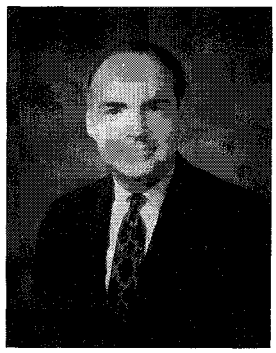
Railroad Commercial Panel

Thomas L. Finkbiner, Moderator



ITI Board Member
Vice President Intermodal
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The intermodal business is quite an unusual food chain—equipment thinks it is on the bottom, IMCs think they are on the bottom, and terminals are sure that they are on the bottom—but it is really the railroads that are on the bottom of the food chain. The railroad business has fundamentally changed—it is a business that is not incremental anymore. Intermodal revenue will pass coal as the leading revenue in the railroad industry for 1999; however, railroads need to provide better intermodal service to their customers. In order for the railroad business and the intermodal business to get to the next level, we are going to have to be smarter about the way we do business as well as more sophisticated, more disciplined, and more receptive to technology and science. This panel explores past commercial issues and identifies future needs.

PANELISTS

Roy L. Hayes, Ronald E. Lawless, Gordon A. Volkers, Richard H. Steiner, William E. Greenwood

(Left to right) Ted Prince, William Greenwood, Richard Steiner, Tom Finkbiner, Gordon Volkers, Roy Hayes, Ronald Lawless, and Gil Carmichael.

Roy L. Hayes
Retired President
Roy L. Hayes Company

Sixty-three years ago I started working for the old Pennsylvania Railroad (PRR) in a freight station in East St. Louis, Illinois. After working a number of assignments in the station department of the Pennsylvania Railroad, I was selected to become involved in the startup of trailer-on-flat-car (TOFC) service by establishing a piggyback terminal in Rose Lake Yard, a suburb of East St. Louis. After many and varied assignments in the TOFC operation, I eventually was appointed assistant vice president of the Intermodal Division of what became Penn Central. I served in this capacity from 1972 to 1978.

When the Penn Central was first formed, it put together a piggyback or intermodal operation. The operation was made up of a combination of New York Central and Penn Central Railroad people, but, basically, it followed the organizational arrangement that had been in effect on the New York Central. This was the TOFC operation, and it functioned under this arrangement for a time. In the interim, I had become the executive vice-president and general manager of a company known as Excelsior Truck Leasing Company. Penn Central owned the company at this time. The company was formed by the old Pennsylvania Railroad shortly after World War II, and its purpose was to supply automotive equipment to the Pennsylvania Railroad. Even though I was working for the leasing company, I was still involved in the development of intermodal.

For whatever reason, top management decided to reorganize the intermodal department, and they brought me back in 1972, as assistant vice president intermodal, to head up this new organization. The organization was to function as a separate business and be a separate profit center. This meant that we would buy our transportation needs and wants from the railroad, and all our other expenses would be handled by us in the negotiation of contracts. At the end of a month, we would pull a profit and loss statement to determine whether or not the business was profitable or unprofitable.

After the first year of the reorganization of the intermodal operation in 1972, we had achieved a 23 percent increase in our volume. *Modern Railroads* thought this was a pretty good thing and awarded Conrail the so-called "Golden Freight Car" Award. This gave us the incentive to do better. Our senior trustee, Jervis Langdon, who was a supporter of intermodal, suggested that we set up a presentation in every major city on our system, which we did.

I served in this capacity until 1978, when I was fifty-nine years old and eleven months. At this point, the railroad, which had become Con-

rail, decided to reorganize again. Richard Steiner was given the responsibility of reorganizing and I was out. This was a bruise to my ego, but I found that my retirement-take-home pay was equal to my work-take-home pay. So, I had no complaints.

The Beginning of TOFC Service

TOFC service started on the Pennsylvania Railroad in 1955, and as best I can determine from the historical record, this was the first movement of traffic in TOFC on any railroad in the United States or the world. In the early 1950s, Gene Ryan was working for General Motors and General Motors produced a railroad car that Gene was attempting to sell to the railroads. The car was designed to haul trailers and to be loaded from a depressed track with a side-load operation. Gene approached the New York Central Railroad and put together a contract in which New York Central was going to work with Gene Ryan to start a TOFC operation. After some investigation, it was found that the New York Central had clearance problems that would prevent it from moving trailers on flatcars. After that, Gene came to the Pennsylvania Railroad with the same idea and tried to sell it.

J.P. Newell, vice president operations, encouraged PRR President James Symes to take this opportunity. This was the beginning! Gene Ryan promoted this idea with the motor carriers. He signed up 150 motor carriers who indicated that they would use this type of service, at least to some degree, probably in overflow or balancing of equipment. We started our operation in 1955, with a dedicated train between Chicago, Illinois, and the New York City area. Then, we put together a similar train that operated between East St. Louis and the New York City area. In time we added extra terminals between these two destinations. We started with dedicated train service—a train operating in each direction on a daily basis.

Gene, through his motor carrier connections, assured us that we had enough business to support the operation of dedicated trains. The 150 motor carriers were providing 90 percent of the traffic that we were moving. From then, until the time that I retired, our business grew until we had a fleet of over 13,000 of our own trailers on line. We operated 4,800 railcars on line on a daily basis and 46 daily-dedicated trains, handling nothing but piggyback. The annual revenue had increased to $300 M approximately, and we were operating on a $100 M budget.

The Beginning of Trailer Train

One other area was extremely important in getting this piggyback movement off the ground. Every railroad, from the time we started, tried

to become a part of the TOFC operation, and every one of these railroads had a different idea about the car equipment that should be used, like the method of tie-downs, etc. It became very evident that if we were ever going to develop anything, we had to develop a standardized car and standardized tie-downs that would allow us free interchange with other railroads. This became the idea for what is now Trailer Train. J.P. Newell, our foresighted vice president, came up with the Trailer Train concept. I did not have a big part in the planning of Trailer Train, but I sat in meetings where the company was formed and incorporated. We bought 200 railcars, financed by the Hanover Bank and Trust. Gene Ryan owned 100 railcars, and the PRR owned another 100. This was the beginning of Trailer Train (now TTX Company).

