

ternatively, it may be stated that individuals will be more likely to switch to dial-a-ride from bus transit service as their perception of the reliability of dial-a-ride service improves. This result is particularly important, because one concern in replacing bus transit service in a particular area with dial-a-ride service is whether former mass transit riders will be willing to switch to dial-a-ride. If bus transit and dial-a-ride are allowed to compete in a particular area (i.e., both services are available), these results indicate that improvements in the reliability and accessibility of bus service will decrease the odds of an individual choosing dial-a-ride.

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## Export Transportation Issues

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#### ABSTRACT

The U.S. seaport industry is sensitive to the ways economic forces are reflected in government policy at all levels. Possible changes in exports and the balance of trade, demographic shifts, and implications of government policy all present challenges to the seaport industry. Planning to meet the challenges in both the short and the long term is discussed, and the ways the ports of Long Beach and Los Angeles, California, are facing these challenges are described in detail.

U.S. seaports have been widely recognized as the pivotal point in the land-sea export process. Some current strategic issues that affect U.S. ports and two major southern California ports are discussed. The President in the State of the Union address noted:

One out of every five jobs in our country depends on trade. . . . So, I will propose a broader strategy in the field of international trade--one that increases the openness of our trading system and is fairer to America's farmers and workers in the world marketplace. . . . We must strengthen the

organization of our trade agencies and make changes in our domestic laws and international trade policy to promote free trade and the increased flow of American goods, services, and investments. . . . Our trade position can also be improved by making our port system more efficient. Better, more active harbors translate into stable jobs in our coal fields, railroads, trucking industry and ports. After two years of debate, it's time for us to get together and enact a port modernization bill. Tax policy, regulatory practices and government programs all need constant reevaluation in terms of our competitiveness. Every American has a role, and a stake, in international trade (1, part I, p.A).

Addressing the importance of the nation's balance of trade position, Martin Feldstein, Chairman, Council of Economic Advisors stated:

The position of the United States as an exporter and importer of goods in the world economy is now undergoing a dramatic change. For a quarter of a century after the second World War, the United States exported more goods each year to the rest of the world than we imported from other countries. Many experts now forecast that the trade deficit for 1983 will rise to the unprecedented level of \$75 billion, about twice last year's level; and three times the level of 1981. A trade deficit of \$75 billion would represent some 2.5 percent of total GNP (2, p.588).

Although the export transportation system is not the cause of the nation's trade imbalance, it may be a contributing cost factor for its product competitiveness. Given the importance of international trade to the U.S. economy and the role that inter-governmental export transportation policy may have, there is a distinct and clear federal strategic policy interest. State and local governments are beginning to share this concern.

#### U.S. PORT FACILITIES

The U.S. port industry is undergoing rapid change. Because it serves as a lightning rod for much of the world and the U.S. economy, it is quite sensitive to how economic forces are translated into specific public policy at the national, regional, state, and local levels of government.

As the lead transportation institution point-of-contact for responding to trade needs, the port industry is particularly subject to political and economic, urban and environmental constraints. Often, for their own survival, ports are forced to anticipate long-range demands and needs with very fast short-term responses and implementation schemes. Because of the crisis nature of much governmental response, ports are forced to respond in this mode. Consider the coal export terminal situation, for example. The demand for coal grew quite quickly within a few years and the governmental system was not prepared to respond as fast. Ports in the meantime attempted to develop facilities and found themselves first in the middle of a long morass of administrative regulations, and then in an economic recession. The combination slowed many projects. As it turned out, the cumbersome process was, by accident, healthy because it prevented many ports from investing in capital-inten-

sive plans and projects. Most were able to put them "on hold" before losing their initial investment due to economic slowdown and disappearance of the coal market. This illustrates the whipsaw effect of the short- and long-term interrelationships.

