

Transporting Oil by Rail: Safety First

Michael Bourque

Michael Bourque, President and CEO of the Railway Association of Canada, highlights the reasons why oil producers and marketers sometimes choose rail to transport their product, and what railways are doing to ensure dangerous goods are moved safely. “Canada’s railways do not seek to replace pipeline movement of crude, nor does our industry oppose any of the new pipeline projects under consideration,” Bourque writes. “Our goal is to work collaboratively to move these essential goods without incident.”

When it comes to the transportation of dangerous goods in Canada, the focus is usually on the comparative environmental and safety records of our country’s railway and pipeline industries. In this ongoing discussion, there are some key facts that bear repeating; mainly that both rail and pipelines are generally safe.

In the rail versus pipe comparison, the most talked-about product is crude oil. Again, both rail and pipeline are very safe transportation modes for moving goods to market, and crude oil is no different. The report *Canadian Crude Oil Transportation: Comparing the Safety of Pipelines and Railways* reviews safety data for each mode. It found that, between 2012 and 2014, Canadian pipelines and Class 1 railways together transported 252.7 billion gallons of crude oil, 99.9997 per cent of which was delivered safely without spillage. It also assessed the movement of dangerous goods by rail from 2004 to 2014 and concluded that railways and pipelines have equally strong safety records.

Under the common carrier obliga-

tion of the *Canada Transportation Act*, Canada’s railways are legally obligated to transport dangerous goods, including crude oil. Nothing is more important to Canada’s railways than safety, and the industry is committed to working with regulators, communities and other stakeholders to continuously improve the safe transportation of dangerous goods.

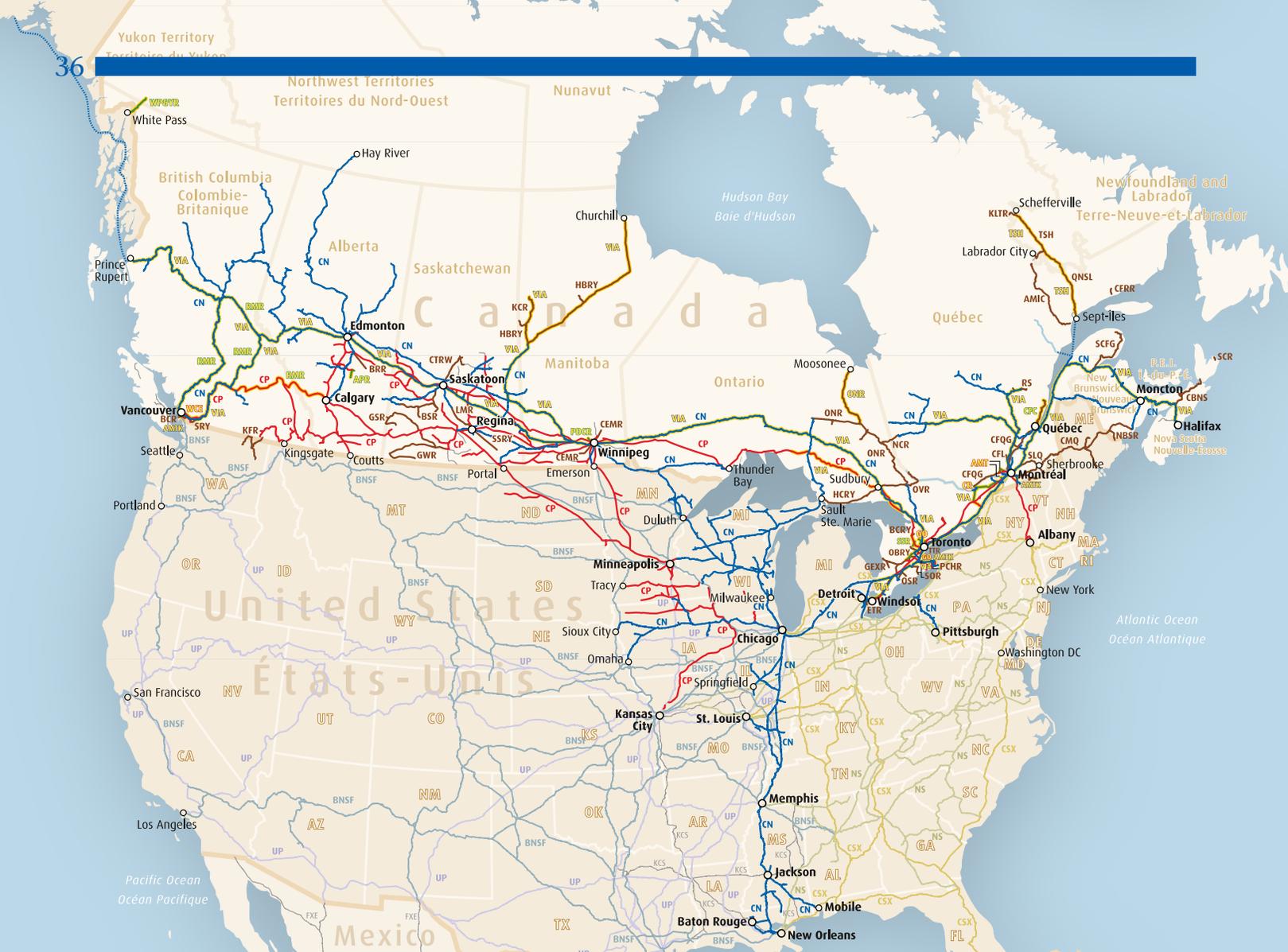
For example, for many years, Canada’s railway industry advocated for a more robust tank car standard to be introduced. We were pleased with the federal government’s new standard and worked collaboratively with Transport Canada on many of the new regulatory requirements that have been implemented over the past several years.

