

## DAY 2: CONCURRENT PANEL SESSIONS (PANEL 4C)

# Service Reliability and Operations

---

Edward Emmett, *National Industrial Transportation League, Moderator*  
Brian Avery, *Hub Group, Inc.*  
Tim Burrack, *National Corn Growers Association*  
Lawrence Wetsel, *Norfolk Southern Corporation*  
Donald Cameron, *The Cameron Group and BOSE Corporation*

### THIRD-PARTY RESPONSE

#### *Brian Avery*

*Brian Avery is Vice President, Rail Relations, for the Hub Group in Lombard, Illinois, and has been associated with the rail industry in various sales and marketing positions since 1978. Before joining the Hub Group in 1994, he was in the marketing department of CSX Intermodal at their headquarters in Hunt Valley, Maryland. His current responsibilities are associated with the Hub Group's rail carrier strategic relationships including contractual arrangements, equipment procurement, service performance, purchasing, pricing, commercial business processes, liability, and mutual strategic initiatives. He is also operationally and commercially responsible for the company's Premier Service Network. He holds a B.S. in business administration and an M.S. in management from The Johns Hopkins University.*

I want to discuss how important intermodal service reliability is in my company. We are an intermodal marketing company. Our annual sales are about \$1.3 billion, of which about 75 percent is intermodal—we do about \$800 million in intermodal. The balance is logistics and truck brokerage. Intermodal is growing a little slower than our logistics business, but it is still the lion's share of our business. We are absolutely tied into service reliability. We have four rail partners to whom we pay over \$100 million and our total rail bill is about \$650 million,

which puts us in some fairly rarefied air from a freight bill perspective. For us, service reliability is absolutely critical.

Whenever anybody thinks about intermodal service reliability, they may automatically go to the recent mergers. In the Union Pacific/Southern Pacific (UP/SP) situation, they completely took over a railroad. In the Conrail split, the railroad was carved up—something that is without precedent. The only comparable transaction of that size is perhaps the breakup of the phone company—to this day I cannot tell you who my long distance provider is because it changes about every 3 weeks.

The UP inherited a very deteriorated physical plant with the SP. One industry expert remarked that “SP was a great franchise, but it was a handyman special” and that pretty much summed it up. On the other hand, with the Conrail split, the property was in excellent condition—the locomotives were in pretty good shape and it was capable of being operated.

In the UP/SP consolidation, information technology was not a major concern or, if it was, we did not hear about it. The Conrail split occurred on June 1, 1999. June is the best time to split up a railroad up, because that is traditionally the slowest track period of the year. It gives you about 3 months before peak to get your act together. Unfortunately, they did it in 1999 and information technology resources were relatively scarce in 1999. Whereas they picked the right month, the year may have been unfortunate and there were some technological issues that affected the service.

In the UP/SP consolidation, the intermodal trouble spots were largely isolated to Los Angeles and Houston. In the Conrail split, the intermodal trouble spots moved

around. CSX had several issues at Toledo and some issues in Cleveland. Norfolk Southern (NS) had car problems in the East and CSX had car problems in the Midwest. It was kind of a moving target and if you cannot isolate your problems or if they keep moving around, it is very difficult to solve them. Although UP was perhaps criticized for exaggerating the schedule on which they would be fixed, they did know how to fix it. When they got Los Angeles and Houston repaired, it spread to the rest of the network. What this tells us is that service failures are not created equally.

The probability of a service failure depends largely on where it occurs. We have statistics on this and we have spent a lot of money to determine root causes of failures. If you have a terminal departure delay, if it is an hour or two, it is probably not a big deal. However, in most cases, intermodal trains operate one train per day from one origin to one destination. This is not the case in Chicago, Los Angeles, or other high-density lanes, but in roughly 95 percent of the intermodal lanes there is only one train. That means if you run out of cars, you depart 24 hours late. A line or road delay can be moderate or low. Data indicate you can be really late in Clovis, New Mexico, and still get to Los Angeles on time on the Burlington Northern Santa Fe (BNSF). For some reason, they can make up a whole lot of time. Data also indicate that when you go from Los Angeles to Chicago and you are late at Kansas City, bad things will happen to you. Those are the chances and they do vary.

A terminal arrival delay may or may not be a problem. Most intermodal trains depart at night and they arrive in the morning. If you have a 12:00 a.m. availability and you are 2 hours late, it probably does not make a whole lot of difference for your 8:00 a.m. appointment. We do a fair amount of recovery that way.

Our data indicate that the biggest problem we have with service failures is getting the trains out on time. If the train leaves on time, generally it is fairly reliable. In a single train lane, if it does not make that train, it is never going to make up the time. This is what you want to look at as a root cause of service reliability failures.

