CRASH Canadians for Responsible and Safe Highways

17 April 2001

Paul Miller
Air Quality Program Manager
Commission for Environmental Cooperation
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Dear Mr. Miller:

I am writing to express our organization's concerns about the recent report prepared for the CEC by ICF Consulting on North American trade corridors that contains an uncritical endorsement of allowing giant multi-trailer trucks.

First we must correct two misleading and erroneous claims. At page 40 the report states that many fleets (in Canada) receive permits to operate vehicles longer than 25 metres. At page 49 it states "Use of LCVs is widespread in Canada." The reader is left with the impression these trucks operate across Canada and there is no concern. Actually, trucks longer than 25 metres (82 feet) are not allowed in most provinces. Ontario, the principal trucking market, rejected a proposal to allow these vehicles after they failed simple on-road maneovring tests. Nowhere does the CEC document reveal that these trucks do not meet Canada's national safety performance standards.

Canadians want nothing to do with LCVs. An Angus Reid poll taken in September, 2000 found that 86 per cent opposed longer double trailer trucks.

The suggestion that allowing heavier and longer trucks would reduce truck traffic defies previous experiences in Canada. Bigger trucks have meant more trucks.

Please find enclosed a briefing paper opposing longer trucks from CRASH, Transport 2000 and Sierra Club.

Yours truly,

Bob Evans
Executive Director

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Brief to Transportation Climate Change Table

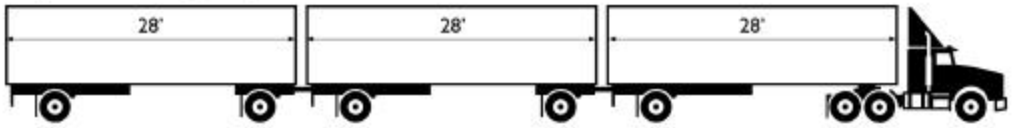
Opposing Expanded Use of Longer Combination Vehicles or LCVs (Longer Double and Triple Trailer Trucks)

Transport 2000 Canada
Canadians for Responsible and Safe Highways
Sierra Club

April 99

Longer Combination Vehicles (LCVs)

Triples – a tractor pulling three 28 foot trailers



Rocky Mountain Doubles – a tractor pulling a 48 foot trailer and a 28 foot trailer

Turnpike Doubles – a tractor pulling two 48' foot trailers

Summary

The trucking industry has lobbied for a number of years for the expanded operation of extra-long double and triple-trailer trucks commonly identified as longer combination vehicles or LCVs. The industry sees the operation of LCVs as providing it with greater productivity, lower costs and a greater share of the long-haul freight market.

Now, the trucking industry is using the climate change transportation table as a convenient forum to advance its cause. It has obtained $40,000 of taxpayer funds for a study of the proposal for LCVs.

These longer double and triple trailer trucks are up to 50 per cent longer than the national safety performance standard of 82 feet. LCVs take longer to pass or be passed. They create longer periods of splash and spray, block motorist views of road hazards and intersections, and increase collision risks at railway crossings. Compared to a regular tractor-trailer, they are at greater risk of jackknife, rollover, or going outside their traffic lane.

The industry says these trucks would only operate on the safest divided highways, but experience in Alberta and Saskatchewan shows that industry and shippers successfully lobby to expand operation from divided highways to two lane roads. These over-length trucks currently operate in Alberta and Saskatchewan (which have the highest traffic death rates in the country), and to a lesser extent in Manitoba and Quebec.

Due to concerns about road safety and damage to bridges, in 1991 the U.S. Congress banned any further deployment of longer combination vehicles or LCVs beyond the roads where they operated in 1991. Congress recently renewed this ban. The trucking industry sees an opportunity to expand the use of longer trucks here because Canada has lower safety standards and already allows heavier trucks. If the industry can expand LCV operations across Canada, it would be able to undermine the U.S. federal ban through NAFTA. Will Canadian road users be the guinea pigs in this continental power struggle?

