Introduction of Long Combination Vehicles in Ontario

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LCVs

• Vehicles
  – With an overall length greater than 25 m
  – That carry divisible loads
  – Use standard length trailers
  – Operate by special permit
• Allowable gross weight is about the legal maximum ~ 63,500 kg
• Carry goods of low and moderate density between terminals
LCVs

Triple

Rocky Mountain Double

Turnpike Double
LCV Operations

- Started in Alberta in 1969
- Now well-established in Saskatchewan, Manitoba, Québec and Yukon
- Pilot programs
  - New Brunswick, 2005
  - BC, 2007
  - Nova Scotia, 2009
Policy Development and Planning
Ontario Commission on Truck Safety, 1983

• Among many things
  – Reviewed LCV operations
  – Sponsored an LCV demonstration
• Concluded that LCVs should “... NOT be allowed at this time”
• Cunningly gave no guidance when the time might be right
• Minister’s policy “LCVs over my dead body”
# Vehicle Bed Length

<table>
<thead>
<tr>
<th>Year</th>
<th>Semitrailer</th>
<th>Doubles</th>
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<tbody>
<tr>
<td>1960’s</td>
<td>13.71 m (45 ft)</td>
<td>~15.84 m (52 ft)</td>
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<tr>
<td>1978</td>
<td>14.00 m (46 ft)</td>
<td>~16.75 m (55 ft)</td>
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<tr>
<td>1984</td>
<td>14.65 m (48 ft)</td>
<td>~16.75 m (55 ft)</td>
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<tr>
<td>1994</td>
<td>16.20 m (53 ft)</td>
<td>~18.75 m (61 ft 6 in)</td>
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- **LCVs**
  - Turnpike Double - 32.4 m (106 ft)
  - Rocky Mountain Double - 24.7 m (81 ft)
  - Triple - 25.6 m (84 ft)
LCVs in the 1990’s

• Academic studies
  – Transportation costs
  – Greenhouse gas emissions
  – Crash rates
• Industry lobbying
Process

• MTO began in-house policy development in early 2000’s
• Ontario and Québec were working to remove barriers to inter-provincial trade
• Program developed by the two ministries
• Extensive consultations with:
  – The two trucking associations, and others
  – NB and NS
  – Shippers, looking for seamless LCV service within the four provinces
Policy Platform

• An Ontario LCV program had to hold carriers, drivers and vehicles to higher standards than in other trucking operations, and to higher standards than LCV operations in Québec and the western provinces:
  – For political approval in Ontario
  – To achieve the highway safety benefits seen in other provinces
  – For public approval
Dynamic Performance of LCVs
Dynamic Performance of LCVs

• Four studies
  – A-train Turnpike Doubles
  – B-train Turnpike Doubles
  – A-train Turnpike Doubles with quad-axle lead semitrailer
  – A-train hitch offset

• Each evaluated against the RTAC performance measures
A-train Turnpike Doubles

- Tandem or tridem semitrailers
- 16.2 or 14.65 m (53 or 48 ft) long
- Tandem converter dolly
A-train Turnpike Doubles

- Static roll threshold was that of the tractor and lead semitrailer as if it was not part of a Turnpike Double
- Large high-speed offtracking not an issue
- Load transfer ratio was critical
- MTO
  - Set 90 km/h speed limit
  - Set 40 m overall length
  - Defined other dimensions
B-train Turnpike Doubles

- Semitrailers
  - 16.2 or 14.65 m (53 or 48 ft) van
  - 16.2, 14.65 or 12.19 m container (53, 48 or 40 ft) container
- Tandem or tridem rear semitrailer
B-train Turnpike Doubles

- Much more space to turn than A-train
- Low static roll threshold due to B-train, not LCV
- MTO accepted B-trains
  - Allowed 3.66m (144in) spread centre tridem at 26,000 kg
Quad-axle Lead Semitrailer

- Used as a lead semitrailer in Québec
- Semitrailer has excessive hitch offset
- MTO elected not to include this in the pilot program
Hitch Offset for a Tridem Lead

• Not all tridem semitrailers with a 3.66 m (144 in) spread tridem could meet the 2.8 m hitch offset specified
• Analysis showed it could be relaxed
• MTO relaxed hitch offset to 3.4 m for a tridem semitrailer
Ontario LCV Pilot Program
• The Premier of Ontario announced on 2 June 2009 that Ontario would proceed with a carefully controlled LCV pilot program compatible with that in Québec
Program Development

- OTA and PMTC identified routes
- OTA and ACQ adapted the CTA driver training program used in the western provinces
- MTO established the permit process
- Extensive consultation
Permit Conditions

• Carrier qualification
• Driver eligibility
• Equipment requirements
Permits

• Two permits each for 50 carriers to:
  – Maximize participation
  – Prevent any carrier gaining a competitive advantage

• Permits were not vehicle-specific

• First 10 carriers had at least one year’s experience operating LCVs
Vehicle Weights and Dimensions

- Québec has rather general specifications
- Ontario defined detailed specifications
- These generally do not restrict existing equipment used by Québec carriers
A-train

max 40 m

14.5-16.2 m

14.5-16.2 m

11.5-12.5 m tandem

min

10.2-12.5 m

10.9-12.5 m tridem

2.7 m
B-train

max 40 m

12.0-16.2 m

max 15.3 m

12.0-16.2 m

max 12.5 m
Operational Rules

• Approved routes
  – LCV primary network – freeways
  – Approved rest/emergency stops
  – From O/D locations to the LCV primary network, generally < 2 km, engineering assessment needed
  – No detours, except for a semitrailer pulling a converter dolly with no rear semitrailer

• 90 km/h

• No livestock or dangerous goods
Windsor-Québec City Corridor
An LCV Must Not Operate ...

• At the start or end of specified long weekends
• In or around Toronto Monday through Friday during specified rush hours
Highway 401 through Toronto

AADT 374,300 (2006)
Toronto Time Restriction

40 km

Morning
7:00 to 9:30 am

Evening
3:30 to 6:30 pm

No O/O Traffic in the shaded area during the time restrictions

NO - Travel towards the shaded area during AM restrictions
NO - Travel away from the shaded area during PM restrictions
An LCV must not Operate

- During specified bad weather conditions
- During December, January or February
- Consistent with Québec
LCV Program Benefits
1.5 million LCV trips per year

- Save $320 million Cdn for shippers
- Save 70 million l of fuel
- Reduce greenhouse gases by 200,000 t
- Reduce infrastructure stress by 2%
- Reduce tractor-semitrailer collisions by 9%
- Reduce congestion around Toronto
- Alleviate a developing driver shortage
Current Status
Status

- Shut down for winter on 1 December 2009, resumed 1 March 2010
- 52 permits issued to 26 carriers
- 14 rest/emergency stops approved
- 21 origin/destinations approved
- 4,114 trips since 9 August 2009
- 1.3 million vehicle-km
- No incidents
- No public concern
Status

- Remaining 48 permits authorized have been issued
- Progress will be reviewed after the first year of operation
- If all is well, permit limits may be relaxed, so operations gradually ramp up
LCV Ultimate Range

1,330 km
80 km
730 km
Thank you for your attention!

Questions?