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Maritime Transportation Strategic Planning

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MARITIME TRANSPORTATION STRATEGIC PLANNING WORKSHOP

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June 5 - 7, 1991

National Academy of Sciences (NAS)
2101 Constitution Avenue, N.W.
Washington, D.C.

Kathleen E. Stein-Hudson, Chair

June 5 Wednesday Evening

5:30 p.m. Reception - Rotunda, NAS
6:30 p.m. Dinner - Members Room, NAS

Session Title: **The Strategic Planning Process — Can it be Applied to the Maritime Industry?**

Overview of the Strategic Planning Process - George Lathrop, Chair, TRB Strategic Management Committee

— What is the difference between strategic planning and long range and other types of planning?
— Why does strategic planning get lost in the process?
— Why isn't strategic planning implemented?

What is the Maritime Industry; How is it Evolving; and What Drives the Intermodal Revolution? - Paul Richardson, Industry Consultant

How is the maritime sector evolving intermodally and what are the driving forces (including point-to-point delivery systems, improving customer services through total transport control, cost reduction and productivity improvements, EDI requirements and deregulation effects).

Megatrends that Will Affect the Marine Transportation Sector - Hugh Randall, Vice President, Temple Barker & Sloan

There are a number of trends and events occurring that are external to the maritime industry that will nevertheless affect the industry. They include basic changes occurring in the world's economic, social, environmental, political, and business environments. What are these trends and how might they impact on the marine transportation environment?

June 6 Thursday Morning

9:00 a.m. Lecture Room, NAS

Session Title: **Environmental Scanning of the Marine and Intermodal Sectors**

A major element of strategic planning is understanding the external environments that shape the way intermodal organizations will be able to do business in the future. This session will look at the major trends that will affect the marine and related intermodal sectors.

Opening Comments and Introduction of Speakers - Paul Mentz, MARAD

Panel Discussion (10-minute presentations followed by general open discussion)

a. Technology change in the intermodal transportation of freight - Eugene Pentimonti, American President Lines, Ltd.
b. Strategic issues for ports - Sid Robinson, Port of Los Angeles
c. Logistical service providers' perspective - John Saylor, Fritz Companies, Inc.
d. Rail linkages to ship, barge, and truck - Craig Philip, Ingram Barge Co.

12:00 p.m. Lunch - Lecture Room

June 6 Thursday Afternoon

1:00 p.m. Lecture Room, NAS

Session Title: **Meeting Shippers' Needs by Creating a Seamless System — Strategic Management Processes**

This session recognizes that while there are many separate agents involved in domestic and international transportation of freight, shippers--the system's customers--are now less concerned about how freight gets there and more concerned about reliability, speed, tracking, and cost. Creating a seamless transportation system that meets these needs is the goal of both the public and private sectors. However, the way in which the goal is achieved may pose different questions and concerns for each sector. (20-minute presentations)

What the shipper expects

Presenters - James Lamb, Eastman Kodak Co.
- Steve Lucas, Louis Dreyfus Co.

Respondents - Steve Nieman, Consultant
- Craig Philip, Ingram Barge

2.30 - 2:45 p.m. BREAK

2:45 - 4:30 p.m. Reaction and General Discussion

Following the presentations, the participants will pose questions to presenters that focus on strategic marine issues. The intent will be to elicit dialogue on strategic issues from the perspective of all modes.

4:30 p.m. **Summary of Presentations and Reactions** - Kathleen Stein-Hudson, Chair

June 7 Friday Morning

9:00 a.m. - 9:30 a.m. Lecture Room, NAS

Session Title: **Strategic Alliances**

Forecasting Transportation Market Demands and Forging Strategic Alliances to Meet Them - Stephen W. McGowan, Vice President of Corporate Planning and Development, Sea-Land Services Inc.

Strategic business and government organizations can be viewed as dynamic open systems that are in constant interaction with their environment. Information about and creative reactions to that environment allow organizations to strategically react to their users.

Demand and supply of world markets are constantly shifting and require a continual assessment. In the deregulation transportation environment, EDI is further revolutionizing the industry, and innovative types of strategic alliances are appearing. These alliances dynamically respond to shifting demand and supply issues and strike new partnerships to meet shifting markets.

9:30 a.m. - 10:00 a.m. **Questions and General Discussion**
10:00 a.m. - 12:00 p.m. **Discussion Groups**

After the presentation and discussion, the meeting will be divided into two discussion groups to focus on:

1. **World Markets — Forecasting of System Capacity, Demand, and Supply — Sources and Gaps in Information** - Facilitator: Arlene Dietz, Navigation Data Center, US Army Corps of Engineers - Room #280, NAS.

2. **Forging Strategic Logistical Alliances: Finding Ways to Efficiently Transport Goods** - Facilitator: Douglas Smith, CN Rail - Room 180, NAS.

Each of these two groups will be asked to identify information and data issues that are necessary inputs for the strategic planning process. They will identify both sources and gaps in information.

Further, they will be asked to look at this information from the perspective of the public and private stakeholders in the system and suggest how they can assist in data collection and dissemination. This information will be reported back to the entire group.

12:00 p.m. Lunch

June 7 Friday Afternoon

1:00 p.m. Lecture Room, NAS

Reports from the Breakout Workshops (15 minutes each)

Roundtable Summary: Marine Strategic Planning — Perspectives of the Industry (20-minute summarizations)

- Paul Richardson, consultant and former president of Sea-Land, will present his overview of how effectively the marine and intermodal sectors are doing strategic planning, and what market, technical, and government issues require further examination.
- Leslie Kanuk, Professor at Baruch College, and former Chair of the Federal Maritime Commission, will react to the Workshop proceedings and offer her perspective on current and future industry practices.
- Steve Nieman, 25-year veteran of multimodal transport companies and industry consultant, will discuss strategic directions for an integrated intermodal industry.

Participant Reaction and Wrap-Up

All participants will be asked to examine the basis for marine strategic planning and set an agenda for the future of strategic planning in the maritime and related intermodal industries.

3:00 p.m. - 3:15 p.m.

Summary Comments, Kathleen Stein-Hudson, Steering Committee Chair

3:00 p.m. - 3:30 p.m.

MARAD Response, Paul Mentz

3:30 p.m. Adjourn

INTRODUCTION

The Workshop on Strategic Planning in Marine Transportation conducted by the Transportation Research Board (TRB) was held at the National Academy of Sciences in Washington, D.C. on June 5-7, 1991. It was sponsored by the Federal Maritime Administration (MARAD) and developed by a TRB-appointed Steering Committee. The Chair for the Steering Committee and the Workshop was Kathleen E. Stein-Hudson. Liaison with the Maritime Administration was provided by Mr. Paul Mentz.

WORKSHOP OBJECTIVES AND OVERVIEW

The goal of this workshop was not to generate a definitive catalog of strategic issues and approaches, but rather to focus an array of perspectives on the diverse marine and intermodal industries in an era of rapid transition. The marine industry has seen more revolutionary change in the last two decades than it has seen in any other time period. In that period, transportation industries were deregulated, stimulating their ability to integrate transport systems both technologically and in terms of institutional arrangements. The marine transportation industry being shaped for the 21st century is composed of shipping lines that have rationalized services with traditional competitors, and these lines have struck partnerships with, or fully integrated rail and truck services in order to provide "through" transport services. Additionally, third-party logistics specialists are an evolving segment of the industry that assemble integrated transport services. Innovation in the industry is aimed at seamless intermodal transport at the lowest cost and responsive to strict timelines.

To facilitate this strategic assessment of a maritime industry in transition, and its relationship with promotional and regulatory counterparts, a group of 46 attendees representing most facets of the marine and intermodal industry was gathered. The product of the 3-day workshop was intended to provide input for the Maritime Administration (MARAD) as that agency considers its research mission for the 1990s and beyond. These edited proceedings contain both prepared presentations and informal comments from the distinguished invited participants. The comments reflect views of the participants and should not be taken to represent the views of the Transportation Research Board or the Maritime Administration.

EXECUTIVE SUMMARY

The participants identified strategic trends and issues that are both external and internal to the marine industry. Assessing and reacting to external global patterns of world trade are continual tasks of the marine industry. The close interplay of both international policies and federal policies as strategic drivers in the marine industry emerged as a recurring central theme. The participants often noted the fact that the 1936 Merchant Marine Act still articulates maritime policy; however, that policy is not applied as written, and this inconsistency between policy and action has had different effects for different players. The participants agreed that the maritime policy should be applied, modified, or abandoned, as an unequivocal maritime policy would provide both the signposts and support for this strategic industry.

Participants also identified crucial linkages between a nation's economic competitiveness and its maritime transport efficiency. Many saw a clear need to focus on a maritime industrial policy. Connected to the need for a clear national marine strategy, the point was made that the Maritime Administration has limited financial ability to shape and promote a research agenda when it administers a $1 million annual research budget to address all aspects of marine transportation.

Internal to the industry, the participants examined strategic maritime issues from the perspective of the service provider, and drew several conclusions. Globally driven customer service demands that react to just-in-time (JIT) inventory programs are shaping the industry. Efficient, low-cost, seamless transportation systems are what a competitive player in the marine and intermodal fields must provide. Constructing and competitively operating ships is by nature capital intensive; the cost factors that carriers face in terms of delays in transit, infrastructure and fixed-asset costs, technology development and transfer costs, and investment in development of information systems have moved the maritime industry into an era of strategic alliances. These hybrid alliances, often between historic competitors, are producing new efficiencies, with the clearest examples being seen in rationalized shipping operations. This rationalization phenomenon, in turn, has affected the port industry as well as the connecting truck and rail systems.

The largest future efficiency gains are predicted in the refinement of management information systems to expedite cargo movement rather than in the development of new hardware technologies. The opinion seems to be that as far as shipping hardware is concerned, the greatest innovations have already been brought forth. The next frontier is the growing importance of information technologies and electronic data interchange (EDI). The participants suggested that in order to coordinate and facilitate this information technology revolution in the transport industry, there may be an enhanced role for the government to play in promoting relevant R&D, harmonizing standards and facilitating international conventions. In contrast to the technological advances of EDI, large gaps in trade data collection efforts and in cross communications between electronic systems were identified as strategic needs. Usable integrated data pools, not just raw data on international trade and transportation trends, are needed to guide responsible strategic planning.

Participants observed that federal marine transportation policies are out of step with the intermodal era. In addition to this perceived "regulatory obsolescence," some extremely influential "non-transportation" policy initiatives were also identified that significantly impact the industry. A proliferation of regulations regarding environmental protection, a growing list of user fee initiatives, and a host of safety and labor requirements present other costly and strategic considerations for the industry. The escalating assessment of user fees has predictably generated the sharpest reactions from the maritime industry. The debate on equitable and reasonable user fees summons back the strategic question that yet remains unanswered, and that is the need for an equitable analysis of the costs and benefits ascribed to the nation's marine industry.

WELCOMING COMMENTS

Kathleen E. Stein-Hudson: Facilitator of Conference

Thanks to MARAD (the Maritime Administration) and to Paul Mentz as sponsors. MARAD has recently become an official sponsor of TRB, so the Board is looking forward to greater involvement in marine issues, which is a happy alliance.

The Board, as part of the National Academy of Sciences, is an advisor to government but is not itself part of the government. It is an independent body that renders independent advice to a variety of government agencies—in this case to MARAD as the sponsor of this activity. We have gathered together a diverse group of experts to help advise MARAD on two topical questions:

1. What is the current state of practice of strategic planning within the maritime industry? and
2. What does that snapshot tell us about the future and the critical strategic issues that will be facing the industry as a whole as well as its diverse players?

Our goal is not to obtain a consensus but to provide a wide array of perspectives on issues in the maritime and intermodal sector, including the wide variety of partners, inland people, port operators, rail and truck operators, third-party logistics providers, and the military. We have deliberately encompassed a wide array of people who we feel are critical to comment on the issues before us. We will emphasize participation and we view the speakers as stimulators of your thinking. We will produce a report that will go to MARAD. The Board will widely publish and distribute the results by way of a summary of our proceedings for these 2-1/2 days.

SESSION I THE STRATEGIC PLANNING PROCESS—CAN IT BE APPLIED TO THE MARITIME INDUSTRY?

OVERVIEW OF STRATEGIC PLANNING

George T. Lathrop, Chairman, TRB
Strategic Management Committee,
Department of Transportation
City of Charlotte, North Carolina

Strategic Planning and its Applicability to the Public and Private Sectors.

Strategic planning is a process which leads to decisions regarding relatively short-term organizational actions based on:

1. Examination of the organization itself,
2. Examination of the context within which it operates, and
3. What the organization wants to do and wants to be.

The objective of strategic planning is to attain the mission of the organization, efficiently.

In the private sector, efficiency usually means a better return on investment and resources—greater profitability.

But, in the public sector, that is much more difficult to specify. It appears, though, that most of the difficulty lies in the definition and complexity of the mission, not in the measurement of the resources consumed.

This argues that clear definition and understanding of both explicit and implicit components of the organization's mission are critical. If we don't know what we are trying to accomplish, then what we do does not matter much; clear understanding of mission is absolutely critical to any effort to plan strategically.

Strategic planning has been criticized because it has not produced success for many of the private organizations which have undertaken the process in the past decade. But strategic planning, like any other process, involves a number of steps which can fail. It can be argued, though, that the process itself does not fail, even though one of those steps may. Why? If for no other reason, because strategic planning involves making decisions based on assumptions about the future and on understanding of the present and past. Every planning process involves those elements; every planning process is subject to "failure" if one or more of those elements fails.

This does not condemn the process, because strategic planning has value only to the extent that it forces or leads the participants to do a better, more thorough job of those elements than some other process. If it does, then the decisions which flow from it will have a higher probability of satisfying the mission and objectives of the organization than will the decisions from some other process.

This line of reasoning suggests that strategic planning is not a panacea and that it will not "do wonders" if it is treated mechanically—turned on and allowed to run to conclusion without thought and attention.

It also suggests that the sequence and outline of the process are not terribly important. What is important is the concept that it presents: making decisions only after identifying important factors which should be considered in making decisions about actions the organization will take:

- What's going on around the organization?
- Who is the organization addressing?
- What is the nature of the organization itself?
- What are the interests of those who are secondary participants in the organization?
- What are possible courses of actions and their potential consequences, given all of the information above?

Here, then, is a list of the steps in one arbitrary definition of strategic planning, and the questions which the steps are intended to answer:

1. Examination of the mission of the organization:
   - What are we trying to accomplish?
   - Where are we now; how successful are we in achieving our mission?
   - Where do we want to be in five years? Do we need to change our mission?
   - How do we define success? How do we know when we get to where we want to be?

2. Environmental scanning:
   - What are the economic, social, technological, demographic, and public policy trends and how will they affect our mission and organization?
   - How will these trends effect the demand for our services?
   - Who else can provide the services or alterna-

tives to them?

- What are the competing demands for the same resources?
- What will happen to the cost structure in providing future services; will there be major changes in technology or production methods?
- Where will future financing come from?

3. Market analysis:
   - Who are our "customers," and how are their needs changing?
   - Are there new markets or special markets that we should serve?
   - What alternatives exist for those who use our services and facilities? How well are they serving our customers?
   - What are our customers' goals; how do they define success? How do we provide services to help them achieve their goals?

4. Strengths and limitations of our organization:
   - What are the key factors that have made our organization successful? Will these key factors lead to success in the future?
   - What are the weaknesses and strengths of our organization and of other agencies serving the same clientele? What factors keep us from being more responsive to our customers' needs?
   - What are the cultural and institutional constraints of our organization?

5. Shareholder analysis (constituency analysis):
   - How will changing our services, our goals, and the structure of our organization affect those who share with us in the current support of our agency and its activities?
   - Do our shareholders have multiple, diverse, and sometimes conflicting goals and objectives? How can we best provide services to such diverse groups?

6. Analysis of threats and opportunities (scenario building):
   - How should we act or react to changes that may occur in the demand for our services, in the cost of our services, and to changes in technology? What are our strategic alternatives?
   - What are current trends that need to be exploited now?
   - What dangers exist if we delay making changes?
   - Are there activities that we should drop, combine, or add? What will be the impacts on our supporters, the markets we serve, and our employees?

7. Critical issues and strategies:
   - What are the top critical issues that have surfaced as a result of our strategic management process?
   - What strategies and options do we have to respond to these critical issues?
   - What are the risks and benefits to the organization and to the shareholders of the proposed scenarios?
   - What losses can the organization sustain?
   - Where is there substantial pain in the organization that warrants making changes?
   - How do we coordinate the strategic plan with the budget process?
   - How do we coordinate changes in our activities with continuing demands for ongoing services?
   - How do we cope with limited resources?

Strategic Planning in the Maritime Industry

The Maritime Administration and other public and private agencies are represented at this meeting.

This group is not a single organization or agency.

MARAD, obviously, is a public agency. Others represent public agencies, while many represent what I will call quasi-public agencies, which behave like private for-profits and compete like private for-profits, still others are private, albeit regulated; shippers and carriers, for example.

This implies a number of things, but in the context of strategic planning, the most important is that each type of participant, and perhaps even each participant, has a different mission. Very importantly though, all of you also share a mission.

Picture a diagram with three interlocking rings, like the famous Ballantine ale symbol. This is a union of three sets that represent a common interest. Although the large majority of what the three rings represent may be quite separate, it is the central area on which this meeting needs to bring its focus.

Each of you must address the above questions twice, first from your point of view as shipper, carrier, or agency, then from an industry mission point of view; what are all of us trying to accomplish for the industry as a whole? We all may be trying to make a living, or satisfy a particular constituency, or a particular group of shareholders, but separate the individual interests and think of the union of those three rings: what are all of us trying to do in the interests of the industry?

The environmental scan raises the same set of questions. Each of you is part of the other's environment. All of you together face the larger

environment, both domestic and foreign, and including other modes, technologies, and economic change.

You might view the environment this way; this group, or my organization, controls "this" and is affected by "that." If you are affected by "that" and you don't control "that," then think of "that" as the environment. If you control "this," then "this" is something for which you can make a strategic plan. It is something about which you can do something. Otherwise, it is your environment.

The point is, you share the small common set of interests and those are what you need to concentrate on in a strategic way. What is external to those shared interests? What do we see as the threats and opportunities? What are our strengths and weaknesses? What are the strategic issues? What are the things we can do? How can we move forward? Treat this group as if it were an organization with a common mission, and remember that if each of us in our own day-to-day activities—shipper, carrier, government agency, port authority—has our own mission, then what are the things that we can do in common toward a shared mission?

The difference between strategic planning and long-range planning is that, while long-range planning shares many of the components of strategic planning, it usually assumes that we are planning for an activity or program that will continue or be carried out in the future.

Strategic planning is driven by the notion that everything is up for grabs. Should I even bother to keep making candy? The question is not my plan for expanding the market for the candy I make now, at least not as a given. If I come to that as a second consideration after I decide that I am going to stay in the candy business, fine—then address the question of how to make better candy or expand the market. But the strategic question is: should I stay in the candy-making business?

To use a public sector example, it is not "strategic" to plan future projects for highway construction in Mecklenberg County, North Carolina, but to determine whether the Department of Transportation ought to do something other than build roads or run the transit system in response to the basic mission of our department, which is to move people and goods.

I leave you each with two questions:

First:

MARAD, what do you want?
Shippers, what do you want?
Carriers, what do you want?
Port authorities, states, others—what do you want?

Second:

What are your common interests?

WHAT IS THE MARITIME INDUSTRY; HOW IS IT EVOLVING; AND WHAT DRIVES THE INTERMODAL REVOLUTION?

Paul Richardson, President
Paul F. Richardson, Inc.
Holmdel, New Jersey

Transportation has always been an important cost for any manufacturer. Today, transportation is becoming even more important in global production distribution.

The world is becoming smaller and demands more efficient freight transportation. What is the maritime industry? There are all kinds of definitions. It is a huge ocean transportation system serving all of the trade lanes throughout the world. Maritime transportation makes trade possible. As it relates to general commodities, it is an extremely capital-intensive industry.

How is it evolving? It was an industry that consisted of small, medium, and large carriers representing many nations. The industry is currently evolving into an industry characterized by larger and larger highly efficient ships that use space sharing and other rationalizing techniques to take advantage of economies of scale in order to reduce their capital risk. Today, the fastest growing segment of international transportation is in development of international/intermodal systems that traverse land masses such as the United States. Intermodalism is here but there are many problems associated with it.

Containerization, which started internationally in the mid-1960s, obviously has had a profound effect on world transportation economics. The container was successful because of its economic advantages. It saved or eliminated expensive packaging costs. People forget that they used to have to pay 20 percent of the retail price of the product just for export packaging. Containerization cut damage, eliminated pilferage, etc. But equally important, containerization has made ships more productive, and freight is loaded in considerably less time than could have been imagined 30 years ago. The container has made the movement of goods simpler as well as cheaper. The container was a maritime tool that won shippers' support because it saved money.

There is an axiom that says all major transportation advances are driven by economics. This is true. It is also true that there are strong economic factors that are today driving the intermodal revolution. Containerization developed at an alarming pace between the 1960s and the 1980s. Intermodalism only came to the forefront with the introduction of the 1984 Shipping Act.

Introduction of point-to-point rates has been a tremendous challenge to the ocean carrier. The adage

applies, "be careful of what you ask for—you might get it." There are few, if any, ocean carriers that would deny that they are losing considerable dollars in the intermodal portion of their business. The only exceptions may be Sea-Land and possibly American President Lines (APL) or American President International (API). While the Shipping Act allows ocean carriers to quote point-to-point inland rates, it does not allow them to work in concert with one another to lower inland costs. The 1984 Shipping Act does allow ocean carriers to space-share, rationalize, and collude on all things except inland operations. This requires third-party involvement.

How large is this international intermodal market in the United States? The total container market in the United States is about 9 million TEUs a year—more imports than exports, although this is in the process of switching. Half of those imports and exports come from the Far East, about a quarter from Europe, and the rest from other parts of the world. Some people don't realize how much shipping in intermodal containers occurs in the United States. The president of Santa Fe said that 37 percent of their revenue comes from intermodal freight. This is a considerable amount of revenue for a major railroad. In 1990, 6 million loaded trailers moved by rail, and approximately 55 percent of the total rail trailers were containers. The trailers that were not containers contained prior or subsequent waterborne cargo that required transloading in the port areas. When truckers hear the size of this intermodal market, they are surprised and amazed.

Most carriers are having a hard time showing profit on intermodal movements. Why? Inexperience, possibly. Moving intermodal containers creates a tremendous container imbalance. Often 40 percent of the containers moving intermodally are moving empty. This is a tremendous cost factor and an issue that must be addressed. The medium and small carriers lack the kind of volume necessary to negotiate the low rates that larger carriers would get from railroads. This is a big factor. It is very hard for a medium carrier, whether it be American or foreign coming to this country, to try and get the bargain rates that CSX could supply or APL could supply.

