Railroad Chief Executive Officer's View

James A. Hagen, *Consolidated Rail Corporation*

Recently I saw a bumper sticker that read "Railroaders don't die . . . they just lose track." Well, I thought, that is something to look forward to. Then as I moved from the personal level and thought about the play on words a little more, I thought that "railroads" could be substituted for "railroaders." An examination of the past 3 decades reveals that the railroad industry, if nothing else, has been a survivor, and, in a literal sense, it certainly has lost track—26 percent of it went away during the 1980s.

What does that have to do with technology and what railroads ought to be investigating for the future? When I saw that bumper sticker, it did not take any great leap to reflect on the combination of factors that have shaped the recent history of railroads and brought them to where they are today: a survivor, a lean competitor, and a shadow of the former self in the physical dimension. All of the factors that have contributed to defining what the industry is today may be grouped under one heading: competitive necessity. Technology, born of that necessity, is what has gotten railroads in the game today, and it will be technology, born of competitive necessity, that will determine how well railroads compete in the future.

My railroad career, which began on the Missouri Pacific in 1958, has coincided with the development and expansion of one of the most significant public works projects in the history of the world and a significant factor in the erosion of railroad traffic during the past several decades—the U.S. Interstate highway system. That system has created competitive necessity for railroads, and competitive necessity has been the principal driver of technological development in the railroad industry.

The single thought I want to leave with participants at this Conference on Railroad Freight Transportation Research Needs is that with all the change that has occurred and with all the change that will occur in the future, the one thing that will not change is that competitive necessity will remain the principal driver of where technology dollars are invested. I can think of no better focus for research and development, no better way to keep scarce resources focused on what it takes to keep and attract new customers.

I would like to help define the competitive necessities that are driving technology decisions today and for the years ahead. They fall into two broad categories.

First is technology driven by the need for improvements in efficiency and productivity. This is based on the need to continuously get more from the substantial investment in physical assets. Productivity improvement is not new territory; it has been the principal driver of the success of railroads during the past 10 years. It has enabled them to reduce costs and remain

competitive. The need for technologies that improve productivity will not lessen in the future. It will continue to be driven by competition and public policy.

The second major competitive necessity that defines the technology priorities of railroads is external. It is driven by customers' continuously changing expectations, which are based on the increasing demands placed on them by their customers. This challenge is a relatively new phenomenon. It is driven by increasing global competition, and its effects may be summed up in two words: time compression. This encompasses the responsiveness of railroads to specific customer needs; their ability to provide timely accurate information about that service; and their ability to make timely decisions to bring new service products to the market quickly.

Customers want all of these things faster, and they want them without the complexity that has typically hobbled their relationships with railroads in the past. Managing time compression is as much a people and cultural challenge to the railroad business as it is a technology challenge, and it is one that plays a growing role in railroads' success in the marketplace.

Let us start with productivity. The need here is still based on a simple premise: railroads own and maintain their plants; trucks just pay when they use theirs. Consequently, many of the technology needs of railroads have been driven by the need to have a first-class track structure, to get the necessary economies of scale, and to be able to build and maintain the physical plant at the lowest possible cost—all critical to their competitiveness. Consider the advanced signaling systems that have enabled effective operation over single- and double-track railroads. Consider the role of computers in dramatically improving the use of locomotives and freight cars.

At Consolidated Rail Corporation (Conrail), if locomotive use levels had remained at 1980 levels, an additional 800 locomotives would be necessary today—at a cost of $1 million to $2 million each. Given that cost, the importance of full use and its effect on the cost structure are apparent. The same holds true with freight cars. In just the past several years, the equivalent of 40,000 additional open-top hopper cars has been created by improving the loading and unloading of these cars. Considering what it costs to build a mile of new railroad, the importance of technologies that permit high-density operations over single-track railroads is clear.

If you think the Interstate system is yesterday's news and that railroads have already accounted for the competitive advantage of truckers, you are wrong. A public policy issue quickly coming to the forefront is the National Highway System. According to the authorization in the Intermodal Surface Transportation Efficiency Act of 1991, this system will be a highway system approximately 155,000 mi long, presumably built to Interstate standards, which will include the existing 42,000-mi Interstate system, 17,000-mi Strahnet defense system, and 5,000 mi of commercial corridors identified by the U.S. Congress. The system will generally be an upgrading of existing principal arterial highways.

