delivered a significantly better standard of living with higher real wages, generally better quality products, and better general level of infrastructure and services 20 years ago. Why?

In an economy, as in an automobile, a ship, or any engine designed to realize an increase in mechanical advantage, heavier is not necessarily better, though it might be. Given different outputs being realized from the same weight of inputs, we have to look to the internal organization of the engine in order to see where the difference lies. Over the 20-year period in question, the transformation of the U.S. economy was so profound—with the drastic reduction or elimination of domestic manufacturing in hundreds of industrial subsectors, the growth of “service economy,” and the general imposition of the post-industrial society—that it is impossible to attribute the decline to any single element.

### Railroads become pipelines

One feature in the general decline of the transportation grid is outstanding in its contribution to our present state of economic inefficiency. That is the completion of the 50-odd-year process of destruction of our freight railroad capability. By some time in the 1970s, America’s railroads had completed the transition from a way-freight system into a pipeline system for hauling coal, grain, and a few other bulk materials—the exact prototype of a Third World railroad system.

For example, in 1967, we were moving 565 million tons of coal. Fifty million tons of it were exported; 271 million tons, or 48%, went to electric power utilities, 191 million tons to manufacturing and industries, and 17 million tons to retail dealers. In 1987, we mined 920 million tons of coal. Of this, 708 million tons, or 77%, was used by the electric utilities.

In per capita terms, the coal use for energy generation was 2.76 tons in 1967. In 1987, it was 3.76 tons per person for the same purpose. That is one additional ton of coal per

man, woman, and child in America. The fact is all the more shocking if one considers it from the standpoint of an intelligent citizen in 1967, looking ahead two decades. As we would have foreseen it then, the use of coal by electric utilities should have been drastically reduced by 1987—replaced by nuclear fission on the way to a fission-fusion hybrid generator. From that perfectly reasonable standpoint, then, we are looking not at one ton, but at 3.76 tons of near pure waste being hauled through our transportation grid.

Secondly, as we shall see, the process has meant the near-complete destruction of our railroads as a freight-handling, or way-freight, capability—another one of the large, but often hidden costs of not going nuclear. Some suppose that the slack in our transportation grid has been taken up by over-the-road trucking. Unfortunately, that is not true, and would indeed be impossible. The slack has been taken up by you, your children, and their children, in the reduction of living standard you have suffered over the past 20 years and will continue to suffer until we repair the ailing engine of our national economy.

### The costs

To grasp why this must be so, let us look at two more key indices of transport efficiency: the approximate cost per ton-mile of freight on each of the four major modes, and the modal distribution of freight traffic. The 1977 U.S. Army Corps of Engineers calculation of average freight costs per ton-mile remains a useful guideline for today. The cost of trucking is 12.13¢ per ton-mile—substantially above the cost of rail, water-borne transport, and pipelines (2.35¢, 0.52¢, and 0.48¢ respectively). See **Figure 1**.

Our own statistical series on modal distribution tells the rest of the story. We’ve chosen certain critical years in order to allow comparison of the key epochs in this process. First, let us compare a recent year, 1987, to 20 years earlier, 1967, just before the infection by the post-industrial paradigm shift had taken full hold (**Table 1**).

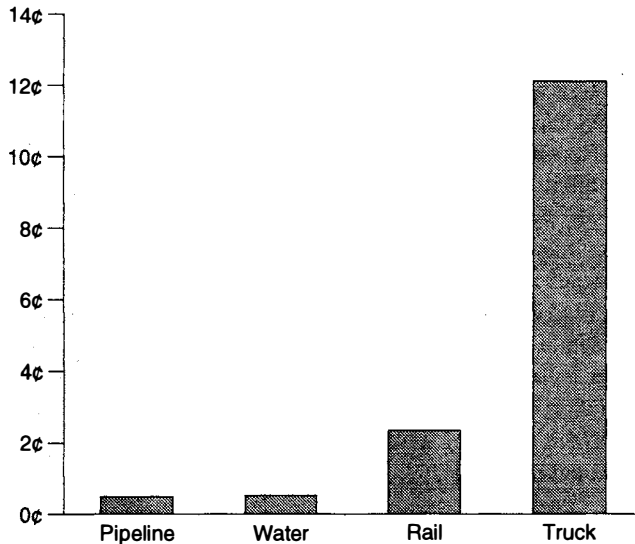
The only mode that does not increase significantly in volume of freight carried, is rail. Also interesting is the huge increase in water freight traffic—an additional 432 million tons, a 41% increase. However, this does not point to any significant improvement in our internal waterways. Half the increase over the 20-year interval came from ocean-going freight entering our ports—i.e., imports—and most of that, by weight, was imported oil.