The trucking industry states that LCVs would reduce fuel consumption per unit of freight hauled, compared to regular tractor-trailers. Any marginal reduction in fuel use would be offset by increased fuel use in other ways. The U.S. D.O.T. states that LCVs would shift 19 per cent of rail traffic to road (30-50 per cent in the east). A shift of 20 per cent in Canadian rail traffic to road would increase the annual economic costs of road and bridges by $185 million, annual accident costs by $170 million, annual pollution costs by $240 million, and annual congestion costs by $320 million. There would be an additional 180 annual deaths in large truck crashes caused by mode shift to road.

Expanding LCV operations would also lead to a less efficient production and distribution system. Freight density would decline. Shipping distances for light products would increase. A less efficient system would generate an overall increase in greenhouse gas emissions.

Longer combination vehicles are not a realistic option. They are not going to lead to a reduction in greenhouse gas emissions, but they would increase road fatalities. Trucking operates in an integrated North American economy, and the U.S. Congress has banned the further deployment of these trucks in the market of our major trading partner. A 1998 Angus Reid poll finds that 86 per cent of Canadians oppose longer double trailer trucks and 95 per cent oppose triple trailer trucks.

Introduction

Transport 2000 is a national non-profit association that works toward a transportation system that is economically, environmentally and socially sustainable.

Canadians for Responsible and Safe Highways (CRASH) provides a voice for the rest of us; whom, as motorists, passengers, cyclists or pedestrians, must share public roads with large trucks. It takes its mission seriously, for large truck accidents kill and injure about 12,000 Canadians every year.

The Sierra Club was founded in 1892 to protect the wilderness of the Sierra Nevada. It has been active in Canada since 1969, working on matters of public policy and environmental awareness.

The purpose of this brief is to outline our objections to the trucking industry proposal to expand the operation of longer combination vehicles or LCVs.

What is the Trucking Industry Proposing?

This truck is about 80 feet long. An LCV is up to 130 feet long

The trucking industry is proposing to operate longer double and triple trailer trucks that are up to 50 per cent longer than the Canadian national safety performance standard of 82 feet overall length. These trucks are currently allowed in Alberta and Saskatchewan, and to a lesser extent are used in Manitoba and Quebec. The industry is seeking to extend operations elsewhere in Canada. The trucking industry is using the transportation table as a convenient forum to promote longer trucks. The industry sees the operation of LCVs as providing it with greater productivity, lower costs and a greater share of the freight market.

The trucking industry would have us believe that this is just a simple technological change. It is in fact proposing to use trucks that do not meet national safety performance standards developed by federal/provincial/territorial transportation officials in the late 1980's. These trucks fail national safety standards for overall length, rollover or offtracking (going outside the lane).

The Pilot Project That Just Keeps Going and Going and Going….

The favourite strategy of the industry is to introduce these trucks incrementally through so-called pilot projects. The initial proposal for expansion usually involves the least offensive of the LCVs, the Rocky Mountain Double, which is "only" 20 feet longer than the national standard. The industry promises to use the best drivers only on divided highways under restricted conditions.

The trucking industry used this incremental expansion approach in Saskatchewan by introducing LCVs on four lane roads in 1982 and then expanded them to two lane roads in 1986. Over time, shippers and trucking lobbyists pushed for even longer trucks on more roads. Today, Saskatchewan allows the longest triple trailer truck on the continent. It also allows double trailer trucks 130 feet long (50 per cent over the national safety performance standard) on two lane roads. As the number of LCVs in operation increases, the pool of best drivers becomes diluted.

Canadians as Guinea Pigs

Saskatchewan and Alberta do encourage the use of these trucks. They also have the highest overall highway fatality rates per capita in Canada. Deaths in large truck crashes in Alberta have roughly doubled in the past five years. Large truck collision deaths and injuries in both Alberta and Saskatchewan are out of proportion to population and increasing.

