

Low-cost approach to logging

By Markku Ranin

Forest companies around the world seek to leave all forest work to private contractors. The rationale is that companies want to concentrate their limited investments in what they know best, whether they are in the business of sawing, peeling or chipping for boards and pulp. Cyclical variations in market demand are easier to control if the labour-intensive forest work is left in private hands.

In Southeast Asia, in particular, it is vital to create job opportunities to maintain social peace and to promote private entrepreneurs. Privatisation of road transportation of logs has been well accepted and investment in one or even several trucks is within financial reach of these new businesses.

Wheel tractors and forest trailers offer a new low investment solution to log forwarding. Simple to operate and with little need for servicing, forest trailers are now an affordable choice where private contractors are encouraged to take over all aspects of forest work. For the price of one traditional forwarder one can buy five trailers - each with close to the same carrying capacity.

Cheap to own - cheap to operate

Wheel tractors and flatbed trailers have long been used in oil palm plantations. They are used to carry the heavy nuts to the roadside where they are then loaded to trucks. Similarly, wheel tractors are now emerging in forest work for all the same reasons. It is easy to find skilled men to operate these forwarders as there are many who master the articulated tractor/trailer link and can do servicing to wheel tractors.

Trailers' loaders are similarly easy to operate as controls function exactly like the ones in excavators. A high reliability is achieved when in the case of engine trouble only the wheel tractor needs to be replaced without further interruption to the forwarding work.

Forest trailers typically need no modification before being fitted to a wheel tractor. The grapple loader with a rotator, hydraulic support legs and the hydraulic 4-WD drive to the low ground pressure balloon tires are all powered by a tiny portable hydraulic pump that fits nicely to the PTO output of the tractor. Hydraulic control levers are

portable and just lifted to a suitable place near the tractor driver.

They also make good road speeds, up to 40 km/h fully laden, making it possible to avoid reloading and delivering logs direct to the mill if distance is a reasonable 10km or less. It has been noted with delight that the road speed allows all machinery to be taken to the campgrounds for the night for security reasons and not left in the dark forests on their own.

Forest forwarding work carried out in Indonesian acacia plantations have shown lower than expected costs in hauling logs to the roadside over distances that vary from 100 m to 400 m. Operating and investment costs have been well below US\$10 per hour or less than US\$1.5 for each m³ of wood carried.

With the low investment level - including cheap freight costs as one can fit four units into a single 40ft container - and ease of operation and service, forest trailers or "ants" are expected to make deep inroads in large numbers into the forest communities in Asia.



Nokka trailers were lengthened by 3 feet and fitted with an extra pair of side poles to accommodate two tiers of short logs.



Nokka can take full 12 tons of logs whether they are short or long. Designed primarily for plantations, the trailer is here loading mixed tropical logs in Sumatra.



The wheel tractor PTO pump operates a 4-WD system to the rear low ground pressure balloon tires. The system is activated from the cabin and deactivates automatically when speed exceeds set limits.



Unlike traditional forwarders, wheel tractor coupled forest trailers can do 40 km/h on roads, making it unnecessary to reload the logs to trucks for short distances.

Thousands of units sold worldwide

Nokka forest trailers come in various sizes to suit all budgets and are suitable for forwarding and transporting all kinds of timber.

"The needs of forest machine operators often vary considerably", says

director Mr Lassi Pesonen. "Hence we have adopted a modular design, which allows logging equipment to be tailored to individual requirements. All Nokka's logging equipment can be made to match the customers needs, wherever he is from".

For example, a chassis on one

Indonesian trailer has been lengthened by three feet, in order to accommodate two tiers of 6 to 8ft logs. Extra side poles have also been added to keep the load in shape for off-road conditions.

The wheel tractor mounted forest machines have a load capacity up to 12 tons and the loaders reach up to 7.5 meters. They can be fitted to any 4-WD tractor of minimum 80 hp engines with little or no modifications. The forest trailers can be equipped with a hydraulic four-wheel drive, which gives the two beam chassis the ability to drive on sloping terrain as well as on wet and soft soils. The draw bar is hydraulic too, making it possible to do 90 degree turns in very tight spaces.

Users in Sumatra have given credit to the low ground pressure, allowing replanting to commence right after logging without any need for soil preparation. This is because of the low own weight and the extra wide balloon tires, which are strengthened for forest use. Some clients, though, fill the tires with water to make



Here, Nokka 12 ton forest trailer is coupled to an old MF-390 wheel tractor whose roof has been tilted up to give better view to the loader which operated by the excavator type levers.

the system more stable in steep slopes.

Nokka-Tume Oy has been a pioneer in bringing the forest trailer concept to Southeast Asia's acacia plantations. More than 10,000 units of forest trailers and over 20,000 units of forest grapple loaders have been sold in up to 30 countries across all continents. This probably makes the company the biggest manufacturer of forest trailers. A wide range of accessories is available for the loaders from excavator buckets to various grapples. Loaders can be equipped with a winch to pull logs closer in extreme conditions.

Nokka Forest Machines occupy a strong position in the forest machinery markets of Central Europe and Scandinavia. They have also gained a foothold in the plantation forests of South America and Southeast Asia. Nokka-Tume Oy is a well-known manufacturer of agricultural and forestry machines in North America, too. ☆

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