Objectives

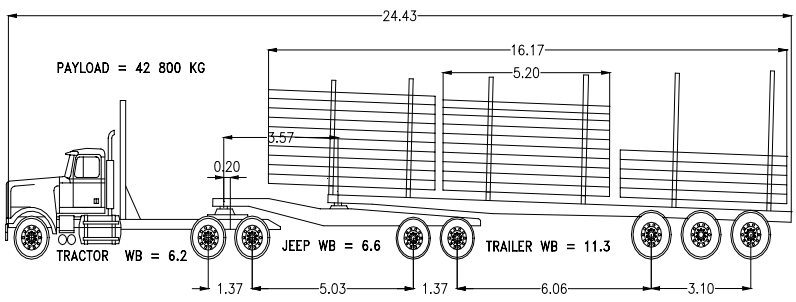
- Seeking opinions from provinces on:
  - How each configuration would be interpreted under their present W&D legislations?
  - Would configurations be acceptable under their present W&D legislations?
  - If not, what conditions would be required to make them acceptable?
- From truck operators:
  - Are these configurations of interest?

Two configurations

- J-Train
- Hinged trailer

J-Train

J-Train



LOAD (KG)	5 500	17 000	17 000	24 000

J-train

- Concept developed in Alberta
- Legal in Alberta
- In terms of axle loads, resembles a B-train
- Semi-trailer is a standard tri-axle semi-trailer
- FERIC has performed simulations to evaluate the dynamic performance of several variants of the configuration

J-train

- Advantages:
  - Can be used to haul both short and long logs (tree length) without requiring trailer reconfiguration
  - Could achieve payloads similar to a B-train
  - Allows for flexibility: in rougher conditions trucker can run with just the semi-trailer
  - Overall lower capital investment than a B-train

J-train

- Disadvantages:
  - Because of jeep, load center of gravity higher in front
  - Vehicle sweep is higher than most configurations
  - May be difficult to use standard tridem semi-trailer and have a sum of wheelbases that is <17m

Simulation Results -

Jeep WB (m)	Trailer WB (m)	Load Density (kg/m3)	Performance Measures SRT (g's)	USC (deg/g)	LTR	RWA	TOT (m)	FD	LSOT (m)	HSOT (m)	LFU
6.5	10.6	580	0.38	1.12	0.41	1.26	0.36	0.07	5.58	**0.48**	0.60
6.5	10.6	390	**0.32**	-2.39	0.52	1.35	0.42	0.07	5.58	**0.49**	0.60
6.5	11.6	580	0.38	1.17	0.40	1.21	0.33	0.07	**6.05**	**0.47**	0.60
6.5	11.6	390	**0.32**	-1.77	0.50	1.29	0.38	0.07	**6.04**	**0.49**	0.60
7	10.8	580	0.38	1.10	0.40	1.23	0.34	0.07	5.81	**0.47**	0.59
7	10.8	390	**0.32**	-1.84	0.51	1.31	0.40	0.07	5.81	**0.50**	0.60
7	11.6	580	0.38	1.14	0.39	1.19	0.32	0.06	**6.08**	**0.47**	0.63
7	11.6	390	**0.32**	-1.81	0.50	1.28	0.37	0.06	**6.08**	**0.49**	0.63
Performance Standard			> 0.35	> -4.45	< 0.60	< 2.20	< 0.80	<0.10	< 6.00	< 0.46	< 0.80