We ran Trailer Train for about four years in our TrucTrain office in Philadelphia. During this time, PRR people ran the company and J.P. Newell was the president. In addition, the Pennsylvania Railroad (PRR) owned the Norfolk & Western Railroad, Wabash Railroad, Lehigh Valley Railroad and a number of other shortline railroads. Therefore, we had the opportunity, in a sense, to influence these railroads to become members of the Trailer Train Company. We then offered other railroads an opportunity to become members of Trailer Train. Eventually it became obvious that we had to put together an organization for Trailer Train so that it could function on its own. Newell was already president, and Jack Wightman from the PRR became the general manager. Some things that happened in the early Trailer Train years would have been frowned upon, particularly by the Interstate Commerce Commission. On several occasions Trailer Train has attempted to put together its history, but the records of what happened during the first three or four years cannot be found because the files were destroyed.

Standardizing the Equipment

When we started in the TOFC business, we had a combination of chains, bolsters, jacks, wheel chocks, and everything else to secure a trailer onto a railcar. This continued to exist even after we started Trailer Train. This situation was extremely time consuming and labor intensive. We had a terrible time keeping track of equipment—chains were stolen, for example. Les Robinson, an engineer working for Gene Ryan, designed and built a working model of what became known as the ACF Trailer Hitch. This was a revolution in the handling of trailers. Gene Ryan patented this particular piece of equipment, but he gave it to American Car & Foundry (ACF) for one dollar. Several years later, Gene realized that he had given up a patent that was worth a considerable amount of money, so he sued ACF for a lot of money.

In addition, Newell was attending an Association of American Railroads (AAR) equipment demonstration in Chicago, and a company known as Travelift was participating. It had developed a crane for launching and removing boats from the water. To influence the railroads to consider using this crane, Travelift used its crane to pick up a Greyhound bus and moved it on the city street. When he saw this demonstration, Newell immediately associated the idea with picking up trailers and putting them on flatcars. He encouraged Travelift to send one of its units to our South Kearny, New Jersey, terminal. He also agreed that our engineers would work with Travelift engineers to develop a lifting mechanism that would lift trailers to and from a railcar.

I was sent to South Kearny to help develop this crane. The crane had lifting arms and other features. We put one of these machines in service in South Kearny, and this was the first crane that ever lifted a trailer on any railroad in the United States. After a few years, Travelift Company was sold to Drott Crane Company. However, the crane originated with Butch Baudwin of Sturgeon Bay, Wisconsin, who owned the Travelift Company.

Ronald E. Lawless

Retired President and CEO
Canadian National Railways and VIA Rail Canada

As we were transitioning through this process to get to intermodal, none of us ever thought of ourselves as founding fathers or early pioneers. For my part, the most significant thing that I was trying to do was to figure out how we were going to work around the hard-headed railroaders, who were married to boxcars, tonnage trains, hump yards, and commodity rates, and try to get them thinking about customers and why these customers wanted us to do something different. The truckers were having a field day as the railroads continued to provide what they produced and hoped that they could sell, and the customers were really moving away in droves. It was not easy internally, it was not pleasant, and it got downright ugly before we were able to make some fundamental changes and get everybody listening to the customers.

This conference can provide insight into future opportunities for intermodal cooperation, perhaps can break barriers to international trade, or can identify solutions to perceived problems. I think that is the essence of intermodalism. It is about optimism. It was before and it is still about thinking outside of the box, before that became a phrase for innovative leadership development and team-building exercises. It is about the big picture—the ability to imagine the whole picture rather than just a jumble of individual jigsaw pieces.

Looking back, it is really not surprising that people used rivers where they could to avoid hauling freight piece-by-piece over land. It required less blood, less sweat, and less tears. The ability to see the water as a means to an end rather than as a barrier involved a leap of faith and the development of appropriate technology.

The Vision of Intermodal

In looking back, roads, rails, and shipping lines were all built as separate modes of transportation. They were developed to serve specific needs, and frequently these were very local needs. The vision involved may have been great, but it was usually limited to as far as the eye could see and to what was needed then and what was needed where. In Canada, the early examples of intermodal in 1953 involved individuals and organizations trying to bridge transportation gaps in what they knew and understood. One was on the West Coast and the other, on the East Coast. Both involved narrow-gauge railways, one in Newfoundland and the other in the British Columbia jump-off to the White Pass and Yukon Railway.

Both railways had been designed and built to serve purely local needs. Those needs expanded as countries and commerce grew and as trade patterns shifted. The effort to change was focused on overcoming the barriers created by operating main line and narrow-gauge links with a body of water between the railheads. Since they could not afford to have standard-gauge track everywhere, people looked for its equivalent. These barriers were measured in time and money—usually lost time and lost money—in all their forms. The traffic that was operating there had to be unloaded from large freight cars and reloaded into smaller freight cars on the other side of the water. In both instances most of the traffic was inbound to remote locations with little or no backhaul.

The solution, almost a half-century ago, was to streamline the breakbulk operation and force out the costs associated with manually handling the traffic piece-by-piece. The pieces were effectively made larger. In some cases, they involved small main-line freight cars whose body could be transferred to and from a narrow-gauge wheel assembly at Newfoundland. Other solutions involved containers and the necessary equipment to move them between two very different railways.

In 1957, some of us were watching SeaLand as it commenced US coastal operations to Puerto Rico to streamline traffic handling. SeaLand used 35-foot containers, which was the maximum road transport length permitted there at that time. And in 1958, Matson Navigation Company started service between the US West Coast and Hawaii, using 24-foot containers, the maximum road transport length that was permitted. What,

at first glance, appeared to be local needs and local problems were, in fact, part of a broader traffic flow that cost much more than was necessary. Technology formed part of the solution as a means to an end, not the end itself.

The Impact of Containers

In Canada, in the late 1950s, we had a company called Steadman Industries Ltd. in Toronto, which provided 18-foot-truck-type containers with portable legs for domestic service and hydraulic lift capabilities for transfer of containers between road and rail. At that time, I was in charge of Canadian National Express. We began experimenting with these units in southwestern Ontario. We were very fortunate because we had tracks on all the ports, such as at Montreal, Vancouver, and Halifax, and that turned out to be a major plus, even though they were used to feed time-sensitive, labor-intensive, cross-Canada, cross-Pacific breakbulk shipping lines. Because of ice, the Port of Montreal actually hibernated every year between December and April.