We have long shared information with municipalities about the goods travelling by rail. Today, through Protective Direction 36, Canada’s railways provide information to hundreds of municipalities to help them properly train for, and respond to, a potential incident. These reports contain de-

tailed information about the commodities that transit through each municipality.

Railways are continuously improving safety outreach when it comes to transporting dangerous goods. We work proactively with emergency responders and communities to prevent, prepare for and respond to incidents. In the last three years alone, railways in Canada have met with hundreds of municipalities, First Nations chiefs and emergency responders to share information about dangerous goods movements by rail. Over that same period, CN and CP sponsored some 600 first responders from communities across Canada to receive rail-specific dangerous goods training in Pueblo, Colo. And railways have long been active supporters of TRANSCAER®, an important initiative led by the chemical industry that provides outreach and information to communities and first responders across Canada. In addition, the AskRail mobile app, developed by North American railways, gives first responders immediate access to accurate, timely information about railcar contents so they can make informed decisions in the event of a rail emergency.

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Canada's railways are key drivers of Canadian trade in North America and beyond. CN (blue) and CP (red) are the two national players with significant reach in the U.S. Map courtesy of the Railway Association of Canada

In addition to these outreach efforts, our industry has developed a strong safety record thanks to investments—more than \$24 billion in infrastructure since 1999 to maintain a safe and efficient network—and a commitment to fostering a robust safety culture. As part of these investments, Canada's railways have introduced a wide range of new technologies that can improve rail safety. For example, Canada's Class 1 railways use automated track and equipment inspection systems with predictive, analytical capabilities. This technology allows companies to identify and prevent risks before they turn into potential safety issues. Mandatory in-cab locomotive voice and video recorders would allow railways to miti-

gate human factors that could potentially cause an incident.

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Since the tragic accident in Lac-Mégantic in 2013, there has been a focus on the safety of crude-by-rail. But not all oil is created equal. There are many types of crude oil, and Canada's oil sands product is well suited to innovative rail transportation. For example, heavy oils, such as pure bitumen, can be transported in tank cars that are specially designed to carry this product. Another example of rail innovation is CN's work with researchers in Alberta to come up with a way to move bitumen in solid pellet form. This solid bitumen pellet, which CN calls CanaPux, is not flammable and floats in water, resulting in a new way of transporting bitumen that puts safety and the environment at the forefront.

Pure bitumen must be diluted with condensate—resulting in what’s known as “dilbit”—for transport via pipeline. Diluting bitumen increases the cost of moving this product by pipeline, and makes it more challenging to mitigate the environmental consequences in the event of a spill. Finally, there are lighter crude oils. Each of these products possesses distinct characteristics and must be treated accordingly. Regulations require classification tests on crude oil and there are rules for the type of tank car that can be used for these products.

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However, market factors make rail an option for transporting energy products to market. Rail plays a niche role as a complementary option to pipelines, and for Canada’s oil producers, refiners and marketers. There has been rapid development of non-conventional energy (such as shale oil) in North America, and expansions in existing energy-producing regions. Railways can

reach places that pipelines can’t and, as a result, offer shippers the flexibility to respond to new and ever-changing markets. Some refineries are located near tidewater with access to ocean tankers, but are not currently served by pipeline. When Canadian and U.S. energy producers are presented with the opportunity to get a higher price for their product, or when there is no other way for them to reach their customer, we can expect them to choose rail.

Canada’s railways do not seek to replace pipelines as the main transportation mode for moving crude oil, nor does our industry oppose any of the new pipeline projects under consideration. Our goal is to work collaboratively to move these essential goods without incident.

Canada must transport what it produces in the most environmentally sustainable way. By investing and innovating to continuously improve operational sustainability, our railways play a vital role in helping Canada reach its climate change goals. Rail is one of Canada’s greenest transportation options—a train can move one tonne of freight more than 200 km on a single litre of fuel—and our freight railways have a long track record of reducing emissions.

We believe it is important to share the facts when it comes to the transportation of dangerous goods by rail. Public confidence in rail is strong, thanks to our excellent safety record and continuous outreach. Lac-Mégantic has raised awareness of the dangers of improper operating practices and has led to a number of safety improvements. Canada’s freight rail accident rate, for example, stands at less than 1.5 accidents per billion gross tonne-kilometres. We are continuously striving toward zero accidents.

Rail is essential for the transport of energy inputs that are used in the development of natural resources; from pipe and fittings, to chemicals and sand. Railways move more than 200 dangerous goods, many

of which cannot be economically transported by pipeline. Rail is the preferred method for moving these goods and we are working hard to ensure that our preparedness, community outreach and excellent safety record will continue to garner support from Canadians.

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Canadian railways have transported dangerous goods for decades, establishing a solid record of safety and sustainability. Railways are working with regulators, accident investigators, equipment manufacturers and universities to examine all incidents and prevent their reoccurrence. We must continue to work together as producers, transporters and regulators to ensure that we move these essential products safely into the future. **P**

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