The U.S. port industry is diverse. There are many different components and organizational forms. Relationships with public and private agencies vary too. A summary report from the U.S. Department of Transportation noted that 189 commercial seaports (excluding those on the Great Lakes) have a tremendous influence on the national economy (3). In 1980 these 189 U.S. ports

1. Handled more than 2 billion short tons of trade,
2. Added \$5.5 billion from customs fees to the treasury,
3. Contributed more than \$35 billion to the gross national product,
4. Added more than \$1.5 billion to the balance-of-payment accounts,
5. Generated \$66 billion in direct and indirect income from gross sales and services to users,
6. Provided directly and indirectly 1 million jobs generating \$23 billion in personal income,
7. Generated federal income taxes of \$10 billion and state and local taxes of \$5 billion, and
8. Invested more than \$5 billion from 1946 to 1980 in capital facilities and anticipated an additional \$5 billion through 1990.

Inland ports anticipated a \$4.8 billion investment through 1990. Several other aspects of the U.S. port system should be noted:

1. Of the berths in the nation, 42.2 percent are in port city population zones of 500,000 or more;
2. Of the berths in the nation, 28.6 percent are in port city population zones of 100,000 to 499,999;
3. The physical condition of the ports is acceptable--58 percent of the national average is "good" and 29 percent of the national average is "fair";
4. Between 1970 and 1976 the industry invested \$138,689,000 in federally mandated environmental protection (70 percent); employee health and safety (11 percent), and cargo security (19 percent); and
5. Between 1970 and 1976 the industry incurred \$55,121,000 in operating costs for environmental protection (22 percent), employee health and safety (11 percent), and cargo security (67 percent).

It is not surprising that most of the capacity is in already developed urban areas. What is of potential concern is that, should these facilities require upgrading, modernization, or expansion, there simply may not be sufficient land surface area. Some ports have had to create new acreage from their dredge material. Another aspect of this is the potential expansion of freight movement to and from the harbors through densely populated areas. More and more conflicts with competing public purpose policies are bound to occur. At some point, local jurisdictions may face the hard decision: Should our port remain at its current level of activity with its known impacts, or should it be allowed to increase activity significantly and have possibly commensurate urban impacts?

In 1981 the ports transported 888,444,000 net tons valued at \$319,255,000,000. The leading tonnage was handled by New Orleans; however, the highest cargo value was through New York. The 1982 year presented a "dismal picture." The national total dropped to 787,138,500 tons (4, p.5).

The coastal and inland ports of the United States

represent a major economic and transportation activity. Their role and influence, collectively, are tremendous. Yet, politically, the governmental system responds in a fragmented way, which in part represents the nature of the port and transportation industry. Even on key issues that cut across the lifeblood of port activities (e.g., the capacity of their facilities to handle large-size vessels and channel and harbor dredging) disagreement exists. The free enterprise attitude and the realities of competitive pricing directly affect port income sources. Pressures from local and state agencies or private operators to raise or lower charges illustrate the difficulty. Reaching a common position, which is good for the whole industry, on such matters is a complex process.

#### PORTS AND TRADE

Export trade could be considerably larger than current levels. An opportunity exists and the United States is in a position to realize that potential. But until national policies and world economic directions are charted, ports may remain cautious. Strategic port planners and transportation companies prefer to be prudent. Commitments for large new export projects have been suspended or cancelled until more confidence exists about the future of such projects. In any case, the export potential exists, if the United States sells what the world wants to buy not what the United States produces. Export sales are dependent on meeting a well-defined market need and satisfying it. They should not be driven by the reverse, that is, selling excess production designed for domestic market consumption. The switch in philosophy is basic and has not yet occurred. Port operators know the strategic planning difference. The evidence is that U.S. industry still does not.

Merchandise trade has shown a consistent deficit of more than \$40 billion since 1977. The 1983 trade deficit was \$69.39 billion with more than \$100 billion anticipated in 1984 (5,p.7). Agricultural trade was showing a healthy surplus through 1981 but has declined with the world recession. The trade composition of the 1981 balances illustrates that the country has positive positions for capital goods, food and beverages, and industrial supplies.

Overall, the U.S. share of world exports has declined from 15.4 percent in 1970 to 13.0 percent in 1981. Since 1980 almost all merchandise categories have worsened. The data demonstrate the severe degree to which U.S. industry and agriculture have been affected by the world recession and the loss of American trade leadership. Many factors account for these problems; however, a new one is now in play. The dollar has grown stronger--so much so that foreign buyers cannot afford to purchase in dollars. Yet, stronger dollars encourage American purchasing abroad and thus more imports. Some officials believe that the dollar must weaken. The situation is "temporary" (6).

