SESSION II ENVIRONMENTAL SCANNING OF THE MARINE AND INTERMODAL SECTORS

OPENING REMARKS

Paul Mentz
Maritime Administration, US DOT
Washington, D.C.

A major element of strategic planning is understanding the external environments that shape the context in which the intermodal organizations are doing business now and will be doing business in the future.

On behalf of the Maritime Administration, I welcome you to this important strategic planning workshop. It comes at a time when the U.S. marine transportation community is beginning to prepare itself for the 21st century. Although we may not be able to define all of the characteristics of the environment for the next century, we can reasonably guess that there will be an accelerated rate of change in the context of the dynamic global market place.

It would appear that strategic planning may well be a critical management tool during the years ahead to adequately cope with such a dynamic change. Secretary of Transportation Skinner has directed the Department of Transportation (DOT) to put in place formal and lasting mechanisms to ensure that the strategic planning perspective is integrated into the legislative, budgetary, and regulatory planning and decision-making processes within each modal administration at DOT. The results of this workshop will assist the Maritime Administration in its efforts to accomplish this.

Such a strategic planning perspective will or could permit building clearer goals and guidelines into every-day operations. The goal is to get better short-term decisions that have long-term strategic implications. The public policy process is fundamentally a balancing of complex and often competing goals and interests. On the one hand, the nation is seeking improved transportation systems and services to support economic activity, encourage growth, foster competitiveness, and achieve a variety of social goals. Often conflicting with these critically important goals are the nation's other vital interests in the areas of safety, energy, environment, and national security.

Another consideration in this balancing process is the appropriate role and responsibility of each level of government and the private sector, and of the financial concerns affecting each of them. The Maritime Administration will continue to strive to play a coordinating role with other components of government and the private sector to achieve our mutual goals and objectives. The purpose of this workshop is to see how well we are prepared.

We are pleased to have a very fine, diversified panel that can bring a number of perspectives from our overall maritime and transportation community. Our first speaker is Gene Pentimonti, Vice President of Processes and Systems for American President Lines Ltd. in Oakland, California.

TECHNOLOGICAL CHANGE IN THE INTERMODAL TRANSPORTATION OF FREIGHT

Eugene Pentimonti, Vice President of
Processes and Systems
American President Lines
Oakland, California

I have been asked to talk about where technology will take us in the intermodal industry in this next period. We have not defined whether it is a 5-, 10-, or 20-year period, but we will talk in generalities. In the past 20 years in containerization and intermodalism, we have seen more technological change in that two-decade period than since the Phoenicians carried their potatoes down the river on a log. We have made a huge impact on transportation. Will we continue to do so in the future? There are a number of reasons why we will see a drop in the rate of change of the physical equipment that we will use in the next 5 to 20 years in our intermodal industry.

Those of us who have invested heavily in capital equipment such as ships, trains, trucks, and containers have seen poor return on investments for those huge capital outlays. We are looking for ways in which we can get a higher return on investment. This is one of the detriments or deterrents that will slow down technological change.

Another significant issue is that while

containerization and intermodalism have flourished, the standards that represent the boundaries of operating have advanced very slowly. For these two basic reasons, we will see a considerable slowdown in the technology that has so rapidly developed in our industry. This slowdown does not mean that there won't be mutations.

We will see some features of container ships that may change. The concept of ships without hatch covers that increase efficiency and flexibility of port operations may arrive. We may see some domestic containers at the 28-foot level and some stack cars that can carry heavier equipment. But from the standpoint of physical change, we will see small changes in technology.

Where are we going to see technological change? The needs that will drive technological improvement all speak to the issue of making our system more seamless. Although we have physically integrated the movement of freight from ship to truck to train efficiently, we have forgotten some of the issues that keep us from doing that well. These issues include the efficient transfer of that freight container from the ship to the train to the truck.

When we look at the processes followed to integrate that network move of our container from Bombay to Boston, we see processes and systems that are totally independent. We may physically take that container and move it from a ship to a terminal to a train to a terminal to a truck, but we still use some of the old techniques in moving both the freight and the information necessary to process it as it goes along through the system. We may input the same data 10 different times in different computer systems as we pass that box from Bombay to Boston.

We have the "mother" of a need for technological change right in front of us in the way that we have linked the physical integration of our intermodal system, but we have not linked the necessary informational flow systems very well. What form will some of these changes take? Where will these technologies be? Clearly, there are some physical changes and some physical technologies that will need to be furthered as we try to improve that process.

I am speaking of some physical port and ship activities in linking up the ship and the rail modes more efficiently, for instance, getting the huge flow of intermodal containers through Los Angeles and Long Beach onto the stack car systems that go across this country. We need to address improvements in technologies and the infrastructure that will simplify that piece of the move. There are a number of other examples that need the same kind of physical delivery and interface system improvements.