Due to concerns about safety and damage to road bridges, in 1991 the U.S. Congress banned any further deployment of longer combination vehicles beyond the States or roads where they operated in 1991. Congress also froze the box length of double and triple trailer combinations. Congress recently reaffirmed the LCV freeze in its new five year national surface transportation legislation. The U.S. Federal Government also applies sanctions to States that do not administer and enforce federally-directed truck size and weight standards and safety compliance standards.

The North American trucking industry wants to operate LCVs on main highways across the continent. Canada is viewed as an easier place to expand the use of these longer trucks because our Federal Government has delegated its constitutional responsibility for the safety of trucking operations to the provinces. In the deregulated continental market, the industry can play one province off against another to allow bigger and longer trucks. If the industry can expand LCV operations across Canada, it will be able to undermine the U.S. freeze through competitive pressure under NAFTA.

Will Canadians be the guinea pigs as the North American trucking industry uses Canada as the strategic beachhead to attack and break down the U.S. Congressional ban on these longer trucks?

Characteristics of Longer Trucks

There are three types of longer combination vehicles or LCVs:

The Rocky Mountain Double has a 48-53 foot trailer plus a 28 foot trailer. It can be up to 101 feet long compared to the national safety performance standard of 82 feet. Compared to a regular tractor-trailer, the Rocky Mountain Double is 35 per cent worse for offtracking (going outside its lane) and 75 per cent worse for rollover during an evasive manoeuvre.[1]

The Turnpike Double has two 48-53 foot trailers and can be up to 130 feet long, as long as a ten story building is high. Of all trucks measured, it has the worst offtracking problem (going outside its lane).

The Triple has three 28 foot trailers.[2] Of all trucks measured, the triple has the worst rearward amplification (crack the whip effect which compromises stability during an evasive manoeuvre). It remains the worst truck even when fitted with the safer C dolly hitches.[3]

Triples suffer from "crack the whip" effect that makes them unstable

All three LCVs (Rocky, Turnpike, Triple) are longer than the national safety performance standard of 82 feet. Thus, LCVs take longer to pass or to be passed. They expose motorists to longer periods of splash and spray when meeting or passing. The longer boxes block motorist views of hazards on or approaching the road. According to the U.S. D.O.T., cars passing longer trucks would need a longer sight distance, but standards for marking passing and no-passing zones were developed in the 1930's and are based on cars passing cars.[4]

[1] U.S. D.O.T., Comprehensive Truck Size and Weight Study, Draft, Vol III, Dec, 1998, Chapter 7,8
[2] Saskatchewan now allows a Queen City Triple which has a 48 foot trailer plus two 28 foot trailers
[3] U.S. D.O.T., exhibit 8-9
[4] ibid, p.9-4

The U.S. D.O.T. warns that longer trucks will increase crash risks at intersections.[5] It states: "*LCVs should not operate through intersections with significant traffic volumes or insufficient sight distances for other traffic."*[6]

The longer double trailer trucks go outside their lane, particularly when making a turn at an intersection or ramp, as they must do in order to get from the highway to terminals. The U.S. D.O.T. states that: *"However, a substantial number of intersections on the existing highway and street network cannot accommodate even a five axle tractor semitrailer combination with a 48 foot semitrailer."* (which is 72 feet long compared to longer double LCVs at 95 to 130 feet long).

Longer trucks turning left will first have to swing far to the right. Even then, the rear trailer may run into other traffic lanes. People in other vehicles run the risk of death or injury as there is nothing to prevent their vehicle from going under the side of the turning truck. Even at slow speeds at an intersection, a trailer could intrude into the passenger compartment because the trailer could be striking the most vulnerable part of the vehicle, a window, rather than the protective bumpers. Even the most professional and alert truck driver may inadvertently have a collision because he/she cannot see all quadrants of the truck.