The biggest single economic happening in the intermodal business is the double-stack trains. These trains have cut line-haul costs virtually in half, and this is extremely significant. If you are a strategic planner, it is not hard to predict that double-stack trains are going to move all over the United States because economics say it is going to happen. If a trucker is running line-haul costs of a dollar per mile, and in some cases double-stack trains are moving for 40 cents a mile, this is very, very significant.

How will all these economic factors come together to benefit the shipping public? We don't know, but it is through conferences like this that these things should be addressed. There is a tremendous future for specialized effective intermodal transportation. The way that the Act is currently structured doesn't allow the small carrier to get the benefits of volume that the larger carriers receive. This is not to say that third parties can't come along and fill that role, in fact, this is what is happening today. CSX is a third party. API is a third party.

What role should the government play, if any? What kind of strategic planning should you be doing if you are an ocean carrier? What kind should you be doing if you are a railroad? Or what kind should you be doing if you are a trucker?

Truckers will have to purchase domestic containers. Wherever and whenever there is an economic edge, such as in the double-stack trains, then you are likely to see innovation evolve.

FOCUS ON MEGATRENDS THAT WILL AFFECT THE MARINE TRANSPORTATION SECTOR

Hugh Randall, Senior Vice President
Temple, Barker & Sloan, Inc.
Lexington, Massachusetts

Our frame of reference is based on a lot of work done on a continuing basis for carriers, suppliers, ports, and shippers all over the world who are involved in maritime transportation. The perspective is global—it is not U.S.—because shippers and carriers think globally.

World Trade

World trade will continue to increase. The largest trade market is North America-Far East, a quarter of worldwide container movements. The second largest trade market is Europe-Far East, and the third largest trade market is North America-North Europe. Inter-Asia is growing rapidly.

Trade will increase in the next 5 years more rapidly than from 1985 to 1990—a projected growth of about 6.6 percent per annum, which is pretty aggressive. It is not the same all over the world. The mature nations are not growing as rapidly as the developing or newly industrialized countries, but Europe, which grew at 2.3 percent from 1985 to 1990, will actually increase up to 2.7 percent because of the impact of European Community

(EC) '92 and the opening of Eastern Europe. The rate of growth for developing nations will continue to increase, first, in raw freight volume. Second, despite the fact that developed countries have containerized their traffic, the newly developing countries are transitioning from bulk to container, and this is driving part of that growth. In the newly industrialized countries of North Korea, Thailand, Singapore, and Taiwan, the growth rate has tapered off from a rapid growth period during the 1980s, declining to only 6.2 percent per annum for the next 5 years.

The volumes to the Far East, which grew rapidly during 1985 to 1990 period, will taper off in the next 5 years but are still growing at a rate of 5.8 percent. For North American to North Europe, the exports that grew rapidly in the eastbound direction to Europe will also taper off. The inter-Asia trade market is the most rapidly growing in the world and is also profitable for the carriers.

Shipper Demands

Shipper demands on carriers are increasing. In the world of global logistics, shippers are changing their strategy. There are some attempts to move toward centralized sourcing to reduce the number of transportation suppliers. This task is difficult but certainly the trend. Quality is more important. There is increased external sourcing of the logistics functions. There is a tighter production line with less inventory in the channels as the JIT environment, which is being driven by the availability of information systems on a global basis. There is increased emphasis on flexible manufacturing and distribution. All these trends are affecting what carriers have to do to compete.

First there was six-day-a-week service, then—with the growth of intermodal—people began operating on a door-to-door basis rather than port-to-port. Now to be in a preferred position with global shippers, we are having to begin to offer things like consolidated inland transport, warehousing distribution, Electronic Data Interchange—moving towards that elusive one-stop shipping capability that a lot of people are trying to attain, but which nobody has yet. Shippers haven't demanded it, so nobody has made it happen, but that is the way the trend is moving. Shippers' willingness to pay for superior service and extra features is still somewhat limited, which is a dilemma for the carriers.

Market Conditions

Market conditions should improve. Good news for the carriers may not be good news for the shippers. The relationship of vessel capacity supply to demand for that capacity is going to tighten up in the 1990s. It is not now in particularly good shape on a worldwide basis but it is beginning to tighten.

For trade, trans-Pacific eastbound from Far East was in good shape through most of the 1980s but has slackened off with the relative slowdown of the rate of import growth from Asia. It will begin to tighten up again going into the 1990s and should be at capacity by 1994 and 1995. In the reverse direction, it is already pretty close to capacity, at 77 to 80 percent, and this is because it is heavier cargo being exported from the United States. This should be very tight through the mid-1990s. Trans-Atlantic traffic exhibits no real change. It has been a soft market in both directions for years and it does not look like it will change. Europe-Far East is a rapidly growing trade, and the tight direction there is westbound from the Far East to Europe, and at 93 to 94 percent an effectively sold-out condition persists so this trade is already tight. The trade going in the opposite direction—from Europe to the Far East—is soft but it will tighten in the 1990s.

A new building constraint is driving this tightening up. On a worldwide basis, the shipyard business was soft for the last 5 years and many yards closed. Government subsidies to state-owned yards in places like Japan and Korea were reduced. Now there is a demand for not only new builds on the container side but also the worldwide tanker fleet needs to be renewed. That will ensure that shipyards are at capacity for many years to come. Not much can happen in the short term to change this. Tanker life is 20 to 25 years, but right now if you went to order a container ship, delivery would take 2 years; it will cost nearly twice what it was 3 or 4 years ago for the same ship. Shipyard labor capacity is already pushed, and within a couple of years shipyard berth capacity will be pushed. A ceiling has been imposed on the amount of additional capacity that can be added, and world trade is continuing to grow—this spells good news for the container shipping industry.

Orders placed for new builds over the last 7 years indicated that the price per ship has been increasing about $1.00 per TEU. The charter rates are going up at about the same rate.

It is not all a good picture for the liner companies. After enjoying the benefits of reducing unit costs during the 1980s, driven in large part by the reduced cost per TEU of larger vessels, smaller crew sizes, and fuel prices that were dropping, unit costs are beginning to go up. There are now increased asset ownership costs caused by the increasing cost of new vessels and also by fuel prices that will go up in the 1990s.

There is tighter capacity and unit costs are increasing. The outlook for rates in the major liner markets is reasonably positive from a carrier perspective. The westbound rates have been climbing in the trans-Pacific and will continue to climb. There is softness in the eastbound market, but in another year demand and supply should begin to get to the point where the eastbound markets will begin to improve. The abysmal levels of eastbound trans-Atlantic rates—as on United States westbound—starting from very low levels, are now rising. In what used to be the head haul direction, westbound, the rates will remain fairly soft throughout the next 5 years because there is just too much tonnage on the Atlantic, and there will continue to be despite all the partnership deals. The west-bound direction in the Europe-Far East market is tight. Rates will climb rapidly and they will also start to rise eastbound.

It is interesting that the Europe-Far East went through a period about a year ago when capacity was reasonably tighter, and there was a perception that other carriers were cutting rates. The psychological impact drove the rates down in whole trade in both directions even though there was not much of an over-capacity situation.

Regulatory Environment

The liner shipping industry is changing. As a whole, the industry has not been earning its cost of capital and that has caused changes in strategy that are now being seen. Obviously, the industry has to do something about this. As you look at the evolution of carrier management strategy, this deterioration has gone on since the 1970s. Approaching the 1990s, the carriers are broadening their service packages, extending the scope of their service, becoming more global, and beginning to compete in ways other than simply through the provision of fixed assets such as iron and steel. They are emphasizing systems, people, and quality. They are growing. There is still a question of profitability but it is getting somewhat better.

The industry is becoming concentrated. The slots that are controlled by the top 20 liner carriers have grown from 32 percent in 1984 to 39 percent in 1990. The positions of the top 20 ratings have changed over the last 15 years. The percentage encompassed by the people at the top is getting higher and higher and the Asian--controlled portion of the liner industry is increasing.

Partnerships have picked up a lot of steam in some trades recently. Partnerships have been an accepted way of doing business in the Europe-Far East trade for a long time, but the sea-land partnerships in the North Atlantic with the Atlantic class vessels worked so well that other carriers have begun to pair up. The carriers find that partnering is a way to increase their attractiveness to shippers, to work on the denominator of the return on invested capital, and to reduce the asset base. So the base of competition is changed. It is not on assets anymore but on the management systems, networking, and ancillary services.

Some of the major liner companies around the world have diversified. In Europe it has been a catastrophe for some operators. They tried to do too much too fast and they lost money. But this is the direction of the major liner companies. They are moving inland; gradually moving into warehousing and distribution, and getting into the terminal services business because terminals in certain parts of the world (in places like Hong Kong) are becoming a scarce commodity. If you can control terminal space and bring others into your terminal on a fee basis, you can make a good profit. Some carriers are even going into air cargo.

Conclusion

For the smart operator, the 1990s should be a good decade.

Questions & Answers

* How will the lines branch out into terminals, etc., and still keep the asset base stable?

By investing in people and systems and using other people's assets.

* Where are all the new ships going to be built?

Japan, Korea, Portugal, Spain, Brazil.

* Is there any future in the American shipbuilding industry?

Not really.

* Any thoughts on where to get capital for shipbuilding?

Companies that must compete on a private sector basis are in an industry where everybody doesn't always play by the same set of rules. New building capacity is

going to be added by people who don't have to meet the same investment thresholds. The numbers don't work if you have to pay $70 million for a new 3,500-TEU ship when you look at the return on rates. In the top 20 list, there will be more concentration in Asia where they don't have to meet the same standards (subsidized vessel construction costs) as U.S. companies.

* We didn't talk about freight management companies at all.

One man says he expects his company in 10 years to be all people and systems and few assets. The smart asset owners will move in that direction.

* Is there a possibility of a major U.S. flag carrier anytime in the future?

From a world market perspective, no. Too inefficient when you compare U.S. manning costs with Philippine labor or Bulgarian labor.

* What is the definition of strategic planning?

Strategic planning has to do with what will be done over the next 24 to 48 months, but it isn't something that governs decisions about activities on a 10- to 15-year time scale.

Strategic planning is actually organizational planning. This kind of planning doesn't exist on a 5- to 10-year time scale—it is more dynamic and short term.

Perhaps it should be characterized as short-term decisions with long-term implications.

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.

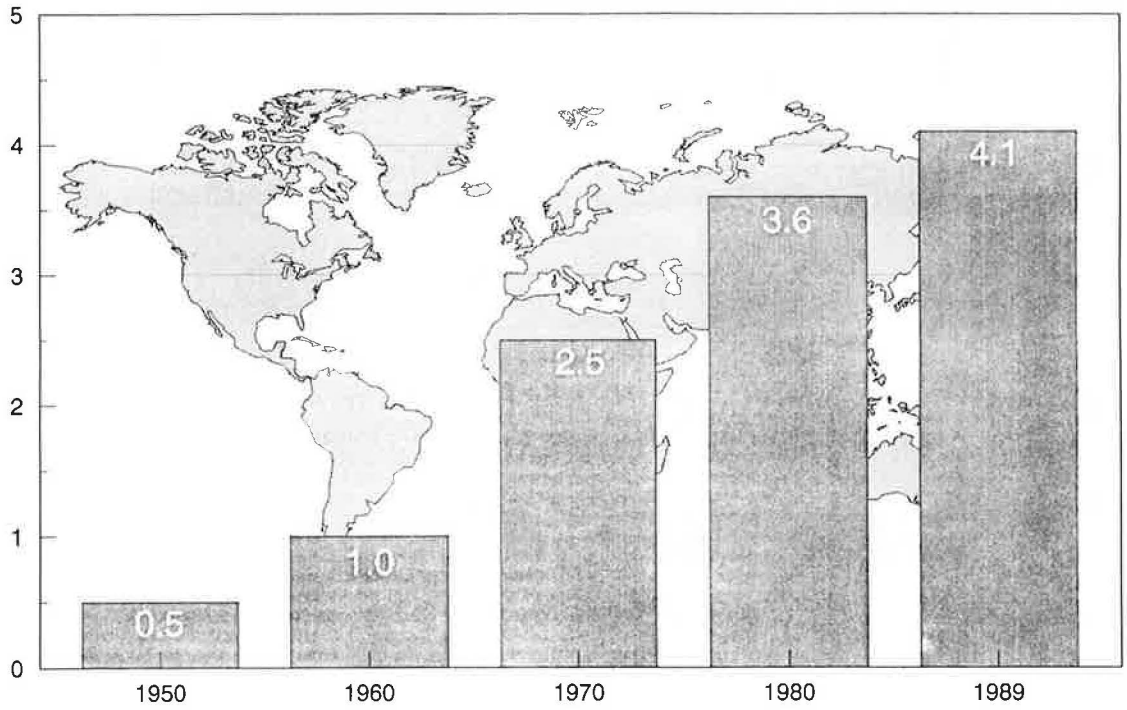


FIGURE 1 Worldwide maritime trade (in billions of metric tons).

Growth of Ship Size

The size, capacity, and speed of vessels handling waterborne trade has significantly increased during the last 20 years. Figure 2, for example, shows the growth in containerships. First generation vessels which were in use toward the end of the 1960s and early 1970s, carried 500 containers and required 25 to 27 feet of water depth. Today's sixth generation vessels carry over 4,000 TEUs and require 40 feet of water. One of the primary reasons for this growth is the economies of scale of using larger vessels.

Increasing ship size/capacity/speed, (i.e., changing ship technology) is a strategic issue because it has required ports to deepen channels and berthing areas, build longer and stronger wharves, provide more backland adjacent to the wharves, and invest in new cargo handling equipment. In other words, as ships get larger, carry more cargo, and become faster, more pressure will be placed on ports to increase efficiency.

Rationalization of Shipping Operations

Rationalization refers to shipping lines sharing space on each other's ships and/or port facilities. This is a strategic issue from the ports' perspective because it reduces the market for port facilities. Rationalization of shipping operations encourages the formation of load center ports and larger terminals, resulting in a need for fewer ports of call. The load center ports that emerge will be required to make substantial investments in larger terminals and infrastructure improvements.

Inadequate Landside Transportation Systems

The nation's highway and railroad systems are inadequate to efficiently handle maritime and domestic traffic. The ports access to the nation's transportation infrastructure, in many instances, is also inadequate. There is a need for major investments to improve deficient roads, bridges, and interchanges connecting ports with highway and rail corridors.

This can be accomplished by, among other things, constructing grade separations and implementing dedicated highway and rail transportation corridors such as the Alameda Transportation Corridor. This transportation project is designed to move cargo in and out of the ports of Los Angeles and Long Beach and provide access to the major highway and rail systems serving the two ports.

The construction, maintenance, and development of port access to highway and rail corridors with sufficient capacity to move the nation's commerce is arguably the most important strategic issue facing the port industry today.

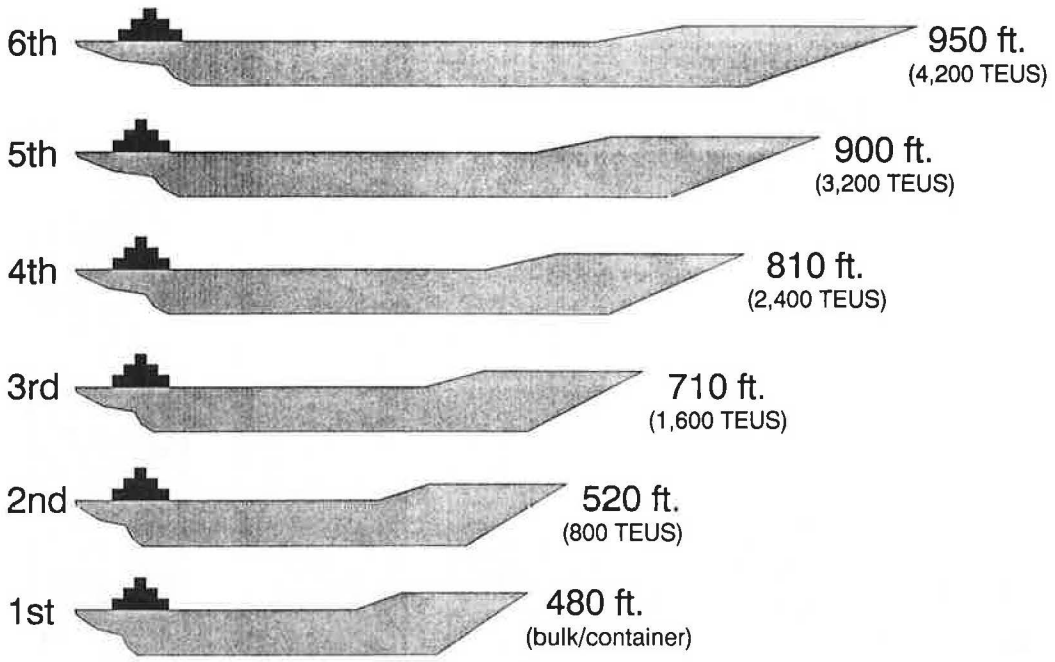


FIGURE 2 Growth of containership size (in generations).

Increasing Land Use Conflicts

It has been said that by the year 2000, 75 percent of the nation's population will be located within 100 miles of the waterfront (assuming that the Great Lakes are considered part of the waterfront). These people will place tremendous demand on ports and other waterfront areas for access.

The desire for public access to the waterfront has created what one port manager called the quiche versus cargo conflicts—where you have public facilities (quiche) being developed adjacent to traditional port facilities (cargo). Consequently, a key strategic issue facing many ports today is the need to respond to community pressure for public access and at the same time maintain existing and develop new port facilities.

Decreasing Environmental Quality

Air quality, water pollution, and soil contamination are examples of another strategic issue facing ports. That issue is the degradation of the environment and its impact on the port's ability to operate and construct needed facilities.

Decreasing environmental quality entails the following issues (among others):

- Dredging channels and disposal of dredged material,
- Restrictive regulations,
- Soil and groundwater contamination, and
- Hazardous waste disposal.

The viability of many ports will depend on their ability to effectively respond to the environmental quality issue.

Limited Financial Capability

The cost of responding to strategic issues is increasing at a high rate as illustrated in Figure 3. A one-berth, 50-acre container terminal costs almost $1 million an acre today as contrasted with less than $200,000 an acre in 1968. This is only half the picture. Not only has the cost to respond to strategic issues substantially increased over the years but the financial capability to fund these costs has decreased at the same time.

Summary

The key strategic issues faced by the port industry are summarized in Figure 4. In essence, there is going to be more cargo handled at fewer ports. The cargo is going to be carried in larger ships operated by fewer shipping

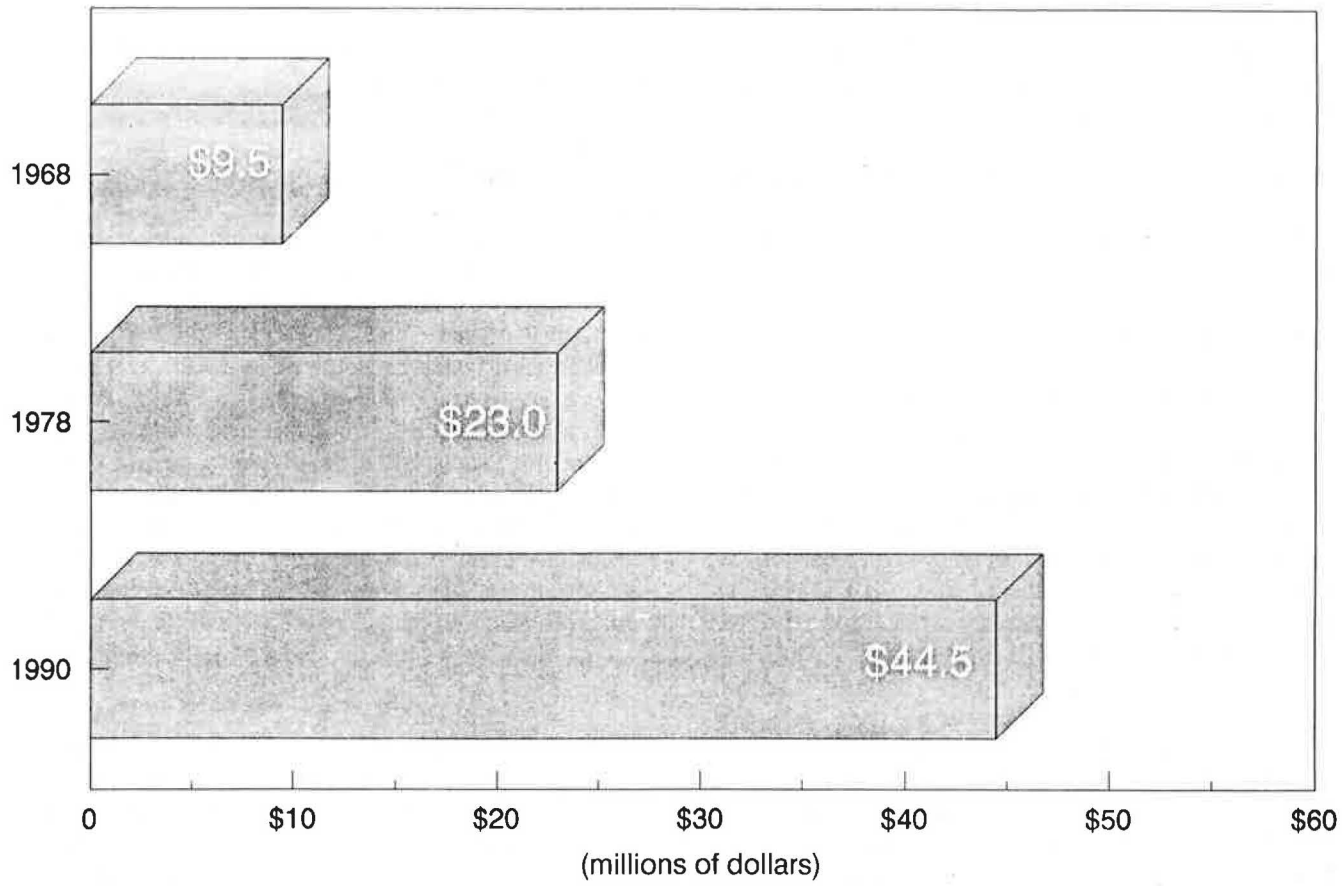


FIGURE 3 Container terminal cost (50 acres).

FIGURE 4 Summary of key strategic issues.

lines requiring larger terminal facilities. The landside transportation systems available to handle the increased movement are inadequate and need to be expanded to provide port access at strategic locations. Finally, ports will have to deal with the inherent land use conflicts between public access facilities and traditional port facilities in a deteriorating environment with limited financial resources.

Questions & Answers

* How can ports project cargo volumes?