During that time, Canadian-bound freight was off-loaded at the ice-free ports of Halifax and Saint John. The seasonal step-up in traffic was known as winter port operations. That changed with the arrival of the ice-strengthened ships and the ice breaking on the St. Lawrence River, which was officially for flood control but facilitated year-round port operations. During this period, Robby Stoker, chairman of Manchester Liners, was a true visionary. Manchester had served Canada with conventional ships, but he really saw the world changing. Although he had no idea how he was going to get the container beyond the waterfront, he did envision them being loaded into railcars, since we had a long history of handling highway trailers on piggyback on railway flatcars. Others just could not imagine the boxes traveling without their wheels. Nevertheless, this was the impetus for change, and the need for railways to serve their customers had finally won the day at Canadian National (CN).

The push clearly came from the customers. In this case the customers were the international shipping lines, who were struggling with their own demons of unproductive time and vast amounts of money spent on maintaining past processes. Ships were either at sea most of their productive life with the same cargo on board, which adds nothing to either the top or bottom line, or they were tied up at the dock, waiting for traffic to be unloaded or loaded one piece at a time. Containerization changed all that. Faster, specialized ships with smaller crews could be loaded and unloaded quicker. Even Japanese shipping lines came to Canada, and they came to Canada's East Coast initially. Because they did not trust the

railways to deliver traffic for them on the long haul, or cart it away so far out of their sight, they came to the East Coast, and Halifax was their port of call. Containers could be loaded directly onto container cars and dedicated trains, and we were able to move that traffic fast to its final destination. Ships, all of a sudden, were in port very briefly, and sailors, all of a sudden, had neither time nor opportunity for the traditional "woman in every port."

The Environmental Benefits

Doublestack container trains improved productivity a great deal, and this is a cost and a benefit for customers that the railway industry paid for itself. Similar increases in truck sizes and weights, which heavily impacted the maintenance cost of roads and bridges, have been seen as an economic benefit to be paid for at the expense of other motorists and taxpayers through increased road congestion, pollution, and fuel consumption. The good news is that the fiscal pressure to balance government budgets and to reduce debt has made railway environmental benefits more valuable to society in the future than simple market forces ever did.

Public interest forces have made transportation a timely topic for North American politicians and public policy planners. They really have been slow to show their interest, unlike the Europeans, where transportation policy has been shaped by limited space, relatively short distances, and population density. The environmental benefits of the railways are quite impressive, and they are not probably given enough attention. Canadian railways, for example, get 375 miles to a gallon, with at least three times more fuel efficiency than big trucks. Simply put, rail freight in Canada accounts for less than 4 percent of greenhouse gas emissions in the transportation sector, while commercial trucks account for 23 percent. Canadian railways have reduced their greenhouse gas emissions of carbon dioxide by more than one-percent-per-year since 1990.

Increase Productivity and Reduce Costs

Freight customers follow the dollar. The railways have had to initiate projects that allow them to increase their productivity and reduce their costs. Excellent examples are the doublestack clearance projects financed by the Canadian railways through the Rockies, under the St. Clair River at Pointe Huron and under the Detroit River at Detroit-Windsor. These initiatives helped the Canadian railways become serious players in the continental and international markets for intermodal traffic. CN examined its whole rail system from coast to coast, and we either lowered

the track or raised bridge clearances to permit doublestack container train operations systemwide.

Perhaps not enough attention has been paid to the role of Customs. Once the responsibility of shipping lines to resolve with government agencies, Customs clearance has played a key role in speeding transborder traffic trade between Canada and the United States. Canadian railroads have been the leaders in this, and we now are moving some million cars a year across the Canada-US border, and that number is growing. I think the US federal and state governments, in particular, are recognizing the potential for greater use of rail service to ease border congestion and to ease congestion well down the road from the international gateways.

It has been demonstrated that visionary companies do not always remain visionary. SeaLand held on to its 35-foot unit for far too long in noncompliance with the International Standards Organization (ISO) 40-foot standard. There was a reason for that, but those of us who have to move these containers felt that they were behind the times. We learned that the fundamental business issues associated with containerization went far beyond the ship-rail interchange.

Without intermodalism, rail would have been confined to hauling bulk commodities. I am more convinced that rail can, and should, get more of the domestic business that is available. The potential to achieve more still lies ahead. The key to success will be a better product delivered with better reliability that satisfies the customer. I challenge those who want to achieve success. Are your customers happy with the service that they are getting? Ask yourself this question. Then ask your customers. Are you hearing the same answer? North American railroads have made gains, the US more so than Canada in recent years.

Changes Needed

Unfortunately, many of Canada's public policies must change to improve modal competition. We have a problem with tax and transportation policies in Canada. We have a situation where split jurisdictions between federal and provincial governments contribute to a Canadian railway cost structure that is much higher than the competitors in North American trucking and in the US railroads.

CN and Canadian Pacific (CP) are both testing systems between Toronto and Montreal. CN has adopted the RoadRailer technology in its highly competitive, road-congested Montreal-Toronto corridor. The strengths and weaknesses of each mode will be put to the test. This balancing act is going to require greater public policy buy-in as road conges-

tion worsens, as pollution builds, as fuel increases in cost, and as fuel decreases in availability.

Perhaps public pressures will force bureaucrats and politicians to recognize that any additional money that they pour into roads and bridges to accommodate bigger and heavier trucks is money that cannot be spent in such areas as healthcare and education to benefit the public-at-large. Perhaps, too, there can be a greater exchange of knowledgeable and experienced leaders between government and industry so that each can better understand the abilities and limitations of the other's field and recognize the potential for quantum leaps by pooling their resources. The need to inform, to educate, to conduct needed research, and to facilitate discussions and decisions for the future is very real. We know how much the world has changed in the last forty years. Just imagine, for one moment, where transportation can take the world and how it can contribute to an improved standard of living for society in the next century.

