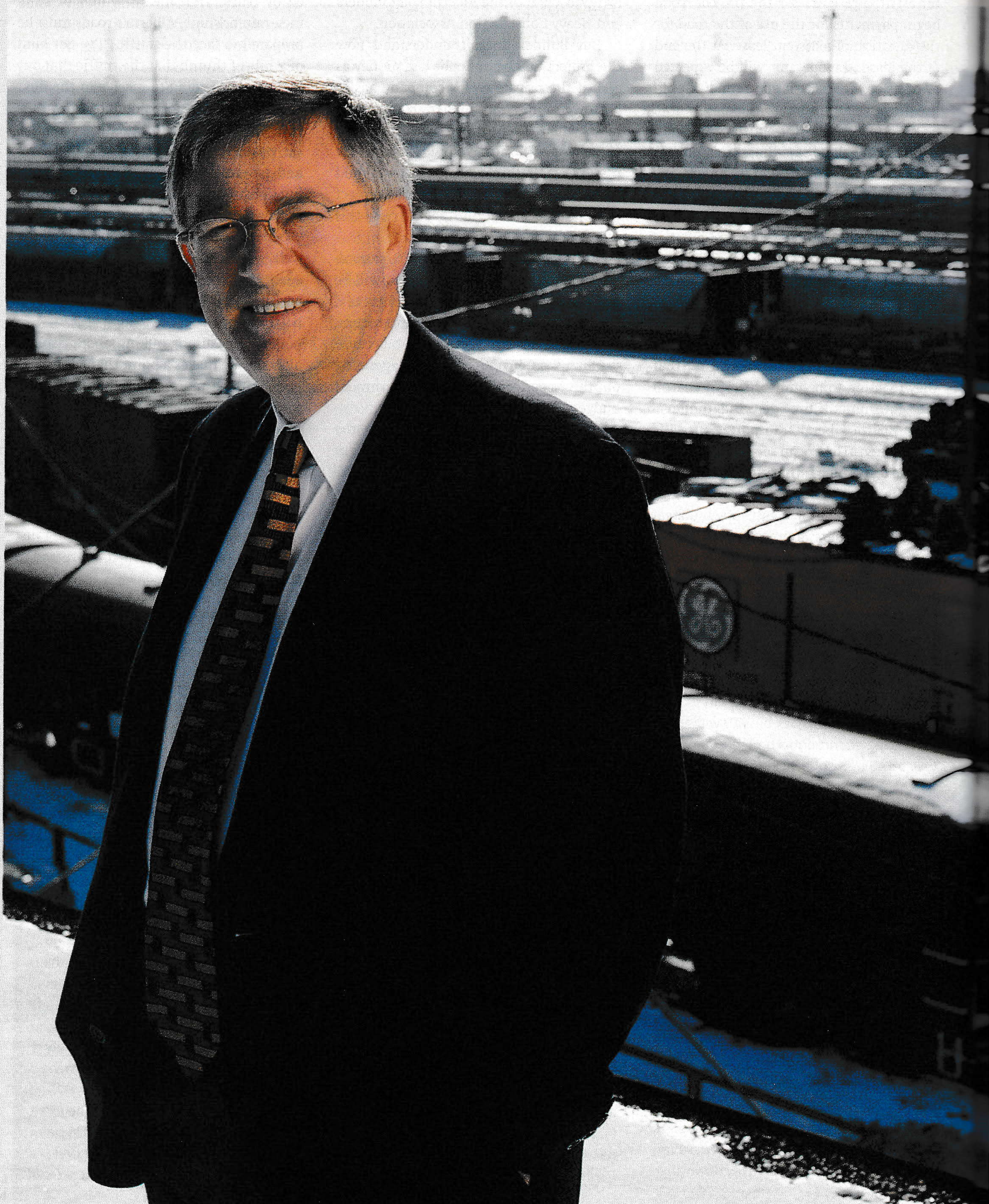

RIGHT ON TIME:
Operations VP Neal Foot led CPR's shift to scheduled rail, which has proved to be a cost advantage

Rail *at the* Crossroads

Canadian Pacific Railway believes widespread conversion to scheduled rail is its industry's best hope to compete with commercial trucking

As locomotive number 2816 rounds Morant's Curve along the Bow River on the way to Banff, its billowing steam clouds waft back towards the passenger cars which are abuzz with various discussions in a multitude of languages.

The participants aboard Canadian Pacific Railway's restored Empress passenger steam locomotive are able to appreciate both the mode of transportation and the exquisite scenery as it flashes by, since all those here have some connection to a railway and, like most visitors, feel as though they're inside a painting.

But despite the sightseeing, the discussions are serious. These visitors are taking part in the first ever International Rail Planning Conference, conceived of and hosted by Canadian Pacific Railway (CPR), and the hosts feel there's a lot riding on the informal chats in the passenger cars.