In the intermodal game, the train performance statistics really do not mean much. We are currently delivering 95 percent on time for our largest customer in lanes where the trains are running 40 percent. There is a whole lot of recovery that goes on and a whole lot of stress. The train performance is very bad in a lot of lanes. There is some recovery that occurs in the rail terminals if they have some slack in the schedules—that 12:00 midnight arrival with the 8:00 a.m. or 6:00 a.m. availability. There is some make-up there. We are also able to recover with our drayage. If we are sitting trackside and we have 2.5 hours to make the appointment and the availability is 1.5 hour before, we can stand a half hour and we can recover it. There are various methods of recovery.

Some of our customers would absolutely be shocked if they knew what the train reliability was in some lanes and that is where the hard work comes in. My company's head count is growing at about twice the rate of our revenue growth and it is simply rework and service recovery. We have gone from 700 employees 5 years ago to 1,400, and it is all backroom costs because of this situation. However, it is not all bad. There are encouraging signs that the service is recovering.

In order not to embarrass anyone or anything, I will illustrate with an average of average of averages. Using a straight line to signify on-time performance, we can array numbers to indicate the variance from on time—how much they are late. This includes several hundred thousand transactions with our five largest intermodal operators: NS, CSX, UP, BNSF, and Pacer Stack Train. In January 1999, we were 20 hours off—almost a full day on every shipment. We know some of them were making it on time, so some of them were in pretty bad shape.

We people in Chicago tend to be somewhat narcissistic about intermodal, thinking the whole world revolves around us. Frankly, I guess it does from an intermodal perspective because if Chicago gets messed up, the whole country is messed up. For example, we had 21 in. of snow on the ground on January 3, 1999. That messed us up for the whole month. There was some service recovery by March—3 hours—then it started to creep. In June we had the Conrail split. As a result, our numbers started going up and we were getting delays and we were getting distress shipments, a lot of loads were left on the ground, and so forth. When we hit 23, it had spread to the western railroads. The cars got all out of cycle, the equipment got out of cycle. It became clear we were definitely within an intermodal network. This January, we have seen significant improvement and the first 2 weeks of February were even better than January, with indications we have definitely turned the corner in the East.

In recent discussions with representatives of NS, I learned they are making some unprecedented investments in additional capacity. They are implementing train operations with some western connections that are designed to improve the fluidity of their network. I believe they are on the right track. Similarly, CSX is making progress. CSX faces a somewhat different issue because they are assimilating 450,000 loads into their network. In the West, UP is running their intermodal trains more reliably than they ever have. BNSF is plus 90 percent.

I believe that as time goes on, with a mild winter like we have had, we can expect some significant service improvements this year. The true test is going to come in March when the business levels get high. If we get through that, the indications are good that we will be able to get through September and October, barring any major weather events. Thank you very much.

## BULK SHIPPING REQUIREMENTS

### *Tim Burrack*

*Tim Burrack farms near Arlington in Fayette County, Iowa, raising corn and soybeans. He has been farming for 26 years with his brother Jim. Burrack is past president of the Iowa Corn Growers Association and is a board member of the National Corn Growers Association. Burrack has been very active in Mississippi River lock improvements and has traveled to South America to research inland waterway infrastructure developments.*

As Ed mentioned in his introduction, I am a bona fide farmer. I derive 100 percent of my income from growing corn and soybeans in northeastern Iowa. I live 40 mi from the Mississippi River. I am here today because several years ago I experienced what we call "river meltdown" and it was not due to the ice going out. It was due to transportation problems and it cost me about \$100,000. It was then I began to realize the river is something I used to take for granted. I offer an analogy to the electric light bulb—when you turn on the electricity and the light comes on, you do not think a thing of it. It is when you turn the switch on and the light does not come on that you realize something is wrong.

After I reached in my empty pocket that year and realized there was no income because I had been unable to ship on the river, I became very active and interested in finding a way to fix what was wrong. That is why today I am going to talk in part about the Mississippi River, a transportation system that is vital to my livelihood.

We are talking about modal service reliability, being able to get shipments to markets. For my products, we are talking about a river transportation infrastructure that is 60 years old and that was built for 600-ft barges. Today, barges are 1,200 ft long and it takes at least an hour and a half, sometimes up to several days when transportation is heavy, to get a barge through a lock system. When barge operators say they charge \$400 to \$500 an hour for that towboat, whether it is moving or not moving, that cost eventually comes back to me as a farmer and a producer in Iowa. I pay the final bill. The closest railroad to me is 50 mi, so that is not an alternative for me. Plus, when you are talking about moving grain to the Gulf and the efficiencies of moving it down there, it is still cheaper to move bulk commodities by water.