Gordon A. Volkers

Consultant
Greenbrier Intermodal

I have certain credos. Number one is being a people person. I enjoy people, I enjoy what they can do, and I enjoy seeing people realize that they can do more than they thought they could do. Number two is that I accept change, and I sometimes glory it. I am not saying that I have never been frustrated by change, but I accept that change is a something that you should have to do and that you should want to do if you want to see change come about. I picked up two other credos a long time ago. One is Harrison's postulate, which says that for every action, there is at least one equal and opposite criticism. My final credo is Stuart's Law of Retroaction, which states that it is easier to get forgiveness than to ask permission.

The Baltimore and Ohio Railroad

I retired after thirty-four years of railroad service. I came up from the ground. I was going to the University of Toledo while crew calling and crew dispatching. I was always curious, so I began to find out where the crews were going. When they went to Cincinnati, I would hop the old steam engines on a day off and ride to see what Cincinnati was about. The crews enjoyed that because here was a crew dispatcher who woke them up and even rode with them on a road train operation. Nobody did that. I wanted to know what was going on in Cincinnati, why we ran the way we did, and where we were going with the freight. From that point

on, I worked like the devil. I spent five years in the railroad terminal operations, yard mastering and working as dock agent with the bulk operation. Management determined from an old accounting statement that I was the highest overtime man in the western region of the railroad.

Shortly after that I started working on the first installation of the Baltimore and Ohio Railroad (B&O) Datamatic 1000, the first computer system. I got to see all of the divisions of the B&O, but I was never attached to a division or terminal. Things happened quickly then. I went to Baltimore in 1959 and commuted between Baltimore and Toledo for three years. I got to run the Capital Limited—taking a jump seat and riding with the crew across the Alleghenies. They trusted me, and I trusted them, so they would let me take the train out of Martinsburg. This was against all kinds of rules, of course, but everybody in the railroad winks at the rules now and then. This added to my experience. Little did I know how much it was going to help.

Since I was the one who did some of the design work for car accounting on the computer, I helped implement the system. I went from that position to Jervis Langdon's staff with three other guys. Langdon was the last president of the B&O Railroad and he wanted people from the B&O to help him. I helped form an industrial engineering department. We had a project that needed funding, so we decided to get funding from the Chesapeake and Ohio Railway (C&O), which was capital rich while the B&O was capital poor. We needed capital to get rid of 19 Civil War tunnels on the railroad between Cumberland, Maryland, and Cincinnati, Ohio. We were doing this because Langdon wanted to start running piggyback into St. Louis. He was fed up with Chicago.

I then went back into the operating department as superintendent of yard and train terminals. I had a "barrel of fun" deciding how we were going to operate when we closed down the railroad from Cumberland to Cincinnati for three months. We did it.

Trailer Jets

In 1960, we received the first delivery of our GP30 locomotives, the first of the new generation locomotives. The old B&O could run a train from Chicago with GP30 power without refueling, all the way to Jersey City by a torturous route. However, we were in competition with Roy Hayes. We had to do something to show that we were competitors, so I got the new locomotives assigned to these piggyback trains, because these trains seemed to be important. We did that, and to make the point, since I had the responsibility for trains and classifications of blocking, I submitted some changes to the train designation. Instead of calling the eastbound train even numbers and the westbound odd numbers, we called

the fleet that we started the New York Trailer-Jet Eastbound and the Chicago Trailer-Jet Westbound. The crews all liked this because they felt that they were now as good as the passenger trains, because only passenger trains had names.

About 1963, I went to the C&O to put computers in the terminal operations. I spent three years putting in the first system in Chicago—the 360/30 IBM computer with Random Access. It had 64K. We air-conditioned the entire first floor because the computer needed it, and I decided to air-condition the whole yard office. People, as well as the computer, needed it. This was not on the "authorization for expenditure" (AFE). Remember, I said that one of my credos is do it first, then get permission. I was in "hot water" again by 1968 because again the "old guard" just was not accepting this kind of thing. I was banished to the position of assistant director of corporate planning for operational projects for the combined C&O/B&O. This was my first experience with MBAs. They were a great bunch of young men and women from the Wharton Finance School. We got involved in analysis of the railroad. In 1970, I went back to operations as director of operations for Chassis/C&O/B&O trailer service. And, this is where I received my first exposure into what railroad costs really were.

The Importance of Pricing

From my perspective, trailer service in intermodal is still, for the most part, a business within a business. I sat down with people in the research cost area because I wanted to find out more about trailer service costs. I learned the cost of trailer service, cars, trailers, ramping, and the cross-lake ferry. They told me what the costs were to handle a trailer or two trailers on a car from Milwaukee. All of the costs of that eastbound load were loaded up on the empty westbound move. The simple answer to this problem was to eliminate the westbound move. So, I called my good friend on the Milwaukee Railroad and asked what his balances were on trailers. They were not good, so I offered to take the empty trailers, load them with beer, and move them eastward. So we started out, and I went back to the cost man and asked how much it would cost for that route. He said that I could not do that. You can draw your own conclusion.

Another example involves Roy Hayes at Conrail. Because the Penn Central pricing and marketing people had put in some fantastic rates of 3-trailer and 10-trailer volume shipments at the Port of Baltimore, we did too. Then, in addition to that, Conrail and Roy told us they were going dock-on-rail in seventy-four hours. I knew we had to as well. But, we were on the west side of Baltimore, we had an old circus-style ramp, and

we would cross-town dray. We had a contract carrier giving us a pretty good price on the ramp, the de-ramp, and the cross-town dray. If we wanted to go into the terminal-rail-switching mode from the west side to the east side of Baltimore, it was only three more days on the car to go to a nine-car spot. Roy had 42 cars a day or something like that. I had about 20 to 25 export cars. We flipped for the spot. I got it first and we alternated after that, sharing that nine-car spot. He took a drenching on his cost, and so did I. In addition to the little ramp and de-ramp crews that we had, we now had an ILA crew of nine men and a chief clerk being paid $100,000. The point is that the price never changed to the customer.

