

Contribution 75 in session "Logging in Steep terrain"

Productivity and Systems Analysis of an Excavator Based Running Skyline in Two Alternative Working Configurations in Norway

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Keywords: Cable yarding; steep terrain, logging; productivity studies

Un-guyed excavator based cable yarders are becoming increasingly popular for reasons of their flexibility and the easy availability of base machines. These yarders are seen with single, double and 3-drum winches, with boom tip equipment ranging from buckets through timber grapples to full processing heads. Some use simple blocks on the boom arm while others are fitted with full towers.

We studied the productivity of a machine developed by Austrian Zöggeler forsttechnik, that has recently become available on the European market. The specific machine is built on a Doosan wheeled excavator and is fitted with a 3-drum winch and a processing head. It requires a 2-man crew and works alternately as a running skyline or a processor, switching every ca. 25 mins. Questions on systems balance, machine utilisation, cost distribution and overall system productivity arise as a result of this working method. Three discrete productivity models were developed through regression analysis of time study data on felling, yarding and processing. These were then used in a simulation model to test the alternative of separating the yarding and processing to two individual machines in assessing whether the increased productivity is justified by the increased cost. This work will report on both the productivity models and the results of the simulated alternative working configuration.