I also want to talk about foreign competition and what they are doing in South America. I was not quite sure the topic would be applicable to this session; however, after sitting in on a previous session and hearing three of the four panelists talk about rail developments

in South America, specifically in Brazil, I realized I was right on track.

Last winter I had the privilege to go down to South America with a farm magazine called *Top Producer*. The editor was going down there to have the first U.S. interview with the world's largest farmer, the number one grower of soybeans. She wanted two U.S. farmers to go with her to better understand and interpret what she heard and saw. We started in the state of Mato Grosso, heading to the center of the continent, an area they refer to as the "new frontier." This is land they have cleared and have just begun to settle over the past 10 years. We traveled along the Madeira River and then on the Amazon River. The area of the state of Mato Grosso is equivalent to the area of Iowa, Minnesota, Illinois, Missouri, and Nebraska; it is a huge state covering a large area.

What is taking place down there is going to change the way American agriculture does business in the 21st century. For example, in 1993, the town of Sapazel was a soybean field. A large family who had bought roughly 200,000 acres down there in the mid-1980s decided they could increase the value of their farmland and their business if they built their own town. Today, it has a population of 7,000 people, it has three soybean processing plants, and it is continuing to grow.

A 43-year-old fellow by the name of Blairo Maggi lives there and he is the world's largest farmer. He grows 150,000 acres of soybeans. He owns 400,000 acres, one part of which is a 60,000-acre soybean field. I do not know if there are any farmers in this audience or anyone who knows much about agriculture, but I can tell you a 60,000-acre field is extremely large anywhere in the world, even in Brazil. I had never seen anything like it. I stood out in that field and for 360 degrees, no matter how far I looked, there was nothing but soybeans for miles. This farmer in Brazil is going to change the way American farmers do business, and that is the message I want to get across.

How is he going to do that? By exploiting the Amazon River. As I mentioned earlier, I live 40 mi from the Mississippi River and that is where a lot of my grain goes. When the river works, I have a market. When the river does not work, I do not have a market. I thought I knew what a big river was. When I got up the first morning at Manaus on the Amazon River, it was foggy, but as that fog cleared and I started looking at that river I suddenly realized I had no concept of what a big river was. At one point, it is 7 mi wide and 130 ft deep. The Amazon is 13 times bigger than the Mississippi. Each of its three tributaries carries more water than the Mississippi. In 1991, this Brazilian farmer, Blairo Maggi, was in Finland buying electric generators. He and his chief marine engineer saw an icebreaker over there. He got to thinking that they could take the design and the prop and adapt it for commercial navigation on the Amazon.

Up to this point, there was one primary reason there had never been any large-scale commercial navigation on the Amazon. The reason is logs coming out of the rainforest and out of the Andes Mountains. These logs are 4 and 5 ft in diameter and would sink any type of large vessel if they got in the propellers. Everyone thought it would be impossible to commercially navigate the Amazon and its tributaries. The main tributary of most interest was the Madeira River. Madeira in Portuguese means wood; it is called the Wood River because of the big logs coming down it.

After Maggi came back from Finland, he built a small prototype and found that the ice-breaker design worked. The logs rolled off the bow and did not get into the propellers. Maggi decided to build his own transportation company. He put up \$60 million of his own money and he borrowed \$40 million from the state of Amazonas. He now has 350 people building barges and line boats in Manaus on the Amazon River.

The design is the secret to his success. This is the design that is going to change U.S. agriculture, but it is being done down in the Amazon. That design—and I was fortunate they had the boat in drydock and were just trying to pull it back into the river while we were standing there and I was able to take a picture of it—has a recessed prop, drops vertically, and rotates 360 degrees. They found out the system works.

He had 30 barges built when we were there. They cost \$1.6 million a piece. A line boat costs \$6 million and two had recently been built. The barges draft 15 ft and hold 75,000 bushels—that is 50 percent larger than what we use on the upper Mississippi. On the upper Mississippi, the U.S. Army Corps of Engineers maintains a 9 ft channel; therefore we can draft only 9 ft. Down there they naturally draft 15 ft—when you have 100 ft of water, you can draft just about anything you want.

He has constructed a site and has a technology for unloading these barges, which includes a conveyor system that enables barges to be brought alongside and directly unloaded to a Panamax vessel or a barge can be unloaded to a storage facility. There is new technology that unloads it. In the United States, we do not have any similar technology. It is a large arm that swings over, drops in, and has an auger-type vacuum that enables them to unload a barge in 65 minutes—75,000 bushels. I found that pretty hard to believe, but they had no reason to lie to me. The point is they have tremendous new efficiencies, new technology.