When I left the B&O in 1984, I was general manager of intermodal marketing. I had worked that position for four years, reporting to Jerry Krassenstein for three of those years. In the very first customer meeting that we had after deregulation, he wowed customers by telling them Chassis was going to go retail and that all the third-party guys would be out of business in two or three years. He added that we were forming our own truck line too. I signed an agreement with the Southern Pacific (SP) for the B&O and we became a volume shipper on the SP for a minimum yearly quota. I came back and gave it to Jerry and retired in 1984.

Richard H. Steiner

Transportation Management Consultant
Formerly Vice President, Executive Department, CSX Corporation

Intermodal is like the Brazilian economy, which has been predicted to be the next great economy. But this never seems to happen. I have heard similar predictions for intermodal over the last twenty years. Yes, intermodal has experienced significant growth and service improvement. But, intermodal still is not the dominant force that has been predicted. For one thing, the competitive bar has just gotten a little higher. But this is also a result of the railroad industry culture and environment. I will discuss the cultural and environmental factors that have limited the growth of intermodal, some of my experiences in intermodal, as well as what we might expect to see in the future for intermodal.

The Impact of the Railroad Industry Culture

I would attribute the slowness of the railroads to grasp and capitalize fully on intermodal technology to three fundamental factors. The first is institutional constraints. Almost everybody thinks railroad management is very rigid and very narrow in its thinking. This is true. However, there are contributing factors that helped shape the culture. Railroad management has evolved in an environment that conditions the way that it thinks

and the way that it views the world. First, until recently, the railroads were heavily regulated. Regulation had a lot to do with the mindset, the way management saw its business and its role. This has been further influenced by very rigid, unionized labor. In fact, labor relations have always had the helping hand of the US Congress. Labor agreements have locked in much of the methods of operation. It is a high-capital industry. The railroads turn capital at a rate of 0.6, which means that every dollar of revenue requires $1.66 of investment. In contrast, truckers have a capital ratio of about 2 to 1. They get double the revenue per year compared to what they have in assets. That makes a big difference in how fast direction can be changed. Finally, the underlying management culture has been militaristic, because the management system evolved when the industry reached its heyday after the Civil War and the major source of managers were former US Army officers.

The second factor is the changing marketplace in which the railroads have operated over the last fifty years. The fixed-asset base of the railroad industry makes dramatic change very difficult and has been a major contributor to the long-term decline in the railroad share of the total transportation market. This is a result of the continual change and accelerating pace of new technology. For example, much of the current growth in the economy is in information-based technology. How many carloads of bits and bytes have you seen?

Manufacturing has also undergone considerable change that affects required transportation services. This is also technology driven. Products are lighter, cheaper, and have less volume. We do not make steel now the way we did. Our cars are smaller and made with lighter weight materials. Look at the mix of goods we consumers buy. The goods are entirely different than they were fifty years ago. They tend to be higher-valued and we expect a higher level of customer service. The point is that the market has changed—bulk commodities and heavy industry, so important to the railroads, have become relatively less important in the economy.

Historically, the United States industrial base was heavily concentrated in the urban areas, while the hinterlands were basically agrarian. This has changed, as we are now more dispersed and more diversified. The newer products and new technologies do not require the scale of economies that the basic industries of the industrial revolution enjoyed. New communications and transportation technologies have facilitated this dispersed economic activity. Additionally, the highway system has aided this trend. These new patterns and economic trends no longer find traditional railroad shipment volumes and service levels meeting their needs.

Finally, in capital-intensive industries and mature manufacturing firms, management tends to be dominated by an operating focus. The

following two examples illustrate this observation. Xerox in the early 1980s had a think-tank in Silicon Valley developing new technology. It came up with a computer-operating system using a graphic interface that would be very easy to use. The system was designed to be intuitive. The system used little pictures (icons), which could be selected with a "mouse." The Xerox management committee, which was made up of the operating heads of the business units, approved all new capital expenditures. When the scientist from Silicon Valley requested funding to bring this new technology to market, he was told that "they were a Xerography company" and would not divert resources to this toy. Also, they were losing photocopier market-share to the Japanese and this took priority. Steve Jobs of Apple took the idea and look what happened—Macintosh, which set the stage for the mass market for personal computers (PCs). Xerox struggles today as PC technology is displacing the use of photocopiers.

In 1975, while I was with Flying Tigers, there was a new, upstart carrier, Federal Express. We started to see this carrier around a little. At that time, Tigers was the largest all-cargo carrier in the world. It did a competitive analysis. It was very simple. Federal Express flew Falcons, and the Tigers flew stretch DC-8s, which carried twenty-two times the amount of freight that could be put on a Falcon. The Tigers had a crew of three; Federal Express had a crew of two. Our Tiger crew was paid more, but with fuel efficiency and total payload, our costs were lower. In fact, the Federal Express unit costs were about $1.20 per pound and the Tigers were about $0.12 per pound. The thing that we missed was that our average revenue was at $0.20 per pound and Federal Express was at $4.00 per pound. The point is that management decisions need to be evaluated in the context of the market and not on the supply side of the equation. This bias of looking primarily at operating characteristics is typical of the railroad industry. Flying Tigers has subsequently been absorbed into Federal Express.

Flexi-Van

In 1960, when I started with the New York Central (NYC), it offered Flexi-Van rather than TOFC intermodal service. Flexi-Van did not use conventional highway trailers but used specialized containers with an integrated chassis and a detachable bogie. These were carried on a center beam car with two turntables for side loading and unloading. With low wind resistance and a low center of gravity, Flexi-Van operated at passenger train speeds with seventeen-hour service between Chicago and New York. At the time, the most significant advantage, as perceived by New York Central management, was the limited interchange. The NYC did not have to be a member of Trailer Train, which was controlled by the

Pennsylvania Railroad. This was my first experience with intermodal. One of the more novel NYC Flexi-Van service offerings was a service from Rochester, New York, to New York City, interchanging freight with Flying Tigers for air distribution across the United States. As I recall, they had only one such shipment. But that was how Flying Tigers became associated with NYC and indirectly led to my eventual employment with Flying Tigers.