Longer trucks will need more engine power to pass another vehicle or to climb hills. The U.S. D.O.T. estimates that poor acceleration by longer trucks is a concern as it can result in large speed differentials between vehicles in traffic, and this increases crashes. The crash risk doubles when the difference in speed between vehicles is 5 miles per hour and becomes 15 times greater at a difference of 20 miles per hour.[7] It also notes that putting large engines in trucks is counterproductive since they consume more fuel and produce more emissions.

Will the truck driver be alert to the extra problems of an LCV? According to the driver fatigue study funded partly by Transport Canada, truck drivers in Canada today get on average only five hours of sleep a night, even though they need seven to eight hours. The Federal Government is under pressure from the trucking industry to increase the current limit on hours of work for truck drivers from the current 60 hours a week to 70 or 80 hours a week. A study funded by Transport Canada finds this could reduce the amount of sleep truck drivers get by 12-24 hours a week. Giant trucks and tired drivers make a deadly combination.

[5] ibid, p.9-7
[6] ibid, p.9-12
[7] ibid

The longer double trailer trucks also increase the risk of grade crossing collisions. Tests by Transport Canada have found that even a standard length loaded tractor-trailer may be unable to clear railway crossings within crossing signal times when it starts from a standing stop just before the warning bells and lights come on. Longer trucks will be at even greater risk. Additional risk is created where there are problems with sight lines or intersections near the rail line which can trap longer trucks on the crossing when traffic is stopped. Advancing the signal time of warning bells/lights at crossings to accommodate longer trucks would create a different safety hazard. Some motorists get frustrated if they cannot see a train coming and drive cross the track against the warning bells/lights.

The industry is fond of saying that LCVs will only operate on the safest divided highways. Experience in the prairies shows that once LCVs are allowed on these roads, trucking companies and shippers successfully lobby to put them on two lane roads where there are intersections and level railway crossings. Even when operation of LCVs is restricted to divided highways, these trucks have to get from the divided highway to yards and terminals where they can be broken up. The trucks are too long for these roads and intersections. Thus, LCVs will intensify pressure on governments to redesign intersections with larger turn radii. This works against efforts to intensify land use and encourage more walking and cycling transportation to reduce greenhouse gas emissions.

LCVs with C dolly hitches between the trailers are less likely to rollover than those with A dolly hitches, but still have a serious safety problem with offtracking compared to a tractor-trailer. The C dolly is also sensitive to variations in road surface and brake adjustments. Trucking operators prefer the A dolly, the least stable of the three couplings. B hitches, the most stable, are not usually used for van trailers because they cannot be backed up to a loading dock. Many trucking companies prefer the operational convenience of A dollies to C dollies. They do not like the extra cost and weight, the extra difficulty of hooking up C dollies or dealing with them in winter snow conditions.

The RTAC standards for safety performance put severe limits and disincentives on the use of A dollies. Here is what the RTAC principles state:

> "The A Train Double configuration was shown to have potentially serious performance limitations. This configuration's performance consistently falls short of the desired levels, particularly with respect to the dynamic load transfer ratio and the transient high speed."

Because the A dolly hitch was found to be the least safe coupling option, the RTAC standards limited the box length on double trailers with an A dolly to just 18.5 metres. This was to be a penalty to discourage using A hitches.[8] LCVs would increase the this box length by up to 80 per cent. The RTAC standards put the same penalty of 18.5 metres on C dolly box length. Since then, regulators have increased this to 20 metres. LCVs would increase the C dolly box length by up to 65 per cent.

Safety Statistics

The trucking industry argues that LCVs have a good safety record in terms of crashes compared to other types of trucks. LCVs spend more of their miles on limited access highways where the accident rate is low. The U.S. D.O.T. states that when the fatality rate per mile is compared for trucks on the same type of road, multiple trailer trucks (including double trailer trucks shorter than LCVs) have a higher fatality rate than regular tractor-trailers.