They unload the barges and load the Panamax vessels at the town of Porto Velho. This is the equivalent of setting up at Minneapolis–St. Paul versus the mouth of the Mississippi River. This is about 1,700 mi inland from the mouth of the Amazon on the Madeira River. At this point, it is still 30 ft (9 m) deep and it is still carrying

more water than the Mississippi River. This is where those barges were loaded last year. This year, he is going into Bolivia and he is developing waterway infrastructure there and bringing it even farther. This river is unique and Maggi had another story about it. Recalling the prop design, he built a boat that is driven back and forth in an effort to find the deepest point in the channel. There are a lot of snags and sand bars even though there is a lot of water. He sounds it, and he did one other thing that I found unique—he used our Global Positioning System (GPS) defense satellites, which I use on my farm to find location. He uses that to make a computerized location map so when he puts nine barges together with one of those tow boats, he puts that generated computer map in the control of the line boat and for the next 48 hours, once they take off, they can go full speed without an operator ever touching the controls or the direction of the boat. They move 700 mi down the river to the Amazon where they unload those barges, using our GPS defense satellites. By the way, he did say thank you to us for those satellites.

He loads the barges, he runs them down to Mato Grosso, and then he loads the Panamax vessel and out they go. This means going 700 to 800 mi up the Amazon with a Panamax vessel that can hold 2.2 million bushels. In the United States, we can bring a Panamax vessel only about 120 mi up the Mississippi River. He can come up 700 to 800 mi. The efficiencies and the economies of scale that he gets are fantastic. This type of infrastructure development has all taken place in the past 2 years. Maggi used to truck his beans down and load them on a Panamax vessel for export to Europe and other markets. The ability to load them on the vessel inland now cuts as much as 8 days off a roundtrip to Europe.

Why is this going to change U.S. agriculture? As Maggi pointed out, he figured out how to develop this river and make the waterway work. No one thought it could be done; he did it. In 1997 he moved 350,000 tons of soybeans; in 1998 he moved 500,000 tons of soybeans; in 1999 he will move close to 1 million tons; and by the year 2002, he will be moving 2 million tons of soybeans out per year. That is the capacity of this facility and he will have paid for and gotten back his \$100 million investment. Now he is asking whether he should build another one, because he has proven this waterway system works. Right now Maggi is trucking the beans from Sapazel, the new town I mentioned earlier—it is 600 mi by truck from there to where it gets loaded on a vessel. He sees more waterways with the potential to be developed for commercial navigation because of technology he has already proved works. In a previous session, I also learned there are railroad developments in this area.

The point is, in this state, they are farming only 10 percent of the available land. There are 75 million acres of

land called the cerrado, which is not rainforest but a good soil type they know can be well farmed. There are 75 million acres yet to be cleared and farmed. Surrounding this state are another 75 million acres of land, for an equivalent of 150,000 acres. You put those two together, and it is equivalent to what we grow in the United States each year in corn and soybeans—150,000 acres. They have that much available land that can now be developed because they are building infrastructure. Up to this point, they have never farmed it because the commodities were not worth enough to pay the price of trucking the grain to the coast to get it to market. Now that they are developing infrastructure, the whole continent of South America is going to change. All that land can be farmed.

I do not know if anyone remembers an old saying by Will Rogers: "Buy land—they aren't making it anymore." Ladies and gentlemen, I think Will Rogers was wrong. They can make it, at 100 acres a day, with two caterpillars and an anchor chain. This has serious implications for U.S. agriculture in the 21st century. Maggi's cost of production on 150,000 acres of soybeans is \$3.29 a bushel. My cost is \$5.40 a bushel. His yield is 51. My yield is 54. He has just as good, if not better, genetics than I do and he is developing it himself. I am not the low-cost supplier in the world. He is. The United States has enjoyed its preeminence in world export markets because of the Mississippi River, our railroads, and our highways. Our infrastructure has allowed us to deliver large quantities extremely cheaply. That has been our secret for the past 40 years.

The secret is out. Maggi came up here and before he ever decided to invest the first penny of his \$60 million, he went up and down the Mississippi River. He looked at our locks and dams and saw what they do for the center of North America and what that means for economic development. Once he knew his technology worked, he had the inspiration to go back to Brazil and make his own system. He is a genius and he is only 43 years old. He wants to transform the center of this continent and here is the reason—he wants to capture our world markets. He wants the markets we already have plus those that are expanding through population growth. I asked why he wanted to do that, when he already owns 400,000 acres, is already a multimillionaire, and is going to have his \$60 million back by the year 2002. He acknowledged all those things were true; however, he also pointed out that as you travel around Brazil, you see millions of poor people, living in shacks made of tin, cardboard, or whatever material can be found. He thinks if he can capture the expanding world markets, he can clear more land in this area of the continent, and then employ more people. If he can employ more people, he can raise the standard of living in his nation.