I left Flying Tigers and joined Conrail, coming back to the railroad industry and intermodal. Conrail was losing $1M per day. The charge of management was to become profitable and return to private-sector ownership. Intermodal was part of the solution because it had some unique characteristics. First, it was a growth business. Second, even though it was low margin business, the ratio of capital to revenue was better than traditional carload business, by two to one. Ten percent of our revenue was from intermodal, but only five percent of identifiable assets were attributed to intermodal. The ability to turn the equipment faster and better utilize assets gave intermodal significant economic advantages over carload service. The service characteristics were more in tune with the changes in the economy.

We organized to manage intermodal and boxcar business together. We were very interested in using intermodal as a substitution of service for carload movements that had low margins and traffic that was on the light density branch line. We used it as a tool. We saw intermodal as a way to improve total margin and also to continue to grow the revenue.

SeaLand Acquisition

After my next foray in the airfreight business with Emery, I joined CSX in September 1985 as senior vice president of sales and marketing. This assignment encompassed sales and marketing for merchandise traffic and included intermodal and motor-carrier operations. The day after Thanksgiving in 1985, I was the senior member of the CSX management team that met with a SeaLand delegation and started the discussion that lead to the acquisition by CSX of SeaLand. The opportunity was to leverage the stacktrain capability and volume of SeaLand to build, what we hoped would be, a national intermodal service network. More importantly, we wanted to build a separate, stand-alone business with intermodal. This is how CSX Intermodal came about. The SeaLand acquisition was a strategic decision, which never achieved its intended goal.

The Future of Intermodal

In thinking about the future, intermodal has been perceived to be a low-margin business relative to the more traditional rail traffics. It has been considered by the industry to be a marginal business to add revenue and use capacity. The airline passenger business may provide a good model as to where intermodal may evolve.

In the early days of its development, the passenger airlines needed more revenue and had excess capacity resulting from the rapid increase in aircraft speed and size. The answer was coach fares at lower prices to stimulate a broader market. The result was tremendous growth in the business. The investment decisions in capacity, configuration of aircraft, and routes became effectively driven by, what had once been considered, incremental business priced at less than full cost. The marginal became the core of the business. I think that intermodal is at the stage of becoming a core business and will do so in the future. Within the next year, intermodal will exceed coal in total revenue for the rail industry.

Another airline analogy, which may foretell future developments in intermodal, is the current approach that the airlines are taking toward travel agents. Commissions now have been cut so low that customers, who use travel agents, pay a surcharge because travel agents cannot generate adequate revenue on the commissions alone. Additionally, the air carriers are doing more direct marketing, especially via the Internet, to increase margins in this highly competitive market. What could this mean for intermodal marketing companies (IMCs)?

The development of supply chain management, another change caused by technology, adds another set of variables to the equation. The role of third-party logistics providers tends to reduce the identity of the carriers and also modal choice. Potentially, the service characteristics and service levels possible with intermodal could greatly enhance the fortunes of the railroads in the future. One of the important elements of intermodal is that the modal distinctions are put aside because intermodal is a process or system. We are talking basically about door-to-door service, and what happens in between really is not that relevant to the customer. We need to continue to think of intermodal development more along these terms.

Transcontinental rail mergers are just a question of time. This development will result in technological competition and head-to-head market pair competition. Think about an operation where you never interchange, can have unique equipment, unique handling, and unique services versus your competitor. With such a closed system, the rate of innovation will be determined by market demand and carrier ingenuity and not limited by the need to have uniformity and industry consensus.

In addition, I think that intermodal will become the dominant traffic for the remaining transcontinental carriers. The trend of bought-to-order goods will continue to increase the demand for higher transportation service levels. How many people now are ordering products by phone or over the Internet and having them delivered in one or two days by a parcel service? This same type of responsiveness is also becoming the norm in business-to-business transactions. We are going to have fewer steps in distribution, which says that the amount of scheduled, high-service package movements by intermodal will become in vogue. That will be a growing business.

I have one, final prediction through analogy. At Flying Tigers, UPS was 25 percent of our business. At Conrail and at CSX, UPS was about 25 percent of the intermodal business. UPS is now one of the largest air carriers in the world. Could this be an indication that UPS might one day vertically integrate into the railroad industry? It could be.

William E. Greenwood

President
The Zephyr Group

In late 1980, I successfully led a resistance among Burlington Northern (BN) operating people against having one of those low margin, unprofitable, lousy piggyback trains running across my division. Then, about a month later I was asked to head up a new business unit—managing the piggyback business. This was a nice promotion, and I very quickly accepted the challenge. I learned very early on, however, that this was a very risky business, full of obstacles. I also learned that no major railroad was managing piggyback as a business. There were just functional departments doing their "own piggyback thing." The only people involved in a business unit approach were Peter Novas on the Illinois Central and John Gray at Western Pacific. I talked to them, and I also talked to Reggie Short at Norfolk Southern (NS). All three warned me to watch out for the people in my company who would aggressively resist the TOFC product and organization.

In February 1981, TOFC was deregulated, which meant that we had the opportunity for a real paradigm shift with dramatic opportunities for growth not only for the railroads but also for those providing services to the railroads as part of the intermodal chain. But, a lot of pain had to be encountered to make the right changes happen. It is possible that if the right things had not been done in the early 1980s, we might not have caught that wave and intermodal would still be a stepchild business.

Why is this important to understand, and why is it important to understand and talk about the changes that had to take place, the obstacles

encountered, and how we got here? It is important because we are, once again, at the same place we were in February 1981. The e-commerce applications to business-to-business and to everything that is going on now is about to strike transportation. E-commerce and technology will, again, change the whole way of thinking about this intermodal business and what it means for us. If we do not catch this wave, we will not be celebrating the success of intermodal twenty years from now. In order to catch this wave, however, we must have the right systems in place, the right people with the right skills, the right processes, the right strategies, the ability to execute these strategies, and the right kind of structure. All of this must be derived from understanding the market and understanding the customers today. At BN in 1981, we were very lucky and very fortunate to have a few things that came together, not by design, but by accident, so we were in a position to take advantage of this wave.

The Intermodal Beginnings at BN

Booz-Allen had done an organizational study about how to organize the railroad more effectively. The study included the recommendation that we create business units, and particularly one to manage the TOFC business. This proposal was approved by Richard Bressler, a new, non-railroad CEO who had just come into the company. It would probably not have been adopted by a traditional railroad CEO at the time. This was luck. It was also luck that I got the call, because I did not know anything about this business. I brought in a team of people who also did not know anything about this business—Mark Cane, Ken Hoepner, Bill DeWitt, Bill Berry, and Dave Burns, and they were all from operations. They were outstanding "out-of-the-box" thinkers.