Note bold text indicates performance standard not met

Load width of 3.05 m, track width of 2.6 m

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Hinged trailer

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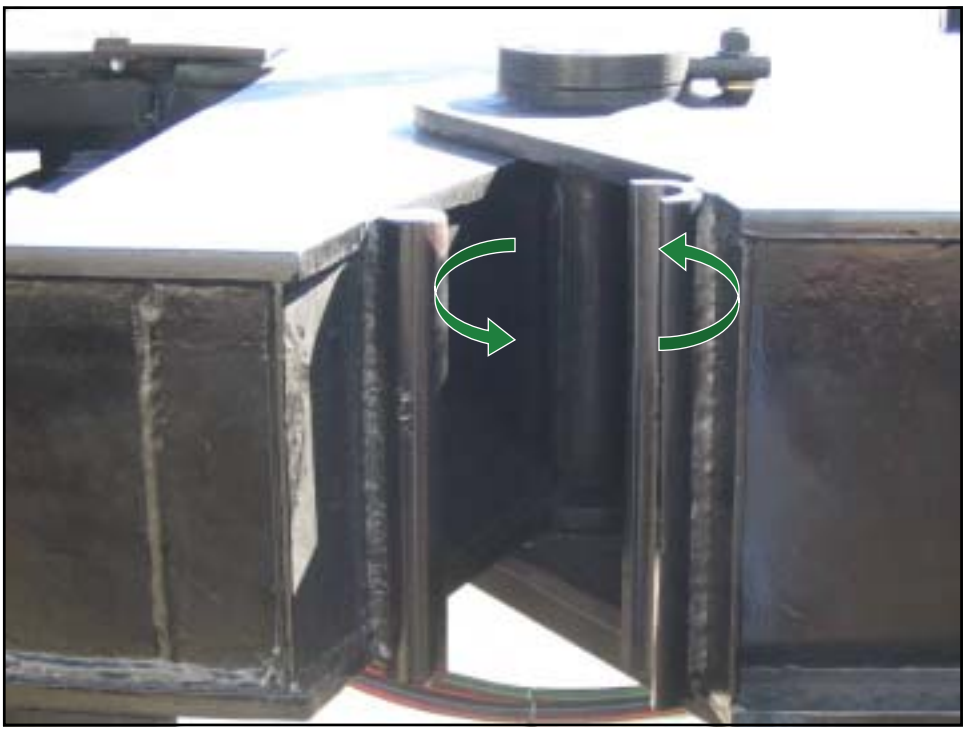


Hinged trailer

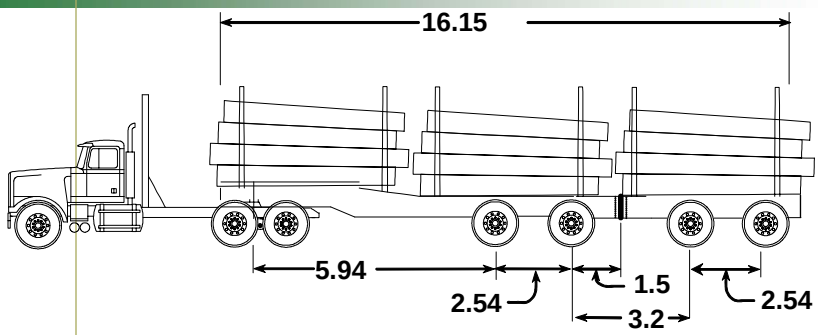
- Concept developed by LBC trailers of Thunder Bay, Ontario
- Only one on road presently
- Present trailer modified 2005 trailer so pre-SPIF
- Designed to be an alternative to 5-axle self-steer SPIF semi-trailer
- One height-leveling valve controls all axles so equal load distribution

Vertical plane

15

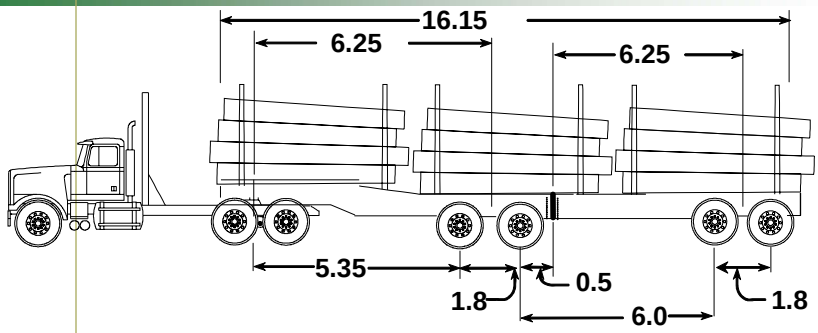
Horizontal plane

Hinged trailer present configuration



GVW = 61.3 t

Hinged trailer possible MOU configuration

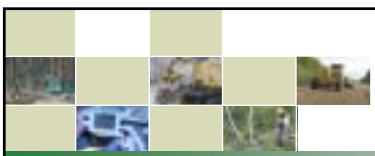


Hinged trailer

- Advantages:
  - Can possibly be used to haul both short and long logs (tree length)
  - Could achieve payloads similar to a B-train
  - Load distributed evenly on all axles
  - Alternative to self-steer axle trailers
  - Could be a means of introducing 4-axle semi-trailers in jurisdictions where not presently allowed
  - Hinged can be locked when backing-up

Hinged trailer

- Disadvantages:
  - Does not fit in any present legislation
  - Interpretation problem:
    - One unit since can not be separated?
    - Two units since has two articulation points?
  - If limited in length, will be difficult to configure similar to a B-train
  - Has not been dynamically simulated so some may question its stability



Comments?

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- Presentation and video available at: http://vcr.feric.ca/Public_FileDownloadList.asp
- Presentation: Alternatif configurations.ppt
- Video: LBCTrl.mpg