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TLD GAUTHIER TELECARRIER TL-3000C USED FOR CEDAR SALVAGE

In March 1998, FERIC observed a TLD Gauthier Telecarrier TL-3000C cable yarding system working on a cedar salvage operation near Port Hardy, B.C. The yarder was demonstrated by the manufacturer, and operated by Arbour Innovations Consulting Inc. of Port McNeill.

FERIC observed the Telecarrier in an area that was clearcut approximately 40 years ago, and that now supports a naturally regenerated crop of western red cedar and western hemlock from 5 to 10 m tall. The site was typical of the coastal plains on northern Vancouver Island — sideslopes ranged between flat and about 40%, and the soils varied from rocky outcrops to deep organics. Arbour Innovations estimated that approximately 200 m^3/ha of cedar was left on the ground from the original harvesting and was available for salvage. It also estimated that approximately 15% of the cedar was high-grade sawlogs, while the remainder was low-grade sawlogs, shake and shingle logs, or pulp.

Arbour Innovations proposed that it salvage the cedar logs using a hoe-forwarder to pile the logs in the corridors, and a skyline yarder to move the logs to the haul road. The hoe-forwarder followed marked trails to the concentrations of cedar logs, grubbed them out of the ground, and piled them for subsequent removal with the yarder. A bucker worked with the hoe-forwarder to ensure that all logs were cut to length. FERIC did not observe the hoe-forwarder in operation or examine the residual stand in detail. However, no damage to the stand was apparent (Figure 1).

Figure 1. Two hoe-forwarder trails showing the site before and after yarding.

The Telecarrier skyline system consists of a self-propelled carriage that travels on a single, stationary cable (Figure 2). The carriage has three large sheaves—two support the carriage and payload, and the third provides traction on the skyline. A motorized winch holds up to 75 m of cable for lateral yarding. A single, air-cooled, 50-kW diesel engine drives a hydraulic pump, and two hydraulic motors provide power for both travel and winching.

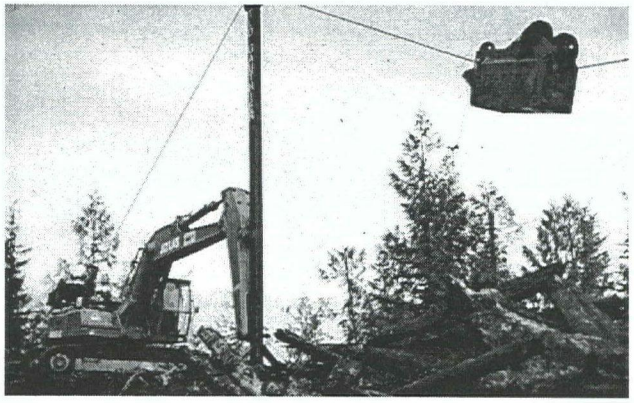

Figure 2. TLD Gauthier Telecarrier TL-3000C carriage approaching the landing. The excavator equipped with tower and skyline winch can be seen in the background.

The yarding crew consisted of just two workers: a hooktender and a landing-man. All carriage functions can be controlled remotely by either worker; a lockout feature prevents them from operating the carriage simultaneously. A keypad for each worker has 12 buttons which control the various carriage functions. Clearly marked keys provide three travel speeds in both directions—two speeds for lowering the dropline, and a single speed for raising the dropline. One key doubles the speed of all functions, and a light on the carriage indicates when the high-speed mode is engaged. Keys must be held down for the carriage to operate. The radio-control system also provides voice communication.

The skyline was anchored at the landing to a 14.5-m tower fastened to the boom of a hydraulic excavator. A winch on the excavator was used to raise and lower the skyline during rig-up. The skyline was anchored to a tailhold stump. (The system is also available in a two-tower

configuration, with the second tower functioning as a mobile backspar.) The tower is quite stable, even without guylines, and is very easy to move.

The maximum yarding distance is rated at 500 m by the manufacturer, although it may be limited by deflection. FERIC observed the Telecarrier operating to approximately 200 m. The carriage cannot pass over an intermediate support.

The skyline remains stationary during yarding, so it may not cause as much abrasion on the residual trees as conventional skylines. Furthermore, the carriage is controlled by the nearest worker, thus enhancing safety. However, the carriage itself is fairly heavy, weighing over 1300 kg, and therefore the payload is reduced.

The skyline was 22-mm-diameter swedged cable, the dropline was 15 mm in diameter, and the chokers were 10 mm in diameter. Such light rigging meant that the hooktender had to be careful not to break the chokers during initial breakout. Even with such light rigging, FERIC observed the Telecarrier transporting several turns of logs that were approximately 6 m long and 80 cm in diameter (Figure 3). Since the logs had been buried for a considerable length of time, they were water-logged and quite heavy. Rated lifting capacity of the winch is about 2700 kg.

Figure 3. Telecarrier self-propelled carriage with a large cedar log.

Limited time prevented FERIC from making extensive productivity observations; however, the machine was observed travelling both loaded and empty, and travel speeds seemed reasonable for a small yarder. Rated travel speed is 6.1 m/s, depending on the model. The carriage slowed as it approached the steep grade near the landing, and in one case, it stalled while pulling a heavy log up the steepest part of the slope. The system was designed for downhill yarding; steep uphill yarding is not recommended by the manufacturer.

The dropline and remote control worked well.

The purchase price for the yarding system is approximately $280 000. This includes the carriage, skyline, rigging, radio controls, and one excavator, but the price will vary depending on the condition of the excavator. When FERIC visited the site, the carriage was almost new, and had yet to be repaired. Fuel consumption was estimated at 35 L per day. The manufacturer estimates that the skyline will last one year during normal operations.

Disclaimer

The information contained in this report is based on limited field observations and is only published to disseminate information to FERIC members and partners. It is not intended as an endorsement or approval by FERIC of any product or service to the exclusion of others that may be suitable.

Further information about the TLD Gauthier Telecarrier can be obtained from the manufacturer or from the logging contractor.

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