This team saw intermodal as a truck; it did not see it as a railroad. This one single mindset made a huge difference in the way we behaved from then on. Because we thought that we were a truck business, we made a lot of different kinds of decisions. This team also saw intermodal, or TOFC, as a process of managing a large number of pieces that had to come together to provide seamless transportation for the customer. Truck is dock to dock. Truck is a lot simpler than these TOFC pieces. One of the very first things this team did was to ask what TOFC, or trailer-on-flat-car, meant to a customer. This question resulted in significant changes in our thinking about the business, and we dropped the terms TOFC and piggyback. Someone in the team came up with the term intermodal, adopting the term from somewhere I am sure. So we renamed our product intermodal. I remember one of the first speeches that I gave about this intermodal product at BN and where it was going. I said that I felt real good about it. At the end of the talk, someone at the back of the room raised his hand and said, "I'd like to ask a question.

Could you tell me just exactly what are these intermodals anyway?" So intermodal was an unfamiliar term. However, we called our product intermodal and we developed three strategies.

The Three Strategies of Intermodal

The three strategies that we developed for intermodal sustained themselves through the whole decade and guided everything that we did. The first strategy was to develop a network of high-volume intermodal hubs. At the time, we had 160 ramps. I think the whole country had about 1,700 ramps and only a few of them were mechanized. We reduced our ramps to 22 mechanized hubs, and we did it over the course of just a few years.

In addition, we recognized that these hubs were trucking terminals, not rail terminals. As such, we hired 22 people from the trucking industry to manage the terminals, and we also managed them with a profit and loss budget similar to what the trucking industry used. We recognized that we were partners with the trucking industry, creating a whole different kind of environment as a result. The result of these consolidated and professionally managed hubs was reduced costs, improved service, and improved relationships, which helped us execute all of our strategies successfully.

The second strategy was to develop a network of cost-effective equipment and dedicated intermodal trains that were market driven. When it came to trailers, we designed for highway compatibility so that customers would not have to plan their loads differently for intermodal trailers. For example, at this time everybody was still ordering 40-foot long, 8-foot wide trailers. Some were ordering 45-foot long trailers. Our first order was for 500 45-foot long, 8½-foot wide trailers because that was what the truckers were ordering. We took delivery on those trailers six months before they became legal. We never got a ticket, but these were the kinds of risks that we were willing to take. These trailers had Burlington Northern Innovative Intermodal Service on the side, they were green, and some are still in use.

In addition, there were many different kinds of flatcars from which to choose, but there was no data on any of them. We could not tell what a particular railcar would do for efficiency, for cost effectiveness, or for ride quality to reduce damage. So, we tested them ourselves at the Pueblo test track facility and in our northern corridor. We paid for the testing ourselves, and we really found out what kind of railcar equipment met our strategy of being highway compatible in terms of ride quality and rolling resistance.

Incidentally, out of this testing project came RoadRailer, and because we were dedicated to making RoadRailer work, we rescued RoadRailer out of the North American bankruptcy in Los Angeles and began operating RoadRailer trains. The first RoadRailer operations were between Detroit and St. Louis. We utilized the Grand Trunk to Chicago and then BN down to St. Louis. It was a very circuitous route and produced second-morning delivery. We eventually turned the operation over to Norfolk Southern because their shorter route provided for first-morning delivery.

A part of the second strategy was to have a system of dedicated intermodal trains. At this time there were only a couple of dedicated intermodal trains on BN. We knew that to achieve a smooth, damage-free ride and good service, we had to keep the intermodal cars with their trailers out of classification yards. The only way to do this was to have dedicated intermodal trains that operated in a way that did not allow them to mix with coal, grains, etc.

Our third strategy was to develop customized marketing packages. This was the driver for our other two strategies. We recognized that there were multiple segments in this intermodal business. We started with just 2 segments that we marketed to, domestic and international. We wound up with about 22 segments. We marketed to each one of these 22 segments differently and went after business in each one. We focused on streamlining and simplifying everything that we did.

When I first went into intermodal, I could not understand what the pricing people were telling me. They were talking about mixing and matching, geographic territories, ten-trailer rates and two-trailer rates. It just did not make sense to me. The first customer I called on after being in the business two weeks was R. C. Matney, and I asked him how he understood what rate we charged. He told me that his business exists because the railroads were so complicated. He suggested that I give a single-trailer, roundtrip rate for a few lanes, and he would bring on all the business in the world. One week later we put this simple, single-trailer rate into place, it created quite a stir, but it really worked.

This strategy of simplifying and streamlining everything was something that we wanted to do to make it easier for our customers to do business with us. We focused on how to channel ourselves into the marketplace. The key was to learn how to be a partner with the people who already controlled the business. There were shippers' agents, freight forwarders, freight traffic associations, and trucking companies. We did not want to take control away from them; we wanted to be a partner so that we could learn everything about that channel and market to it better. Our issue was whether we wanted to be more of a variable cost or a fixed-cost structure. We did not want to take on all kinds of additional fixed

cost. We felt that we could get to the issue by working with our customers as partners. We did a lot of market research early on. We did focus groups and market surveys. The research showed us what we had to do to develop the right kind of product to be successful. We went from margin pricing to value-based pricing and to balance pricing, which is a combination of the two. This made a huge difference.

These strategies lasted for over a decade. One of the things that helped make them work was a pervasive and successful communication effort. Every morning, we spent about twenty or thirty minutes meeting to discuss how we were moving the business forward and whether we were in line with the strategy. We had certain things that we reported on. For example, one morning the equipment person reported that his flow had shifted and he was running 10 empties a day from Memphis, Tennessee, to Fargo, North Dakota. The market manager explained that he had a price at Fargo for 10 trailers a day of loaded material going to Seattle, Washington, but the price was based on utilizing the excess capacity that we had at Fargo. If that excess capacity disappeared, he could not support the cost of moving the empties. The empty move order was immediately cancelled. We focused on these kinds of things constantly. We communicated the strategies all the time inside the organization.