We will now take the series back several more decades. Pay particular attention to the percentage split between road and rail in **Table 2**.

Notice that the tonnage hauled by rail in 1947 was greater in absolute number and far greater in percentage than any decade since then. The 1950s marked the final destruction of the rail system as a carrier of non-bulk freight in the United States, and its replacement by trucking at *five times* the cost per ton-mile. The reason why is a long story which

FIGURE 1

**Cost per ton-mile of major freight modes**  
(cents per ton-mile)



Source: Department of the Army, Corps of Engineers, 1977.

TABLE 1

**Modal distribution of freight in 1987 and 1967**  
(millions of short tons)

	Road	Rail	Water	Pipeline*	Total
1987:					
Weight	2,326	1,523	1,476	1,308	6,640
% of total	35%	23%	22%	20%	100%
1967:					
Weight	1,845	1,498	1,044	1,050	5,439
% of total	34%	28%	19%	19%	100%

\* Includes oil and natural gas. Factor of 20.631067 used to convert quads of natural gas to millions of tons, based on 1,080 BTU per cubic foot of natural gas at 0.0425 pounds per cubic foot of methane (60°F, 1 atmosphere).

Sources: Department of the Army, Corps of Engineers, *Waterborne Commerce of the United States*, 1988; U.S. Department of Commerce, Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970*, and *Statistical Abstract of the United States*, 1989; ENO Foundation, *Transportation in America*, May 1989.

we cannot recount here, but it has only little to do with the popular myth of “oil and auto versus railroad,” since these largely involved the same financial interests. In fact, the expansion of the American railroad network halted in 1916, when the track mileage had reached its high point. One year later, the looted and bankrupted system was taken over by the government under a wartime nationalization plan. In reality, the plans for railroad expansion hatched by American System advocates for the post-Civil War era were already

TABLE 2

**Modal distribution of freight in 1957 and 1947**  
(millions of short tons)

	Road	Rail	Water	Pipeline*	Total
1957:					
Weight	1,113	1,449	845	653	4,060
% of total	27%	36%	21%	16%	100%
1947:					
Weight	556	1,613	528	344	3,041
% of total	18%	53%	17%	11%	100%

\* Includes oil and natural gas.

Sources: Department of the Army, Corps of Engineers, *Waterborne Commerce of the United States*, 1988; U.S. Department of Commerce, Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970*, and *Statistical Abstract of the United States*, 1989; ENO Foundation, *Transportation in America*, May 1989.

being ruined in the 1870s by zero-growth-promoting British financial interests.

The extensive American railroad network did not just disappear overnight, however. Through the 1920s, and even into the 1930s, trucks were introduced to replace horse-drawn vehicles, not railroads. A long-distance trip by automobile, if undertaken at all, was seen as an adventure, not routine travel. Families rode trains for long trips, and often got there more quickly and more comfortably by train in 1912, 1922, or 1942, than they do today by automobile. Freight also moved that way, and most parts of the country, even rural towns, were within 25 miles of a railroad station.

In World War II, the railroads provided the logistical depth for the U.S. war mobilization in movement of troops, supplies, and industrial products. The railroads logged all-time highs in tons of freight hauled and train miles run, but without any major investment in new equipment or infrastructure. After the war, it was mostly downhill, and the 1950s saw the replacement of the railroad way-freight system by long-haul trucking (Figure 2).