Rather than using truck drivers, motorists and pedestrians and pedestrians as guinea pigs in a test of LCV safety, it would be more prudent to examine more readily available stability and handling characteristics. The Report of the Ontario Commission on Truck Safety said: *"Despite careful preparation by the owners and the use of exceptionally skilled drivers, all three of the overlength vehicles evaluated under the auspices of this Commission failed fundamental off-road controlled tests and simple manoeuvring tests on the public highways under almost ideal conditions."*[9]

These safety performance problems were documented again by the federal/provincial engineering studies on truck safety in the late 1980's. The Rocky Mountain Double failed safety performance thresholds for rollover or offtracking. The Turnpike Double severely failed the test for offtracking (going outside its lane). Triples severely failed the test for highspeed rollover and highspeed offtracking. The U.S. D.O.T. study released December, 1998, found similar safety performance problems with LCVs.

[8] According to some information posted on the Alberta Trucking Association web page, B.C. and other western provinces have already agreed to over-ride the RTAC principle by 1.5 metres to 20 metres.
[9] Report of the Ontario Commission on Truck Safety, 1983, p. 179

Environmental Issues

The trucking industry states that LCVs use less fuel than regular tractor-trailers for each unit of freight shipped. This is a narrow framework of analysis which does not iterate the downstream negative impacts that will increase the entropy and inefficiency of the production and distribution system. A similar problem has plagued urban passenger transportation planning models. They offered solutions that perpetuated land use dispersal and urban sprawl and therefore made the transportation less efficient (OECD, Newman and Kenworthy). Improved fuel efficiency of cars has also been offset by increased travel due to land use dispersal. A narrow definition of fuel efficiency in the transportation table's trucking study, without understanding the dynamics of production and distribution, will lead to a similar policy failure.

It is expected that LCVs would reduce the cost of transportation for light density materials relative to more concentrated materials. This would create the following inefficiencies and entropy in the production and distribution system that will increase fuel consumption overall:

- Mode shift from rail to road
- Reduction in shipment density
- Encourage shipment in a less concentrated form
- Increased shipping distances in production and distribution

Current trends in production and distribution are making freight transportation unsustainable (OECD, Centre for Sustainable Transportation, Wuppertal Institut). LCVs would accelerate and accentuate these trends. The transportation table trucking study will lead to incorrect conclusions if it does not consider the overall and long-term impact on production and distribution. We are concerned that it may instead be chasing a misleading definition of efficiency that will make the problem worse rather than better.

The brief to the table by the trucking industry dated October, 1998, indicates that the industry has a strong ideology that rejects any critical analysis of sustainability of the overall production and distribution system. Instead, it is focused on technical solutions that cater to what it perceives as market preference. This would replicate in freight the mistakes that have afflicted urban passenger transport planning over the past 50 years.

According to work prepared for the Ontario Round Table on Environment and Economy by IBI Group, rail piggyback or container traffic is 2.7 to 3.3 times more fuel efficient than trucks.

The U.S. D.O.T. estimates that allowing nationwide operation of LCVs on main highways would transfer 19 per cent of existing rail traffic to road, including 9 per cent of rail carload and 31 per cent of intermodal.[10] This mode shift would be even more dramatic in the east, with Conrail losing 50 per cent of its rail traffic. Rail rates on remaining traffic would increase 11 per cent overall, and 17 per cent in the east for Conrail. The U.S. D.O.T. estimates that as a result of allowing nationwide LCVs, investment in railways would cease, rail lines would be abandoned, intermodal service on some routes would be discontinued, and rail service would deteriorate. This would lead to the financial collapse of the rail system, and the transfer of even more rail freight to road.

The U.S. D.O.T. study[11] is projecting that allowing LCVs nationwide on main U.S. highways would shift 19 per cent of rail freight traffic to road, and 30-50 per cent of rail traffic in the east. Research for Canada's National Transportation Act Review Commission found that a 2.2 per cent shift of freight from rail to road would increase emissions in freight transport by 4 to 7 per cent. It concluded: *"Thus, even a small switch from rail to trucking mode can significantly change the emissions due to goods transportation.*" Thus, a 19 per cent shift from rail to truck would increase freight transport emissions about 50 per cent. A 40 per cent shift in the central/eastern Provinces would increase freight transport emissions there by 100 per cent. This would not help Canada meet its Kyoto target.

