



Supply Chain Management Timber Harvesting and Logistics



Shift work and shift scheduling

An investigation into shift work and shift scheduling in forestry harvesting operation in general and mechanized operations in particular. Shift work in timber harvesting operations; require careful consideration be given to human-related performance, the human/machine interface as well as equipment functioning within an environment of continuous production. The work conceptualised a shift work framework for the industry.

Work study nomenclature and protocols

The study was undertaken in a prelim to the development of nomenclature and protocols for the South African forest industry. Currently no standard protocol is being followed in the collection of work study data; albeit work sampling data or time study data, their analysis and application of the basic time concept and the use of time ratios in productivity improvements. This study has collated all existing literature and practices worldwide in a concise document and lays the foundation for the development of an actual protocol for the country.

Satellite tracking and use of GPS/GIS in forest timber harvesting and transport operations.

- Comparisons of various commercially available onboard satellite tracking systems in collaboration with the CRC in Australia. More specifically comparisons are made between a system developed mainly for primary transport monitoring and one developed for specific use in forest operation management. Results will show the applicability, the efficiency and the accuracy of the different systems in collecting information about forest operation. The information provided can be used to improve work systems and productivity of forest operations.
- Tracking of primary transport vehicles to establish variable related to specific terrain and operating conditions; such as a wander factor, loaded and empty travel speeds, work element times, time ratios, harvesting protocols and productivity improvements.
- Tracking of secondary transport operations to determine drive speeds over roads of certain condition and class with various loads, truck types and products. In addition vehicle productivity and operations efficiencies are determined which can be applied in productivity improvements.