**The ton-miles per hour hoax**

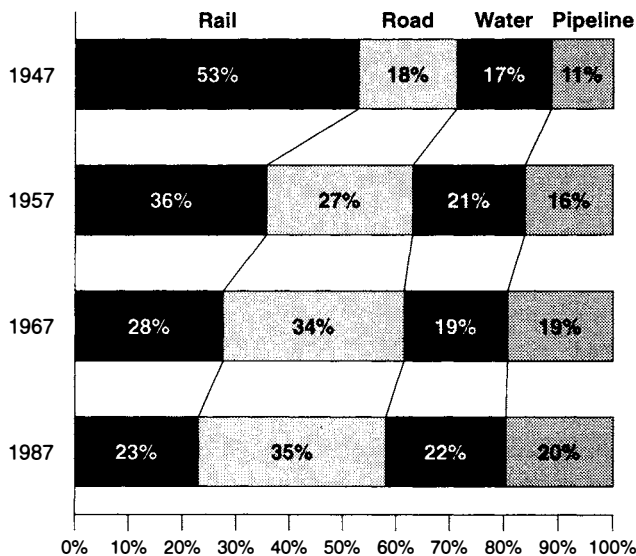
Despite this, the Association of American Railroads continues to issue yearly reports showing ever higher yearly figures for tons hauled and even ton-miles per train hour run on our collapsing rail network. How is this possible?

The problem is that the same index or measure can mean radically different things, depending on whether the system being measured is growing or declining. Under conditions of growth, ton-miles per hour should be a good measure of the efficiency of a rail system. More tons carried more miles in less time is what an efficient transportation system is all about. The introduction of better engines, improvements in freight-handling systems, track design, signaling systems, and so forth can all add to efficiency and increase the index

FIGURE 2

**Rail freight has declined drastically since 1947 relative to other modes**

(percent of all freight carried)



Sources: Department of the Army, Corps of Engineers, *Waterborne Commerce of the United States*, 1988; U.S. Department of Commerce, Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970*, and *Statistical Abstract of the United States*, 1989; ENO Foundation, *Transportation in America*, May 1989.

TABLE 3

**Increase in net ton-miles per train-hour is not healthy under today's conditions**

Year	Net ton-miles per train-hour
1947	18,126
1955	25,314
1965	33,815
1975	38,788
1985	56,343
1989	60,949

Source: Association of American Railroads, *Railroad Facts*, 1990 edition.

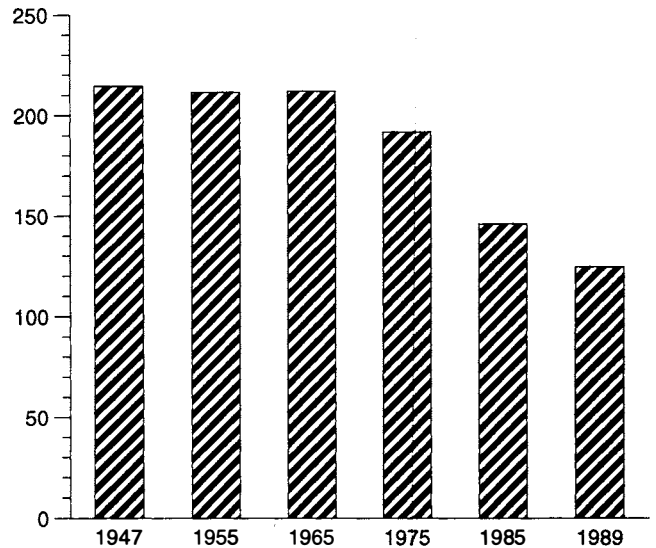
of ton-miles per hour.

However, in the case of a railroad being transformed from a freight-handling system into a pipeline for a limited number of bulk goods, an increase in the same measure may well reflect a more rapid rate of *deterioration* of the system. And that is the case with our railroads. The most recent edition of the Association of American Railroads' *Railroad Facts* showed a steady increase in the net ton-miles per train hour from 1947 to the present, as shown in **Table 3**.

FIGURE 3

**Miles of road owned by Class I railroads**

(thousands of miles)



Source: Association of American Railroads, *Railroad Facts*.

TABLE 4

**New rail and crossties laid have declined since 1947**

Year	New rail laid (tons)	Crossties laid (thousands)
1947	1,639,746	40,206
1955	963,350	27,173
1965	445,863	16,982
1975	537,537	20,548
1985	699,774	20,736
1989	348,186	13,458

Source: Association of American Railroads, *Railroad Facts*, 1990 edition.

What we are really looking at here, is two distinct phenomena. From 1947 to 1955, some 35,000 steam locomotives (85% of all locomotives) were replaced with diesel electric units. At the same time, however, and with increasing frequency beginning about 1968, the major carriers, known as the Class I railroads, abandoned enormous lengths of track. By 1989, the number of miles of road owned had been nearly halved from the 1947 level (see **Figure 3**). Replacement rate of rails and crossties also dropped precipitously (**Table 4**).