Some of the cargo is discretionary. When you have a population base like Los Angeles and Long Beach of 16 million people within an 80-mile radius of the port, cargo is going to go there. It is not going to be shipped through Vancouver and trucked down to Los Angeles. Of our cargo, 40 to 50 percent is discretionary. The other 50 percent could go to either Long Beach or Los Angeles, but it will come to the Southern California area. Even some of the discretionary cargo is not so discretionary in that if you are coming to Los Angeles anyway, you are going to bring some of that discretionary cargo there. A big segment of the business is discretionary; we compete with Seattle, Tacoma, and to some extent, Oakland and San Francisco. The real major competitor to the Port of Los Angeles is our neighbor, Long Beach.

* What about the truck weight issue and how ports deal with that?

It should be a national issue with a national solution rather than a port issue.

LOGISTICS SERVICE: PROVIDERS' PERSPECTIVE

John Saylor, Director of Government Affairs
Fritz Companies, Inc.
Washington, D.C.

I will explain what we do in third-party logistics and give you a case study of what is going on in Kuwait as far as the need for strategic planning and the mess that anyone doing business in that part of the world is facing.

Fritz Companies, based in San Francisco, is the largest U.S. freight forwarder custom house broker. We have 65 offices in the United States and over 150 locations worldwide. We look at third-party logistics. We can offer services to our clients on a worldwide basis. Providing third-party logistics is a seamless operation. We provide service from purchase order all the way through delivery.

Sears is one of the largest companies that we deal with so I will use it as an example. We are the transportation department for Sears. We work with Sears to provide a complete system to meet all its transportation goals. We examined its operation, made recommendations, and came up with a cost savings. The objective is to save money for our clients. We worked with their purchasing department. We don't buy goods for them but we could. We could do everything, the full range, or any individual segments of the process. From the time the Sears buyers issue their purchase orders from their foreign factories, we take it all the way until we deliver the products into their distribution centers and their stores. We have Fritz employees in their overseas buying offices. Once the order is issued, we work with the suppliers, checking on the required shipping dates, as well as the delivery dates required by Sears.

All this information is loaded into our computers. The key to the whole operation is our systems. Without them, the operation couldn't work. What we are providing to our customers is access to this information. They don't have the staff to do it. We have the staff both overseas and in the United States. There are a number of different departments within Sears that are looking for certain kinds of information. The transportation group is trying to make sure that the goods are delivered when they are supposed to be. They are looking at their cost. Purchasing is looking at making sure they are going to get their goods when they are supposed to and in the quantities that are supposed to be delivered.

Then there is finance—keeping tabs on what they paid for. This is like a Nintendo game going from one screen to another. This is basically what our computer program does for Sears. Depending on who the intended users are, their information is coded in. We can break down every single item that they have purchased—how much it will cost them in their distribution center. The system also has flexibility, so even if the goods are in transit changes can still be made. If they come to us and say that they have too much sitting out in Seattle and they want to move it to Phoenix—but it is in transit—we will take care of it as soon as it enters the port.

The idea is that once we load the system we put the data into the computer on a daily basis. It comes in from all over the world. Sears in Chicago has access to that information. They can pull it up whenever they like. They can make changes, recommendations, or comments that get back to us. Not to say we don't have problems. Of course, we have problems whether there is a shortage

or whether they have too much and want to hold up an order in a supplier's warehouse. There are a number of things we can do with it. The key is flexibility and control. This is what we are offering our clients and what third-party logistics is doing for our customers. You must be flexible.

Another part of this is to have the right partners. As a freight forwarder custom house broker, we don't have the huge assets of our own airplanes, ships, trains, trucks. We have partners that do this around the world. Merchandise may not come right into the port. It may be warehoused and consolidated with other cargo, then moved in. It may come into Los Angeles and go back into another warehouse for distribution with other cargo for other areas depending on what the customer wants. It may be sectioned and some may be flown out.

If our partner isn't doing his job, we can go get another partner without being bogged down with his assets. We handle Federal Express. We do all the customs clearance for them. We are their partner. Their cargo is precleared before it ever leaves for its destination. We have 100 people in Anchorage, Alaska, waiting for planes to come in and refuel to take the documentation off those planes and have it up and running by the time the planes get to Memphis for distribution. It took a while to set up the system but we've done it. Again, it is the partner relationship. In order to be efficient you have to have this. It is an integrated management information system that makes it work and we are constantly upgrading our system. We have FIS, the Fritz Information System, with a BASIC program. We go to a client, find out what their needs are, and develop a system for them based on what they want.

In some cases there will be problems, but it is up to us, in third-party logistics, to solve them. We have material management control for all items of purchase. For example, on our defense military contracts everything works off a purchase order, we work on a line-item basis from the original supplier here in the United States all the way to delivery to our clients overseas. It goes both ways. In reference to cost control and savings, most of our clients, like Sears and Penneys, must see some type of savings to justify bringing us in. We use our buying power around the world and our operations around the world to determine what we can tie into not only to keep the cargo moving as fast as possible but also to keep the costs in line.

I want to talk for a few moments about applying third-party logistics to world changes and demands. Kuwait is a crisis where there is no single solution. The Iraqis destroyed the entire infrastructure—all files, all computers, all transportation systems, and all communications systems.

There are two operational ports in Kuwait that handle general cargo. Shwayka and Shwayba. Shwayka is the largest port and it is closed and will be closed for at least a year. All the equipment in the yard of the ports has been destroyed. Nothing in the port is functional any longer. Every 3-ton crane in the port was damaged and has to be replaced. Kuwaiti Customs now requires ships coming in (except for those bringing relief supplies) have 24 hours to get their cargo off the piers. If it is not off the piers, they put the cargo right back on the ship again and make it sail out. There is no domestic trucking industry left in Kuwait. What trucking there is now comes up from the emirates out of Saudi Arabia and they are charging a fortune for it.

There is no place to store any cargo because all the buildings were hit with cluster bombs. The problem in Kuwait is that they have to start again from scratch. We toured the airport and the ports to look at the basic infrastructure to see how to get cargo delivered all the way through. This is what we are studying right now. The problems we are facing I don't think anyone has faced anywhere else in the world. Even if we had the equipment there, we don't have the labor force.

Conclusion

Third-party logistics and strategic planning go hand in hand. There are a lot of opportunities out there. We see a lot of innovations and improvements coming down the road because of situations like this.

THE REGULATORY ENVIRONMENT

Ralph Kreuger, Sr. Vice President
Lykes Brothers Steamship Lines
New Orleans, Louisiana

One of the major issues is the regulatory environment we find ourselves in today. The laws that have been written and rewritten over the last 75 years are really a quagmire. Today's marketplace bears little resemblance to the marketplace for which those laws were enacted. Therefore, it is difficult to follow the letter or the spirit of the laws that were enacted in the early 1900s.

An American flag carrier today finds itself competing in a regulatory environment that allows foreign-flag carriers to have more rights and competitive opportunity than a U.S.-flag carrier. Also, certain U.S.-flag carriers compete on a more equal basis than

others. A U.S.-flag carrier who is receiving subsidy to offset his higher crew costs is precluded without waiver from foreign-flag feeder opportunities, utilization of foreign-flag vessels, contracting with foreign flag vessels, or operating them—almost everything that relates to profitable operation. Thus, he is a second-class citizen to his unsubsidized U.S.-flag brethren and really a third-class citizen to foreigners.

We hear the concept of a level playing field espoused in forums such as this, at conferences, and constantly in the media. But no one really wants a level playing field. Each player in the game is looking for his own strategic advantage. In the past few years, Sea-Land has said on more than one occasion that it desires to obtain a subsidy. Some would support this issue if Sea-Land would accept the regulatory environment that U.S.-flag subsidized carriers operate under and also be willing to divest all domestic and foreign-flag operations. Under today's laws, the level playing field would also require a stand-alone vessel operator with subsidy, no foreign flag vessels, no domestic operations, strict adherence to trade routes, and no affiliated companies operating in any of the above environments. Foreign-flag operators must somehow also be put into this same trick bag if we really want a level playing field.

On the other hand, we could try and seek legislative relief to fix some of these problems. Legislative relief has been sought for over the last decade or two with little or no change except the abolition of some of the most helpful legislation that existed for the U.S. Merchant Marine. What really is the definition of intermodalism? Is it the cooperation between carriers with each mode of transportation being provided by a first-class provider in that mode? Or is it a vertically integrated mega-company with absolute control over cargo movement, routing it from its steamship company to its railroad company to its trucking company, or vice versa? I'd like to coin a phrase and call it a mega-modal company in which basically the ocean carrier is lost inside this mega-company. It becomes sort of a loss leader, so that the other business of the mega-modal operator can profit. Today, we have two companies striving hard to be mega-modal, CSX and Nedlloyd. Also, American President International (API) to a certain degree.

I believe that true intermodalism is the former definition whereby each mode in the transportation chain does what it does best. Vertical integration of domestic segments, blue and brown water segments, logistics, management, and full land segments will in time create mega-modal companies that become ineffective and in the long run disappear. Mega-modalism could turn into monopoly.

A true intermodal move really requires strong partnership between first-class transportation providers in each segment of the transportation chain in lieu of these mega-modal operators. From the shipper-consignee perspective, they are interested in and continually espouse a desire for premier service. At the end of the day, shippers and consignees are looking for the lowest rate, which is not always equal to superior service. In the short run, the mega-modal carrier may produce the lowest cost, but the quality of service will not necessarily be as high as the services offered by the partnerships of first-class carriers in each segment working together to provide an integrated, superior, hopefully seamless, intermodal service.

This may take us back to the level playing field or utopian situation where each transportation mode strives to be the best that it can be and in effect, to provide the best overall service, albeit possibly not the lowest-cost service. What do shippers and consignees want? They want air freight at covered wagon prices.

On the ocean carrier segment and how the playing field is not level, there are many different types of ocean carriers running the gamut from the very small one- or two-ship operators with charter tonnage (or even on the non-vessel-operating common carriers, NVOCC, with no ships at all in the trade) and just slot chartering on others, to the perfectly integrated transportation monopolizers, with each size of operator in between. There are various direct or hidden subsidies that are given to the many operators, officially subsidized or not. There are ocean carriers that are wholly or partly owned by foreign governments who subsidize their operation. There are foreign taxation schemes that subsidize the capital component of vessels. There are vertically and horizontally integrated manufacturing, trading, and shipping companies that strive to maintain low freight rates and use ocean transportation as a loss leader to their other business enterprises. In vertically integrated transportation companies, we have indeterminate subsidies from parent to son or grandson.

These subsidies, directly or indirectly, easily defined or undefined, generally pose no regulatory problem for the ocean carrier providers; however, some require long administrative proceedings and labors because they are precluded from owning and operating foreign flag vessels, providing domestic transportation services, deviating from authorized trade routes or making more than their allowable number of sailings per annum. As I have briefly outlined, each operator has a different set of circumstances and regulatory constraints; the playing field we operate on is less than level—it is in fact quite uneven.

This is the environment. One must plan for no

regulatory or administrative relief because this condition will probably be the environment into the future as it has been for the last 75 years. We at Lykes support and are in favor of a level playing field and state today that we will support Sea-Land's application for subsidy as long as they remove themselves from foreign-flag operations and domestic transportation operations, and live within the rules of the regulatory environment that most remaining U.S.-flag operators have been living with for decades.

Questions & Answers

* Has Lykes considered giving up its subsidy in order to have foreign operations?

It has been considered on several occasions. The decision has not been firmly made.

* How many more years do we have before that decision will be made for you by lack of government action?

Probably months is a better answer than years.

* Do you have a strategic plan for when these months are up as to where Lykes is going to go?

We have been working on waivers for years to operate foreign flag vessels and we are no closer today than we have been. We are finding it very difficult to diversify inside the system.

* If nothing happens with the U.S. Merchant Marine policy, what is going to happen?

Over the last 20 years, we have lost about 20 operators. After I said that, I came up with 16 that have gone out of business in the last 20 years. I think that is what is happening. It is not going to happen to Lykes Brothers Steamship Company, but the flag at the stern of the vessel might be a little different.

RAIL LINKAGES TO SHIP, BARGE, AND TRUCK

Dr. Craig E. Philip, Sr. Vice President
Ingram Barge Company
Nashville, Tennessee

I'd like to talk about intermodalism from a carrier's perspective—in particular, how it affects the maritime industries. The changes of the last 20 years have been so significant and happened so fast that I don't think it is fair to call it a rapid pace of change. I think it has been more like magic.

A concept that is similar to the concept of mega-modalism is what I call multi-modalism. I think the term intermodal is really too narrow and by the definition of the term may restrict us in thinking about strategy and change over the next 20 years.

It is impossible to be in a discussion about contemporary issues in transportation, especially an internationally oriented discussion, without automatically using the term intermodal to describe much of what is going on. I will focus on three topics.

1. What is this idea of multi-modalism?
2. Who has won so far and why?
3. Some thoughts on how it might evolve in the future.

Intermodal has been defined primarily according to technology. The textbook definition is the transfer of freight from one mode or type of carrier to another. In the 1960s and 1970s, we commonly described intermodal as referring to the movement of highway trailers on railroad flatbed cars, but strictly speaking intermodal really refers to just about every type of transportation movement that any of the carriers are involved in. Virtually every movement we make as inland barge carriers is part of an intermodal movement whether it be grain products that start at a field elevator and move to the water by rail or truck, then by barge, then to another terminal, then to an ocean carrier. Almost all movements are intermodal.

In the 1980s, the term intermodal was expanded to refer to the movement of ocean carriers by rail and then ship or ship and then rail. While this physical definition is perfectly suitable to draw boundaries around what is meant by intermodal transportation, multimodalism is defined more in terms of the customers who are being served than by the service that is being provided.

Service from the shippers' perspective is the set of options that deliver the necessary transportation service from true origin to true destination, from purchase order to invoice. From the shippers' perspective, we are trying to make the movement uni-modal. We don't want the shipper himself to care at all about the intermediate transactions that the carriers perform either as mega-modal independent entities or as a whole group of carriers aligned in sequence together.

The second distinguishing feature, as intermodalism unfolded, was that the roles and responsibilities of the various participants were basically well defined. The rail

carriers provided services between rail terminals and almost always operated those rail terminals. Steamship companies provided ocean transportation from one port to another. Ports provided all the shoreside infrastructure. Truckers and draymen did the intervening service and customs brokers or forwarders managed the paperwork transaction. The paperwork transaction was and is always more complicated than the physical transaction itself.

Today the roles of the parties are dynamic and complicated. Many participants offer services that go well beyond the bounds of their traditional domain and responsibility. Perhaps every carrier is trying to be a mega-carrier to some degree. Railroads today provide door-to-door services in addition to the wholesale line haul product. Several railroads have even experimented from time to time with providing ocean transportation services. The roles are dynamic because they change over time and they change even from customer to customer. The best examples of this come from the mega-carriers like American President Lines and CSX Sea-Land Services. Both of these carriers provide modally oriented transportation services just like they always did, whether it is rail or ocean transportation from port to port or railhead to railhead. Both of them strive also to provide to the very same customer base, a richer and different set of transportation options; entire door-to-door service, some complex combination of wholesale-retail product, or even a set of options going beyond the traditional transportation functions such as the relationship between Fritz and Sears.

When one looks back on the brief history of intermodalism much of it in the 1960s and 1970s was defined in terms of shifting existing demands between modes. Rail carriers looked at mechanisms to shift from boxcars to intermodalism as a way to keep that freight on the railroad. Perhaps ocean carriers were doing the same, shifting from break bulk to container in order to keep that freight on their shipping line. But in the case of multimodalism, I think the carriers and service providers have really sought and are trying to develop new markets, in many respects, inducing demand. The best textbook example of this derivation of new demand involves the service offerings of Federal Express and now its many imitators. Federal and the others have basically created a new demand for a particular type of transportation service; namely, the overnight delivery of small packages. This is a service that I think is truly intermodal, and whether it is multi- or mega-modal, it probably qualifies for those definitions as well.

We have the same derivation of demand in this container-oriented transportation movement as Federal Express. A $29 gasoline airplane I bought my neighbor's son for his birthday came with 7 or 8 subassemblies but each of these subassemblies came in separate packages. Each of the packages identified the manufacturer and the origin of that little piece, each one was made in a different country. I thought about this. Here is a $29 toy and somebody has a logistics infrastructure that has allowed them to bring all those individual pieces together—to say nothing of the planning to decide where they will be constructed and put them all together and still sell this toy for $29. I think this is a derived demand that is based in part on the logistics multi-modal, mega-modal infrastructure that we have in place today and I don't think it would have been possible 20 years ago with the type of infrastructure we had then.

Who is winning this multi-modal game? There are generic statements such as, "It is the guys who provide high quality, a superior level of service, and who are customer responsive."

There is no question that an international orientation is going to define the people that are successful in the multi-modal game today and in the future. This may not necessarily mean that a carrier has to be providing an international service per se, but being a partner with carriers that are is indispensable.

On the port side, the hinterland issues will be the crucial and key ones for the next couple of decades. The ports that have been successful, like Los Angeles and Long Beach, have had huge natural advantages owing to the 14 or 16 million people that live in that basin. They draw and attract an incredible amount of freight to their territory because of that local hinterland. Seattle and Tacoma don't have a large hinterland but they are a day closer to the Pacific rim countries than Los Angeles and Long Beach, so they have had a natural advantage. But look at the hinterland opportunities that Los Angeles and Long Beach have exploited compared with Seattle and Tacoma. Freight goes through Seattle and Tacoma and basically goes to one interior gateway in Chicago. Los Angeles and Long Beach, with the participation of the rail carriers, serves a whole variety of hinterland destinations and if they can overcome their infrastructure problems in the 1990s, in terms of linking with the rail in particular, they will probably be able to continue to exploit that competitive advantage.

Finally, because few carriers will be in a position to provide all of the services required by even a single one of their large customers, developing alliances and partnership is a key to the future.

What will happen in the future? First, we will see continuing efforts to generate cooperative ventures between historic competitors. Nowhere is this more evident than on the ocean side in the Pacific where the alliances are rapidly forming. Who would have imagined

that Sea-Land and Maersk would be partners even a year ago. These types of alliances are simply inevitable.

We will also see continued alliances emerging between transportation suppliers and transportation buyers, especially in the middle of the transportation chain. The barge lines, the railroads, truck lines, and other intermediate producers short of those mega-carriers are going to try and tie themselves more closely to the umbrella multimodal or mega-modal service organizations. Who owns the barge companies today? Domestic grain companies, now foreign grain companies, oil companies, petroleum companies, coal producers, even railroads. These are examples of the way that these multimodal alliances are going to emerge between suppliers and buyers.

In terms of specific changes, I think there will be continued evolution and sophistication on the part of ports as they try to select and support partnerships. Until recently there was a tendency on the part of ports to view maximizing the number of competitors as being an overwhelming and desirable feature that would define their probable success both on the ocean and the land side. What is becoming apparent, at least to the carriers, is that more competition does not necessarily define a healthy set of relationships or prove to be the foundation for continued growth, especially where massive investment in infrastructure is concerned. This will be equally true with rails. They will take more aggressive action to rationalize their route structures so they can better make their capacity meet the long-term demand which will be put on their resources. Certainly if the rail carriers are going to shift and make significant infrastructure investments around ports, they have got to rationalize elsewhere.

Will steamship companies be continued buyers of rail transportation companies? My answer is a guarded no. We have gone through an extraordinary period of investment in this business and with all the investment we are now facing up to the hard reality that none of us are making any money. Investments that are intended to strengthen alliances are probably going to continue in the future. The Japanese model is typical of the way companies have worked there for decades with cross investments by suppliers and buyers. I think this is the pattern which will unfold in the future.

Summary

In the 1970s the rage was moving from uni-modal planning to multi-modal planning. There is something profound going on in the industry, and it has happened faster than anyone anticipated. I hope with conferences like this we will all go away with a better idea of how to do things better in the next 20 years than we did in the last 20 years.

Questions & Answers

* What are the challenges that you see in the next decade for transportation providers?

How competitors figure out a way to put aside their differences and become allies. Competitors cooperating when you have so many institutional, legal, and emotional barriers will be the key as to who comes out the winner and who is the loser. How to reconcile competitive and cooperative issues is the biggest challenge.

* Do you see the railroads aligning themselves with a particular port or trying to accumulate other ports in their system to develop further systems?

This depends on having an alliance between a single railroad or two and a port in order to belly up to the bar to make those investments. Southern Pacific invested more than $100 million in a great intermodal complex in the Los Angeles basin. When the ports approached the railroads about that project in the early 1980s, they approached all three railroads and said that they wanted all three to come together to build this facility. The other two rail carriers decided not to. I think that if the other two had said yes, then none of them would have made any investment in that facility because none of them would have felt they were getting a competitive advantage for making that kind of massive investment. It turned out this singular relationship is the key to making the dollar. The ports have historically wanted lots of competition among the rail carriers and they need to look at ways where they can favor single rail carriers, and maybe single ocean carriers, to induce the kind of investment that will be needed to keep the infrastructure ahead of the demand.

* Hasn't the balance of power been in the other direction where the ports sought out the rails and the ocean carriers?

If you look at the relationships in the era of regulation, it is not surprising that the railroads were recalcitrant partners. In the case of California, the railroads are told that the rate they can charge from Los

Angeles to Chicago was the same as the rate from Oakland to Chicago, but Oakland to Chicago is 500 miles longer than Los Angeles to Chicago. It is no surprise that none of the rail carriers were enthusiastic partners of the port of Oakland. Their own economic self-interest told them that it was stupid. I hope that era is behind us where you have adversaries between ports and railroads and between ports and ocean carriers.

* With the new partnerships and ports still linked to wanting multiple railroads—let's say there are alliances between ports and railroads—are there operating systems and techniques available to handle large complex multiple-line containers and expertise in the ports and a single railroad?

We're still far behind the demand curve in terms of our capability to deliver the seamless product. We may have a technology surprise in the 1990s in this area that could facilitate the seamless system.

* Do we have the capability to control and move the cargo within a single partnership?

We have to answer that question in perspective. Toyota measures the transport time of parts in fractions of days. When they measure how successful they are, it is in meeting their standards. We may not be very good at this transfer of cargo between the marine terminal and our facility and then at the other end of the line, but we are providing a service to that market for which an ocean, rail, and truck transportation product can realistically be measured in fractions of days, and that is pretty remarkable. Are we where we want to be? No, but the kind of service, at least in some cases, that we are providing is incredible. The answer to the question is, "Yes, we are doing it in part in a very small segment of our total business, but we are incapable of doing that in a much broader perspective." We cannot in any way provide that sort of service to every one of our customers. This is the challenge because we don't have the capability or the systems or the process developed to do that.

* How do you translate those small success segments to the national system to make this intermodal pipeline technically work?

It is a combination. We heard a lot about partnerships. There will be a few mega-modal companies, but it is within the relationship of partnerships that we can develop the systems that will support those needs and that type of a seamless system. Until those partnerships are in place and we start cooperating rather than competing, it won't happen.

* What if a rail serving a single port is not a good partner?

This is the risk that you take whenever you choose a partner. You have foreclosed your option in the future of choosing another partner. Then the choice is a big issue and a big risk.

