

## TRUCKBASE™ Log Truck Monitoring System

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### Introduction

Concern for public safety, efficiency, productivity and government regulations have encouraged the use of vehicle monitoring systems for log trucks in Canada. Originally the use of tachograph units were the primary source of information for managers to monitor their fleets. However, this technology was slow and did not provide accurate positioning data.

The race to find an alternative reliable system was on. In response, TRUCKBASE Corporation, of Edmonton, Alberta, developed a log truck monitoring system using a Global Positioning System (GPS).

The system provides managers with details on:

- where a specific truck has been
- when it travelled the route
- the speed it travelled at any point along the route
- the cycle time.

### Monitoring System

The basic monitoring system comprises the following:

On each truck;

- an on-board "black box" computer with GPS receiver
- a manual input terminal
- 1 megabyte memory card.

For each fleet;

- Windows™ based TRUCKBASE™ TRACS analysis software.

These components allow managers to collect and analyse truck location and speed data.

TRUCKBASE Corporation also offers a range of add-on functions to enhance the performance of the basic system. These include touch screens, CTI and hydraulic system monitoring.



### Location and Speed Monitoring

The TRUCKBASE on-board computer calculates and records speed from successive uncorrected GPS coordinates. The GPS recording interval can be set by the manager, to give a maximum speed accuracy of  $\pm 0.1$  km/hr. This system therefore acts like a tachometer with the added ability to record locations.

With trucks travelling through a variety of speed limit zones during any one trip, it is possible to determine the compliance with speed limits within these zones.

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The breaks between different speed limit zones are identified by the computer using geographical reference points called signposts. These ensure the truck's TRUCKBASE on-board computer knows exactly what the speed limit is at the truck's current location. These signposts can also direct the GPS recording interval. For instance, as a truck passes a signpost at the edge of a suburban area, the recording interval may be automatically increased or decreased depending on which direction the truck is travelling. Signposts can also be used at the mill gate. This allows a manager to measure how long the vehicle remains in the yard.

## Fleet Management

The collection of accurate trip times and speeds can help managers assess a range of efficiency and safety issues. The TRACS software generates management reports in both tabular and map form for individual trucks or groups of trucks. The reports include;

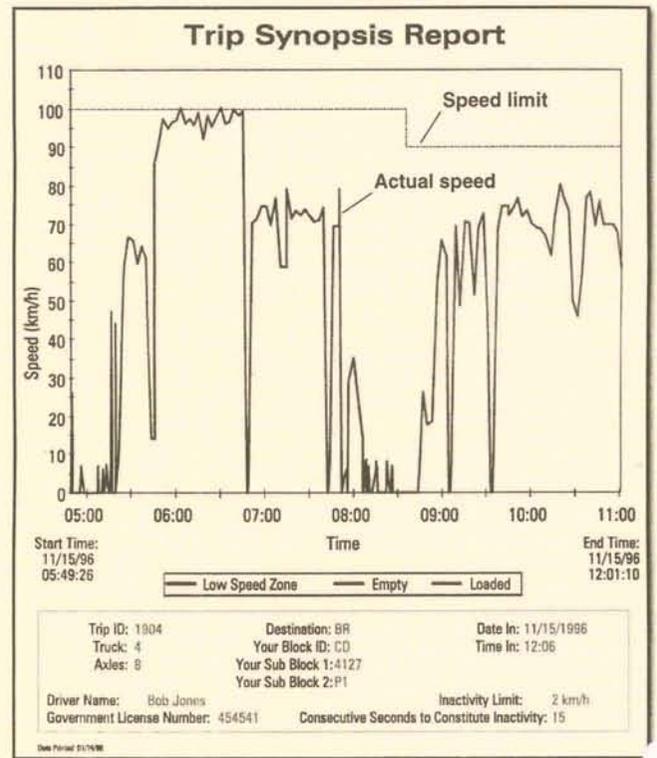
- cycle time reports
- inactivity reports
- speeding reports
- trip synopsis report
- zone occupation report
- low speed zone violation report
- signpost and zone management reports.

Data from on-board computers in some of the newer trucks may also be analysed to generate some of the information provided by the TRUCKBASE system. However, this requires each trip to be manually constructed from speed, distance and time information, requiring more time and effort than is appropriate for the information gained.

## Limitations

At present, the TRUCKBASE monitoring system is not capable of operating in the southern hemisphere where longitudinal geographical references increase towards the north (this is the reverse of the northern hemisphere). However, this problem can be easily fixed by TRUCKBASE Corporation through some re-programming of the software.

The vehicle monitoring system does not give real-time information. It is possible to establish real-time processing through radio or satellite communication. However, at this point in time it is not considered cost-effective.



*A Trip Synopsis Report showing truck speed and speed limit for a day's activity*

## Cost

The current cost of the basic monitoring system is approximately NZ\$4,000 per truck (computer/GPS and terminal) and NZ\$12,300 for the TRACS software.

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