We grew the business from $200 M in 1980 to $550 M in 1985. We went from being number eight in the industry in volume to number one by the end of the decade. This should not have happened. We did not have the production base or the consumption base in the BN franchise to do that well. I think we did well because of the strategies that were in place and the ability to execute them. If the organizational structure that I described had not been in place, we never would have been able to carry it off. That was a very, very important piece of our success.

The Obstacles to Intermodal

The obstacles that we encountered are still present today, and they have to be watched in case changes need to be made. The obstacles that we had were all internal. When you change structure, when you change systems, when you change skills, and when you change people in one part of a company, there tends to be nothing but open hostility from the rest of the organization. Most of the railroads were still protective of their functions.

The operating departments wanted the hub terminals under their control and saw hub terminals as a place where flatcars got switched. But, we saw hub terminals as a place where the highway met the railroad, as a trucking operation not a rail operation. The operating department did not like dedicated trains because they took away a lot of their ability

and flexibility to fill trains with merchandise, grain, and some other things.

The purchasing department was furious about the fact that we opened ourselves up to all the vendors. We invited all the vendors, the car builders and the trailer builders, to talk to us. We wanted to learn what they knew, and we wanted them to know where we were going so that they could start designing equipment to meet our requirements. It was a great relationship, but they had to meet us in secret because our purchasing department would punish them if they knew that they were going to meet with us.

Measurements were inappropriate for the business that we were in. The cost system was based on complicated algorithms derived from ICC Form A. It had nothing to do with our activity of trying to run our intermodal trains and our whole intermodal system. The systems related to the railcars but not to the trailers. The information systems could tell us everything we wanted to know about the flatcar but nothing about the trailer. We solved these issues because we had "out-of-the-box" thinkers who were risk takers. The company had a policy prohibiting personal computers (PCs) outside the information systems department. We bought 12 PCs out of the trunk of a car on the black market in Dallas, Texas. We paid for these IBM clones by creating an invoice for drayage from the Minneapolis, Minnesota, hub. While we were trying to grow an intermodal organization and adding people, Burlington Northern was downsizing from 60,000 to 30,000 people. Imagine the hostility that was created when we would successfully make an argument for adding people or for sometimes getting people without authority.

My superiors were, at best, skeptical, but, for the most part, they were hostile to what we were trying to do. One time my boss gathered some of the intermodal people together and told them that they had to help him stop me from going too far, too fast, and getting us all fired! He felt that intermodal was not supposed to take business away from everybody else. Intermodal was not taking business away from everybody else, but that is the way he saw it.

We survived these internal obstacles because we had great teamwork in the organization, because we had great strategies that we were all commonly working toward, because we had a vision, because we were willing risk takers, and because we were getting performance results from our vendors, from our customers, and from the press. We were continuing to innovate because we were continually learning from people. We would talk to outsiders, like the Phil Yeagers and the R.C. Matneys of the world, about what was going on in the marketplace. We learned from them. We would talk to Jim Jimenez about how to do creative financing to get more equipment, because the railroad could not give us capital. We talked to

John Gray about terminals, and he would give us all kinds of ideas on terminal operations.

E-Commerce and Intermodalism

I tell this story about the early 1980s obstacles to intermodal—about what had to be done, about what had to be changed, and about how the paradigm had to shift—because we are again at the same place today. There are software companies and some transportation companies that are designing e-commerce transportation exchanges. The subscribers to these e-commerce exchanges will be able to have a shipper post their demand for loads between point A and point B. Transportation companies will post their available capacity and price. In this exchange, we will be able to tell the credit worthiness of both parties, their history of damage, and their history of paying claims. We will be able to track immediately a carrier's history on service performance in that particular corridor. The exchanges will do the invoicing and the collection by electronic funds transfer. The list goes on and on and on.

The trucking companies and the railroads that embrace these technological changes and try to be leaders will have a profitable role for the future. The ones that do not are going to be reduced to being a commodity that can only compete with price. The only question is who is going to capture the value from what will be created. The business-to-business structure in transportation will bring a tremendous cost reduction in the administrative processes along with service improvements. Someone will be extracting a lot of value for providing this new efficiency.

In 2020, what industry will the new intermodal founding fathers come from? Will they be from software companies, will they be from 3PLs, will they be from railroads, or will they be from trucking companies? I do not know the answer. The challenge, as well as the dilemma, for the people who are now in railroad intermodal departments is whether or not to lead the way by making the necessary changes inside their companies. Just like in the early 1980s, they will run a risk either way. Doing the right things exposes intermodal officers to internal risks and doing nothing exposes them and their companies to being out performed in the market place. It seems that once again history is repeating itself.

Concluding Remarks

Thomas L. Finkbiner

The intermodal business is at an inflection point. The Intermodal Founding Fathers of North America Conference presentations have been about the transportation heroes who have overcome a lot of difficulty to get the intermodal industry to where it is today, in 1999. Intermodal is an incredible accomplishment. As we have learned, intermodal will surpass coal as the leading revenue generator in the railroad industry in 1999.

When I say that the intermodal industry is at an inflection point, I will also tell you that the skills, the heroism, the tenacity, and the awkwardness that got the business to this level in 1999 will not take it to the next level. *It will not take it to the next level.* You will not drive it beyond where it is now. Intermodal service needs to be better. The railroads need to provide service. And, there is no excess capacity.

The railroad business has fundamentally changed. So, we find ourselves in a business that is not incremental anymore. In order to use the capacity that we have wisely, we are going to have to be smarter. Hard work, which is always of value, is a good thing, and hard work is what all of the Founding Fathers did, but all of the work and all of the long hours will not produce results anymore.

We are going to have to be smarter about the way that we do things. We are going to have to be more sophisticated. In order to get the railroad business to the next level and the intermodal business to the next level, we are going to have to use discipline and to use science, and, I think, that is what ITI is all about and that is why I am proud to be part of ITI. For those who are just starting in ITI, the future is yours, and I think what has been said at this conference is that intermodal is still teetering. Intermodal could go either way, and it is up to you, the next generation of transportation leaders, to see which way it goes. Thank you.