You have to have the network connectedness. People that don't have it better get it. I don't think the government will do it.

* How do you extrapolate those successes that appear to work and have it affect a national cargo freight system? Is it possible? Usually a marriage between a port and a railroad excludes other railroads. What system is used to make it national instead of just a narrow segment?

We've talked about partnerships and strategic alliances—what is the role of the public sector in encouraging or facilitating these kinds of partnerships to happen so the United States can compete internationally? What roles do you see the federal government playing? The state government play? The port authority play? What would help you create a partnership?

When we were trying to export all the coal we could in the world, every port around the country wanted a deep-water port. Logically there might have been a few that ought to be placed but who makes that decision? Who sits up there and says this one will have a deep-water port and this one won't? You have the political question that has to be answered. Right now with the Harbor Investment Trust Fund, the questions are who will get the amount of dollars to improve what ports; and where and how you make those decisions. The whole regulatory process gets involved in this and even though you have some antitrust immunity, when you get inland and get into cooperative ventures you might run up against the Justice Department, so there are problems.

* Are you suggesting that the United States needs a maritime industrial policy?

I am not suggesting, it is the only way. The most efficient government is a benevolent dictator but I am not suggesting that he always stays benevolent. That's the problem.

There is nobody up there looking out for the welfare of the U.S. maritime industry, and even for the shipment of U.S. international trade there is nobody concerned, nobody coordinating!

COMMENT FROM SID ROBINSON, PORT OF LOS ANGELES

Let's look at how the national transportation system operates and cooperates. When I asked earlier what are the main obstacles to getting a more effective transportation system, you said those who have previously been competitors will learn to cooperate. This makes good sense, but then your response to the question, "Why did the Alameda corridor get built in the Los Angeles-Long Beach area?": "Because the carriers did not cooperate but rather one of them saw the great competitive advantage of linking up with Los Angeles."

You've got vertical cooperation versus horizontal cooperation. What happened in the case of the Intermodal Container Transfer Facility (ICTF) was vertical cooperation between a single rail carrier and two ports. Another model could have been used if it had been possible at the time or if it would be possible in the future for them to cooperate in a way that wouldn't forego all the competitive advantages. In the current legal structure, that is not easy to do. It may be easier on the water side because the antitrust on either side of the port is different. You can have cooperation vertically along the chain or horizontally among the players. Both are going to be necessary. The water side is testing the extent of what can be done with horizontal cooperation. I'd like to see more of this model used on the land side as well.

You can compete and cooperate at the same time. Los Angeles and Long Beach share the same bay and we compete with each other. However, when we get together and take a look at our areas of mutual interest, we come to the conclusion that our strategic policy would be to work together to attract cargo to sunny California and then fight like hell to see who gets it. That was our strategy and we were able to identify a number of areas such as the ICTF. When we do dredging and filling in the two harbors, we recognize that when one port dredges and fills an area it affects the circulation of the whole harbor. We really need to know what the other port's plans are to make sure we are working together. But then we fight to get the customers. So cooperation and competitiveness are not mutually exclusive.

A U.S.-flag carrier is a second-class citizen because it can't affect cooperation the way a foreign-flag carrier can. We have a national transportation policy, yet it does not address the crucial bridge weight laws which vary throughout the United States. A bridge in Maryland can handle 90,000 lbs. if a container comes to the Port of Baltimore, but for that same container coming through Port Elizabeth in New York, those bridges only handle 80,000 lbs. These kinds of fragmented policy issues are all over the United States. It is very frustrating for the trucking industry and the ocean industry. For a foreign country shipping here, it is like dealing with 50 separate states.

A success that the ports of Los Angeles and Long Beach had when I sat on their combined planning board for their 20-20 plan was that after the two very strong competitors got together, the coalition that was formed forced the environmental concerns to focus on solutions. From two competitors getting together, we won't get a national policy, but by showing the constituents of the Los Angeles Basin that they had a combined plan, they took in their own hands the solution to deal with environmental problems. They will get a dredging plan and a fill plan that is consistent because the constituents in the Basin understand that this is a group of competitors that has gotten together and can agree on something. This has been a helpful model to force solutions, considering that we will not get a top-down federal policy direction to help us solve these problems.

SUMMARY COMMENTS FROM PAUL MENTZ

We have covered

- The really critical information requirements.
- The customer-service focus as well as the schizophrenia that we sometimes see—between the demand for high-quality service but also insistence on bargain basement prices—and this tension will continue to pressure the system.
- The importance of issue of scale and a reminder that it is not so simple as saying bigger is better.
- The notion of competitive and cooperative relationships between the different players is creating a key dynamic for the future.
- The diversification of market and the growing complexity of relationships among players. Consolidation both horizontally and vertically and also complex relationships among third parties and between shippers

and their customers.

- A whole host of cost and investment issues; lack of capital to make major investments as we've done before; the costs of innovation; the costs on the land side and the pressures for the infrastructure investment, and not knowing where those funds are going to come from.

- The complex regulatory and policy environment in which we work that we have inherited from the last 75 years and the mismatch between the marketplace in which many of us are working and the regulatory and policy environment within which we must strive to serve our customers and also make a profit.

SESSION III MEETING SHIPPERS' NEEDS BY CREATING A SEAMLESS SYSTEM — STRATEGIC MANAGEMENT PROCESS

Douglas Smith, TRB Committee Chairman
Committee on Intermodal Freight Transportation
Canadian National Railroad
Ontario, Canada

While there are many separate agents involved in domestic and international transportation of freight shippers, the systems customers are now less concerned about how freight gets there and more concerned with reliability, speed, tracking, and cost. Creating a seamless transportation system that meets these needs is the goal of both the public and the private sectors; however, the way in which that goal is achieved may pose very different questions and concerns for each of the public and private sectors so we welcome this opportunity to hear the shippers' perspective.

WHAT THE SHIPPER EXPECTS

Jim Lamb, Director of Transportation Planning
Eastman Kodak
Rochester, New York

The way Kodak selects and monitors suppliers is now under development and may be different for other organizations.

Kodak is an $18 billion corporation worldwide with 134,000 employees. We have five major operating divisions which are viewed as autonomous businesses, and they in turn are subdivided into some 25 to 30 business units. We have about 30 manufacturing plants throughout the world and some 60 distribution centers. The interchange among all of those entities represents about 20,000 FEUs per annum and the cost is about $75 million. The process I am going to talk about does not apply to 100 percent of all of that, only some portion and is in the development stage and not totally implemented. Our total freight bill is between half and three-quarters of a billion dollars.

In the carrier selection process, what we are trying to do is centralize the buy. We are going in the direction of a supplier or mode manager. I try to bring together into the process of putting this out to the carriers as many different business units, operating divisions, operating units, manufacturing plants, and distribution centers as I can. Strategically, we are working towards reducing the number of suppliers with whom we are doing business. There are in-house opinions that say single sourcing. If we could deal with one steamship line to take care of all our needs, I would push for that. There are those that do not agree with me. We do not relish sitting down with ocean carriers every year and negotiating rates lane by lane. We want to put together a global deal to cover all of our trade lanes in one package but do it with enough flexibility so that a few years out both parties are still satisfied with price. We have been struggling with this but this is the way we are going.

A carrier selected by Eastman Kodak (EKC) would have the following characteristics as basic criteria:

- Provides frequent, competitive, consistent, reliable sailing schedules and in-transit time on lanes of interest to EKC.
- Offers services on the majority of trade lanes where EKC has traffic. This can be by third-party arrangements when necessary.
- Manages from a worldwide perspective as opposed to a purely trade lane focus, e.g., has a total-account approach to EKC traffic. This must include the capability to address pricing on a global, total-account basis.
- Provides a leadership role in pricing proposals on behalf of EKC.
- Provides equipment of appropriate size, type, and condition to handle specific EKC needs on a given lane.
- Provides capability of effective EDI programs and processes using EDIFACT standards. This includes booking shipment status and tracking, billing, payment, and performance measurement.
- Develops, maintains, and nurtures a consistent long-term relationship with EKC. This must include a focus on mutual cost reduction programs as opposed to price increases.
- Manages effectively for positive long-term financial results, indicating future presence in the trade.
- Shares information on market conditions, industry direction and developments, long-term strategies, and other matters relevant to EKC's transport management process. Openly shares detailed cost information by corridor in order to develop cost improvement strategies.
- Meets or exceeds all applicable standards for local, national, and international safety and regulatory rules and requirements.

First, we are looking for service, reliability, frequency, and consistency. This must be a given. Then we get into pricing discussion.

Because of competition, our gross margins have been eroded tremendously. To improve our return on invested capital we must get our manufacturing costs down and get better returns out of our assets. One of our largest assets is inventory. Unless we have fast reliable service we can't make a dent in that inventory.

Secondly, we look for suppliers that can cover a large number if not all of our trade lanes. We are involved in some 30 to 40 major trade lanes throughout the world. I am not just talking about U.S. imports and exports. I mean Far East-Europe, Europe-Far East, intra-Asia, Australia to Japan, Brazil to Singapore, Toronto to Europe, etc. We are looking for people who can put that under an umbrella for us and can put together either the organization or the process to deal with this on a global basis. We do not want to be talking to 12 different divisional vice presidents. We have not run across one line at this point who is adept at this.

Price is always a factor. We have to maintain our competitive edge; in some marketplaces we are down to pretty slim margins especially where you are in the backyard of some of these European and Asian manufacturers. Transportation costs can make a difference between being in a marketplace or not, even for a high-priced product like ours.

The EKC carrier assurance program is based on the following weighted service characteristics:

• Operational Performance		70%
Delivery schedule	30 pts	
Regulatory compliance	10 pts	
Claims ratio to shipments	5 pts	
Claims ratio to revenue	5 pts	
Condition of equipment	10 pts	
Equipment availability	10 pts	
• Administrative Performance		10%
Claims settled in less than 60 days	5 pts	
Billing accuracy	5 pts	
• Customer Service Surveys		20%
External customer survey	10 pts	
Internal customer survey	10 pts	
• Total		100%

We are looking for companies that can provide the type of equipment we need, and in good condition, when we need it.

The EDI issue may look like it is low priority but it is not. This is really a fast payoff. We need to get rid of papers and our intent is by the end of 1992 on any given trade lane there is a carrier who can hook EDI up with us. We want to transmit the booking, get booking confirmation back electronically, transmit the bill of lading, any other information, and send money electronically without exchanging invoices. This is a must. We have got to get these administrative costs under control.

We are looking for strategic alliances. I can't call them partnerships because the legal department told me not to. We want to develop this long-term alliance because we want to get costs out of the system. We will not be able to absorb price increases from the carriers. The only solution is to work together to get costs out of the system. We are looking for stable companies that will be around for awhile. We will deal only with people who are strong and who can show us they have staying power. We want to share information and make sure we know what is going on in the marketplace. The intent is to maintain our competitiveness by getting costs out of the system.

As a chemical company, we are in the spotlight of environmental regulatory and safety issues. We must do business with carriers that can conform to or exceed any existing local, national, or international standards, rules, and regulations. Once a carrier is on board, how do we measure it? On delivery schedule, regulatory compliance, shipment integrity measured by claims ratios, condition of equipment, and equipment availability.

We are also looking at administrative performance, billing accuracy, how quickly claims are settled—and we will be doing customer surveys both external and internal. Internal customers are distribution centers, business units. External customers are overseas subsidiaries.

The EKC international liner shipping performance standards are as follows (100% means non-negotiable expectations):

• Delivery Service	
Shipments delivered on time	100%
Containers loaded as booked	100%
Containers sales as booked	100%
Immediate notification of disruptions	
• Equipment	
Loadable containers/chassis	

spotted for loading 100%
48-hour removal of
unacceptable equipment

- Documents
  Timely processing and delivery
  of original bills of lading

- Shipment Integrity
  Shipments delivered free of
  loss or damage 100%
  Claim acknowledgment in 30 days
  Full claim payment in 60 days

- Administrative
  Accurate freight invoices 100%

What sort of performance standards are we looking at? Delivered on time against our mutually negotiated standard. Containers getting on ship as they are booked. We are trying to squeeze the inventory out of the system. When there is a dysfunction in the service, we expect to know about it immediately and we expect to hear about the solution also. Container loading, same thing. Our warehouse has a load for Germany, it is ready to go, it is occupying space on the warehouse floor, we call for that container, and we expect it to be loaded. That may not seem like an issue to you but we currently turn away a good 5 percent of the containers that come into the warehouse for loading.

When a piece of equipment is refused at a warehouse, we expect it to be removed from the premises within 48 hours.

We are really trying to get away from documents, but timely processing and delivery of bills of lading is crucial until we can get into an electronic environment. Shipment integrity—we expect 100 percent of our shipments to be delivered without damage, without loss. If there is a claim, we expect claim acknowledgment within 30 days and we expect full payment within 60 days. Accuracy of freight invoices. We talked about taking administrative costs out of the system. When we put an invoice in, and it is audited and it is incorrect, the effort we go through to get that changed is not productive, not adding value, and costing money. Hopefully by 1992, we will be in an environment where we will be simply remitting electronically on the basis of negotiated rates, not even exchanging invoices.

When we get to the stage where we are linked up electronically for booking, invoices, tracking, the whole gamut, the freight forwarder has no value to the process. This function will disappear. We pay a forwarder a certain amount per bill of lading, steamship lines are paying 2-1/2 percent to that same forwarder, and he is not adding value to the line or to us and is a cost we can get out of the system.

The global coverage we are looking for and the service we are looking for is that the trend toward slot chartering, slot sharing, and vessel sharing, from our perspective, is a very positive one. We feel this will give us added flexibility, added service and make us more able to eventually get to the point where we are really dealing with single sources.

Questions & Answers

* Does some of the criteria give you concern like using only carriers that have a sound financial position? In many cases, the alliances are between a strong carrier and a weak carrier.

We look very carefully at alliances and who is dealing with whom. As far as reduced competition on a lane, traditionally, we have looked to use as many carriers as possible. This is simply going out of style. More and more shippers are going single sourcing, hooking up electronically, integrating operations as opposed to trading off business to various carriers.

WHAT THE SHIPPER EXPECTS

Steve Lucas, Director of Logistics and Operations
Louis Dreyfus Corporation
Wilton, Connecticut

I represent the dinosaur in the maritime industry—dry bulk and wet bulk. Louis Dreyfus Corporation is an exporter and importer of dry bulk and some wet bulk commodities. Everything from corn to boneless beef to orange juice. We are basically in the business of exporting out of this country agricultural commodities, corn, wheat, soybeans, oats, barley, etc.

Two weeks ago there was a sale to the People's Republic of China of U.S. wheat. The difference between doing that business and not doing that business, which was 800,000 to 900,000 tons, was 3 cents a ton. We are in business where all we have to compete with is price. U.S. corn to the Russian purchaser is absolutely no different than the corn he gets from Argentina or anywhere else in the world.

We've talked about double-stack, EDI, the fancy high-technology, new-technology things. I will tell you we are in the low-technology business, physically handling hundreds of thousands of tons of grain every year in this

country where gravity supplies about 40 percent of the power inputs to the system of moving that. We lift the grain out of containers, haul it to the top of the elevator and let it drop back down. It works every time. We use inland barge transportation, we use ocean-going, we do occasionally ship by rail. I was told I should mention the new technological innovations in the bulk business. The last big-time technological innovations were the invention of the steam engine, the internal combustion engine, and the electric motor. Watch them load at the Port of Houston and then look at how it was done 100 years ago. There has been no change. We are not on the cutting edge of the technological revolution here.

We use both inland and ocean-going transportation. I try to balance the inflows and outflows of the commodities. Not as easy as it sounds. "Amateurs debate tactics and generals study logistics" is a quote from *Red Storm Rising*. All of the generals in our business study the logistics really carefully because when you have only price to compete with you must have a seamless, organized, efficient system so you have quality performance at a quality price. It must work right every time and the price must be low.

On the inland side, we look for those two criteria from the inland carriers—performance and price. There is nothing more unpleasant than to see a line of trucks a half-mile long outside an elevator when the barge has not shown up on time and to have to tell somebody that he has to tell the guy at the end of the line that he has to be there 5 or 6 hours, and there are not a lot of volunteers for that job. Efficient utilization of our capital assets, the elevators, means the product has to come in on time. We buy from the American farmer. If my costs are higher because I can't get barges placed on time, I can't pay him as much for his soybeans or his corn. He will go to my competitor because all I have to compete with is my price. If barges are delayed coming to the export facility, then I have another problem. I have ships on demurrage and I've got no commodity to load on board. Not a pleasant prospect, and for bulk carriers not a cheap prospect. If the problem is great enough, there is damage to the cargo and spoilage of the cargo and here we are talking about a dead loss. Same way with ocean-going transportation. We expect timely performance and price. When we charter ships, we expect them to show up and on time. If they show up too early, we have one kind of problem. If they show up too late, all those barges are hollering, the elevator superintendents call and raise hell, and it is all translated into costs—each and every time.

I want to talk about infrastructure because many of these things that happen operationally get transferred immediately into price. This is the true free market economy out here. Adam Smith is alive and well. There are many of buyers and sellers. If one part of it is inefficient, something happens. Ten years ago, the predominant size of ships loaded were the handy size vessels; today almost entirely panamax-class vessels carry goods to the major importing countries of the world.

I think there are some other components that ought to go into the infrastructure other than just concrete and steel. For the inland system, one of the issues that affects the price is the aging of the lock and dam system in this country. The cost of an inefficient locking system to move barges down river is enormous when you have tows waiting 3, 4, or 5 days just to come through a lock. That cost gets passed someplace. In a business such as grain, which is so price sensitive, this doesn't happen very often before somebody else finds a better, cheaper way. Another related issue is the water level management issue that we have run across in the inland system. Inefficiencies—problems because of low water and inability to forecast or control flows—get translated immediately into price. When I have to load a barge to 7 feet rather than 9 feet and I am paying on the same minimum, that comes out of somebody's pocket, and you can't pass it on to the Russians.

Another aspect of the infrastructure that ought to be included in all discussions are "imposed costs." The government has fancier names—like "revenue enhancers" and "taxes." Any of these fees that are imposed from federal, state, or local governments, that add to the costs, only serve to decrease our competitiveness overseas or to reduce our farm income in the United States. Another part of the infrastructure is the information systems. The bulk business being the dinosaur that it is, our information systems are not nearly as sophisticated as EDI and some of the other things. We still rely on the telex, the telephone call, and the fax. We have stumbled along for 125 years this way and we may get a little better at it but there is always the need for accurate, timely information. If that ship owner can't tell me when that ship is due, I can't make an informed decision about how to load, when to load, and where to load. If I make that decision based on some guess, I make the wrong decision both for myself and for the ship owner, which costs us both money.

Another value of timely, accurate information is that it allows us to take advantage of whatever flexibility is in the system. Unlike a particular container that must get to a particular factory or they shut down, we deal with masses of barges coming in, several ships at a time to load down. There is some margin for product substitutability, but without information it is very difficult to make those choices. This applies to both the inland and the ocean-going side.

The two things I want to leave with you are that from a bulk shippers' standpoint only two things are important: price first and acceptable level of performance second.

REACTING TO SHIPPER EXPECTATIONS

Steve Nieman, Consultant
Pleasant Hill, California

I am more than modestly intrigued by why it is 1991 and we are just now having a strategic planning conference in marine transportation. The first strategic planning conference I ever attended was in the 1960s. Attending conferences does not ensure success nor does developing a strategic plan. Applying a strategic plan is all that counts. In 1970, I went to another strategic planning conference and learned all about portfolios, but it was all investment banker theory and portfolio management. It wasn't business and it wasn't strategic planning. In the 1980s, I went to another conference. There was no transportation person at either of the first two conferences except me. At the third one, there were several because they were facing deregulation and the theme of the conference was quality. Quality in 1977 was an issue being looked at by Fortune 500 companies. In the 1990s, the topic among strategic planners is customer satisfaction. What do the customers want? This indeed may be the only true functional subject for strategic planners.

Environmental assessment is important. Competitive analysis is part of the question. The only true focus of strategic planning may well be understanding the customer and then exceeding his anticipation.

But it is 1991 and the marine transportation segment is now having its first discussion of what is the state of the art in the industry, what is strategic planning, and what this encompasses. We've got to catch up really fast. One of the reasons there are so many topics flying around the table is because there hasn't been any cohesion in the thinking of the management personnel in the operating and marketing companies about the strategic factors in this business.

On the question of what constitutes customer focus, there certainly hasn't been any cohesive thought. I am now in business for myself, and no longer employed by someone else, so I am freer to make stronger comments than I used to make. There are still a lot of CEOs in transportation operating companies in 1991 that don't think the customer is important. There is still a lot of energy that goes into strategic marketing and strategic planning in transportation, service providers, just trying to get the senior-most people to listen to what the customer wants.

This leads me to two fast conclusions:

- Asset-intensive transportation companies are being displaced by market-intensive transportation companies because their focus is service not assets.
- Third-party logistics providers are service oriented, but I question whether their service delivery is objective when the company is linked to an asset-owning parent company or affiliate.

What is there out there that we can look to that helps us understand what the customer wants?

Most of what is out there that helps us understand that what the customer wants is not public. It is proprietary. The last 6 years I have spent doing raw, original, customer research in "the intermodal industry" and none of it has been released publicly. There are some significant efforts being made by some major corporations to better understand what it means to be customer-focused in the intermodal business.

A study done for MARAD and the Federal Railroad Administration (FRA) last year by Manalytics, Inc., was operational, data based, and freight-flow intensive. The industry is extremely sensitive to competitive marketing and that is what will drive the future of domestic double-stack container systems as opposed to "Is the freight out there?" and/or "Is the double-stack train a viable economic entity?" Here was a golden opportunity to get some insight into what the marketplace wants and, unfortunately, it didn't answer all the questions.

The *Intermodal Index* is a document that is brand new and a great first start. On the other hand, it is a shame. It is sponsored by the Transportation Committee of the National Industrial Traffic League and the Executive Committee of the Intermodal Transportation Association. It speaks almost exclusively to handling traffic within the continental U.S., which is moving intermodally. There is no differentiation between international or domestic point of origin or destination.

We finally have some findings about what the customers think about this business. The one that has dominated my thinking for 6 years hasn't even been mentioned today. It is that for the consumer of transport services the frame of reference is the U.S. long-haul general freight trucking business. It sets the standard. Another conclusion is that shippers prefer to deal with intermodal third-party providers such as the Fritz Company rather than with the direct operator, or even with a trucking company. They find that the third-party logistics provider is far more understanding and far more responsive to their needs.

I isolate these two pragmatic elements because they stand in contrast to some of the things that we have been talking about. Yet, they come from a sample of 500+ shippers who are moving freight in the intermodal system every day of the week. I suggest this deserves some thought. It is the first such survey. It will be repeated each of the next 4 years, so it is a compliment to those organizations to fund it for the 5-year trend period. There is nothing better for us strategic planners than a time series. Snap-shot analysis tends to hurt strategic planners while time-series analysis helps them.