Nevertheless, demand is there. The United Nations' 1979 projections for the world population are between 5.8 billion and 6.5 billion people by the year 2000 (7,p.1). Almost 52 percent of the growth will be in less-developed countries.

Even with the huge potential world need it is quite difficult to identify demand for U.S. products by the year 2000. If the nation actively markets export opportunities, its share may be much larger than it is at present.

By 1990 cargo exports for the nation are projected at 421,800,000 long tons compared with 285,558,000 long tons in 1980. This represents a 47

percent increase (3,p.44). To meet the combined export and import cargo growth, the equivalent of 247 new port facilities will be needed by 1990, including 27 additional breakbulk handling facilities, 25 additional other bulk berths, 22 new petroleum berths, 6 new liquefied natural gas (LNG) facilities, and 19 new berths for handling other liquid bulk cargoes. The most urgent requirements for added container handling capacity in the 1980-1990 forecast period are expected to be concentrated in ports of the South Pacific, North Pacific, and North Atlantic coastal regions. The greatest need by 1990 for new or expanded breakbulk facilities is expected to occur in port areas on the Atlantic and Gulf coasts. It is anticipated that ports in the Gulf and the Great Lakes regions will experience the greatest need for added grain-handling facilities in 1985-1990. The most significant need by 1990 for new and expanded dry bulk-handling facilities is expected to be experienced in the Gulf and Great Lakes region ports.

During the 1980s, no significant changes are anticipated in cargo handling or shipping technology that would influence seaport terminal capabilities. Present trends toward increased ship size are expected to continue.

Ports are already responding to the anticipated need for additional facilities. But the plans and projects in many locations have been slowed, as illustrated by the situation of coal exports. In 1981 coal exports were at an all-time high of 110 million tons. By 1982 they had dropped to 105 million tons and the rate of decline was increasing in 1983. On the other hand, most ports have excess coal-handling capacity now (8). Just this one experience is enough to make policy makers and planners cautious.

In trying to take into account all the uncertainties discussed here, one additional factor must be added. The productive capacity and population centers of the United States are shifting to the sunbelt sections of the country. Should this trend continue, port capacity may be "out-of-sync" with locations of production and seaport shipment abroad. Pacific Rim trade potential, for example, initially may be more easily served by ports on the West Coast. Gulf and eastern ports may lose export business in some cargoes because it may become cheaper and faster to ship by rail, pipeline, or truck to the West Coast than through the Panama Canal or around South America or Africa. Similarly, should African and Middle Eastern trade grow, East and Gulf Coast ports might experience the same advantage.

#### STRATEGIC POLICY ISSUES

How sensitive is the export transportation system to changes in the external operating environment, the U.S. economy, and the world economy? Is the domestic and export transportation system structured for a different set of underlying assumptions than may be operating now and will be operating in the future? The systems' predicament is becoming profound. There are serious implications for management throughout government and for the port and land transportation industries that are concerned about export transportation viability. The restructuring may also provide opportunities.

Some of the external shifts now developing are

1. The domestic transportation system is predicated on an industrial structure designed for heavy industry and manufacture and natural resource and agricultural production and distribution.

2. That structure relied heavily on railroad transport and physical labor.

3. For exports and imports the system relied on a generally balanced two-way flow.

4. The international trade system was commingled with an extensive domestic transport infrastructure of railroads, highways, barges, and pipelines.

5. Based on international trade flows and domestic population shifts, the demand for this transportation infrastructure has shifted.

6. The older parts of the system, Northeast and Midwest, reflected the industrialized snowbelt of the country.

7. The newer parts reflected the growth in the sunbelt, South, Southwest, and Northwest, and relied more on a new extensive highway system than on railroads, except for long intercity distances.

8. The newer port facilities were also constructed in the growing South, Southwest, and Northwest.

9. Subsequent trade flows show that the greatest growth has been in exports to the Pacific Rim and not Latin America, Europe, or Africa (though needs exist).

10. Ports exporting industrialized goods and commodities will be hurt by the failure or disintegration of these industries.