In the United States, we do business because we have a profit incentive on an individual basis or a company

basis. Down there, profit is his secondary goal. His primary goal is to raise the standard of living of the people of his country. That is a major difference and also a sobering and perhaps scary point. We are up against a nationalistic, patriotic tendency.

Where does that leave us? Well, let me go back to the Mississippi River. For the past 7 years, we have spent \$54 million to do a navigation study to see whether we can justify lengthening locks or building new locks on the Mississippi River and on the Illinois River. In recent weeks, the controversy has reached new heights. We cannot afford this type of controversy anymore. If U.S. agriculture wants to hold even a percentage of the current export market share, that investment needs to be made.

We are talking about \$1.5 to \$2.0 billion for five locks on the Mississippi River and two on the Illinois River, spread over 20 years. If we started digging and pouring cement today, it would still be the year 2017 before we were done, and that is \$2.0 billion spread over that time. Part of that is generated through a \$0.20 per gallon user fee on diesel fuel on the river. Put it in perspective—that is one-third of the nuclear aircraft carriers we are building. The United States is building three nuclear submarines at \$4.5 billion apiece, or the equivalent of one B-2 bomber. I support all of those. However, we are asking for only up to \$2.0 billion over the next 20 years, and it looks like we are in for a protracted political fight. We need those locks. Our infrastructure is our efficiency. Without them, we will not be competitive in world agriculture. That is the message I need to leave with you—it is vital for the next generation of farmers in the United States to have an infrastructure that is competitive.

Today, Brazil is playing catch-up with us. Between what I saw down there and what I heard over here an hour ago, in 10 years the United States will be playing catch-up with Brazil. Thank you.

## RAIL RESPONSE

*Lawrence Wetsel*

**B**efore June 1, Norfolk Southern (NS) had a strong presence in the South and fairly good access to the Midwest but no access in the Northeast and the northernmost port served by NS was Norfolk. NS has always been a short-haul railroad. We did not reach the markets we needed to reach and our primary competitor, CSX, has always had a somewhat greater market reach than we had. This geographic and market reality had important implications for the business model that NS pursued historically. Given the new reality, this is changing in certain respects.

From the intermodal perspective, Conrail was basically an east-west railroad. Their interest in the north-south access was seriously lacking, because that was their short haul. We operated some trains north-south with Conrail, but the marketing effort was not there. We had some business but not enough to justify any increase. As a result of the recent sale and breakup of Conrail, NS now has 58 percent of those assets and CSX has 42 percent. The shared asset areas were northern New Jersey and southern New Jersey and the Detroit area. NS now has full access to the Northeast and access to every port on the Atlantic. In addition, most of our line is cleared for high-cubed doublestack service.

In 1999, we were a \$5.2 billion revenue company. The year 1999 was an unusual year for us, because 5 months was without Conrail and 7 months was with Conrail. The metal side of our business went up considerably after we took over the Conrail route through the heart of Pennsylvania. We also gained a good portion of the intermodal business of Conrail.

Since the passage of Staggers Act in 1980, the railroad industry has downsized considerably, with 35 percent less track, 32 percent fewer locomotives, 27 percent lower cost, 60 percent fewer employees, but 48 percent more traffic. The change in productivity has been massive. The most important and impressive index is reflected in revenue ton-miles per employee hour. Also since 1980, real freight rates have declined an average of 1.2 percent per year. In inflation adjusted dollars on average, it costs 55 percent less to move freight now than it did in 1981. U.S. producers enjoy the lowest average freight rates per unit of output anywhere in the world.

It would be foolish to expect that market prices will move uniformly on every commodity across every market segment to the same degree. That is not how markets work. Yet, the reality is that, since 1980, virtually every shipper has benefited from deregulation and the rate declines have been substantial in almost every instance. Were you to compare the trajectory in rail rates versus commodity prices on virtually every commodity, rail rates have fallen faster than prices for the product transported, whether that is steam, coal, wheat or bread, or soybeans. For a couple of commodities, like corn, the rates have declined about the same amount. For others, like automobiles, rates have declined substantially while finished products price costs have risen.

With that summary of NS business and the rail renaissance the Staggers Act unleashed in the industry, I now turn to the business model the U.S. railroads in general have pursued since the Staggers Act, perhaps none more successfully over the past 20 years than NS.