At the same time, the railroad companies were applying

efficiency studies to the task of cheapening the cost of bulk freight hauling. Unit trains, averaging about 70 cars, haul one bulk commodity, most especially coal, from point of origin to delivery point with no need for freight handling on the way. Longer, heavier cars can carry considerably more weight, also improving apparent efficiency. The average tons per carload have gone from about 49 tons in 1965 to 66 tons in 1989. The weight of the average trainload has nearly doubled in the same time frame. The result is the apparently efficient handling of a few bulk commodities, while the system as a whole goes to ruin. Coal alone accounts for over 39% of the total tonnage hauled in 1989. Along with chemicals, non-metallic minerals, and farm products, mostly grain, it comes to over two-thirds.

There are other effects as well. Running 10,000-ton trainloads of coal over the under-maintained track has steadily ruined the graded sections of rail. The superelevation—the difference in height between outer and inner rail necessary to maintain balance on curves—is destroyed. As a result, trains must slow to speeds of 20, 10, or fewer miles per hour on tight curves.

But as long as they can keep moving, it does not matter much to the real estate companies known as railroads. They have specialized in moving low-value-per-ton commodities where it doesn't much matter if average speeds on long-distance hauls are 35 to 40 miles per hour or less. Because they don't stop to handle freight, don't maintain any cost for freight handling and distribution in yards, and reduce labor costs through unit trains, they can keep showing actual increases in net ton-miles per train hour and per employee hour.

### Do all roads lead to Rome?

We no longer have a railroad as Americans once knew it. Rather, it is a pipeline for hauling cheap raw materials, exactly on the model of the 19th-century lines built in colonial nations for extracting products for export. This "makes money," they say. It is also insane.

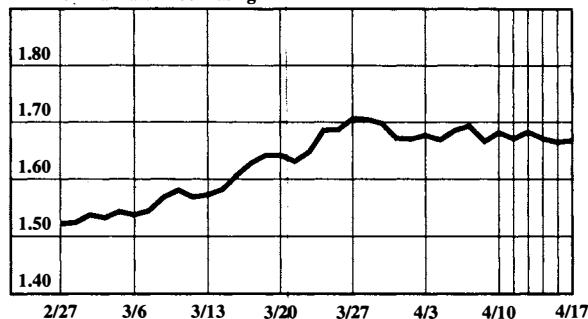
Many in the Roman Empire also "made money" on their insane system of looting colonies, destroying their citizen-farmers, and degrading the public morals while maintaining a pretense of public morality in their Senate and a uniform code of laws. Peter, after all, was carried thousands of miles by ship to be "fairly tried" before a Roman court of law.

But there is at least one difference. The Romans, it is reported, maintained a very fine system of roads which served as the means of communications and logistics for their armies, until revolting slaves, and then barbarians, discovered that the roads could also be used in the opposite direction. It is considered impolitic at this moment in our nation's history to suggest it, but is it possible that George Bush has thought of something new? Perhaps if the roads and bridges into Washington collapse, no one can come to tell him his time has come.

## Currency Rates

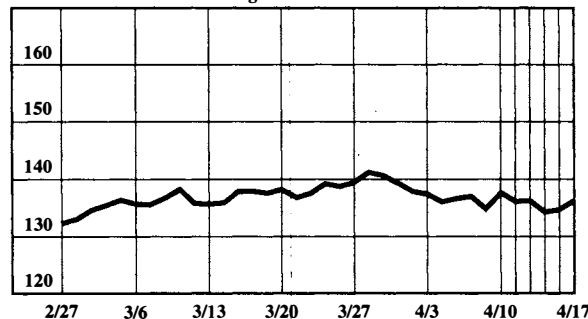
### The dollar in deutschemarks

New York late afternoon fixing



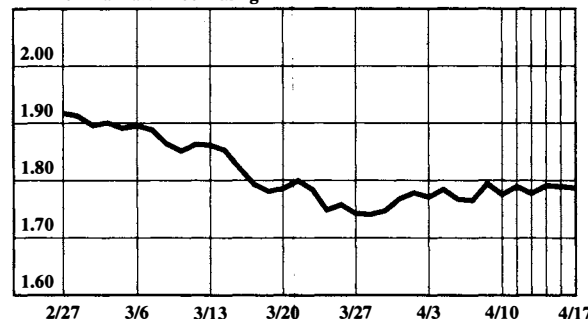
### The dollar in yen

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