It's the final day of an intense, information-laden conference which challenged the international delegates to consider whether their own railways should convert to a scheduled railroad from a tonnage-based railroad. (The latter, traditional method simply means that trains aren't sent to their destinations until enough tonnage has accumulated to fill trains to capacity.)

Instead, CPR executives are convinced that scheduled railway – running individual shipments on trains to a schedule – is a sure, if gradual, passage to better service and, consequently more clients. In fact, the company believes it has already successfully made the passage. After incorporating the concept in 1998, it has reduced its operating cost base by an impressive $500 million per year.

According to Neal Foot, CPR senior vice-president, operations, changeover to a scheduled rail, which the company calls its Integrated Operating Plan (IOP), meant an enormous commitment of money, effort and change of company culture, but it was spurred on by an urgent need for future growth. "It was a significant step brought about by the needs of our customers and by a changing environment," Foot says. "We were struggling with high costs and low profitability, while at the same time, our customers were demanding more from us. We weren't sure our traditional strategies were

By Ernest Granson
PHOTOGRAPHY BY CHAD JOHNSTON

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up to the challenge of dealing with the issues, so it was apparent to our executive team that we needed a new game plan."

That game plan partly involved a $250-million overhaul of all CPR operating systems. It also meant a major culture shift at the operations level. That is because the tonnage-based approach has long been employed by North American railways. The reasoning behind this approach is that maximizing the length of the train minimizes crew costs and maximizes track capacity.

The CPR realized this method resulted in several disadvantages including the need for more railcars and storage capacity in rail yards, but most importantly, unreliable service for the customer. But the alternative, the scheduled railway, would require next-level software to forecast and schedule the CPR's incredibly complex set of issues and assets, as well as a thorough grasp of each customer's needs in each corridor.

To put this into perspective, consider that the railway handles 7,000 new shipments each day. Each shipment must be co-ordinated for 1,600 locomotives, 65,000 railcars and more than 5,000 crew members over 22,500 kilometres of track and through 250 rail yards. While the new system is called "scheduled" this is not as simple as a fixed timetable, which could easily result in an excessive number of trains being operated. The new IOP uses an intricate automated traffic forecasting system and shifts in traffic patterns and volume are closely monitored.

CPR executives were aware they would be going against an operating tradition almost 125 years old, and of major concern was the culture or attitude change needed at the yard level; the company would have to convince yard managers that making scheduling changes in isolation could no longer be the accepted practice. But managers were also cognizant of the consequences of not moving forward, especially if they want to make inroads into rail's major competition, the trucking industry.

Bucking the tradition has paid off for CPR. Over a five-year period beginning in 1998, the main indicators are all positive: car velocity is up 41%; labour productivity is up 40%; fuel consumption is down 17%; locomotive productivity is up 35%. Not only are the operating costs lower, but higher productivity reduces the need for more assets, which reduces capital costs. Foot says while railways historically have passed productivity gains onto shippers in the form of lower rates, the marketplace still sets the prices CPR can charge.

"In recent years, price increases have been modest. However, even with the rail industry's successful expense management efforts, the need to replenish our assets will create a climate where price increases are seen as good value for customers."

The company's new operating plan has also given CPR much greater flexibility to reallocate capacity and resources to account for market changes and opportunities. The company can now shift resources to where the marketplace needs them.

"For example," says Foot, "in the last quarter of 2002, CPR's grain and coal business dropped by about 18% and 16%, respectively. At the same time, there were growth opportunities developing in the intermodal and automotive sectors. We were able to shift capacity and resources to take advantage of these growth opportunities."

Increasing productivity, reducing costs and capitalizing on those opportunities has led to higher profitability and has diverted traffic from the highways to the railways.

CPR's successful integration of the scheduled concept has led to considerable recognition, both by others in the industry and by such groups as The Institute for Operations Research and the Management Sciences (INFORMS) in Baltimore, Md. This society, representing over 12,000 professionals in the fields of operations research and management science, recently presented the company, and software developer, MultiModal Applied Systems, with the prestigious 2003 Franz Edelman Award for Management Science Achievement.

At least two other major North American railways that have observed CPR's success have also begun to incorporate some of those methods into their own operating plans. One is Norfolk Southern Corporation, based in Norfolk, Va., whose railway operates 21,500 route miles (about 34,600 kilometres) in 22 eastern states, the District of Columbia and in Ontario. Dan Mazur, assistant vice-president, strategic planning for Norfolk, agrees that the culture change from tonnage to scheduled proved to be one of the most difficult obstacles.

