



Managing log hauling with GPS

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The use of Global Positioning System (GPS) technology within the forest industry has be-



TimberTrax Solutions photo

come commonplace in certain activities, such as forest mapping where it is used to improve accuracy. There are still, however, plenty of opportunities for GPS use in other areas of forestry, says **Gord Vaughan** of Vancouver's TimberTrax™ Solutions Ltd.

Recently, TimberTrax Solutions, with the aid of TELUS Geomatics of Edmonton, customized GPS technology to track the location of logging vehicles and the weight of their loads. Until now, the

lack of accurate, up-to-date information in these areas has made monitoring vehicles and their loads very difficult.

The Automated Vehicle Location (AVL) system helps forest managers monitor where individual pieces of equipment are located, allows them to closely analyze cycle times and shift lengths, and helps determine where non-productive idle time may be occurring. In the past, large fleets covering a very large land base meant dispatchers often had trouble locating equipment accurately. When a truck was needed, the dispatcher attempted to pick the closest truck and, in many cases, a lack of information meant the wrong truck was selected. This caused frustration for drivers and dispatchers, and resulted in non-productive idle time.

TimberTrax Solutions has done several experiments on this AVL system and reports promising results.

Highway truck being loaded.



Managers receive custom reports

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"Idle times were reduced from 50% to 25% in one six-week trial period," said Vaughan. "Warm-up times were reduced from 24 minutes to as low as six minutes in another eight-week trial."

Reducing warm-up and idling times has many benefits. Service requirements are reduced, lowering costs, and machine production is increased. The system also allows for better invoice reconciliation. These GPS units can hold drivers to higher standards, and can also identify unrealistic management targets, which leads to less confusion and reduced labour/management and contractor/forest company conflicts. This kind of raw data will provide clear evidence for both sides when establishing contracts.

Another benefit of this AVL system is its ability to record data that can be used to analyze driving distances and times. Managers can compare the cycle times between two different routes to the same location, and then establish which route is most cost-effective. The data can show when a truck is on Crown land, private land, or on highways, allow-

ing for much easier verification of motor-vehicle tax rebates.

TimberTrax Solutions has recently developed a program to allow these GPS units to provide additional data on the weights of loaded logging trucks. Loader operators can view a scale in their machine to see how much weight has been loaded onto the truck. This information allows truck drivers to haul loads that the truck is capable of handling, and increases the efficiency of the loader operator. A "load slip" is printed in the loader and then sent to the truck via wireless transmission. This should eliminate the human errors that occur when relaying information such as opening number, hammer mark, and loader numbers—all of which demand accurate tracking.

There are several times when the unit is triggered to collect data. These include the following:

- Time intervals of three minutes
- Vehicle movements, starting and stopping
- Vehicle ignition start up and turn off
- Hood opening and closing
- Whenever modem re-acquires signal

The data are transferred by one of two wireless networks, which TELUS Geomatics receives, and then filters and stores in a large database. This database is made available to authorized users via the Internet. TimberTrax is able to use this data to build custom reports for managers.

The cost of a basic AVL system begins at \$2.35 per day. A modem for transmitting data and a memory unit that is used to store data when the unit is out of satellite coverage is also required. The coverage for these GPS units is generally better than typical cell phone coverage.

The forest industry has come a long way in implementing technology. The AVL system is a new tool that can help managers and operators conduct business more efficiently. 🌲

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This image shows a truck-hauling cycle and was created by TimberTrax Solutions.