Traffic Management Magazine, the current edition, talks about how intermodal stacks up. This is an effort by a publisher to talk to shippers and ask what is good or bad about intermodalism without defining it as domestic, international, blue-water based, brown-water based, or rail-based. There are some very interesting conclusions in it that are not quite as dramatic as the others. If you are an intermodal provider and you don't know what your customers want, this magazine has a service that will do it for you. Just pay them money. They'll even tell you what you ought to be researching. You ought to be researching the marketing or operating companies' characteristics of the tangibles: reliability, responsiveness, assurance, the empathy factor, and price. I happen to agree with that list of five and in about that order.

Reliability and consistency—remarkably, in my work experience you can't get the senior officers of any operating or marketing company to even agree that those are the factors that they should be concerned with. As elementary as it may seem, the marketers and operators of intermodal services, the service providers, are not in agreement as to what factors are important to the customers. Here is a magazine trying to advertise what they are. Unfortunately, this will just engender debate, rather than results among most providers.

The most publicized public source of what customers think of carriers is *Distribution Magazine*, which comes out once a year and for several years has had an interesting rating system by shippers of carriers and an award. Here is a listing of the annual recipients of the award. For the first time, we have recognition of ports, water carriers, rail third parties, intermodal operators, and stack train operators. The majority of the recipients are all trucking companies. The standard of excellence is being set by the trucking industry. Fewer awards were presented to the steamship lines than the average intermodal operator and stack train service provider.

This survey has been going on for several years now by this magazine. Any one carrier can get a continuing track of his performance. It is a relatively broad-based sample but like so many market research techniques it raises a whole host of questions about the validity of it. Carriers have grabbed a hold of it because it is in vogue to have a quality program, it is wonderful to be awarded a quality recognition award from a public source, which public source used shippers to do the evaluation.

Just a word of caution about market research techniques in this industry. This is a soft subject. Easy techniques are available and used by many. I would suggest the subject is not susceptible to accurate analytics by easy, cheap techniques. There are a lot of peddlers calling on the carriers and marketers saying I'll survey your customers, and I'll only charge you $10,000. It has been my experience that the subject is a complex one—and a quickie survey of a few customers may be doing more injustice than good. A one-time survey as opposed to a time series survey is risky and a survey that is sponsored by a vested interest is inherently suspect.

Referring to the two previous speakers who purchase transport services, you heard factual content because they buy transportation service. You heard a couple of common points even though they disagree on which comes first—the price or the service. They both did state that you had to have the service. Jim Lamb said that often transportation costs define the economical reach of their product in the market. This is true when you are a commodity-based business. They both talked about the value of combining purchases or getting full leverage. Steve Lucas is the pure economic customer. To me as a supplier, he is an easy customer. His demands are straightforward and anything I can do to take cost out of the system and immediately put it into his profit is desirable. Conversely, if I offer him a track record of poor service due to costly add-ons, interruptions, or difficulties, I am not offering a viable service to this customer.

Conclusion

When you think about strategic planning, it is a matter of defining what business you are in. How can you know what business you are really in until you know who the customer is, what he wants to buy, why he is buying it, and how he prefers to buy it? It is a matter of what business the customer thinks you are in.

REACTING TO SHIPPER EXPECTATIONS

Craig E. Philip, Senior Vice President
Ingram Barge Company

There is a radical difference between Jim Lamb's and Steve Lucas' presentations in terms of the way they are making transportation choices.

Jim clearly articulated a carrier selection and transportation selection process that focuses on a limited number of alliances. First, he defines them by a broad set of service criteria, which probably didn't come as a surprise to anyone. After all is said and done, they will negotiate for good prices, but they will do long-term pricing, etc. Steve was equally blunt that price, price, and price is the key. To those of you who aren't as involved in the grain transportation business, I don't know if you understand how serious that is.

They trade both barge transportation and ocean transportation on a commodities market alongside pork bellies and bushels of corn, so you go buy and sell barge freight for delivery next October for a set price just like that. Also to a limited degree rail capacity, although you only have one person making the market, so it is not quite as fair. It really is a price-driven transaction in many respects.

Beneath the surface of those discussions I heard a couple of comments that led me to believe that, as diverse as those approaches seem to be, my guess is they are moving together rather than apart. Jim tried not to use the buzz word of price at all in his presentation but he did have some things in there about negotiating about continuous cost reductions. From the carrier's point of view that is continuous price reductions. What he was really saying, in some respects, as I heard it, was that they have gone from a comfortable situation in their business—(which may be common to American manufacturers) in which they had a dominant share of a marketplace—to a situation that is intensely competitive. One of the results is that Kodak film is more like a commodity with Agfa film and Fuji film than was true in the past. He alluded to the example of the port tax. Well if Fuji is going to ship through Montreal and is getting a price reduction, I may have to do the same thing, my historic partnerships notwithstanding. Steve suggested that he would prefer to move more in the direction of Jim as well. We trade barge freight like a commodity but the service that is behind that freight really does have an impact on Steve's ultimate cost of the transaction. It is a commodity in the sense that it is priced that way, but the service characteristics are relevant. The system really prevents us as carriers and shippers from trying to deal with those service issues in a way that is really going to reduce the total cost of the transaction. How can you marry these two concepts together?

Finally, two additional items are particularly relevant in the public-private perspective. Steve was open about the fact that infrastructure issues are very important issues to him. The lock and dam improvement process is clearly of concern because it directly impacts the capacity of his network. Because that network has been pressed to operate in some cases beyond its realistic capacity level, the shippers get acutely aware of it. Because of this, it has allowed the industry to develop a coalition to do the improvements like Lock and Dam 26. Maybe there is a lesson there for everybody who is trying to deal with the same set of infrastructure issues in the more traditional intermodal context. Obviously, Jim isn't really in touch with or concerned about the infrastructure questions (i.e., the fact that Los Angeles-Long Beach may go to container gridlock). We probably need to find a way to make sure he understands that before it becomes a core issue for his transportation choice process because that is an important part of developing the constituency—to make sure we get the infrastructure improvements we need.

I was real interested in the commentary on the government levies. They were both consistent on this one, at least. Government levies are perceived as bad. Jim talked about the question of a port tax in New York harbor and that he has an option, perhaps, through Montreal. Steve talked about the user fees and the payment for the improvements of locks and dams and that had a direct effect and impact on the farmer. You can also turn that around. The impact of the new Lock and Dam 26 has been to virtually eliminate congestion on the upper Mississippi River. By some estimates it has led to reductions in the price that barge companies are earning from the movement of barge grain transportation by 10 percent to 15 percent or even 20 percent. How do we properly assess beneficiaries if the beneficiary is really the farmer?

REACTION AND GENERAL DISCUSSION

Kathleen E. Stein-Hudson
Steering Committee Chairman

We have heard from providers and shippers and touched on the role of government. We have been discussing our relationships as competitors and partners and we seem to be redefining the nature of competition. This is one of the key parts of a strategic perspective. What follows are questions, answers, and comments on the key issues that were discussed.

Arlene Dietz on the Role of Government

* Does the role of government require a nonpartisan review of taxes and regulations? What are the impacts of regulations, cumulatively?

Leslie Kanuk Responding on Government Regulation

The purpose of regulation is to protect the public interest. Regulation is enacted for two reasons: (a) to control industries that engage in malpractices against the public, and (b) to regulate industries that are granted antitrust immunity and to make sure that they operate in the best interest of the public. If the regulations are not doing this, then they should be changed. But, from our experience in terms of deregulation in other industries, we would end up having to be re-regulated. Regulation is not bad per se, it may be the way it is being implemented that is bad.

Our transportation infrastructure developed on a mode-by-mode basis and therefore our regulations developed the same way. It probably would be much more appropriate to have an intermodal regulatory agency overseeing and eliminate the Interstate Commerce Commission and Federal Maritime Commission.

Thomas Schumacher on the Definition of Regulations

We have to define what we mean by regulations. When we talk about deregulation, we talk about the elimination of rate regulation and the elimination of route regulation. Everybody says that those are the elimination of the economic regulation. The other regulations—access to cities, access to ports, environmental controls—those kinds of regulations have nothing to do with antitrust and are far more expensive and dilatory to the industry than were the crazy regulations on routes, gateways, and rates. Don't say economic regulations versus noneconomic regulation, because when you are denied access that is far more important from an economic standpoint than whether you get 5 cents a ton, or 5 cents a hundred or 4-1/2 cents a hundred. If you have the mileage down, you can get by with a lower rate. The point is, we have to define what kind of regulations we are talking about.

Leslie Kanuk

I am defining regulations as those enforced by regulatory agencies that are prevalent in this industry. EPA has caused us great expense, but what is the purpose of protecting the environment? How can you gauge the impact on people? There has to be something to protect the people. You can't throw that away.

I don't want to throw it away. When you talk in terms of regulations—when you talk in terms of cost-benefit—there are a lot of regulations that are there because some person has the idea that it would be good, and there is no identification of whether it is truly necessary, but it sounds good.

I think that he is talking about regulations being flexible, depending on circumstance—flexible framework of guidance—what works in this case and what won't work in that case.

Charles Lehman on Defining and Protecting the Public Good

I think the government's role is to protect the public and the good of the public, but I don't know how to define it. We are going to deal with this politically. It is not going to be what is really publicly good. Talk about the Clean Air Act. I don't know anyone who is opposed to clean air, but how states might implement different issues has a real impact on what we do in transporting. I don't know if it is in the best interest of the public to burn low-sulfur western coal or to mandate scrubbers and use high-sulfur coal. All sorts of dynamics are being mandated by not only the federal government but also state and local governments. Then you talk about a global economy. All these things add to costs. What is done to a farmer determines whether we are going to move grain on the Mississippi River down to the Gateway. How we deal with all these other impacts in a strategic way comes down to whom you elect to Congress. You have half of Congress deciding one way for the public and the other half deciding the other way. When they don't get reelected, some new guys decide to change the parameters.

Ken Murdock on Coalitions and Public Policy

The politics in a democratic society are the pulse of the issue. What you are trying to achieve is balance and consideration. This is done through building coalitions and getting information out. Several people talked about cost. You have to measure the impacts, put them together in a context where you are not suspect, and deliver that to people. Build the coalitions and win the

elections; if you don't do that the balance will tilt against you. This is part of strategy.

John Glover on Separating Strategic Issues From Strategic Approaches

Part of strategic planning is deciding what is within the realm you can plan for. Dredging is an example—we finally stopped battling the Corps of Engineers and decided to work with them. This is not to say that simultaneously we are not also in Washington trying to make the regulations more palatable or focused or understandable, but for the time being there is an environment and in the short range we are not going to change it. The president and the groundswell within Congress all mean that in the short term these environmental regulations will be part of our operating environment. This is not to say that we won't continue to strive for balance, but in the meantime we have to figure out how to work with it rather than beat our heads against a stone wall as if we could somehow break through it.

Anne Strauss-Wieder on the "Politics of Freight"

"I need it there tomorrow" and "freight doesn't vote." These two statements summarize the conflict between the private sector's need for goods movement and the public sector's attempt to satisfy the major concerns of their constituencies. Freight movement is difficult to understand; it is a derived demand, based on the needs of businesses and consumers. However, many times, when consumers see a large truck on the road, they don't think about the commodities being carried. Rather, they view the truck as a looming menace that should be removed. This is also how politicians and regulators can view freight movement and why truck bans and halting "garbage trains" can be appealing. From a political viewpoint, environmental and economic development causes are important; freight transportation by itself is not as critical. One possible solution is to translate the strategic freight needs of businesses into their impacts on economic development and the environment, thereby placing the issues within a mutually understandable framework.

Sid Robinson on the Political Importance of Freight and the Need to Develop Alliances

You can build the alliances we are talking about. Freight sustains the standard of living that we all enjoy in the United States. Freight creates jobs, taxes, employee wages, and corporate profit in this country. The problem is that we have not been able to put together the broad-based alliances we need to effectively get this message across. We have been working as independent entities because historically that approach has worked. But now we find that even if we are effective within our own geographic boundaries, we can still fail. Our success is based, in part, on what happens outside of our jurisdictional boundary, on decisions made by government agencies and other entities over which we have limited control. We need to develop a mechanism to create alliances between interconnected industries (ports, rail, trucking, shippers, etc.) to develop local, state, and national perspectives on resolving strategic issues and to direct limited financial resources for mutual benefit.

We developed these alliances on the Alameda Transportation Corridor project in Los Angeles and Long Beach. Because of the Southern California air quality issue, environmentalist and cargo movement experts had to find a way to work together if this project was to move forward. Both groups came to agree that it was better for the environment, and the movement of cargo, to expand the region's ability to move cargo by rail and take trucks off the freeways. These two groups would probably disagree on a number of issues but found a way to identify a mutually beneficial strategy and create a positive alliance.

Paul Mentz on the Need for Maritime Research and its Relationship to Strategic Issues

It was said that a prudent research program in the maritime intermodal area might be an appropriate corollary to the strategic planning activity. Does anybody know what the research funding capability is for the maritime community in the United States from the public sector this year?

MARAD starts with a base of $1 million. The Coast Guard is our safety regulator and they have a budget of $28 million in R&D but they don't support marine transportation business interests.

The point is that out of a total federal R&D budget that is approximately $76 billion this year, the Department of Transportation as a whole has about $425 million, so a very small portion of the nation's R&D program is allocated for transportation. The agricultural program gets a far larger share of the federal R&D dollar. Most of the R&D budget goes to DOD, but those in the civil sector such as agriculture get a substantial share. The final comment that is useful to this group is that, of the $425 million in the DOT, the

Maritime Administration gets $1 million. That is $1 million out of $76 billion for the kinds of work we are talking about.

MARAD proposed that for next year this $1 million go to $2 million. A week ago there was a mark-up in the House Appropriations Subcommittee. Of the $425 million R&D program of the Department of Transportation, $424 million is under the House Transportation Appropriations Subcommittee. The $1 million for the Maritime Administration is under the Commerce-Justice-State-Judiciary-Related Agencies Subcommittee. It has been that way since we were in the Department of Commerce. We have now been in DOT for 10 years, but we have not shifted to the Transportation Subcommittee.

* You ask, why is this difference significant?

One difference is that the Department of Transportation's R&D request is part of the Transportation Subcommittee focus. However the Maritime Administration's R&D is presented on a different day, in a different room, and is reviewed by another subcommittee. Maritime interests do not have a high profile at the Commerce-Justice-State-Judiciary-Related Agencies Subcommittee, consequently, the maritime research budget receives very little attention or support in this forum.

Sid Robinson on Cooperative Research Efforts

* Is it possible for federal departments that have limited R&D money to combine that money and fund a joint project that meets everyone needs?

Paul Mentz Responding

When you only have a very small amount of funding in your portfolio, you reach out for joint ventures everywhere. We have inter-agency agreements with the Coast Guard on safety matters, and are preparing to execute one with EPA on environmental protection matters, one with the U.S. Navy on matters relating to sealift technology and many others. How much can you do when all you can bring to the table is a relatively small amount of funding?

We have one very productive joint venture, the Cargo Handling Cooperative Program (CHCP). A joint venture of the Maritime Administration, American President Lines, Sea-Land, Crowley Maritime, Matson, and possibly the American Association of Port Authorities, which is a unique joint venture to pool resources and look at matters of potential productivity and competitive issues in the marine terminal and intermodal area. We give 20 percent of our modest $1 million to this program, that's only $200,000. It really should be 10 times that amount.

Anatoly Hochstein on the Level of Tax Dollars to Research Dollars

* Is water transportation only a fraction of total transportation?

A significant portion of the nation's freight moves by water and the industry is overloaded by taxes. We generate billions of dollars. I am surprised we are talking about $1 million versus $2 million. We are supposed to be talking about $1 million versus $50 million and then maybe we will get $25 million. The point is that nobody is talking about it. Our meeting should make a strong statement to enhance maritime research in the public sector. There is no champion, no spokesman, and very little money applied to the crucial promotion of science and technology in the public sector of marine transportation.

Lester Hoel on Mechanisms to Develop a Research Agency and Research Funding

The topic has shifted. We have been speaking in general terms of strategic planning issues and how they relate to what we did in the conference (TRB Marine Task Force Report) that put all this together last year. Many of the same issues came out; in some ways they are being better articulated here than what we were able to do in the task force. I am very impressed. From there to research—what research needs are and where we go from there with regard to research is a logical next step. I don't think we can answer the question as to what the research needs are, but we certainly have a model mechanism and process for that. The most successful of those efforts is about to come to an end, the Strategic Highway Research Program (SHRP). It was funded at $150 million over a 5-year period to do research in focused areas of highway pavement and bridge design. Other examples are TRB policy studies in the area of transit research needs, which have now lead into a new National Transit Research Program because the justifications are all there. The same thing is being done in the safety area.

It seems to me that a logical next step is to begin to build a broad constituency and a case for research in the

intermodal and marine transportation areas that would include all the areas we have been discussing regarding the regulations, environmental issues, intermodalism itself, technology, ports, etc. I hope one of the outcomes could be a follow-up that will look at the research justification—What are the issues that have to be addressed in the maritime field and the intermodal field over a period of years?—and build a constituency and from there build a funding base.

Henry Marcus and Douglas Smith on Linking Maritime Transportation to International Competitiveness

The purpose that the industry serves is to enhance international trade and to serve trade—what problems are there in our infrastructure, and what are the processes that inhibit trade? What inhibits national or continental competitiveness in trade and how do we go about changing those things? If we are going to spend $1 billion on port facilities, maybe it won't be enough if these facilities are going to be scattered all over and not operated at capacity because they don't have the appropriate infrastructures.

You could be in a position in which $1 billion is not enough unless you put it in the right place. What weaknesses are there in our infrastructure and processes in terms of supporting trade over the long term when we know it will increase, we want it to increase, and we want to enhance our competitive position? Are some of the constraints we are building into the system going to explode and start to cause real problems? There is no law that says North America has to share fully in the growth of world trade. If the infrastructure isn't here, you can bet we will be on the bottom of the pile.

Zelvin Levine on R&D Needs

Over the last 20 years, the R&D program for the Maritime Administration has used a very broad definition of what constitutes R&D. Witness that this conference here today is being funded with a trickle of funding from MARAD's R&D budget. A few years ago, the Marine Board did an outstanding study on the role of the federal government on maritime research and development. They produced some very powerful and persuasive arguments as to why government involvement and leadership was essential to achieve successful R&D in the maritime community. Regrettably there is no evidence that report was ever read or acted on by any of the bodies that needed to. It was distributed as widely as we could, but notwithstanding the R&D budget continues to decline. I don't think we need to study the problem all over again.

Lester Hoel on the Research Agenda

I was aware of that study and the Marine Board so I do recognize that there has been much done. I used SHRP and the others as examples of some things that started from nothing. The early 1980s was a time in the highway area when everyone was saying the percent of our gross national product that was used on researching highways was going down lower than the private sector, etc. There were two dimensions that I observed. One was this focused effort to identify research areas that would have very high payoffs and that were saleable to Congress, second was finding out a way to generate the necessary funds. That model has been followed in the safety area because people say we need a SHRP safety program and a SHRP transit program. Perhaps we also need a SHRP marine transportation program.

Also I remembered, when we were doing our year's study on how TRB should be involved in intermodal and marine transportation, someone suggested we had better find out what everybody else was doing. I had to summarize those answers. To my surprise, there was quite a bit going on. The Corps of Engineers has a great deal, and there are a number of maritime transportation research centers at some universities (Florida, MIT, Texas A&M, as I recall) and a number of other organizations, both private and public, at the state or the federal level, reporting back that they were doing things. It is not fair to say that nothing is being done, and, if you add up surrounding issues including trucking, rail, intercoastal waterways, and river harbors, one could make a case that other research has been developed. I didn't mean to imply that nothing has been done or reports haven't been read, but, if we could find a way to focus in on something really exciting and then identify funds for it, something bigger might happen.

James Doig on Commitment and Accountability for Research

The cost burden that comes with regulatory constraints is an issue that was very prominent during the Carter administration. At least in some states there is a policy that when new regulatory laws are passed there has to be attached a fiscal note and analysis of what that is doing to the competitive structure as well as the environment. Even though politics will be more important than studies in terms of what will finally be

sorted out, a lot of people in Congress pay attention to high-quality, careful studies if they are focused on a specific issue.

If I am a member of Congress, the two questions I would ask before I would add a nickel to that $1 million budget are, "What are you going to take out of the rest of the MARAD budget and put into research if research is more important than some of those other things?" In my mind, as a member of Congress from New Jersey or California, I would think MARAD has spent a lot of its money closely tied to subsidizing longshoremen's unions, wages, and inefficient shipping operations. We have to have a way of showing that we think something is important enough to take it out of our own pocket. The second thing is that if the group in this room thinks research is so important, is it willing to put money into research. If I am a member of Congress, I want to see blood from those stones.

Michael Bronzini on Applied Research

In SHRP, there was an attempt to go to the people that had the problems (the Chief administrative officers of the state highway and transportation agencies) and to find out what they thought and what were the problems that they faced on a regular basis. They were willing to see research done and state that they would probably be able to use the results of that research in their agencies. There was a fairly broad attempt to get the input of the people who had the money, had some influence on how it was spent, and had the problems. The second thing that was key was the funding.

The orientation of the research throughout is, "What will be the ultimate end use of any one of these projects?" Every project that has been funded has as its outcome a specification, something that you can see a use for. It was very problem-focused from the start. There was a fairly wide industry coalition behind it and a willingness to divert funds from a dedicated source to accomplish it.

Carl Seiberlich on the Merchant Marine Act

If you review one component of the intermodal system, the U.S.-flag Merchant Marine, you will find that since 1789 legislation in support of our merchant marine, in various forms, has been in effect. The reasons for this support have been twofold: economics and defense. It has long been recognized that this nation must control its commerce in peacetime and ensure that wartime sealift requirements can be met at an acceptable level of military risk.

The law of the land today is the Merchant Marine Act of 1936; our stated maritime policy is contained in Section 101 of the Act. In 1985, President Reagan signed the military airlift policy which works extremely well in providing U.S. airline support to the Military Airlift Command. The National Security Sealift Policy, signed by President Bush in 1989, is not as strong a document. It provides for an "American-owned" merchant marine rather than U.S.-flag, which seems to eliminate the need for American seamen during war or contingencies. In addition, execution of the policy is delegated to the Emergency Policy Planning Coordinating Committee which has met infrequently and failed to provide necessary guidance to the maritime industry.

Strategic planning for the maritime industry has been discussed today. As a former military strategic planner, I would like to observe that we would all be better served by the use of facts rather than assumptions. Assumptions are useful if you want to skew the answer or recommendation in some desired direction. The *Washington Post* will report the results of a military or maritime study but never mention the assumptions which were used to produce the product of the study. In doing strategic planning for the maritime industry or a segment of it, the fact that no workable maritime policy exists makes it difficult to produce useful recommendations. There are those in and out of government who advocate a maritime policy which places all sealift responsibilities in the Department of Defense (DOD) and terminates the 75-year old system which has maintained a government-impelled merchant marine. The cost and effect on overall sealift capabilities are not discussed or supported with facts.