There are certainly many other factors involved in this cycle, but the external forces operating appear to suggest this direction.

An early warning system might well indicate that our transport system may be located in the wrong places, has outdated technology and high costs, and is greatly subject to one-way flows with empty vehicles or containers returning to their point of origin. For some, this may seem like a roller coaster with many cyclical ups and downs happening unpredictably. Others may see these patterns and begin to suggest that it is no longer a roller coaster, it is in reality a long-term radical change. The process by which our transport system moves from older assumptions to the newer, only partly understood, assumptions will be a wrenching and difficult one. Ports and the land transport system for export will not be exempt from this and will experience many of these disconcerting effects.

#### SOUTHERN CALIFORNIA PORTS

For the ports of Long Beach and Los Angeles, four special issues of concern are presented.

Larger ship sizes provide a potential economy of scale that is hard to resist. Few ports in the nation are able to handle drafts of more than 51 ft. Most that can are on the Pacific Coast. Dredging is essential to maintain existing depths and capability to handle larger ships approaching the 200,000 to 250,000 ton range. Long Beach already has depths of up to 70 ft, due in large part to oil extraction and subsurface subsidence. Los Angeles is dredging now to 51 ft with federal and port funds. Permitting and fund delays increased the project cost almost three times from 1975 to 1979. Though first proposed in 1965, actual work did not begin until 1980. Though not reassuring, such time spans conform to national averages. A good part of the delay is the U.S. Army Corps of Engineers' staged process, which requires going back to Congress each time for permission and funding to proceed to the next stage. Proposals to speed up the process will help, but lack of funding will hurt. It appears that if ports wish to dredge they will have to share the cost burden, and these monies will come from user fees, cooperative fund-

ing, taxes, and so forth. Another factor that slowed the Los Angeles port dredging was the veto of plans by several agencies. Only after exasperating negotiations and technical disagreements was it possible to agree on how to handle several critical environmental issues. The result of this facility-oriented bottleneck is that if ports cannot handle the larger ships, or if they must charge for dredging costs, they will be less competitive with ports not so affected.

#### Coal

Coal exports look promising for the national economy. The United States has vast deposits that are attractive to foreign buyers. However, the process of extracting, processing, and transporting coal requires new facility construction and thus large financial commitments. Owners and operators are hesitant to venture forward without long-term purchase agreements. Ports, particularly Long Beach and Los Angeles, have quickly moved toward package coal exports. Five western states have coal that may come through southern California. Bottlenecks are mine-site impacts, railroad transport, regional air quality, harbor land space, local railroad and street crossings, and state and local permits. One-hundred-car trains, for example, must pass over as many as 322 street-level crossings on one route between Ogden, Utah, and the ports. About 179 of the crossings are in urban southern California. Furthermore, federal policy is changing on channel deepening, coal production and leasing, protection of western coal reserves, and railroad versus coal-slurry pipeline competition.

#### Grain

Grain and related crops account for almost 90 percent of U.S. agricultural exports. In recent years cyclic or seasonal demand caused stress on the transport system from farm to ship. Fewer rail rights-of-way near the farm, deteriorating state and local roads and bridges, and railroad consolidation and abandonment are of grave concern. Farmers have little choice in how they transport their product and at what cost. As world demand grows again, these facilities will be severely overloaded, insufficient rail cars will be available, and traffic jams will occur at key port rail yards. Very possibly there will be competition for rail and port facilities if coal, grain, and containers move at the same time.

#### Containers

Container freight is rapidly replacing breakbulk freight in many sectors. For southern California, traffic has grown at an annual rate of 184 percent (1976-1980) and is predicted to increase by 300 percent for the decade (1990). To handle the growth, both ports have joined with Southern Pacific Transportation Company to construct and operate a joint Intermodal Container Transfer Facility closer to the port complex. Current separate facilities are up to 25 miles to the north, near central Los Angeles. Principal bottlenecks occur at the existing highway, rail, transfer, and port complex system for loading, carrying, unloading, and storing containers. To the extent that export cargo greatly increases, larger and longer trailers may be desirable from the operators' point of view but not necessarily from the point of view of highway facility operators and other highway users.

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