The solutions that will be forwarded more than any are pure information technologies that can be applied to our industry and that will enhance the way we make that seamless move work. The computer has been used in dealing with this information flow and we are finding it much more difficult than the operational flow of the container itself. We believe that there are a tremendous number of technologies that can be applied to making this industry much more seamless in the way that we hand off that container—the intermodal box—that moves from one mode to the other.

Technologies—such as a group of movements that will allow us to run a container in and out of a facility without paper—the electronic identification of the container, the ability to develop an interchange report that can be kept and processed electronically rather than with paper—all are technologies that are available to us today but that we have not embraced as fully as we think we will in the next few years. This will simplify our work and provide our customers with a much better product as we refine this intermodal service that we offer. The challenge in the future is not with the hardware but more with the software, with the systems, with the streamlining of the work processes that we have welded together in the different segments of the industry, which we now need to look at in a much more integrated way. Not only single companies but strategic partners of companies will work more closely to produce a seamless product.

Questions & Answers

* Has there been any kind of public domain analysis of the costs and benefits of the Automatic Equipment Identification (AEI) system?

There has been no public domain analysis of the economics. There is an ISO (International Standards Organization) standard that has been set to facilitate the use of this technology internationally for identifying containers, chassis, and equipment moving in and out of gates and terminals. The Association of American Railroads (AAR) has established a standard as has the Air Transport Association (ATA) with the same technology, so that we do have a truly intermodal standard that exists to operate that equipment.

The Cargo Handling Cooperative Program (CHCP) at MARAD was really the seed planter for this effort, which indicates that through industry consolidation we can make some progress in this area. With the ISO standard, there has been a tremendous amount of interest (and activity) that we have seen from our colleagues and competitors in moving ahead with diverse

systems. Pilot programs are underway using AEI. One of the most successful is Matson Lines in Hawaii, which has completely automated its tractors and chasses in an intermodal gate that is as advanced as any. The economics has not been outlined in any public forum yet.

* Do the economic benefits accrue to the individual users of AEI or extend to the system?

Both. At American President Company, we are evaluating both the external and internal economies. There are dramatic cost-cuttings and simplifications from this process that justify moving ahead with it. We also feel that there are some external economics pertinent to providing the customer a much better logistical product. There is a pilot program underway with my company, the railroads, and others to establish this more fully, probably 9 months away.

* What is the effect of innovative hardware on labor opportunities?

On the West Coast, the shippers' organization has made some presentations to organized labor, the International Longshoremen's and Warehousemen's Union (ILWU), on the concept of using technologies that will simplify the marine terminal operations to the point where manning reductions will be seen. There is an awareness and a forum to dialogue these issues. We are confident that over a short time logical and reasonable implementations can be made to automate the functions on the west coast. I don't know about rail labor or other areas, but the approach is to work with the ILWU.

We tend to find solutions and breakthroughs when there is a necessity. The forces that are acting on us today do not explain what we can do to break through our hardware issues. I believe we will see mutations but I also believe that the forces behind our industry to make change and force innovation are not in the area of marine propulsion or areas where we can take physical advantage in the physical movement and operation of the freight. This is why I feel comfortable that we are not going to see any major changes in the technology relative to the hardware.

* Federal Express Company is one of the best examples of seamless movement. They pick up the package, input the computer one time, and it moves through the system.

Basically, they get a high degree of efficiency as a result of that. Are we going to move to such a system for container movements? This change would mean an integrated organization, a CSX type of approach. Is this the future?

We do need to look at so-called "one-stop shipping." We do need to integrate the way that we process a shipment. We would love to find out how their procedures work and imitate Federal Express. We have essentially glued our documentation together, leading all the way to billing the customer from bulk rates, adding the rail and the trucker's portion on top of that. Benchmarking Federal Express makes our operation seem outmoded.

STRATEGIC ISSUES FOR PORTS

Sid Robinson, Director of Planning and Research
Port of Los Angeles
San Pedro, California

Ports mean different things to different people and may be viewed in terms of:

- Cargo trans-shipment point.
- Public access point to the waterfront.
- Recreational and/or commercial and/or retail development site.
- Industrial development site.

My presentation addresses ports as cargo trans-shipment points.

Increasing Commodity Flows

Figure 1 shows that the ports of the world handled 4.1 billion metric tons of cargo in 1989. That's big business and the business is growing. While commodity flows will be increasing in the future, the increase will be handled by fewer ports. In other words, this is a strategic opportunity for ports who gain market share and a strategic threat for ports who lose market share.

Increasing commodity flows are important from a port perspective because they have strategic implications in the following areas:

- Type of vessel calls,
- Facility requirements,
- Landside transportation requirements,
- Environmental concerns, and
- Community impacts.