For the first time since 1916, we must deal with the question: "Do we need a U.S.-flag, American-crewed merchant marine for economic or defense purposes?" And, if we do not, "Do we need American-owned, foreign-flag companies?" If the answer again is no, then the question is "Can we safely deal with foreign-owned, foreign-flag companies to meet our emergency- and war-lift requirements, and in peacetime entrust our economic well-being to these same companies many of which are instrumentalities of foreign governments?" You must never lose sight of the fact that the flag state determines the policy governing the ship and its crew. If this government's only interest is operating at the lowest cost, then we should man the 101st Airborne Division totally with Chinese troops; they are good fighters and they are inexpensive! The reason we don't do this is the military risk would be unacceptable. By the same criteria, it is important that a national maritime policy

produce an affordable capability where the military risk is acceptable—based on fact, not assumption. At that point, a determination can be made as to where the government should invest its money in order to obtain the desired result.

If a decision is made to terminate all support for a U.S.-flag merchant marine, then the current American companies should be supported by their efforts to remain viable as they shift to a foreign-flag mode of operations.

George List on Goods Mobility

A major shift in thinking and policy seems to be taking place. The state of New York has determined that problems in the New York metropolitan area are tax-based and have to do with goods mobility as opposed to personal mobility. I am exploring ways in which the ability of goods to move within that area can be improved. One of the problems with a constituency in the context of federal transportation policy has to do with whether or not maritime and intermodal interests have a high level of attention so far as the state departments of transportation are concerned. In New York's case, I think this problem may be in the process of change, and you should take advantage of that. I am looking at the transportation network in the New York metropolitan area to determine whether or not its use can be allocated to make goods movement easier or whether its dedicated use of lanes of expressways for freight purposes or private roads can better connect the ports to railheads, etc. The spectrum of that has yet to be defined, but it is clear that this is the direction in which we are going. Freight is where the leverage is. Freight goes where the tax base goes.

John Vickerman on Technology in U.S. Terminals

The United States is not as competitive as the rest of the world in terminals and in the capability of moving cargo from marine side to land side. In some instances, we have one-third of the capability of the entire world. If we are going to be more competitive in the global market, then we better do something about it. Right now, we are at the very bottom, worse than some developing nations.

Well and good that we talk about getting funds for research and development, but until the marine terminals of this nation start producing at higher throughput levels to compete more effectively in the world market, it doesn't matter how much research and development you have. We are never going to have effective marine transportation systems that allow us to compete effectively. We are not doing an adequate job.

AFTERNOON SUMMARY: Kathleen Stein-Hudson

As I have listened to the shipper perspectives and responses and to our discussion, eight points came through quite clearly.

1. Price and service are of critical importance.
2. Regardless of one's perspective of which is Number 1 and which is Number 2, the notion of consistency of performance on the part of shippers is critical.
3. Also, regardless if one is a low-tech or high-tech user, the need for accurate and timely information is key.
4. The notion of a customer focus as the central, functional element of strategic planning is emphasized very strongly.
5. We are in a global context and global competitiveness is a key issue.
6. Maritime research is underfunded and a research agenda is needed, along with a strategy for that research. Relating research to performance and results is important.
7. On the role of government, we have many different perspectives. We lack consistency among regulations at all levels of government and we need to take a closer look at the costs and benefits of regulation and the parties on whom those costs and benefits are falling. Some of us say there are clear government policies that don't get enacted. Others say there is a lack of clear government policy.
8. Finally, identifying who our constituencies are, constituency building and alliance building, either at the Congressional level around funding or among shippers and between shippers and carriers, are crucial to strategically dealing with the issues of today and tomorrow.

SESSION IV STRATEGIC ALLIANCES

FORECASTING TRANSPORTATION MARKET DEMANDS AND FORGING STRATEGIC ALLIANCES TO MEET THEM

Steven McGowan, Vice President of
Corporate Planning & Development
Sea-Land Services Inc.
Iselin, New Jersey

Sea-Land is an industry leader that is striking some of the most innovative and perhaps unexpected strategic alliances, and doing some dramatic things that are producing some strategic challenges within our industry.

The main topics that will be covered in this presentation are the following:

- Key drivers of trade,
- World trade outlook,
- Supply-demand overview,
- Shipper needs in the 1990s,
- Carriers response, and
- Sea-Land strategic partners.

I want to talk about how we bridge from the demand side to the supply side, and look at some other key issues that help us in trying to decide what types of alliances we form. A good amount of time is spent looking at the obvious, what is happening in each country in terms of GNP growth, import, and export levels; what is happening in consumption, in key containerized commodity industries like apparel, chemicals, textiles, and electronic goods. Beyond that, we examine where the investment flow is heading and why; what is happening to inflation rates and their impact on a country's competitiveness; and different industry sectors' competitiveness that causes shifts in sourcing of goods and therefore changes in our trade flow opportunities. Similarly, we look at what is happening to industrial production levels and why; and focus on shifts and major swings in exchange rates, interest rates, and other drivers.

We look a lot at direct investment, both company-direct investments for a U.S. company in any given area, or third-party investments. We might work with a European company making a joint venture in China. A lot of our customer needs and the key market segments we serve will do the same thing. They will work with direct and third-party investments; we try to track that as closely as we can. A lot of time is spent assessing trade policies, working closely with our people and divisions in the individual countries to see what they are observing on swings in protectionism, both direct and indirect, what is happening with subsidies, and what is happening with legislative changes, both for the country overall and for key sectors like the Caribbean Basin Initiative, like GATT negotiations throughout Europe, Asia, and North America. Reciprocal trade agreements take quite a bit of looking at. What will that do in terms of manufacturing competitiveness, in terms of trade flows and therefore, our services? How quickly do we need to shift services to take advantage of the swings and opportunities?

Some of the market opportunities we are looking at right now (and have been for the last few years) include Eastern Europe and the Soviet Bloc, South America, the Middle East subcontinent (principally, India and Pakistan and to a lesser degree Vietnam, and Burma, recently renamed Myanmar).

The key trading blocks that we are focused on and the great majority of our revenues and loads include North America, Europe, and Asia. In North America, we are particularly careful to assess what is happening with the Mexico-United States free trade agreement negotiations as well as impacts that have already occurred in the Canadian zone. In Europe and Asia, we are looking at a lot of the same things. All carriers and transportation providers are concerned with what is going on with single-market integration and what is happening with some of the Asian trading lines, particularly the Southeast Asian blocks.

The world economic outlook for 1991-1992 is generally expected to have the following characteristics:

- World economic growth decelerates in 1991, regains momentum in 1992.
- After recession, U.S. economy gathers momentum over second half of 1991.
- U.S. recovery underpinned by the following factors:
  - Rebound in consumer confidence,
  - Inventory rebuilding, and
  - Continued export growth.
- Economic growth slows abroad in 1991
  - Germany
  - Japan
- U.S. dollar appreciates slightly.
- Oil prices remain relatively stable.

From an overview standpoint, of course, growth

decreased quite a bit this year. We think it will regain strength next year, not to match the level of the last 5-year average, but a great deal better than 1990 and 1991 figures. In the United States, we are still looking generally at a modest recovery in the middle to late third quarter of 1991. We do agree though it will be anemic. We're talking about maybe a 2% GNP next year, 2% to 3% tops, not the 5% to 6% that has been typical after most major recessions.

Growth abroad will still be quite a bit stronger than in the United States, although slowing a bit from the late 1980s, particularly in Germany and Japan. We are looking for 3% to 4% growth, perhaps 5% in Japan rather than the 5% to 7% that we've seen in the last 3 to 4 years. We do see a slight rebound in the dollar but nothing to really hurt export competitiveness in the United States. Then a relatively stable level of oil prices, based on the fact that any production that Iraq and Kuwait bring back on line will be offset by Saudi Arabia reducing its production. Therefore we don't think the prices will drop much.

In the United States, factors driving trade include

- Weak domestic demand (industrial and consumer);
- Deceleration in capital investment (foreign and domestic;
- Weak but strengthening U.S. dollar;
- Interest rates as affected by neutral Fed policy in short term;
- Budget deficits, federal, state, and local, tempering economic rebound;
- Evolving North American common market;
- Middle East rebuild, with bias toward U.S. companies; and
- Military cutbacks with troop withdrawals from Europe and Asia.

In the United States, we've seen weakness in so many sectors; that is what has caused problems for us in some of the in-bound lanes. We'll see weak demand both in industrial investment, machinery, capital goods, and a lot of basic infrastructure goods, as well as on the consumer side across the board in apparel, textiles, durables, and, in fact, in major sectors like housing, furniture, and related industries. The capital investment levels have dropped fairly significantly for investment both within the domestic markets and abroad. We do see the dollar strengthening but still weak, which has helped on the export side but has exacerbated problems on the import side, as shown in Figure 1. Interest rates will stay in a pretty narrow band. They've come down far enough that we don't see much of a further drop, but we also don't see, any big kick back upward. Budget deficits, or course, are, shall we say, restricting a lot of the growth potential, restricting rebounds for the foreseeable future of any major magnitude. The North American Common Market we feel very positive about, very hopeful that the fast-track legislation will continue on stream and progress forward for Mexico and help opportunities in the United States in the transportation area. In the Middle East, we see some gratitude that leaves a little bias to U.S. companies on the rebuild and we are positioning ourselves over there along with most of our competitors. Finally, on the military side, in the short to middle term, the troop withdrawals look like they will be fairly significant in Europe and Asia, so we see some slowdown in military cargo carriage.

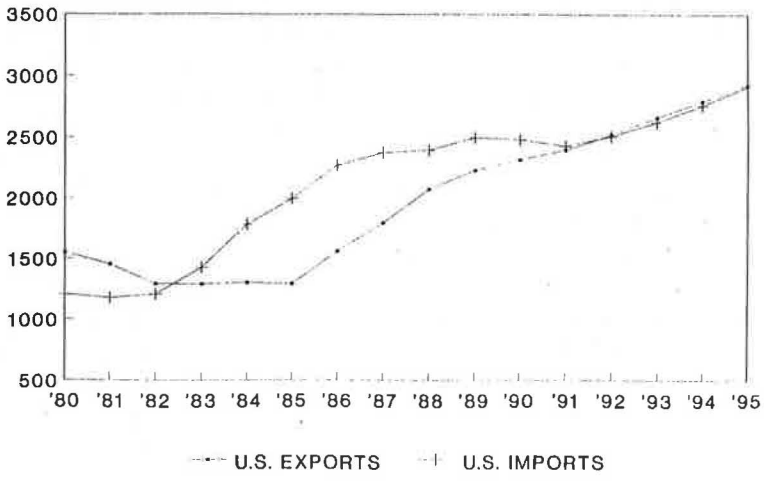


FIGURE 1 Total U.S. commercial container trade with Asia, Europe, and Americas ('000 FEUs).

In Asia, factors driving trade include:

- General slowing of regional economic growth in 1991;
- Japan as strategic driver of Asia;
- Region's reduced export dependence on United States;
- Rising intra-regional trade and investment links;
- Expanding market presence in Europe and Eastern Europe;
- New market opportunities in Vietnam, Burma (Myanmar), and the Subcontinent;
- Trade friction between United States, Japan, and People's Republic of China;
- U.S. military cutbacks; and
- Inflationary pressures (Southeast Asia) undermining international competitiveness.

In Asia, we see very strong growth in an absolute level but it is slowing from a few years ago. Roughly a level of 6% to 8% rather than 10% to 12% percent average for most of the late 1980s. Japan is still the strategic driver and has had quite a rebound. In a few sectors where it had lost a bit of ground a few years ago, it has come back booming as an investor and as a producer, particularly its investments in Southeast Asia. The overall region's dependence on the United States has dropped dramatically in the last 10 years. The trade bloc there is growing in power and significance, given all the intra-regional trade not only between Northeast and Southeast Asia but within Southeast Asia and within and across Northeast Asia, and that includes direct and indirect investment linkages. The presence of Asian customers and firms and competitors in Europe and Eastern Europe has been building very steadily over the last 2 years. They have a good foothold in a lot of key countries supported by direct investment.

Market opportunities are in a few new areas that will not be a major source of new business but a steadily building one, over the next 5 to 10 years. There is some friction with both Japan and with the People's Republic of China (PRC), not only with trade legislation but on legal issues, property rights, profit margins, and other things, that cause us to be very careful about the nature of the investment or business operations that we set up. We have seen some strong inflationary pressures building over the last 2 or 3 years. It is cutting the area's overall competitiveness from 2 or 3 years ago.

In Europe, the principal drivers of trade include

- Recession in United Kingdom, Sweden, and (potentially) France;
- Moderate growth in Italy and Spain;
- Problems with Germany reunification including financial costs and in infrastructure development;
- Currency realignments;
- "Single market" in Europe;
- Problems associated with Eastern Europe and Soviet Union because of declining growth, high inflation, and rising unemployment;
- U.S. military cutbacks; and
- Inflationary pressures in Mediterranean countries undermining international competitiveness.

In Europe, the largest, deepest recessions to date are in Britain and Sweden, and one is beginning to build in France, not to mention some of the smaller countries of western Europe. Growth in Italy and Spain is still good but moderating. The German unification has had some major setbacks and problems, not only because of the direct costs in social legislation given unemployment levels and rationalizing of factories but also due to the enormous capital needs and new technology, new infrastructure, in an environmental pollution clean-up. You name it, they have massive capital needs. This has hurt a lot of the German economic performance.

Currency realignments continue to shift more rapidly than before, so we are paying a lot more attention to the nature of our operations, how our costs are set up so that we can take advantage of currency swings and local currency rather than always being subject to the swings and risks of our United States-based currency.

Problems in Eastern Europe overall and the Soviet Bloc going well beyond just the German issue are growing very quickly. The growth levels have declined, production in a good number of Eastern European countries has dropped 30% in the last 18 months, and inflation is up to high double digits in most of the countries. In some countries it is up to triple digits. Unemployment is up to 15% to 20% levels in most of them; in some of them there is 30% to 35% unemployment. Big problems exist in the short-to-middle term.

Cutbacks in military strength of the United States have hurt some of the military cargo carriage; we see that pretty much stabilizing after another year at a lower level than over the past decade.

Again, there are some strong inflationary pressures in the Mediterranean countries that are reducing their competitiveness, particularly in Spain and Greece.

We'll take a quick snapshot and look at the major global containerized trade lanes that we serve. The import trades for the United States declined for both

Europe and Asia last year in the 1% to 2% magnitude for the Pacific eastbound and the Atlantic westbound. The export lanes of the United States were mixed last year seeing strong growth in the Atlantic eastbound, about 10% to 11% and a bit of a softening from the year before, for Pacific westbound, but still positive. The strongest have been the foreign-to-foreign trade lanes, Asia to Europe and back, as well as the interport areas. Trade within Asia and within Europe: high single-digit or low double-digit last year and continuing, as we see it, for the next few years.

This year, the import trades declined again by more significant margins. Eastbound, we are forecasting about a 2% to 3% drop and it has actually been more severe than that this year. Year to date through about 4 months, which is the most current hard data we have, about a 6% drop in Pacific eastbound. The Atlantic westbound has dropped even more precipitously—about a 3% drop for the year, but that is predicated on a fairly significant turnaround for the remainder of the year; right now it is down by quite a bit more than that.

Figure 2 shows this is not revenue. It is strictly container loads. This is all in 40-foot equivalent containers, which is the major benchmark standard we use for base volume. The export lanes are strong again. We are seeing stronger growth than last year in Pacific westbound up to about 5%. Right now for 4 months it has been 10%. So the import lanes have been tougher than expected and the export lanes stronger than expected. Then you can see in the Atlantic eastbound we are forecasting about 4% to 5% growth; right now it has been about 13%, booming Atlantic eastbound trade. Again, all that for the reasons we talked about earlier. In the United States, the industrial competitiveness of a lot of basic industries and some advanced consumer goods and electronic industries have improved dramatically. The exchange rate is also in our favor, with the dollar depreciation and the growth abroad in GNP and per capita income and production very strong, giving us a good source of export markets. We see that continuing for several years. Foreign-to-foreign are the star performers in the 10% to 12% growth range.

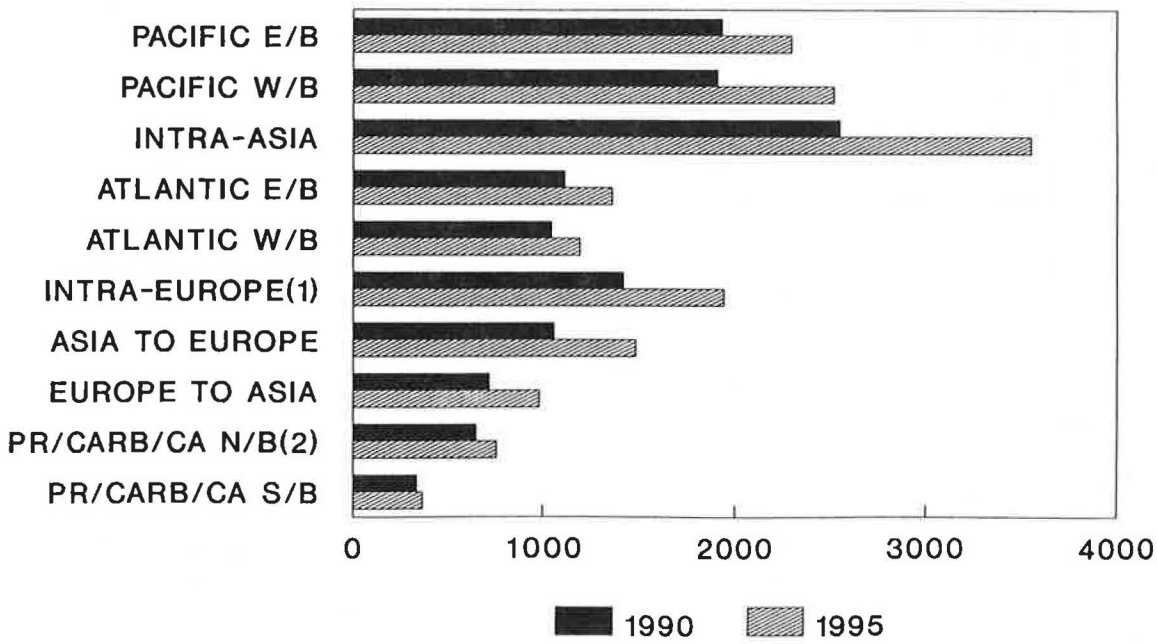


FIGURE 2 All-in container market (000 FEUs).

Looking next year, we see more of the same with the exception of the imports. We do think that will have a recovery by next year assuming the rebound by late third quarter in the United States with at least a recovery from the recession of a gradual nature that would lead to some positive gains on the import side from both the Pacific and Europe. We see the export lanes continuing, even building, as we gain competitiveness in chemicals, machinery, electronic goods, and other capital goods. We think intra-Europe will actually grow stronger than it has for the last 5 or 6 years getting very close in growth levels to Asia up to the 7% to 8% range. Then pretty much as it has been for the past 5 years but pretty amazingly strong given the size of the base. Now we see Asia to Europe and back continuing yet again in the 7% to 8% range. That market is the second biggest in the world now.

Just a quick summary of some of those major lanes. A look at the level and the crossing over, the transition and size between the exports and imports in the United States. The overall growth has been in real terms very healthy over the last decade. We've gone from about 1.3 and 1.6 million FEU, respectively, in 1980 to about 2.5 million 40-foot equivalents. So there has been major growth in real terms. We can see that moderating a bit, but still healthy basic growth and much better balance on the imports and exports, both continuing from about 1991 on, pretty much in tandem, up to 3 million FEU.

We have far better information on commercial growth around the world and that is what we primarily focus on. To get a feel for overall demand that we have to take into account when looking at supply and balance, we've included on top of the commercial, the military market, the quasi-bulk market, and other, what we call, below-the-line markets, non-commercial. Comparisons between last year and a 5-year future outlook: the biggest ones will remain in importance for some time in the Pacific theater, both Pacific East and West, and the strongest of all, the intra-Asia area, a very large market, a very fast-growing and very profitable market. The Atlantic is now not only much smaller than the Pacific (which it has been for several years) but is becoming smaller intra-Europe and the major Asia to-and-from Europe lanes, as we look forward. Our America lanes are still growing but at a much slower level, with Puerto Rico, the Caribbean, and Central America on the bottom.

Even when the military is added, the Pacific theater and the foreign-to-foreign trade within their regions or between them are becoming larger and healthier markets than the United States-based ones. The military is only a big factor in a few lanes, particularly in the Atlantic and, to a lesser degree, in one of the Pacific lanes.

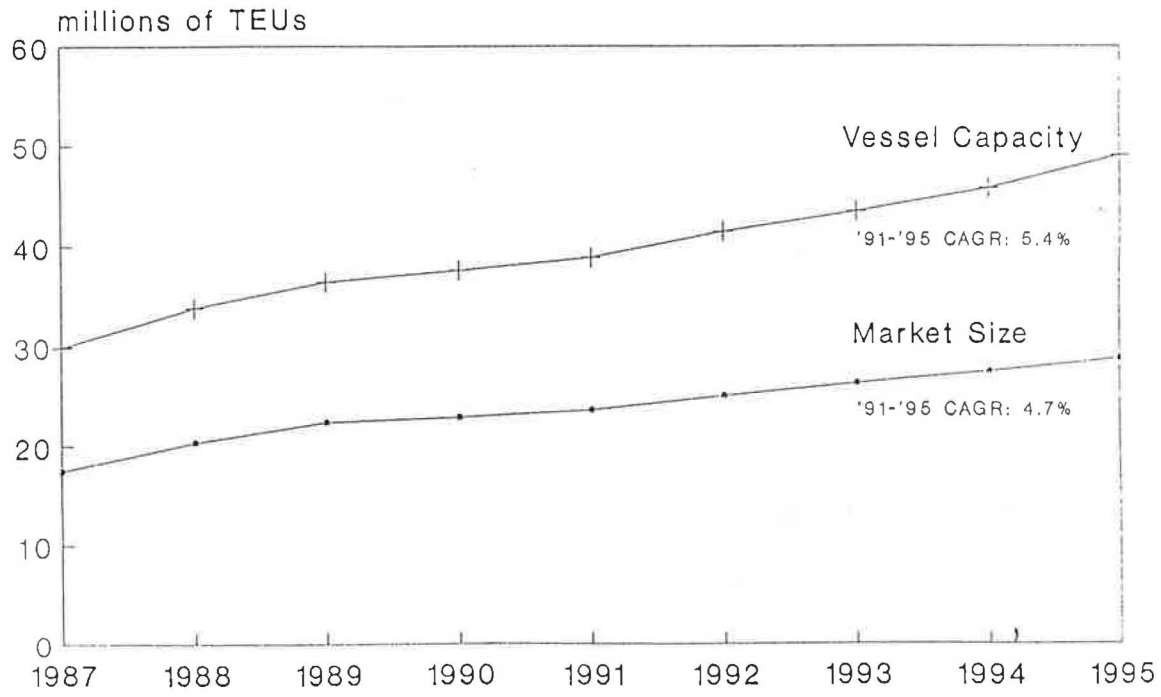
From a total global standpoint including all the lanes you've seen plus some others like South Pacific-Africa, etc., compounded average annual growth in market demand is a little under 5%, and on the supply side a little over 5% percent. So this is nothing to feel good about, but supply is still growing faster than demand the balance of markets across the world (Figure 3, page 51). On the other hand, things shouldn't get a great deal worse. The imbalances by region are significant; we need to continue to push alliances and other means to take advantage of market opportunities. We certainly do not want to contribute to any supply problem.

