

Canada Transportation Act REVIEW

For consideration by the CTA Review Panel

Prepared by

Safe Rail Communities

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Introduction

According to the Railway Association of Canada, the number of rail cars carrying crude oil across Canada has increased from 500 in 2009 to an estimated 140,000 in 2014. This is an increase of 28,000%, an increase that has not gone unnoticed in rail communities across the country.

This significant surge in the transport by rail of crude oil raises concerns about its impact on rail communities in regards to air quality, noise levels, speed of rail traffic, and potential for disaster on the scale of Lac-Mégantic. In its August 2014 final report on this tragic rail disaster, the Transportation Safety Board of Canada confirms that this increase in oil by rail constitutes a significant change in operation for railways, changing their risk profile and requiring a robust formal assessment of risk.

This submission to the Review Panel of the Canada Transportation Act will consider limits of the current act as it relates to rail, as well as address broader concerns related to rail safety.

Safe Rail Communities is a non-partisan community organization advocating nationally for transparency and safeguards with respect to rail safety.

We would like to thank the following individuals for their invaluable feedback and advice during the preparation of this submission:

Krystyn Tully, Founder and Vice-President, Lake Ontario Waterkeeper

Fred Millar, Independent Rail Consultant

Alex Cullen, Parliamentary Assistant for Mike Sullivan, M.P. York South-Weston

Eddy Aceti

Air Quality

The recent rise in oil transport by rail has increased rail traffic and idling, consequently amplifying the amount of diesel exhaust affecting adjacent rail communities. Diesel exhaust is a significant health concern.

In June 2012, the World Health Organization (WHO) made an announcement related to the classification of diesel exhaust as carcinogenic to humans (Group 1).¹ This classification was made by the International Agency for Research on Cancer, a branch of WHO. The designation of Group 1 means that there is 'sufficient evidence of carcinogenicity in humans', and in this study, it was found that diesel exhaust is a cause of lung cancer.

Diesel engine exhaust is a mixture of noxious gases (such as carbon monoxide, benzene, and formaldehyde), diesel particulate matter (DPM), and polycyclic aromatic hydrocarbons.² Exposure to these chemical agents occurs through inhalation, and they can damage the genetic information within a cell causing mutations which lead to cancer.³ Most DPM is composed of small particles less than 2.5 µm in diameter, small enough to be inhaled deeply into the lungs, where the body cannot dislodge them.⁴ Other toxic and independently carcinogenic components of diesel exhaust may also contribute to its carcinogenicity.⁵

Railroad workers are exposed to high levels of diesel engine exhaust, and generally experience a 20-80% increased lung cancer risk.⁶ There are also strong indications that their risk of developing cancer of the bladder may increase by 10-40%.⁷

Urban residents situated in close proximity to heavy diesel pollution are exposed to levels of diesel engine exhaust that could cause a 50% increase in lifetime lung cancer risk.⁸

Within the opening sections of the Canada Transportation Act, under National Transportation Policy:

5. It is declared that a competitive, economic and efficient national transportation system that meets the highest practicable safety and security standards and contributes to a sustainable environment and makes the best use of all modes of transportation at the lowest total cost is essential to serve the needs of its users, advance the well-being of Canadians and enable competitiveness and economic growth in both urban and rural areas throughout Canada.

Air quality is certainly part of a 'sustainable environment', and we would suggest that air quality currently lies within the scope of the CTA. Given the proven significant health risks of diesel engine exhaust on rail community residents, air quality standards should be established and regularly monitored by the CTA.

Noise levels

Noise and vibration are rail transportation by-products that affect the health of rail communities. The CTA is charged with responding to complaints about noise and vibration caused by the construction and/or operation of railway.

Noise and Vibration Section 95.1

95.1 When constructing or operating a railway, a railway company shall cause only such noise and vibration as is reasonable, taking into account

- (a) its obligations under sections 113 and 114, if applicable;
- (b) its operational requirements; and
- (c) the area where the construction or operation takes place.

Section 113 details the level of service that a railway must deliver. Section 114 details the requirements for the transfer of merchandise from one railway to another. Neither of these sections would hinder a railway from performing its obligation to maintain reasonable levels of noise and vibration.