"You're a train master in a certain area, so you say, 'I'll fix the problem. Today we're going to hold this train, but then we'll combine it with this locomotive.' But that train master can't forget he's working within a network of hundreds of trains. What you just did to solve your problem may have put me in an incredible hole," Mazur says. "So we've had to develop a plan that's built upon traffic pace and that changes the way field people are being evaluated. Previously, the concerns centred mainly on cost control. Now you still have to control the costs, but you're judged on how well you implement the plan."

Mazur admits it was hard to get everyone to buy into this but says the railway regularly holds feedback sessions with field employees and has implemented much of that input. The bottom line, Mazur says, is that going to the scheduled approach has had a dramatically positive impact on utilization of Norfolk's assets. "We've also seen it from our customers," he says, "We've had lots of positive comments about the improved service."

While several, but not all North American railways, are moving into the same direction as CPR, the picture is not quite so clear in the rest of the world. A major objective of the International Rail Planning Conference was to invite railways in Europe, South America, Africa and Asia to jump aboard. What the CPR essentially proposes is that international rail systems be regarded as one big system where railways share yards and networks the way airlines share gates and ports.

But even established railway territories such as Europe present situations that do not easily lend themselves to CPR's goals. As André Kalvelage, an international rail consultant with Deutsche Bahn FG, says, there were a lot of non-North American delegates nodding their heads at the conference, indicating that no matter where you're from, there are similarities within the industry. But those similarities may not be enough to overcome the differences between the two continents. "For example," he says, "the huge distances and longer trains in North America generate different kinds of economies."

Kalvelage, who recently acted as a transportation specialist for CPR through an industry exchange program, points out another significant distinction. The European Open Access Policy forced all railways to split into shipping and network companies. The shipping divisions must operate separately from their rail divisions to allow other individual businesses to have access to the railway networks.

This policy went into effect in the early 1990s to encourage competition on the railways. It means individual shipping companies must be allowed to lease rails from the major rail companies. The trouble is, not all countries are conforming.

"Germany was the first country to segregate the shipping from the rail divisions, but France, so far, has refused," Kalvelage says. "They'll get into trouble with the European Union because of it. But Europe will eventually go there. It's inevitable."

Other areas of the world present their own perplexing problems, which could impede the way to worldwide integration. For instance, Brazil, the biggest country in South America and the world's largest supplier of iron ore, recently privatized its major railway companies into seven separate concessions, which are now operated by companies like Companhia Vale do Rio Doce (CVRD), the world's largest iron ore mining company and Minerações Brasileiras Reunidas, the second-largest producer.

While there is a substantial rail network in Brazil – 28,530 kilometres total – the railways are not necessarily dependent on each other for intermodal traffic. According to Renato Botelho, with CVRD's Network Planning division, each of the individual railways has its own network which is able to reach the various coastal ports of the country on its own, consequently it's not critical that railways adopt integration.

As well, Botelho says, while Brazil's rail standards are as high as any other railway's in the world, there are peculiarities which could be obstacles to an integrated, worldwide rail system.

"For instance," Botelho says, "We have one and 1.6-metre-gauge tracks, as well as standard gauge, a situation caused by the historical fact that Brazil developed as a colony of various countries."

CVRD already employs the scheduled railroad approach to some extent, largely because of its association with mining, but the railway is targeting the carload market, which still makes use of the tonnage approach. However, Botelho says he thinks more scheduling will eventually be utilized.

CPR is adamant that global integration through the scheduled railway is not only possible, but also necessary if the rail industry is to retain a competitive edge, particularly against the trucking industry. While Foot is reluctant to say that the railways are fighting it out with truckers, he does believe that the rail industry has to collectively "overcome corrosive public policies that tax and regulate rail, undermine rail's profitability and competitiveness and give trucks, which use the publicly funded highway infrastructure an unfair competitive advantage," according to his keynote address at the convention.

Foot says there are opportunities for co-operation between the two industries. In the Eastern Canada-U.S. corridors, trucking firms can have trouble delivering intercity loads. CPR Expressway service offers a solution by loading the trailers onto its trains for transportation to the destination city.

"Basically," Foot says, "we provide the vehicle to get the trailer to Windsor or Toronto or Montreal or Detroit, where the trailer is unloaded, then driven to the customer's door. So, yes, trucking is our major competitor, but we're trying to co-operate."

CPR is absolutely certain the scheduled railway will be the catalyst to international rail co-operation. It has invested a huge human effort and substantial financial resources in its quest to improve efficiency and open new markets.

Undoubtedly, global delegates who participated in the conference are still digesting the intensive downloading of information, not to mention the awesome prairie/mountain landscapes. But even once the information is digested and passed on to decision makers, the CPR's ambitious proposal ultimately depends on railway executives in the crowded European corridors, in the jungles of South America, and halfway around the world, committing to the same belief. AV