Shipper needs in the 1990s can be summarized as follows:

- Flexible and reliable partnerships with carriers;
- Broader service offerings from single sources;
- Global coverage, including warehousing, distribution, etc.;
- Advanced information capabilities; and
- Integrated transportation packages, i.e., logistics management.

The shippers first want us to be a lot more flexible—by how we handle the need, a rapid response to ship to a new market, a lot more reliable—that if we come forward with a proposal to enter another market we will do it steadily and reliably even if we are not in total control of the access involved; we have to find a way to manage so that we do deliver. They want broader service offerings from a single source rather than to deal with a host of vendors. They tell us, "We want to rationalize down to a much shorter list and if you want to be on that list and remain on it we need to develop additional offerings, value-added services, geographic services, specialized sales approaches, new market channels, etc."

A growing number are telling us that they want global coverage. They want us in some of the markets we are not in today, either directly or indirectly, with other carrier partnerships and with other modals. They would also like, particularly in some of the industries most important to us, value-added services that we don't have in all markets now, like warehousing, additional consolidation services, tag services, distribution capabilities, and so on. Information capabilities are something that we have invested very heavily in over the last 5 years and will continue to invest in the coming years. It has been a particularly fast-growing area of investment for us because we see that as a main source of advantage. That information has to be customized very strongly just the way the customer wants it and on a real time basis.



Source: DRI McGraw-Hill

FIGURE 3 Global container supply/demand.

To a lesser degree—but also important—is logistics management. There we have gone down a big learning curve with one of our sister units, CSX Sea-Land Logistics, and with partnerships we've had in Europe and Asia with logistics firms. Customers are telling us they do have an interest and they do want, in some cases, contract logistics. In other cases, they are not ready to turn over their operations but they want more coordination and more patching from us. They want it their way, not the way it is shown in press releases or studies or a cookie cutter package. We and others have probably been too quick to offer what we may think is customized, but evidently is not really customized enough, when you get down to brass tacks. We are working hard on that and we have had some good successes recently.

The changing needs of shippers have forced carriers to rethink strategies, with emphasis on the following factors:

- Stronger customer orientation;
- High-quality service;
- Emphasis on value-added services and differentiated products;
- Sophisticated information systems;
- "Marketing" focus versus operations and sales focus;
- Greater focus on integrated logistics services;
- Door-to-door services;
- Global coverage;
- Inland intermodal capability in North America and Europe; and
- Formation of strategic partnerships and alliances.

What has all this led us to focus on in terms of strategies? We do have a much stronger emphasis on product development, market development, and strategic planning across the board focused on the customer's perspective. If you look at a lot of plans we have put together in the last couple of years, if you look at how we have entered new markets and the types of new products and services we have developed, whether they are information products or valuated services or new geographic services, they have been developed far more closely in connection with customers than in the past. Quality, service-across-the-board people are still as interested as ever in reliability. The ship's on time at their point-to-point operation, the information on bills of lading and other documents are accurate and timely, and people are responsive and knowledgeable at customer service centers. That has certainly not diminished in importance and we have spent a lot of time and money beefing up those operations, the basics.

The emphasis on differentiated products and services has continued, particularly in the area of information products and value-added services like consolidation and

warehousing. Information systems have gotten more sophisticated from the customer's perspective. To speak their language, whatever their business may be, is critical—not our language in shipping. Our focus in the company in terms of functional emphasis has clearly emphasized marketing. We have beefed up marketing in the last 2 to 3 years, not only at the corporate level but in the divisions and in the individual countries.

The emphasis on integration of all our services—basic services, value-added services, and logistics management functions—has been heavy. One of the ways we have done this is to get people in the local markets working in a task force or team approach rather than working under functional hierarchies. They are working together for customer segments, each of them bringing something different to the party. One is the expert on warehousing, one on the ocean side, one on the intermodal side, and so on. Door-to-door service is growing as a portion of our revenues and volume and we see that continuing. A lot of our emphasis has been entering markets we either hadn't served strongly enough or at all, so that we can increase the global scope. Intermodal capability has been increasingly important, not only in North America but also in Europe and Asia. We have had to do a great deal with partnerships and alliances, not only with carriers but also with customers.

Because of all that, the only way we feel we can meet needs and still have an advantage is by being efficient and effective. We think the approach that will be increasingly important is alliances and partnerships.

The effects of strategic alliances will enable carriers to

- Enhance service scope,
- Expand value-added services,
- Reduce cost structure and capital requirements,
- Enhance competitive advantage,
- Expand global coverage,
- Rationalize capacity,
- Increase utilization, and
- Increase market share.

Benefits we see are many. Enhancing the scope of services geographically, entering into a market with somebody already here so that we don't add excess capacity and we can rationalize and work together and both be more efficient in serving that market. Sea-Land has expanded our menu of value-added services by aligning with businesses who may have capabilities we don't, and we, in turn, offer capabilities to these new partners that they would like to offer their customers. The result will be efficiency and investment-reducing operating costs on several fronts—vessel operations, equipment, terminal operations, people, fuel, and of course, capital—given the extreme capital requirements in this business. This is a very effective, cost-effective way to enter a market on the capital side. Enhancing our competitive advantage by offering more frequent sailings, better day of the week departures for customers, having better access to certain terminals—a lot of direct operating advantages can come about through proper alliances: expanding global coverage even in markets where we already are; expanding the frequency of coverage and having a much stronger base around the world; in some cases rationalizing capacity, being able to enter a partnership and not only being able to improve service but actually to take vessels out of the trade and redeploy them elsewhere where there is a better market opportunity; and raising the utilization level for efficiency and getting gains and share by offering better service in key customer segments.

The longest alliance that we have has been running for about 3 years. In the vessel-sharing agreements in the Atlantic that have primary partners P&O, Nedlloyd, and Compagnie General Maritime (CGM), we are not only sharing vessels but are beginning to share terminals, containers, and chasses. It affects trade between North America and Europe, and the main thrust behind it continues to be asset rationalizing, better utilization assets, equipment and terminals, and overall operating cost reduction in an extremely competitive and overtonnage trade. We had the lowest-cost capacity on the trade and had something to bring to the party for our competitive carriers that they have agreed with Maersk, we have several ventures already under way. The slot charter for that U.S. West Coast-to-Europe service, the all-water service, has as a benefit that it is a new service for us—we didn't have an all-water service from the West Coast to Europe. For Maersk, it is an opportunity to gain some revenue for slots they are not using at any given time. The U.S. East Coast/Gulf to Europe and back service has enhanced our capabilities in terms of frequency of coverage from those areas to New York and better day of the week departures, so it has enhanced competitiveness on our basic services. For Maersk, they are taking advantage of our vessel-sharing operations from those locations. The newest one which has had heavy press coverage is the Pacific agreement with Maersk in which we have a full vessel-sharing agreement. We will be sharing more than 50 vessels altogether when you count all the intra-Asia feeder vessels. About 15 of those are intra-Asia. That is (conversely from most of the other ventures) far more driven by service enhancement than costs. There will be

PARTNER	TYPE OF AGREEMENT	TRADE LANE	RATIONALE/BENEFITS
P&O NEDLLOYD CGM	VESSEL SHARING AGREEMENT (USA); SHARING OF TERMINALS AND ROLLING STOCK.	NORTH AMERICA–EUROPE	ASSET RATIONALIZATION; COST REDUCTIONS; BETTER UTILIZATION OF CAPACITY/EQUIPMENT
MAERSK	SLOT CHARTER	U.S. WEST COAST–EUROPE	NEW SERVICE FOR SEA–LAND
MAERSK	SLOT/SWAP AGREEMENT	U.S. EAST COAST/GULF–EUROPE	ENHANCE SERVICE CAPABILITIES
MAERSK	VESSEL SHARING AGREEMENT	NORTH AMERICA–ASIA INTRA–ASIA	ENHANCE SERVICE CAPABILITIES; REDUCE CAPACITY; ENHANCE INTRA–ASIA SERVICES
PARTNER	TYPE OF AGREEMENT	TRADE LANE	RATIONALE/BENEFITS
CTE	SLOT CHARTERING	NORTH AMERICA–EUROPE	PREVENT ADDITIONAL CAPACITY FROM ENTERING TRADE; GROW REVENUES
NORASIA	VESSEL SHARING AGREEMENT	EUROPE–MIDDLE EAST–ASIA	ENHANCE AND AUGMENT SERVICE CAPACITY; LOW–COST ENTRY TO EXPANDING TRADES
SOVIETS	PARTNERSHIP; CONNECTING–CARRIER AGREEMENT	TRANS SIBERIAN LAND BRIDGE (ASIA–EUROPE); BLACK SEA–MEDITERRANEAN	NEW BUSINESS/SERVICE OPPORTUNITIES
FRANS MAAS	PARTNERSHIP	INTRA–EUROPE	NEW BUSINESS/SERVICE OPPORTUNITIES

FIGURE 4 Sea-Land strategic partners.

some slight cost savings but not major. The real issue was in improving the number of sailings. We'll now have 5 weekly sailings to and from the Pacific, we'll reduce some capacity, and we will go from 9 to 8 feeder services in intra-Asia.

There are also sharing space arrangements with CGM on our econo-ships in the Atlantic, where they are slot chartering. That was done to gain some revenue from some underutilized space that we still had and also to prevent our slot chartering partner (CGM) from adding unnecessary capacity to the trade. They were planning to enter one way or another. If you are going to enter, let's find a more acceptable way so that we can work together and take advantage of existing assets and capacity and still give you the opportunity to serve customers in a market you need. The deal with Norasia in the Asia-Middle East-Europe trade has been underway for 2-1/2 years now and it has had some major enhancements recently. We've enhanced the service frequency, maintained a low-cost entry, and expanded the nature of the venture with capital contributions growing on both our side and Norasia. That had initially been an issue for us to increase coverage of the Middle East and gradually has become

more important to us for trade between the two legs of Europe and Asia as well as the Middle East and subcontinent—expanded coverage in big markets as well as smaller ones. Regarding the Soviets, there is a lot going on, actually six or seven things going on. We still feel very positive about the Trans-Siberian Land Bridge. The Land Bridge time has decreased from 40 days, 3 years ago, to about 15 days, now. It still has a long way to go in improving itself in reliability and accuracy but it is making steady gains. Obviously, there are risks involved, given the problems within the Soviet Bloc and the instability within the political sphere. Given the importance to them of building their own infrastructure, we don't think that the Soviets will allow this venture to deteriorate.

Another that is just beginning is with Baltic shipping, trade between Bremerhaven and Leningrad. In addition, things coming down the road that you may have seen in the press include some sea-air ventures that are in the embryonic stages now, such as sea-air trade between Asia and Europe with Aeroflot. We think that will take another year to get underway. We are confident we can have about a 5-day transit time from Asia to Europe with that sea-air combination at a very attractive cost. In addition, we have opened up about a half-dozen sales offices in the Soviet Union and the Eastern Bloc and we have put in place some new information tracking systems jointly owned by us and the Soviet ministries of transportation, using, for one, sea track to link the Soviet carriers that are partners with Sea-Land's customer base worldwide. Our joint venture with Frans Maas, the big Dutch freight forwarder and logistics management firm, has led to a lot of new operations within Europe, including contract trucking, warehousing, and consolidation. That also is still in early stages. The joint venture has been underway about 1-1/2 years and it is building steadily.

Other types of strategic alliances include those involving

- Inland operations, e.g., trucking;
- Information systems;
- Equipment; and
- Terminals.

A few other examples that are a bit further afield from the direct ocean-land transportation per se include ventures and link ups with several trucking lines; and an expanded network in Asia through Hong Kong Orient Trucking. We also have some initial ventures in western Europe and one new one that will begin in Southern Europe. On the information systems front, we have been focusing on not reinventing the wheel where possible by working with other carriers to develop a common work station for booking and other processes so that customers don't have to use 16 different systems, procedures, or hook ups in order to do what they want to do. We are also working with some companies who are leaders in information systems technology outside of the shipping field, in fact, outside of the transportation field.

On the equipment front, I can mention one thing that was in the press about 9 months ago. We have a joint venture on K Manufacturing, one on chassis manufacturing in Asia, and one that probably will take place soon with a European firm. On the terminal front, third-party terminal services has been the way to leverage our existing capacity around the world. We do have a very good position for competitive carriers who find a cost-effective way to leverage our system.

What Frans Maas, our Dutch partner, has been doing with Xerox is a good example of the kinds of initiatives we think will gain importance because they offer real bottom line benefits. They have been successful in attracting new customers we haven't served at all in the past. They are not only taking care of the inbound transportation, the consolidation, the warehousing, and even the outbound distribution for Rank Xerox, but also they are assembling copiers at locations for them, actually bolting housings, attaching trays, and other operations, which have cut out a great deal of direct labor and manufacturing overhead for Xerox. This is a very important service.

In another case, our buyers, consolidators, and subsidiaries in Asia are working with about a half-dozen very large merchandise accounts, particularly apparel and footwear people. They are going further than the consolidation activity of the past. In the past, a couple of big footwear employers, retail chains, may have gotten most of the footwear produced in one country, say South Korea. One 40-foot container holds about 10,000 pairs of shoes or sneakers. Now, footwear production has shifted to many locations around the world (e.g., Korea, China, Singapore, and Malaysia) and there is also heavy footwear production in parts of Latin America and even parts of Eastern Europe. It is not as cost effective anymore for the importers to pull in multiple containers but inventory will draw down very slowly with all the different styles. So what buyers are doing is consolidating all this footwear from about 19 countries, allowing the importer to save on warehousing by drawing down all the styles it needs from this one container. It has also allowed us to use larger and larger containers to spread the costs very effectively over more units and, if coordinated correctly, we can even ship the container with all these styles directly from the port to

the retail store right to the display rack. This procedure saves them all the double handling. One other thing they are doing is labeling footwear carts for them.

A lot of value-added services have been popping up very successfully in the last 2 or 3 years. Our CTI (Customized Transportation Inc.) subsidiary, part of CSX, trucking and related services, is working with the North American automobile sector right now, taking their assembly line parts—key ones like shock absorber struts and door handles and parts—and assembling them and taking them directly to the assembly plants just in time to avoid any production down time. That has just begun with two automobile carriers and will probably expand to three or four including one of the transplant Asian operators within another year.

Summary

The trade of containerized commodities around the world is clearly becoming more complex, shifting more quickly and becoming far less focused on the United States. As recently as about 5 years ago, just under 60% was U.S.-based counting imports and exports. Right now we are estimating about 45%. A good 13-to-14-point drop in just 5 years is quite significant. The outlook for supply and demand balance is not going to change dramatically—not going to get a lot better or worse—but given the current imbalances, what that tells us is that there is going to be enough supply out there to keep things intensely competitive in all major trade lanes, particularly over the long haul. Therefore, we have to be more aggressive than ever to find ways to be creative, sharing assets, and sharing capacities already out there. At the same time, the needs of our customers are growing in both size and complexity, so we need to be more flexible not only in where we serve and how we do it with partners from an operating standpoint, but also in terms of what we offer. That has forced us to continually look for new ways to create alliances with competitors, intermediaries, and customers. We think the next decade will see a lot more of the same and it will take a lot more management time and talent to manage it all. In the last 2 years, we have had to devote a lot more time for key people to manage all these vessel-sharing agreements and equipment partnerships to make them work right.

Questions & Answers to Mr. McGowan

* Any potential growth that might exist in South America?

South America will be more important down the road. For the next 2 years, it will probably be volatile enough that it probably wouldn't be a big opportunity for us or others. It is going to take time to settle down because key countries are going through so much change with deregulation of their own in privatization not only in the transportation sector but in a lot of related industries. It will take time to shake out the rules and regulations on how one operates, legal restrictions on ownership and operation, the nature of partnerships, nature of accounting and profit repatriation, etc. It is worth considering down the road because it is a major sphere of the world that we certainly do think that over the long run will be a bigger player in the economy.

* What is the expected impact of the execution of the free-trade agreement with Mexico for Sea-Land?

Depends on the nature of it. We are watching it because of what it may do not only for trade between Mexico and the United States but for trade between Mexico, Europe, Asia, and the rest of Latin America. We think that, depending on the nature of the agreement it can spur a lot of growth in industry that will impact ocean transportation as well as intermodal transportation with the United States.

* Does that mean you are looking at direct calls at Mexican ports?

We are not looking at that yet because things are pretty muddy on the nature of the agreement. There is a lot of press hype we don't think has really panned out yet and it will be slower going than reports to date. It is an open question at this point, similar to South America, not a high priority but on the list of future opportunities.

* Customers are requiring broader services from a single source. Have you seen any particular concern as to whether that single source actually provides the underlying service or are they satisfied as long as the process is managed in the eyes of the customer? Does it make any difference?

It makes less difference in how we do it than in what gets delivered. Whether we work with 5 or 15 people, while still presenting one face to the customer and making it easier to do to business day to day in every way, the customer doesn't care how many people are involved behind the scenes.

* The concept of a mega-modal carrier that is pretty heavily integrated was talked about. Do you see that the relationship with your sister company, CSX Intermodal, provides Sea-Land with any particular benefit as compared with doing business with other intermodal providers?

Some benefit because they are close to us. By dealing with them as part of the same company, we know their operation better and they get to know us better, but it isn't a major difference. I am not as close to CSX Intermodal as others in the company but from what I've seen we pretty much work at arm's length. The meetings between Sea-Land and CSX Intermodal are probably not much different than the meetings they have with other customers.

Our relationship with logistics sister units is much closer. They are working directly on developing new valuated services, understanding logistics flows, and coming up with good opportunities for us, whereas Intermodal serves more as a modal carrier for us. Certainly, they work as hard to understand our needs as they would with any customer, but I haven't been involved enough with them personally to understand the nature of the advantage beyond knowing one another's cost structures, markets, and players, so you work together well. That is an advantage, of course.

* You listed a fairly broad range of agreements and alliances with other parties. What are some of the biggest obstacles you have had?

Most of the obstacles have not been legislative, regulatory, or in any way government related. When the first big initiative came up, many people thought that the vessel-sharing agreement (VSA) would collapse because it would be too difficult to get the different carriers to work with one another. There had to be agreement on who sails where, and when, who manages the tonnage center, who manages the operating decision making, who changes the sailing frequencies, etc. They thought that the carriers were just too accustomed to controlling their destinies totally and were too independent. We did have growing pains, but within 6 months it was working smoothly, much more so than people expected, and that has continued. For some of the other alliances, the newer ones, time will tell. But they have started off well. The real hurdle has been, particularly with ocean carriers, learning one another's needs and figuring out a creative way to take care of them. It takes a lot of time up front. We underestimated initially the amount of time required and a lot of management time on an ongoing basis. There was much less difficulty in basic operations and more needs of people to manage. With other partnerships involving the joint venture, say with Frans Maas, we didn't have a history to overcome in terms of being competitors but we had to learn a totally new company with a different background, culture, philosophy, objectives, and style and that has taken longer.

* Can you talk about the significance of the Trans-Siberian Railroad improvements to the American east coast trade?

I see a big impact over the next few years. I think it will take long enough to make a sizable impact on trade between Asia and Europe as a basic land bridge. It has a lot to do to prove itself but we are encouraged by early signs because the cooperation has been good but there will be setbacks and risks of further changes and governments. There are enough underlying fundamental demands driving them that we think it will improve, but for a long time to come its main thrust will be as a competitive service to all water routes between Asia and Europe.

* What happens 10 or 20 years from now when you have one carrier, one route, and we are all cooperating when, in fact, you have a monopoly?

I have only been in the industry 3 years, but the way I have seen things happen it would take a 100 or 200 years before there is a ghost of a chance of that happening. The amount of capacity that keeps getting added is in some cases staggering. Right now the amount of overcapacity in the Atlantic is about 35 percent. We are full up on our ships because we are up to six partners now, but the trade as a whole is almost 40 percent overtonnaged. In the Pacific, it is close to 30 percent. In most of the other trades, at least 10 to 20 percent. If you look at the number of carriers coming on stream with either announced plans or firm ship orders going out until at least the end of the decade, I don't see that going away. There are too many independent carriers, new national carriers, that have their own objectives, their own interests in becoming a major transportation firm, in becoming global operators, in supporting their country's other industries with secure,

cost-effective transportation service. They are subsidized in many cases, or they are owned outright by many governments. I just don't see that going away. It would be an incredible feat to have enough alliances to possibly make a dent in that.

We are working harder and harder to come up with new sources of business.

The terminal and equipment side is the challenge over the next few years. This is a bigger challenge to manage and coordinate with other carriers than the vessel side.

* How do Sea-Land and its sister affiliates approach a JC Penney as a corporation—do you all go in separately or is there a matrix organization?

There has been too much of a fragmented approach, with a number of different hats going in—maybe eight or nine depending on the size of the customers and the extent of their markets around the world and the services they need from transportation providers. We are working hard to fix that. The large customers in multiple countries often have 10 or 15 groups to deal with. As we are trying to go in with fewer hats, ideally with one hat, we are working with customers to try and do the same. We have had some success by trying to work as a team.

We wouldn't rule out alliances with national carriers. We will work with key players in whatever market if it gives us benefit and takes care of the customers. If it doesn't, we have to see if it is worthwhile to go it alone.

* When you have an international partner like Frans Maas, which approach to data harmonization and exchange does Sea-Land advocate?

It has a long way to go. The systems are not fully integrated. We are still working on that. It will take years to work out and a lot of cost. Capital requirements for informational systems have been absolutely enormous. They have begun to dwarf some of the hard asset needs. To really link all these new services, the informational systems needed amount to massive costs. We are trying to come to grips with this.

[At this point in the workshop the participants broke into two discussion groups to examine world market data and opportunities for innovative alliances. What follows is a report from those discussion groups.]