While many municipalities and provinces have guidelines and standards regarding acceptable levels of noise, the CTA is not bound by these and maintains that 'reasonable' noise and vibration is determined on a case-by-case basis. However, the WHO has presented its recommendation of 30dB in respect to safe levels of environmental noise:⁹

Nighttime outside noise	Health affect
up to 30 dB	Although individual sensitivities and circumstances differ, it appears that up to this level no substantial biological effects are observed.
of 30 to 40 dB	A number of effects are observed to increase: body movements, awakening, self-reported sleep disturbance, arousals. With the intensity of the effect depending on the nature of the source and on the number of events, even in the worst cases the effects seem modest. It cannot be ruled out that vulnerable groups (for example children, the chronically ill and the elderly) are affected to some degree.
of 40 to 55 dB	There is a sharp increase in adverse health effects, and many of the exposed population are now affected and have to adapt their lives to cope with the noise. Vulnerable groups are now severely affected.
above 55 dB	The situation is considered increasingly dangerous for public health. Adverse health effects occur frequently, a high percentage of the population is highly annoyed and there is some limited evidence that the cardiovascular system is coming under stress.

Given these recommendations regarding nighttime noise levels, regular monitoring of noise (both daytime and nighttime) as caused by rail traffic should fall under the Railway Safety Act (RSA). Any noise complaints to the CTA should be followed by a measurement of the noise detailed in the complaint.

We also suggest that railway companies should be required to use the latest technology and best practices (i.e. rail lubricators, piston retarders, sound barriers, etc.) in order to reduce noise levels.

Speed

The speed of a train necessarily affects the level of noise and vibration it creates. Moreover, according to the Pipeline and Hazardous Material Safety Administration (PHMSA), speed is a factor that may contribute to derailments and can influence the probability of an accident, the probability of tank cars being punctured in the event of a derailment.¹⁰

According to the Transportation Safety Board of Canada's (TSB) final report on the July 2013 disaster of Lac Mégantic, 15% of the tank cars derailed at speeds of 40 mph or less and were significantly damaged.¹¹ On April 30, 2014, at least 13 of a 105-car train derailed in Lynchburg, Virginia. At the time of the derailment, the train was travelling at 24 mph.¹²

Under the RSA there is no provision to allow for the monitoring of train speeds. Subsequently, the CTA includes no provision for rail communities to question or comment on the speed of a train passing by their homes. Given that speed is a contributing factor in derailments, and given the increase in rail traffic of volatile unconventional crude oil, Transport Canada should thoroughly assess the relationships between speed, load, and probability of derailment. Once an empirical study is completed, standards should be established and implemented through the RSA. The RSA should provide municipalities the right to monitor train speeds in densely populated areas and to declare any infraction through the CTA.

The TSB has recommended the use of physical fail-safe train controls.¹³ In its investigative report R12T0038, the TSB outlines a number of new available technologies that can address issues with speeding trains. One of these technologies is Positive Train Control.¹⁴ The RSA should require railways to use the latest technology available to mitigate the risk of a derailment as a result of excessive speeds.

Tank Vulnerability

In addition to the speed of the trains, the current tank model used to transport unconventional crude and other hazardous materials poses a considerable risk to the public. The TSB has been warning for about two decades that the DOT 111 tank cars are unsafe for the transport of dangerous goods.¹⁵ On July 2, 2014, Transport

Canada established a new standard (TP14877) for tank cars carrying hazardous goods. They also announced a proposed new tank standard (TC 140).¹⁶

However, even on April 23, 2014, The Transportation Safety Board clearly indicated concerns that the TP14877 standard would not sufficiently mitigate the risk of tank cars being punctured and releasing product in an accident.¹⁷ Furthermore, at that time, the TSB pointed out that the TP14877 standard proposed by Transport Canada was to be imposed only on new cars. In the interest of public safety, especially for rail communities, the TC 140 tank standards should be aggressively implemented during the phase out of the DOT 111 tank cars.

The Pipeline and Hazardous Materials Safety Administration (PHMSA) has also stated that the increase in tank cars carrying flammable liquid poses an emergent safety risk and that the DOT 111 specifications "can almost always be expected to breach in the event of a derailment resulting in car-to-car impacts or pileups".¹⁸ The PHMSA also notes that puncture testing demonstrates that the DOT 111 tank car is significantly more likely to puncture than the new proposed standards.¹⁹

Insurance

It is well documented that the rail companies do not have enough liability insurance to cover the cost of a high impact, catastrophic derailment.²⁰ The financial impact of the July 2013 derailment in Lac Mégantic has been estimated at over CDN \$2 billion. Even a Class 1 railway such as Canadian National does not carry enough insurance to cover the full cost of such an event (CN response to SRC, Appendix A).