Looking at 1980 through 1996 data, railroads did not do a very good job growing revenues. In real dollars, revenues were flat, or even down a bit. Despite all the growth

in intermodal and western coal, originated tonnage was up by only 8 percent. The massive success has been in ton-miles. This is a legitimate metric, because it points directly to soaring profitability. Net operations went from \$1.9 billion to \$6.4 billion, a 234 percent increase. Railroads succeeded by controlling costs. Railroads exited many markets in which rail had little advantage over trucks. We focused on longer hauls, heavier loading, and high volume. We produced new service offerings such as intermodal and end unit trains. In intermodal, the most spectacular offering came in the form of doublestacks. NS has been extremely successful in this environment. Just between 1990 and 1997, our ton-miles increased 25 percent. If you look at ton-miles, we actually jumped 35 percent, reflecting our strong emphasis on intermodal and automotive.

However, now the most obvious savings are behind us, such as moving from the five-person crew to two. We have been successful by reducing costs in the context of an infrastructure that had been significantly over capacity. Thus, additional traffic and very competitive rates could be absorbed because the costs of handling were incremental. That business model is nearing exhaustion.

If you review NS's capital expenditures over the past 3 years—1997 through 1999—NS has been at close to \$1 billion per year. When you consider that before the purchase of Conrail, we were about a \$4 billion annual business, you realize what a significant investment that represents. One of the things we are trying to do is get our capacity up for the north-south business, and we are building an additional intermodal facility in Harrisburg, Pennsylvania. This facility will be on the north-south access as opposed to the present facility, which is on the east-west route. We are also building a 450-acre facility in Atlanta, Georgia.

Railroads are heavy, capital intensive businesses. For close to 20 years, because we finally got government "do-gooders" mostly out of the picture, we have been able to grow the business very profitably by reducing costs. Costs are incurred as a function of excessive government regulation. As mentioned, the easy period of that business model has pretty much come to a close. We have come to the year 2000 with a slimmed down infrastructure, which has succeeded almost too well in attracting ever-increasing volumes of traffic. But now, unlike the past 20 years, in order to have that traffic we will need to heavily reinvest in assets, including terminal capacity and equipment and, in some instances, line capacity. This is a new mix.

We have also managed to come to this point with an expectation from our customers that rates are in a perpetual downward glide. It is apparent we cannot continue to build the business under that business model. At NS, we have combined this industry-wide paradigm shift with the challenges posed by the Conrail transaction. In

this regard, we are not alone. Many of the same issues are being faced by CSX. Issues of much greater magnitude were faced by UP a couple of years ago in its consolidation of SP.

Let me leave the thought in your minds that the rail industry, NS included, will be challenged to increase its service performance and that can be achieved only through massive reinvestment in plants and equipment. I believe it is fair to say you can expect railroads to look very different 10 years from now than they do today.

I have commented on the exhaustion of this business model in the industry overall. At NS, we are so good at everything we do, that was not enough of a challenge for us. We decided to compound our complexity by consuming Conrail. Let me comment briefly on where we are operationally on the merger.

As you all know, the transaction did not go nearly as well as we had hoped. A good number of the problems centered on the information systems, some of which spilled into the labor arena. Some problems were generated by uncertainty until the very last minute, regarding which carrier, NS or CSX, was going to be handling which traffic after June 1. It is important to note that this is the only time a rail system has been split into component parts. By nature, railroads are fixed plants involving track and infrastructure, impossible to pick up and move, and very expensive to build. We thought we had planned well before June 1, in part because we had run a huge number of tests.

However, data system problems proved extensive. In our effort to serve customers, we burned up crews, locomotives, and fuel. We sent employees in the field to do work manually that typically is done by computers. From June through September, traffic congestion built up, reaching a peak of 248,000 railcars on line by July 18. Many shippers diverted their traffic to the highways and to other rail carriers. We have come a long way since the worst of it. Railcars on line have been largely corrected, based on daily snapshots that tell us how many cars are on the network. Our estimate is that a fully fluid network our size would have 220,000 cars on line and we are very close to that number. Since the beginning of the year, we are performing well in many lanes, even during a January snowstorm. Certainly any problem that CSX might have has a tendency to spill over onto our lines.

With respect to our merchandise cars, we started out with 72 hours and, as we got better, we raised or lowered the bar, depending on how you want to look at it. But now we have 48-hour cars and we are not satisfied with that at all. We also have data to show the train hours delayed because of power, with the greatest spike occurring during the holiday season. We continue to improve on box sidings to the point it is now almost negligible. Again, spikes occurred during the holiday season. Data

show intermodal trains are on time or not more than 4 hours late, again in the northern region. I do not have to tell you that 4 hours is not good, but it is better than it was. We continue to see improvement as well in terminal dwell time, a point also noted earlier by Brian Avery. The intermodal train speeds and the system speed are also continuing to improve. Thank you.