WORLD MARKETS — FORECASTING OF SYSTEM CAPACITY, DEMAND AND SUPPLY — SOURCES AND GAPS IN INFORMATION

Arlene Dietz
Navigation Data Center
U.S. Army Corps of Engineers

Our subgroup was focusing on the problems and gaps in the data for forecasting world market capacity demand and supply. The first thing we did is make note of the TRB workshops that were held last year on data resources for national transportation decision making. Part of this dealt with the marine side. *Transportation Research Record 1253*, a paper on marine transportation, provides very good coverage of the data sources. It is a handy reference.

Of the data sources, we discussed the private and the public ones. The most recognized firms are on the private side, DRI/TBS of the World Seatrade Services, the Wharton Econometrics group are leaders. For information on the government side is the Department of Commerce and the Corps of Engineers for some water transportation data.

Two to one felt that the number one problem is that data is plentiful but there is little information. The information is only important when it meets a decision maker's needs. The information has to be focused for a particular decision maker. These data have to be consistently updated. Maintaining consistency as far as data currency. Databases should be compatible between rail, foreign trade, and waterborne cargo with common standards and codes as well as other locators.

The value of geographic information systems (GISs) lies in giving utility to data and translating it into useful information. This is critical for data integrators and is seen by our group as the wave of the future. This is a key intermodal area. We have a GIS group within TRB but they haven't focused on the marine/intermodal industry.

Another major area of priority is agreeing on national and international formats and data. The container weight issue, the information on standards for measurement, and the format for transmitting this information (software).

Data reporting is another area, internationally as well as nationally. It is inadequate and inconsistent across modes domestically. We don't have consistent origin-destination information. What we do have when we try to get it internationally—we find it goes to a broker's address? In exports, it looks like all the grain is going out of Louisiana. We know it is not all grown in

Louisiana.

PIERS data has to really be manipulated before it can be used because it is raw and rough.

A big gap in the data is the true origin-destination (O-D) flow. We collect it from waterside to waterside but we don't go internally. We don't have anything on trucks and there is very little information on O-D flow. When commodities become containerized they lose their identity.

Many other items had to do with information rather than problems. One point was that shippers really dictate our communications protocols. Another issue is that we have to know who the customers are before we can make a decision on what we are doing with information. They are very diverse. The last addendum had to do with port capacity. A lot of discussion focused on the need to get information on port capacity and performance but our port contingent says that the ports aren't going to share a lot of this.

FORGING STRATEGIC LOGISTICAL ALLIANCES: FINDING WAYS TO EFFICIENTLY TRANSPORT GOODS

Douglas Smith
CN Railroad

Our study group looked at the issues we are facing from several ways—what the objectives are, what the drivers are, who the players are, and what sort of alliances there are. There are eight things that have to be done to improve the efficiency of the system and given more time, the group felt that they could have identified twice as many issues.

Some alliances would have to be formed to facilitate these improvements. Sometimes government is a facilitator and in some cases an active participant.

1. **The Ability to Share Infrastructure**. Fixed facilities, highways, rail lines, port facilities. The port infrastructure alliances could be ports and labor, ports and government. Highways between carriers, customers, and government. On the rail side between rail carriers and ports, carriers, and government. All the way through, there is a wide range of alliances that could be drawn up depending on what the specific objective was.

2. **Improvements in Information Sharing**. The alliance of shippers and carriers has shown that they are the ones whose communications needs determine how the information is going to flow. Very few movements now don't include a number of modal carriers. And improved/integrated data networks could enhance transport efficiency.

3. **Improved Asset Utilization is Needed**. The carrier-carrier alliance to share assets is a necessary alliance. Timing and location of investments. There must be long-term alliances between specialized customers and carriers. That could be a combination of marine, rail, and so forth. There are alliances between customers and ports. Government-to-port and government-to-carrier alliances in terms of return on investment for mutual goals could pay off.

4. **Risk Reduction is One of the Keys**. Shipper-carrier alliances eliminate some of the commercial risk—less risk in investing to satisfy that particular customer's needs. Carrier-carrier alliances provide financial benefits in terms of investing in shared assets or exchange of assets. In port-carrier alliances, the ports want to have long-term relationships with carriers to invest in facilities.

5. **Optimization of Regulation**. Regulate where there is going to be a benefit and remove the regulations in places where it is negative. The big area here is government-government. A lot of coordination needs to be done among different government agencies. There are a lot of different levels of government and branches at each level that have different interests with much room for coordination and alliances. A lot of regulation is there to protect customers. If the customers and carriers form an alliance, is user confidentiality/government regulation still valid?

6. **Technology Development and Transfer**. Government is useful as a facilitator of industry-industry, port-carrier, labor-carrier, and carrier-carrier alliances. Governments can mitigate the risk. Alliances can negate or spread some of the risk of looking at new technology.

7. **Improved Planning**. Coordinating customer requirements with your capabilities. Planning further ahead than we do—more than an hour. Don't treat all the links in the chain as a set of black holes. Two areas of planning: investment and long-term/short-term operations.

8. **Alliance Exploration and Promotion**. Start to discuss the structure of alliances and how they may affect and work into the process of improving the system.

In general, there is a need to focus on what the strategic objectives of the system are and what factors are driving the system. Enhancing trade in a general sense, and improving the financial health of the industry are among the issues of national interest that are mutual objectives of the system. A number of drivers, including

geopolitical factors and increased global economic interdependence, suggest that there are new players on modified playing fields. Therefore, the need for alliances requires complete reexamination.

Our task force also saw a role for future TRB activities. TRB, a part of the National Academy of Sciences, is basically devoted to facilitating research on transportation issues. It started as the Highway Research Board and coordinated a lot of work that was being done at the state level and municipal level. It facilitated technology transfer. Over time, there have been other modes added to the portfolio. The name was changed from Highway Research Board to Transportation Research Board. Added were a number of committees related to rail, to trucking, and air. About 4 or 5 years ago, there was a committee related to international trade; 2 years ago we put together a task force to look at how maritime interests should be included in the TRB portfolio. Now there appears to be a critical role evolving for MARAD and the maritime industry whereby they can assume more focused activity in the TRB organization.

What we are doing in the freight transport section (where I chair the section) is trying to facilitate research. TRB has participation from the private sector, from the public sector at different levels, and a large participation from the academics. The objective is to try and get some of the same benefits that the construction and maintenance of highways and mass transit have gotten by sharing some of the research and by coordinating research that benefits a number of cities and states. This presents a challenge in the freight section, as we are primarily a private transportation sector. There are shared interests but there is also a lot of competition between providers. There are a number of areas in which TRB is making a major contribution, bringing together these diverse players at a neutral setting, and conferences, trying to facilitate a governmental perspective on issues. TRB doesn't try to set policy, it plays a role in coordinating the development and in bringing people together in order to develop better policy. The highway-container weight issues are key issues a group like TRB brings together. Trying to reconcile some of the different government issues like those we are talking about today is useful from the TRB perspective. On the committees, TRB integrates public sector, private sector, and academic sector perspectives. There are a substantial number of European and Asian participants as well.

It is the role of the freight committees to examine marine issues among the many other issues that are facing domestic and international freight transportation and putting them into focus to facilitate public policy decisions. The Intermodal Terminal Design Committee was very useful from 1982 to 1988 when the big growth in North America was going on. Hundreds of millions of dollars were being invested in terminals. In the beginning, people did not have a handle on the best kind of terminal, how to operate it, what kind of crane should be used. Our committee was key for the industry participants on an informal basis.

Our task group believes that we have just a few areas that could be further explored through the workshop forum.

SESSION V ROUND TABLE SUMMARY

MARINE STRATEGIC PLANNING—PERSPECTIVES ON THE INDUSTRY

Paul Richardson, Consultant
Paul F. Richardson, Inc.
Holmdel, New Jersey

How well are we doing in strategic planning in the marine and intermodal sector and what are the key issues that require further attention?

This type of dialogue with this caliber of people making the contributions they have is extremely valuable. The bad news is that how somebody will capture this in a succinct fashion to pass it along to people who should read it is quite a challenge.

How effectively are the marine and intermodal sectors doing in strategic planning? We talked a lot about the dynamic economics that are driving the intermodal or multimodal systems in the United States. The bulk shippers highlight the fact that cost is king and service follows, in contrast to operators who have introduced technological advancement in ships, handling systems, and types of cargo. A strong point was made that improvements in the software are needed to allow those who have invested to receive a decent return on their investment. As far as strategic planning goes, obviously there is a lot that takes place. It is impressive to see what Sea-Land is doing in spreading the risk. When you consider that Sea-Land has the lowest slot cost existing in the North Atlantic trade, they have taken tremendous steps to mitigate their risk, yet they are at best breaking even on the North Atlantic. This tells you some of the risks that carriers have taken in this particular trade. It is worth repeating.

We heard a lot about partnerships. Forming a strategic partnership is delicate—how do competitors learn to be allies? This is a great question. Companies are learning. We heard several good examples with trucks, rail, barges, etc.

Strategic alliances and partnerships—a sobering example where a strategic alliance hasn't worked—are the efforts on the part of United Shipowners Association to resolve their differences on the subsidy issue. How can government facilitate some of this strategic planning? What should the government's role be? I think there shouldn't be too much government. I do think the government has some role if only as a mediator or facilitator.

As for the problems that exist in the regulatory arena, we wouldn't have such a hard time coming up with a maritime policy if the government would answer the basic question, "Do we need an American flag steamship line?" "Do we need American-flag shipping lines for economic interest?" I know what I think the answer should be and I won't get into it but I do think that we have the Shipping Act, Section 101A, which outlines a policy. If government people are asked do they really believe that Section 101A applies, I would like to hear what the answer is.

PERSPECTIVE ON CURRENT AND FUTURE INDUSTRY PRACTICES

Leslie Kanuk, Professor (former Chair of Federal Maritime Commission)
Baruch College
New York, New York

As strategic planning has become a buzz word, every marketing, planning, or marketing book that comes across my desk now says STRATEGIC. This word is supposed to indicate that this book is current and vital. There is nothing magical about the term "strategic." The notion as a process forces us to take a systematic approach, to go through a series of steps, the chief one being environmental scanning, looking at the current market situation both externally and internally. Certainly this was done. Paul Mentz tells us that Secretary Skinner wants a strategic planning perspective integrated into the industry. The Secretary wants clear goals and guidelines. Better short-term decisions for long-term benefits.

Whose decisions is the Secretary concerned with, his own regarding the industry or industry's decisions? Ralph Kreuger hinted that Lykes Lines is about to make a decision shortly and I wonder whether that is the same as a short-term decision concerning subsidy in the hopes of achieving long-term benefits for Lykes. If so, would that really be a long-term benefit for the nation? Along with Paul Richardson, I am concerned that the nation does not recognize—the Administration does not recognize—the need for a strong U.S. merchant marine. Paul Richardson and Carl Seiberlich yesterday both asked for a government statement on policy. I believe the government has made that statement implicitly, from

everything it has done from 1980 on. It is clear to me that the U.S. government does not recognize the need for a strong U.S. merchant marine and I bemoan that fact.

I reviewed my notes to see how well we addressed strategic planning in the maritime industry using Terry Lathrop's format but somewhat adjusted to meet the strategic market planning format that I prefer. I am using the transportation industry as my unit of analysis rather than any one specific carrier. Terry started out with an examination of mission. We never addressed our mission for the transportation industry. From a U.S. perspective, our mission could be: to provide cheap and efficient common and contract carriage of freight domestically and internationally, to facilitate U.S. domestic and international trade, to earn a profit for shareholders and risk takers, to provide employment, etc. But I don't know how you see the mission of the transportation industry and if we have the time I would love to have that addressed by someone. What is the mission?

An examination of the current market situation obviously requires in-depth environmental scanning. Externally, legal, political, regulatory, economic, technological, I thought that Hugh Randall, Steve McGowan, and Ralph Kreuger presented us with good information on the external environment in terms of the internal environment—technology of individual companies, suppliers, customers, economies of scale, market forecasts, etc. Paul Richardson, Gene Pentimonti, Ralph Kreuger, and Craig Philip addressed that. Sid Robinson did a great job presenting that for Ports and Jim Lamb and Steve Lucas spoke about customer needs that had to be addressed in the examination of the internal environment. John Saylor gave an interesting example of how a third-party intermediary really meets the needs of shippers. After an examination of the environment, the next step is an analysis of issues that have been presented in the environmental scanning, including strengths and weaknesses. Strengths of the U.S. maritime industry technology and U.S. know-how are number one. But that is all I got. In terms of weaknesses, the transfer of information, the paucity of publicly funded R&D, little or no market research, funds drying up, industry squabbles, and a total production orientation up until this point are problem areas. It is finally recognized that shippers really do call the shots.

Opportunities and challenges (which is a nicer word than threats). What is facing the industry? In terms of opportunities, cooperation among partners, more linkages, more strategic alliances, and an examination of the external environment indicate that there are growing trade opportunities, and the forecast looks good. In terms of challenges (or threats) certainly the fact that the Administration does not support the industry and that funds are drying up. I know you can add to that.

In an analysis of issues one should come up with a series of objectives. Again the one that was mentioned constantly was a seamless intermodal system. But this is a production-oriented objective. No one really said to increase customer satisfaction in terms of their shipping needs. During the roundtable workshop, Dave Messer said improve the efficiency of the transportation system. That is a good objective. Certainly customer needs were very succinctly stated by Jim Lamb and Steve Lucas, and that should provide direction for objectives.

On the basis of objectives, that leads into strategies. The only strategy that I heard mentioned was the need to improve software, with the end result a paperless movement, and strategic alliances. From strategies, we get to tactics and programs of action, and I didn't hear any. The important focus should be on market research. If we are in the business of satisfying consumer needs, we must do market research. Steve is the first industry person that has mentioned the company doing market research. For some reason, market research seems to have been regarded in the industry as a bad investment. Carriers decide what they want to do and shippers better accept it and like it. This is not the way other industries operate.

Besides increased market research and R&D, there are only so many controllable variables that we can address. All else in the short term is not controllable. The four Ps. We can control the product that we offer and the price and the promotion (that has not been a word mentioned in this workshop). Distribution certainly has been emphasized, the need for a global network, a global scope, and global alliances. One would follow that with a business analysis, cost-benefits, and certainly we should examine the cost to industry and the profits to industry. What I keep hearing is that most of the industry is losing money, so there is something wrong with the programs of action. Finally, the cost and benefits to the nation. In the last 15 years or so, there have been many seminars on the costs and the benefits, but nobody out there is listening, which amazes me.

SOME OF THE CRITICAL FACTORS FOR THE FUTURE

Steve Nieman
Consultant

One traditional strategic planning item we haven't covered is some kind of industry structural analysis

including a competitive assessment. This has to be done as part of strategic planning. Maybe in the private sector it is considered too proprietary. The more compelling point is the diversity of opinions, views, and interests that are represented here. This is a tremendously diverse group. There is a huge geometric expansion of the people involved. Then, in addition, although the marine industry is quite an established industry, the intermodal aspect is brand new—in its infancy—and a lot of players feel they have a piece of it. An industry structure analysis in a developing industry is particularly critical and also difficult.

We did not go through an elementary analysis of where the money is in this business. I know shippers think they pay 100% of the freight cost in this industry. There is a public policy view that says the public is subsidizing some costs, so maybe the shippers are only paying 99%. I think a funds flow statement of where the cash goes would be very revealing. I come from a history in the trucking industry and I feel free to say this. In the intermodal business or in a door-to-door transaction from Bombay to Boston, the local truckers don't have much clout. The ports don't either. The clout is with the deep sea carrier. In the domestic moves totally within a country, in a double-stack system, or in a coordinated transportation interchange system, the railroad has the clout. A good analysis of strengths, weaknesses, opportunities, and threats would be beneficial. We would find from a crass, commercial standpoint that the roles of the various parties are not equal.

It might be beneficial to have the chief strategy officer or the general manager of a number of companies give us a bit more insight on how their strategic planning occurs and what steps they use. Both the strategies that they use and the steps that got them there might short cut what needs to be done here.

Marine transportation should not be considered separately but as part of an integrated transport move.

Intermodal is a new phenomena and some of us who view ourselves as true intermodalists try to get rid of a mode-specific label.

One of the problems of single-mode thinking is the resultant modal bias, and transportation planning that is not sufficiently integrated.

Did we fulfill our goals? What were the goals of this session? MARAD was the sponsor. How well prepared are we in the sense of knowing what strategies exist or are in place? We have not answered that question very well. We touched on it. We got started on it. Sea-Land and some other companies are far more mature and far more advanced than other parties, especially on the intermodal aspects, partly because the Sea-Land Chairman is an ex-strategic planner for his corporation. They are implementing many of the strategies he helped devise. But it is not nearly that mature in some other entities that are important. In particular, at the railroads, if strategic planning is a mature activity, it is not mature in the intermodal context.

Did we have the right participants? When we have chief strategy officers and general managers responsible for the profitability of their units from private industry, we have the right people and there are a number of those around the table. When we have spokesmen for the industry and people who are influential in the strategic thinking in their companies, agencies, and units, we also have the right people. You don't have to have the title to have the clout. It is unfortunate that we didn't have more rail and truck participation or more from the marketing intermediaries who may be the one segment that has their act together.

The fact that we had as much port attendance and inland waterway attendance and as much attendance from academia and from the TRB committee members is fine, but it kind of carried the day and was not as balanced as it might have been.

We might have profited by having a few more spokesmen for foreign interests.

Intermodal aspects of marine transportation or intermodal aspects of rail transportation or intermodal aspects of truck transportation are developing rapidly. It wasn't stated but it is clear to everybody that it wouldn't have been nearly as fast developing if it hadn't been for the regulatory changes in 1980 and 1984. Door-to-door intermodal transportation is really only 1 to 10 years old. This industry has come a long way in 10 years. I think the intermodal aspects of this industry are doing just fine getting through the swamp and avoiding the alligators. I worry that we will put too many alligators in the way. My suggestion is to let private industry continue to do its thing with support from necessary infrastructure people like the Corps. We might get there. Let's not get it too structured.

Responding to Leslie's challenge calling for programs for action: where do we go from here?

Over time, there has been a great deal of discussion about different opportunities in terms of proposed research and studies. We have also discussed briefly the 1989 and 1990 DOT hearings. At those hearings conducted throughout the country, people in our own locales presented their viewpoint. All that information couldn't be put into the summary documents. I think there is a close correlation between the interest and concerns of those people in the hinterlands and those same research and study proposals that had been presented over the past several years—an idea that may have some relevance to this meeting. TRB has a number

of committee chairmen that are related to the maritime and intermodal industry, directly or indirectly. I would like for them to take a look at these listings of studies and research proposals over the last several years and the documentation that came about through those DOT hearings across the country. I'd like to see an assessment, a ranking, of some of those recommendations in light of some of the discussions we have had here. Then, I'd suggest TRB and MARAD look at the findings, and from them come away with a consensus of whether or not we need to push for a national policy for maritime/intermodal interests, either short-term or long-term? This is my sense of where these discussions are leading and where we need to take it.

COMMENTS FROM RADM. CARL J. SEIBERLICH, USN (RET.)

In discussing strategic planning and maritime policy earlier, the Merchant Marine Act of 1936 and the National Security Sealift Policy were reviewed. The third document of interest is the Transportation Policy published by the Secretary of Transportation in *Moving America*. The printed words of these three documents do not guide execution of transportation or maritime policy for the United States.

A role for the Transportation Research Board (TRB) which would be useful in considering the intermodal, national competitiveness issue and the supporting role of the federal government would be to develop an informed, broad based view of the issues and available options. The various segments of the maritime industry have their views; various special interest groups theirs; and there certainly appears to be a fragmented view within the government. What is truly needed is a really objective national review of the issues, what should be done in the public interest and what public investment in the industry is prudent to make. Such an overview could lead to enhancing our national competitiveness. It seems to me that this would be an important project for the TRB.

Again, I would like to emphasize that if the foreign flag option is adopted for our merchant marine, programs to assist the companies in making the transition from the American flag, and in retraining displaced American seamen, must be established as well as a doable timetable.

SUMMARY COMMENTS FROM KATHLEEN STEIN-HUDSON

In response to the overall question of where are we in strategic planning in the marine and intermodal sector, we agreed that we have made terrific strides in strategic thinking. Some organizations are more mature and further ahead in implementing strategic planning; but most organizations are effectively honing in on critical strategic issues.

Some of these issues are ones we can do nothing about. Others we can do little about, but we need to understand them, since they shape the environment and our future operating mileau. Some important issues were only briefly touched on in our discussions, such as: what is the future of U.S.-flag carriers? How are we going to deal with military strategic requirements? How are labor issues to be addressed?

Environmental issues were touched on briefly, and we noted that they are growing issues on the landside. We also briefly discussed the role of government, with many participants requesting either endorsement or revision of existing policies. The place of government in a mediator-facilitator role was suggested, but we had different, sometimes conflicting, viewpoints on how this would translate in practice.

We see a big agenda for the future. Information requirements are very important. We also see the need for a new definition of competitiveness, and we noted that the choices are not simply to say either let the free market reign or have the marine and intermodal sector regulated by government. We are in the process of redefining competitiveness as we continue to explore and implement strategic alliances. We also see a large pending research agenda, particularly on implementation-oriented research that will be helpful to respond to issues like the ones we raised in this conference.

CONCLUDING REMARKS — PAUL MENTZ, U.S. MARITIME ADMINISTRATION

We've begun to see what the 21st century might be for our community. The many speakers have brought about a perspective on change that is very stimulating and challenging. The industries that we represent are going through dramatic change more than evolution. The marine, intermodal, and water transportation industries

in the 21st century will be quite different from those we were familiar with just a few years ago.

One of my concerns is that there may be those among us who may not fully appreciate that to the degree they should. I am concerned that there are many misunderstandings, misperceptions, and inability to appreciate how much change there has been, is taking place now, and will continue to take place in this community. If there is one hope that I have it is that the presentations and following discussions we had here the last several days can be relayed to those that really need a better appreciation of how much change there is taking place and how the various decision processes should be pursued in the context of change—not in the context of the way things were, or perhaps in the way that some of us might like them to be—but in the way that they are and in the way that they will be. I think that this is the hope that I have for the results of this workshop and therein is a charge for all of us to try to better handle some of the information and supporting data that we have here to help those from our organizations and various other aspects of our institutions to come to grips with all of the change that is taking place.

The vision is one of facilitating the development of world-class industries. By world class, I mean productive, efficient, profitable, and having the ability to be part of any alliance and partnership that is developed in any sector within our global marketplace. That is the vision, to be a partner and a participant in an exciting world of growing interdependence and growing world trade. This relates to the new world order, an order of cooperation, mutual support, and understanding. World trade and our transportation communities will play a strong role to ensure that new order comes about in a most profitable way in both a social and financial sense.

It was a tremendous 2-1/2 days. I want to thank TRB staff and, Kathy Stein-Hudson for leading the steering committee through the planning process and continuing her leadership through this workshop. Of course, thanks to all of you, without whom this workshop couldn't have existed and been as good as it has been.

This has been an outstanding way to bring together people from different perspectives—different points of view—and to really get a common vision of the future and to struggle with ways in which we can move towards that vision.