The Pipeline and Hazardous Materials Safety Administration (PHMSA) has established that there is an increased risk to public safety and the environment because of the increased shipment of crude oil and ethanol and the risk of flammability. This risk is compounded by the fact that crude oil and ethanol are commonly shipped in large unit trains.²¹ In recent years, there has been a surge in train accidents involving flammable liquid, resulting in severe consequences (Lac Mégantic, Quebec; Arcadia, OH; Plevna, MT; Casselton, ND; and Aliceville, AL).²²

Given this increased risk, section 92 (1) of the CTA should be revised to clearly define adequate insurance to be carried by railways and/or shippers, so that railways and/or shippers are able to cover the cost of a catastrophic derailment.

The Transportation Safety Board of Canada has made it clear that the current increase in crude oil shipments constitutes a significant change in operations.²³ Under section 93 (1), the CTA may vary a certificate of fitness (CoF) on application in order to reflect a change in operations. This language is vague. It is unclear what constitutes a 'change in operations', and what kind of variance in the CoF an operational change may elicit. It is unclear how a CoF might be different for a railway carrying large loads of crude oil. Definitions should be added to this section of the CTA to ensure that standards are clear. Under the CTA, there is no specific requirement to advise the regulator of significant changes to operation, including

risk profile and the type and quantity of dangerous goods. The CTA should make it a requirement for the railways to report all such changes in an annual report to the Canadian Transportation Agency. Moreover, this would permit railways to confirm that they remain in good standing against their CoF.

We would also like to suggest that the Act be enhanced to enforce the implementation of all recommendations by the Transportation Safety Board of Canada as they pertain to the Railway Third Party Liability Insurance Coverage (SOR/96-337).

Recommendations

- 1) Air Quality: Air quality currently falls under the Act. Because the dangers of diesel exhaust are well known and documented, the CTA should establish air quality standards along rail corridors, regularly monitor this air quality, and publicly report its findings to protect the health of residents and workers.
- 2) Noise Level: We suggest that the CTA affirm that noise caused by rail traffic falls under the Act, that it measures and monitors noise complaints, and that it reports regularly on its response to noise complaints. The Act should also require railways to use the latest technology and best practices to reduce noise levels.
- 3) Speed: Given the documented role of speed in derailments, the CTA should monitor and enforce train speeds that will protect communities. The Act should allow municipalities to do the same. All findings should be available to the public.
- 4) Technology: The CTA should require railways to use the latest technology available to mitigate the risk of derailment.
- 5) Tank standards: The CTA must require an aggressive implementation of the TC 140 tank standards during the phase out of the DOT 111 tank cars.
- 6) Insurance: The CTA should require that railways carry enough insurance to cover the cost of a catastrophic derailment in a densely populated area. All recommendations made by the TSB should require compliance under the Railway Third Party Liability Insurance Coverage (SOR/96-337).

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Appendix A



www.cn.ca

Corporate Services

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November 7, 2014

Ms. Patricia Y. Lai and
Ms. Helen Vassilakos
Safe Rail Communities
C/O Peggy Nash, MP
Constituency Office
1596 Bloor Street West
Toronto, Ontario M6P 1A7

Dear Ms. ~~Lai~~ and Ms. Vassilakos:

At the request of CN's President and Chief Executive Officer Claude Mongeau, I am responding to your September 28, 2014 letter expressing your interest in rail safety and communication with CN. I appreciate you taking the time to write on this important topic.

At CN, we have an unwavering commitment to safety. Our strong safety record flows from our sizable investments to operate a safe and fluid railroad, intense focus on employee training and safety awareness, root cause analysis of accidents, and technological innovation. All of these initiatives allow us to maintain a strong safety record where 99.998% of dangerous goods arrive at destination without a release caused by accident.

CN continues to make significant investments in infrastructure, equipment, and technology to provide rail capacity to accommodate current and future freight traffic across Canada and the United States. CN transports approximately \$250 billion in goods annually, serving exporters, importers, retailers, farmers and touching the lives of millions of people every day. Our agenda of supply chain collaboration and Operational and Service Excellence is helping make CN customers and the markets it serves more competitive at home and abroad.

Appendix A (cont'd)

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CN's investment in plant and equipment is significant. Approximately 50 cents of every dollar of CN's operating profit is currently allocated to capital spending, and note the fact that CN and other North American railways build, maintain and pay taxes on their infrastructure at no cost to the taxpayer.