## CONTAINER SHIPPER REQUIREMENTS

*Donald Cameron*

*Don Cameron served as Manager of Corporate Logistics and Manager of International Trade Policies for BOSE Corporation until his retirement in June 1999. He continues to serve as a consultant to BOSE, reporting to the general counsel, and is also a consultant to FastShip, Inc. His company, The Cameron Group, offers consulting services in the fields of transportation, distribution, supply-chain management, international trade matters, and import-export services. Cameron is the 1998 recipient of the John T. McCullough and the National Industrial Transportation League's award as the Logistics Executive of the Year. He served as Chairman of the Ocean Transportation Committee and is a past member of the Board of Directors of the National Industrial Transportation League. He is a graduate of Northeastern University's Transportation School and its Advanced Management School.*

I have spent most of my time as a logistics manager for a number of companies, both in the chemical industry and for the last 14 to 15 years with the BOSE Corporation. I want to give you a couple of examples of how we operate, because from the manufacturing side on-time delivery is not only a necessity, it is something we have to do or they are going to replace us. For example, if you take an automobile plant—there are thousands of parts that go into an automobile and you cannot make an automobile without all the essential parts (although sometimes that may happen)—most of the emergencies in manufacturing are at the plant level and not the customer level. What we learn to do in the traffic business is make sure everything is delivered on time.

A couple of things we have done at BOSE to ensure on-time reliability are a bit different than how things are done by third-party logistics providers. We basically bring in the carriers and sit them down on our floor space. For example, we have a representative from a less than truckload (LTL) carrier, from a truckload carrier, from a freight forwarder, and from a steamship line, whose single job at

BOSE is to see that every piece of freight we move is on time, which is a lot different from many other people. While they are thinking of outsourcing things, we think of insourcing—just the opposite of what many companies have done over a period of time.

I also want to talk a little about ocean carrier reliability. Our job in every case, no matter what happens—snowstorms, holidays, and so forth—is to overcome whatever might come along. A number of people have talked about the rail problem here in Los Angeles with the UP/SP merger. Our job is to quickly find alternatives to overcome factors like delays and congestion. There are some things over which we have less control. For example, right now we have the Euro, which has dropped in value and affected the flow of traffic coming from Europe to the United States because European goods are now cheaper. The same thing can happen with the yen and other similar fluctuations. These are some of the things that affect service and are outside of the things mentioned earlier.

Some ocean carriers today want to serve all the trades. They are deploying so many vessels that what has happened is they are often not on time. We talked about larger vessels and I think somebody has talked about an 8,000 20-ft equivalent ship. Can you imagine how long that is going to take to unload in a port and move those containers in and out of the port? Carriers also schedule their vessels too tight, resulting in imbalance problems and requiring relocation of empty containers. Economics is also a factor. Certainly, the Asian economies went through some real problems over the past several years. Things are a little better now, but they were pretty bad. The number of port calls is also a factor—vessels like to pick up all the cargo they can throughout the world and sometimes they stretch those port calls so badly that their on-time reliability is not good. There have been a lot of issues recently with vessels having mechanical problems.

Transportation connections are also a factor. The BOSE Corporation, for example, just does not use rail anymore and the reason is that railroads are not reliable enough for us to build our manufacturing schedules around them. We just do not even use them anymore.

On-time performance data are often hard to come by. The best we have been able to come up with, and the data do vary, is that in the Pacific trades on-time performance appears to be much better, for example, than in the North Atlantic. We are looking at 80 to 90 percent on time in the Pacific trades, whereas in the North Atlantic we are down to 60 to 70 percent on time. Why is that? I have not the slightest idea, but the fact is those are not statistics we can live with in a manufacturing environment.

We talked a lot about ports. If you think about it, there are relatively few ports on the West Coast of the United States compared with the East Coast, where we have considerably more ports. I am beginning to think

that having a lot more ports is going to be a good thing and not a bad thing as others may think. The port of Long Beach is the largest port in the United States today. My guess is that when more traffic comes through here, and there is no question it will, they are going to run out of land and there is going to be a need for additional ports. On the East Coast, I can say that we have enough ports that if any one of them reaches capacity, there is another that can take its place.

We talked a little about the proposed BNSF rail merger with the Canadian National (CN). At this point in time, you probably heard that the railroads continually have a problem with on-time performance; it is a major issue. If the BNSF/CN merger does happen, U.S. manufacturers will have another set of ports in Canada they can use. Even today, more than 50 percent of the traffic that goes in and out of Canadian ports is from a U.S. origin or to a U.S. destination. If the CN merges with the BNSF, I foresee more and more rapid growth in Canadian ports.