This is a crossroads issue for the railroad industry. Tripling the existing Interstate system at public expense obviously has significant productivity implications for truckers. This creates competitive necessity. It also emphasizes the importance of continuing to focus on technologies that will allow railroads to get more from their track and equipment at the lowest possible cost.

One of the latest developments, alternating current traction locomotives, is an example of a technology that can help railroads operate with fewer units and at a lower maintenance cost.

Another example is that, in many cases, rail "fatigues" before it wears out, as a result of cracks or Sperry car defects. Railroads have to find the technologies, the science, that can be used to identify the cause of these types of defects. What causes these cracks? What is it in the science that does not permit the rail to be worn out? It is not sufficient to just run Sperry cars. The causes must be found, and the environment that keeps railroads from maximizing their use of this costly asset must be eliminated.

One competitive necessity is productivity improvement, which is an internal necessity. It is driven by railroads' competition and by an ever-challenging public policy environment, and it is focused on cost structure, for which the record of improvement is good.

However, that is no longer sufficient. The industry is not going to make it on cost reduction alone. Railroads cannot continue to succeed just by getting smaller—by "losing track," if you will. The number of miles of track was reduced by 26 percent through the 1980s. Current

employment in the industry is less than half what it was in 1980. However, during that period, railroads still lost market share to trucks, as the railroad industry remains one struggling to earn its cost of capital. Without more attention to the revenue side, without the ability to provide a product superior to what the trucks can offer, and the ability to bring it to the market quickly, railroads will be a thing of the past before long.

That is competitive necessity. It is driven by customers' ever-changing, increasingly demanding expectations, and that is what I have called the challenge of time compression.

I think all in the railroad industry are beginning to recognize the market forces at work now that are making this need to manage time compression pretty compelling.

Regional and global competition is increasing and will continue to increase. No longer will any one country have a corner on anything. As a result, marketing and sourcing patterns are changing and will continue to change. Artificial trade barriers are falling. The United States–Canada free trade agreement already is stimulating cross-border investment and changing traffic flows in both countries. New manufacturing growth in the Pacific is moving to Southeast Asia from North Asia, creating new options for reaching North American markets.

The point is this: as world trade increases, change will accelerate, and options will proliferate. That is a new reality with as much meaning to railroads as to their customers. Railroads must be able to be as responsive to new needs in the market as their customers must be.

Railroad customers are confronted with a widening array of choices about which modes to use to access which markets. They are looking to railroads to help fashion the answers to logistics problems of growing complexity. Clearly, this has compelled railroads to develop a new sense of their role in the marketplace—what services they ought to provide, and how to provide them effectively. If railroads are to be a player, they must listen to their customers, help them anticipate their needs in the market, and respond quickly with the services and equipment to meet those needs.

Railroads are learning that time must be considered as a resource as precious in their competitive environment as the creativity of their employees or their investment capital. Time has value. The ability to innovate is useless without a sense of urgency and a coordinated approach to bringing those ideas to the marketplace.

Making decisions about product development and new equipment designs on a shorter cycle means that railroads can be in the market ahead of the competition. It means that they can be more flexible to changes and move to take advantage of opportunities before they disappear. It is the only way they can expect to be successful and to increase their revenue base. It is the only way to satisfy customers under the pressure of global competition.

More demanding customer requirements mean that change cannot occur slowly, one railroad at a time, but that consistent levels of quality and technology must be pursued and maintained across the entire industry.

The opportunity will not be realized if just a few railroads embrace quality improvement, or if new technologies are applied inconsistently. Railroads have always recognized their interdependence, but always with a high degree of independence. It has always been recognized that railroads' collective performance could be only as strong as the weakest link. That was always a convenient excuse for underperformance. It was always "the other guy" who had the problem. Pointing the finger at the other guy will not achieve success in this competitive world. The seamlessness that railroad professionals have all talked about so much means that they must help one another succeed.