In 2014, CN plans to invest approximately \$2.25 billion in capital programs, of which approximately \$1.2 billion is targeted toward maintaining the safety and integrity of the network, particularly track infrastructure. This investment will include the replacement of rail, ties, and other track materials, bridge improvements, as well as various branch-line upgrades.

CN's equipment capital expenditures this year are expected to reach approximately \$350 million, allowing the company to tap growth opportunities and improve the quality of the fleet. CN also expects to spend approximately \$700 million on facilities, such as transloads and distribution centers; to grow the business; and to improve the productivity and fluidity of the network. The investment includes funds for strategic initiatives, information technology to improve service and operating efficiency, and other projects to increase productivity.

Further, although the tragedy in Lac-Mégantic last July did not involve CN, we took a series of steps to further reduce the potential for accidents, for example, by:

- Strengthening our already-robust train securement practices;
- Voluntarily applying policy aimed at reducing risk to our Canadian operations, ahead of regulatory requirements. Such as "OT-55" applicable to trains transporting dangerous goods, as well as "key crude" applicable to trains transporting crude oil. These policies include measures on train dispatching, track and equipment inspections and restrictions on train speeds;
- Stepping up our detection capability to prevent accidents, ie. in November 2013, CN unveiled a special program to acquire additional detection and inspection equipment to enhance its strong technological base for early detection of defects and mitigate the severity of accidents, and
- Conducting corridor risk assessments, examining rail line proximity to urban population and associated infrastructure, environmentally sensitive areas, and railway operating practices to develop enhanced safety processes for trains transporting dangerous goods.

Appendix A (cont'd)

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CN has also expressed clear support for the retrofitting or phase-out of older DOT-111 cars used to transport flammable liquids and a reinforced standard for new tank cars to be built in the future, as well as special operating practices for the transportation of dangerous goods. CN has also implemented freight rate changes to encourage customers to acquire tank cars that meet higher safety standards and begun to phase-out its small fleet of legacy DOT-111 tank cars used to transport diesel fuel for its locomotives to yard terminals.

Furthermore, CN, which already has a strong emergency response plan and significant resources to handle accidents when they occur, believes that the rail industry can enhance safety by working more closely with communities. Toward that end, CN is reaching out to municipalities along its North American rail network to review its safety practices, share relevant information on dangerous goods traffic, and discuss emergency response planning and training. In addition, CN is urging the implementation of mutual aid intervention protocols, with the participation of other carriers and producers of dangerous commodities. This would help codify emergency response standards and expand response resources in order to be prepared to handle any future rail incidents involving dangerous goods.

CN supports the Canadian Government's Protective Direction of April 23, 2014, requiring shippers to have in place Emergency Response Assistance Plans for crude oil, gasoline, diesel, aviation fuel and ethanol.

CN fully complies with the terms of the Canadian Governments Protective Direction 32 (PD 32). CN supplies dangerous goods information to communities as part of PD 32 for the purpose of municipal emergency-response planning. Pursuant to Transport Canada's PD 32, CN is required to provide to a designated municipal Emergency Planning Officer (EPO) yearly aggregate information on the nature and volume of dangerous goods we transport through municipalities, on the condition that the information is solely used for emergency response planning and training and is held in confidence under a non-disclosure agreement. Municipalities must register with CANUTEC to receive such information. CANUTEC is the Canadian Transport Emergency Centre operated by the Transportation of Dangerous Goods (TDG) Directorate of Transport Canada.

I understand from your letter that you expressed concern on behalf of the residents who live in Toronto's west end communities that are adjacent to a rail corridor. CN does not own tracks in the west end of Toronto. Therefore, you may want to also engage the other railroads who do own and operate in your communities.

Appendix A (cont'd)

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In regards to your question surrounding liability, CN has accident liability insurance of \$1.240 billion. This surpasses the recommended minimum set out by the regulators. CN is committed to being a good neighbour and working towards building a strong relationship with emergency responders in all communities through which we operate and to share information and training practices to ensure communities are well prepared.

Thank you again for taking the time to write. CN is very active in engaging communities on rail safety and we will continue in our efforts. I hope the information I have provided you is helpful and once again encourage you to also reach out to the railways that do have track infrastructure in your communities.

Sincerely,

A handwritten signature in black ink that reads "Sean Finn". The signature is written in a cursive, flowing style.

Sean Finn
Executive Vice President Corporate Services
and Chief Legal Officer

cc: Peggy Nash, MP Parkdale-Highpark
Michael Farkouh, Vice President and Chief Safety and Sustainability Officer, CN
Jim Feeny, Director Public and Government Affairs, CN