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FIELD NOTE NO.: 9 Trucking--10
Previous Sheet Reference Nos.: 3, 4, 6, 8

SUBJECT: 8-AXLE TRUCK/TRAILER CONFIGURATION
(Tractor/Jeep with Self-Steering Quadaxle Trailer)

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In September 1987, FERIC observed an 8-axle tractor/trailer unit hauling logs in the Kootenay area of B.C. The unit consisted of a conventional 3-axle tractor, a single-axle tractor-jeep, and a "self-steering" quadaxle trailer without a reach.

The 8-axle unit was manufactured and is owned by S-Train Transport Ltd. of Kamloops, B.C. The unit had primarily been used for pole hauling, but Crestbrook Forest Industries Ltd. (CFI) recently experimented with log hauling in the B.C. Kootenays (Figures A and B). During the trial, the unit averaged 100% of its gross capacity (with a range of 96 to 104%) and the average volume of the 24 loads was 52.5 m³/load.



FIGURE A. Travel Empty.

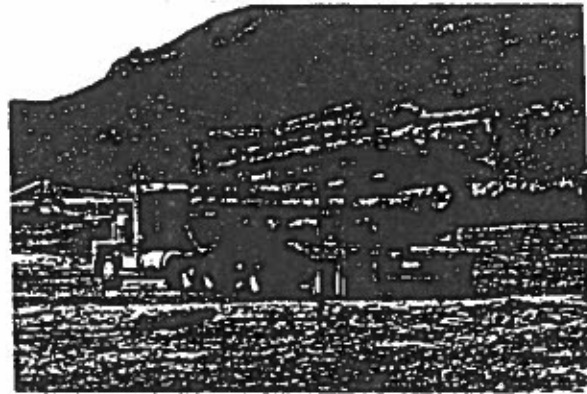


FIGURE B. Travel Loaded in Mill Yard.

TRACTOR DESCRIPTION

- 924 Kenworth with a 6.4-m wheelbase.
- 475 Cummins engine, 10-speed main transmission with 4-speed auxiliary.

JEEP DESCRIPTION

- Single-axle (no suspension), T1 steel frame, attached through a fifth wheel, manufactured by S-Train Transport Ltd.

TRAILER DESCRIPTION

- Reflection-steering quadaxle trailer manufactured by S-Train Transport Ltd. Trailer bunk rotation is transmitted to the trailer's two front steering axles through tie rods and bell cranks.

BUNK DESCRIPTION

- Fifth wheel mounted.
- Low profile construction (T-1 steel), double stakes.
- Each bunk has two built-in mounts (ratchets) for nylon wrappers.

ADVANTAGES OF CONFIGURATION

- Higher gross vehicle weight, resulting in a greater payload capacity (Figure C). This configuration achieved maximum licenced loading within maximum height restrictions during the CFI trial. Also, no Restricted Route Permit is required.
- Ability to change vehicle length to accommodate differing log/pole lengths.
- Good off-tracking and outswing characteristics (providing trailer steering linkage is correctly adjusted).
- Good load security (achieved by four nylon belt wrappers on the bunks plus two conventional cable wrappers).
- Ability to haul heavy/long off-highway loads without excessive axle loadings or load sweep.

DISADVANTAGES OF CONFIGURATION

- High capital cost (approximately \$191 000 for combination).
- Little or no incremental payload over a 7-axle logging truck (Table 1).
- Return trip traction is less than for a conventional logging truck that can carry the trailer on the tractor.
- Longer set-up, loading, and load preparation time.
- Increased driver skill is necessary, especially to adjust trailer tracking correctly as interbunk spacing is changed.

TABLE 1. Comparison of Typical Logging-Truck Configurations (No Tolerance, 25.4-cm (10-in.) Steering Axle Tires).

Truck/Trailer Configuration	No. of Axles	Total Gross Load (Restricted Route) kg	Tare Weight ¹ (Typical) kg	Net Capacity kg
Tractor/Quadaxle Trailer ²	7	58 088	17 600	40 488
Double Doglogger ³	7	58 788	17 000	41 788
Tractor-Jeep/Triaxle Trailer ⁴	7	58 788	17 500	41 288
Tractor-Jeep/Quadaxle Trailer ⁵	8	63 500 ⁵	20 000	43 500

¹ Some tare weights have been adjusted from previous Field Notes (specific truck weights have been adjusted to more typical weights).
² Field Note No.: Trucking--4.
³ Field Note No.: Trucking--3.
⁴ Field Note No.: Trucking--6.
⁵ Licenced Weight (not Restricted Route--no tolerance allowed).

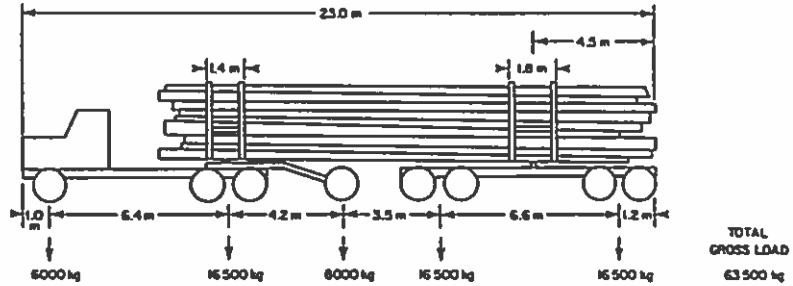


FIGURE C. 8-Axle Truck/Trailer Dimension and Loading Specifications.

INFORMATION: The information contained in this report is based on limited field observation and is only published to disseminate information to FERIC member companies. More information may be obtained from:

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