Shifting traffic from private railways to congested highways also raises safety concerns. For example, a shift of 20 per cent (56 billion tonne kilometres) of rail freight to road would lead to an additional annual 180 deaths in large truck crashes.[12]

In order to meet the Kyoto target, Canadians would have to be encouraged to use smaller, more fuel efficient, passenger vehicles. It is not realistic to expect them to do this if they have to share the road with bigger trucks. If allowing longer trucks causes even a small shift in consumer behaviour to heavier cars, there will be increased fuel consumption by passenger vehicles.

[10] The majority of this diversion is due to increased cubic capacity of longer trucks, not increasing gross truck weight above 80,000 lbs. For example, the report simulated a 5.8 per cent rail to truck diversion if the U.S. adopted a 131,000 lb weight limit on trucks, similar to the weight limit in Canada.

[11] U.S. D.O.T. chapter 11

[12] In 1995, rail had 280 billion tonne-kilometres of freight activity. Freight trains were involved in 96 deaths, including rail/road crossing collisions, for a fatality rate of 0.34 deaths/billion tonne-kilometre (note: excludes passenger trains). Intercity trucking in 1995 was estimated at 112 billion intercity tonne-kilometres and there were 404 persons killed in collisions involving tractor-trailers (note: excludes straight trucks) for a fatality rate of 3.6 deaths/billion tonne-kilometre.

Economic Issues

The U.S. D.O.T. estimates that allowing LCVs nationwide on main highways in the U.S. would shift 19 per cent of rail traffic to road and 30-50 per cent in the east. A shift of 20 per cent of Canadian rail traffic to road has been estimated to increase annual costs by almost one billion dollars:[13] [14]

- Additional road damage would increase annual government road subsidies $185 million (using Royal Commission on National Passenger Transport highway cost and revenue estimates)
- Increase annual accident costs $170 million (using Transport Canada cost of death and injury)
- Increase annual pollution costs $240 million
- Increase annual congestion costs $320 million

A shift of 30-50 per cent of rail traffic in the east to road would put so much additional truck traffic on highways that major highways such as the 401 (Ontario) and 40 (Quebec) would become virtually inoperable.

Shippers and trucking companies like the economics of LCVs. Having one driver pull two or three trailers instead of one reduces labour costs. This translates into lower shipping costs. The extra costs of LCVs for accidents and infrastructure are, however, external to the decisions of production and distribution and passed on to the public. With LCVs will come pressure to modify intersections and ramps and to construct staging areas where the trucks can be hooked together or taken apart.

Trucking companies prefer not to use LCVs for short distance trips because of the extra time and cost of assembling and disassembling the trailers together. Thus, LCVs will focus on longer inter city trips where rail intermodal is an alternative.

[13] Transport Concepts, External Costs of Truck and Train, prepared for Brotherhood of Maintenance Way Employees, 1994, p.35

[14] a similar estimate of increased cost would be obtained by using costs from IBI Group in association with Boon Jones & Associates in a report supporting work of the climate change collaborative

Public Opposition

The transportation table needs to assess if the proposal from the trucking companies to expand operation of LCVs is feasible. Canadians are overwhelmingly opposed to longer trucks. Professional pollsters have commented that opinion against longer trucks is so lop-sided that it is virtual unanimity.

The reputable Angus Reid Group conducted a scientific sampling of opinion held by Canadians on large trucks in April, 1998. Following are the results on longer trucks:

- 86 per cent are opposed to allowing longer double 48 foot trailer trucks

- 95 per cent are opposed to allowing triple trailer trucks

Their suspicions and fears are justified. On average, there are already about 43,000 large truck collisions a year that kill or injure 12,000 people. LCVs would operate on public roads, not private property. You must consider the needs and expectations of the people who share the roads with large trucks.

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