The management of time compression has provided new opportunities for transportation companies to work cooperatively. Many railroads are beginning to focus on the same issues in similar ways and in many cases are working on these issues in partnership with others or as an industry. Automatic equipment identification is a good example of an industry initiative based on the need to improve the management of time—to speed the flow of good information—out of market necessity.

More must be done, however, if railroads are to overcome barriers that traditionally have kept them a collection of separate islands handing off freight to one another. The concept of seamless service needs to be taken more seriously, in both physical operations and information flow. Railroads must apply the information technology that will enable them to make the

traditional barriers between railroads smooth and invisible to the customer who wants single-system service no matter how many railroads are involved. Railroads need to take the historic complexity of dealing with multiple railroads and create simplicity for the customer.

When the customer calls, it is not good enough to say, "Oh, that's not my problem; the shipment is moving on the Union Pacific now." If the railroad has touched the shipment, then it has to be able to answer to the customer on the first phone call, no matter where the shipment is in the pipeline.

This simplicity is expanding throughout the industry as information systems alliances are created. The industry's Rate Electronic Data Interchange (EDI) Network and Interline Settlement System are well into development and are scheduled for implementation in 1994. Railroads are creating simplified pricing, single-source information on shipment status and more accurate and efficient back office functions in billing and claims.

Following are two examples that demonstrate how dependent railroads are on each other, both for providing successful new services and for backing those services up with free-flowing information.

To provide guaranteed interline rail service for Ford Motor Company, all of the carriers involved need to be aware of where Ford's cars are at any point in time. As a result, Conrail and several of its rail partners had to work together to transform a system that transmitted car status and waybill information only one step ahead of the car into a system that broadcast that information to all of the carriers involved at the time cars leave their origin. This way, the destination carrier responsible for delivering the cars can track their progress.

In another example, several rail carriers have begun working with J.B. Hunt to move Hunt trailers in rail intermodal service, with Hunt drivers handling local pickup and delivery. Before Conrail or Santa Fe or any other carrier could move the first of Hunt's trailers, they needed to develop the ability to communicate with Hunt—via EDI—in the electronic language of the trucking industry, a language railroads had never used before. Without that capability, there could be no business. Railroads have achieved that capability to meet Hunt's needs.

Achieving true seamlessness requires more than information technology; it involves physical assets as well. Equipment designs need to meet customers' logistical requirements. That may mean automated loading and unloading, improved ride quality, or other features that provide damage-free delivery.

Furthermore, if the physical plant is not in top-notch shape, railroads cannot provide the reliable service customers expect. Another term that goes with seamless service is "transparent" physical plant. It must be there. It must work every time. It must never get in the way of the ability to provide transportation. The railroads of the future will learn how to apply science to achieve a more productively maintained, transparent physical plant.

Let us now turn from technology to people. In the competitive world described here—in this era of time compression where railroads must stay on top of customer expectations and be able to respond quickly—the only way to bring the right technology to the right place at the right time is to have all the people in the railroads working together toward that goal.

That is why emphasis on total quality and continuous improvement is so important. Most railroads have developed some form of total quality initiative. Conrail's is called Continuous Quality Improvement. The goal is to replace the traditional top-down, hierarchical style of management with one based on the participation of knowledgeable employees close to the customer. This is key to creating railroads that can respond rapidly to customer needs.

Railroads need to be serious about total quality. Only those organizations that not only talk about it, but practice it, will make it in this world where quality and value are all that count in a product. It no longer matters where the product comes from. The practice of continuous improvement cannot be limited to the Chief Executive Officer or the Vice President of Marketing; it must have the participation of everyone, for that is where the real power to make a difference for customers lies.

In summary, I am optimistic about the future of railroads. I believe that railroads now have greater opportunity to improve quality and to apply technology to improve the product than does the trucking industry. However, they are not there yet. It is up to railroad professionals to move change forward. The changing needs of customers must constantly be anticipated and

met. Customers must remain the focus. If technology does not meet the test of competitive necessity, if it does not get at those root causes that will help railroads improve productivity, improve use of their assets, or help them meet real needs in the market, they cannot afford it.

If railroads change, if they make a commitment to quality, if they listen to their customers, and if they rely on the participation of their employees, I believe they opt for something new and invigorating for the industry: satisfied customers and revenue growth.