It is also important to consider how logistics managers make decisions. Sometimes I think it is like water—it always levels off—in that when you look at a situation for your company, you make the best decision you can, both financially and to meet a schedule. For example, we talked about the harbor maintenance tax and how it has been eliminated for exports in the United States. It has not been eliminated for imports. Therefore, if I get a piece of imported machinery that costs \$1.0 million, what do you think I am going to do with it? It is not coming into a U.S. port, that's for sure. It is going to a Canadian port.

On reliability, we believe some of the things we have done in a logistics operation are on target—when you know something is going to be late before it is late, you can take some action and divert it or change it. You cannot get much better than that. For example, we do that on LTL operations in the United States. We have somebody tracking every piece of freight. If it does not make the service level required for one part of the leg, this person gets on the phone to the person in the terminal who can change the order so it gets on the next truck out; as a result, we are probably 98 percent on time for reliability on LTL and certainly on truckload shipments. That is why we stay away from rail, because we cannot tolerate the level of reliability railroads would give us on containers.

I guess one shoe does not fit all. Not every shipper wants the same thing. Certainly, value has to do with how we make decisions. If I were shipping corn at \$5.00 a bushel, I probably would not ship it on an airplane. The breakeven point is, in my opinion, about \$35.00 a pound. This means air shipments—and anything below that value is usually shipped by container.

BOSE has had an on-line tracking system for every piece of freight we have been shipping internationally for about 10 years. If our manufacturing manager, who runs



multiple plants, decides he needs a particular part for a particular plant to produce something very quickly, we can go into our database and see that part number is moving in transit. We know where every one of them is. If we find a part that is going to a plant that does not need it, we will divert it to the plant that does need it. It is just like having complete control over everything you do. In the environment we live in, where we build high-value products, what we do is always make sure those plants are taken care of.

I want to illustrate a couple of other things we have done over a period of time with respect to reliability. We make a lot of home deliveries, so when the United Parcel Service (UPS) strike was on the horizon, we moved every shipment to the competitor—FedEx. Knowing that FedEx would be loaded at certain locations and not at others, we then used our own truck fleet to move the cargoes around the country so they would be on time, every time. Any time there is a potential disruption in service—whether it is weather, strikes, or whatever—as a logistics manager, our job is to continually ensure we are on time and that our customers are taken care of and our plants are operating all the time. That kind of thinking is required, because our job is on a transaction basis. Thousands of transactions take place every day and it is our job to see that those thousands of transactions translate to 98 percent reliability for our customers and our plants.

We talked about how many shippers, over a long period of time, talk about reducing inventories. We are not any different than anybody else. We prefer not to run inventories and reduce them as far as we can. We have done that in the past, and we are going to continue to do so in the future. We also need to consider where we are going with respect to e-commerce, the new way of selling consumer products on a worldwide basis. One of the most difficult problems we have, for example, is finding the tariff rate in every country in the world. Nobody has that data. We will build that kind of system so that our products can be sold around the world.

I want to say something about ocean shipping reform, which to me means more competition in the market. The fact is that we can sit down with carriers and negotiate worldwide contracts and, like many companies, we would like a single contract with one carrier around the world.

That is not always possible, but, like any purchasing, what you want to do is take all your dollars and put them in one place so the buying power is maximized—that is something we really work at. We know we can get the best service and that we will be a player with that carrier.

Earlier there was mention of the on-time performance with UPS. I do not think that 98 percent on time is unrealistic for anyone. We do not want the carrier that is not on time, that is not reliable, but who gives us the lowest rate. That is not the kind of business we are in. There are other businesses out there who really do not care about on-time performance but are more concerned about the cost of moving the cargoes.

I will briefly mention air rates. In the Pacific, the cost of moving any cargo by air is very expensive, unlike the Atlantic, which has poor on-time ocean service but air rates are so cheap that if you miss something, it is easier to move that cargo to air and get it there on time. Every day our job is to look at the reliability of every carrier we have. BOSE sells a lot of sound systems—for example, to Japanese automobile makers. What we have done in that case is actually build product on a specific day to fit in a 40-ft container to move on a train that will meet a vessel schedule that will arrive in Japan on a specific day, be cleared by customs, and delivered in plus or minus 18 days. We track every container and we use a statistical process of control to make sure these are on time all the time. From a shipper's point of view, whatever is out there, we will find a way to keep our products on time and we will use only the reliable people who will do what we need for our particular business. That is the kind of thing shippers really do—we get paid by our companies for selecting carriers that are reliable, on time, for what we do in our business.

The other thing we are talking about here is infrastructure. There is no question that infrastructure is critical and Tim Burrack was exactly right in his remarks about how infrastructure affects competitiveness. If you are passionate about your business, then you are going to find a way to do it and do it well, and you are going to do it better than your competitor. Fortunately, I work for a company that has a great product. What we have to do is take a great product and do the right things for both our plants and our customers. Thank you.