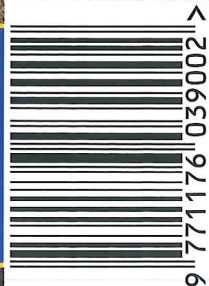


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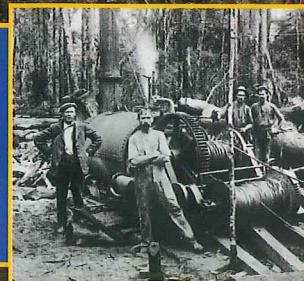
***Big Tigercat
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ahead!
Puffing haulers***



NZ leading the world in winch-assist technology

IT'S NO SECRET THAT NEW ZEALAND HAS BECOME A WORLD leader in developing winch-assist technology to mechanically harvest trees on steep slopes. The extent of our leadership was showcased at the 6th International Forest Engineering Conference in Rotorua last month.

Keith Raymond, who has led the Steepland Harvesting programme for the past eight years – first with Future Forests Research and now with Forest Growers Research – highlighted the developments to visitors from more than 22 countries at the conference, who had travelled from as far afield as France, Finland, Poland, Latvia, Thailand and the Americas

The figures spoke volumes. More than 180 winch-assist units produced by New Zealand companies have been sold to date, with 90 going into North and South America. Around 70 locally-developed grapple carriages and 100 camera systems have also been sold. Advanced mechanised harvesting software developed here has captured 20 customers, too.

“We’ve seen more than \$110 million in sales of new harvesting machinery and equipment developed here in New Zealand since 2012,” says Mr Raymond.

A total of 19 new products have been developed in the last five years, some under the research programmes and others funded by contractors and engineers, with 13 going on to be commercialised



This ClimbiMAX was among the first NZ-developed winch-assist machines to be exported – seen here lowering itself down a snowy slope in British Columbia..

and six reaching prototype stage.

A major benefit seen in the forests around New Zealand has been a 60% reduction in serious harm injuries between 2012 and 2017, with more than 200 people removed from manual falling and breaking out. A 25% increase in productivity from cable harvesting crews has been attributed to the introduction of winch-assist and grapple carriage technologies since 2013 – mechanisation has improved ground-based productivity by 33%. **NZL**

Where have all the yarders gone?

AN INTERESTING TREND HAS SURFACED in the latest survey by the University of Canterbury on the number of yarders working in New Zealand forests.

The survey, carried out every five-to-six years, appears to show fewer yarders are working in corporate forests in 2018,

compared to 2012. So where have they gone?

Hunter Harrill, a researcher with the university’s School of Forestry, told the 6th International Forest Engineering Conference in Rotorua last month that whilst the survey has yet to be completed, only 193 swing yarders and tower haulers had been identified so far, compared to a total of 305 working six years ago.

“Although some forest owners have not yet responded, that doesn’t make up for the lack of numbers showing in the information collected to date,” says Dr Harrill,

“Some of the older towers, the Madill 009s, have been retired, but the others seem to have moved into woodlots or they are working with smaller forest managers and we haven’t yet been able to identify them. That was to be expected with more

woodlots now coming on stream, but it makes the task difficult, especially when there are reckoned to be 14,000 individual woodlot owners in New Zealand.”

Few new towers are being built today, as the emphasis goes on swing yarders that can grapple logs from the hillsides, a trend also showing in the survey, with the Madill 124 still being the most numerous model in the bush.

More motorised carriages are being used by New Zealand loggers, too. Back in 2012, less than 30% of yarders/tower crews were employing motorised carriages, but that has grown to 50% of those surveyed, with scabbing now becoming less common, although the venerable North Bend system is still a popular configuration.

And six years ago, no one was using grapple-equipped carriages, whereas they are used by an increasing number of crews in 2018.

NZ Logger will carry the full results when the survey is completed. **NZL**



The Madill 124 is the most popular swing yarder in New Zealand.

Ikea buys forests to make furniture

FURNITURE PHENOMENA, IKEA, is buying its own forests to ensure it is supplied with enough FSC-certified wood to keep its 403 worldwide stores satisfied.

Ikea manager, Christoph Leibing, visited New Zealand last month to attend the 6th International Forest Engineering Conference to brief attendees on the company's wood-based activities and plans.

Ikea is the world's largest single consumer of wood and started its own MDF factory in New Zealand. The lightweight, yet strong tables and chairs are made from fast-growing radiata pine harvested in Europe, and they now make a corner-stone of its product range. Ikea also uses fast-growing Acacia for its outdoor furniture.

Leibing explains: "We can now produce furniture from the same raw material as a solid wood table".

Ikea uses close to 16 million cubic metres of round wood equivalent every year to source all of its wood and paper products from sustainable sources by 2020, with the aim of preventing deforestation. As part of its plan, Ikea recently invested in forests in Romania and Latvia. No word on whether New Zealand will be on the list – the company does not yet have stores here but there are ten in

(NZL)

Winch-assist study highlights utilisation

WHEN SPENDING BIG BUCKS ON A WINCH-assist system to improve productivity and safety levels on steep slopes, you want to make sure it is constantly working.

But, as many contractors are discovering, that's easier said than done. So, Pan Pac decided to commission a survey to find out exactly how much a new TractionLine winch-assist system put to work by contractor DG Glenn in its Hawkes' Bay forests was being utilised.

"Pan Pac is paying a day rate to the contractor for the winch-assist unit, so they were wanting to make sure it was being used," says University of Canterbury forest engineering student, Ben Reriti, who studied the winch-assist operation over the summer.

To date, there has been no in-depth or long-term evaluation of winch-assist machines, so utilisation is an unknown, he told the 6th International Forest Engineering Conference in Rotorua last month.



The DG Glenn TractionLine used in the winch-assist study.

An accurate estimate of utilisation will allow for better planning and efficiency of the system, he adds.

Pan Pac has set a target of 75% utilisation and Ben was able to check whether it was working to plan by fitting a GPS unit to monitor the TractionLine and the Cat 552 harvester, recording when they were 'On' and 'Off'.

Ben found a clear difference between the utilisation of the winch-assist machine and the harvester. The TractionLine was used on 49 out of a possible 70 days and worked a total of 268 hours. Whereas the harvesting machine worked 357 hours when used in conjunction with the winch-assist Hitachi. And it was also operated off the tether on ground-based felling at times, with the TractionLine parked up, so the Cat ended up with 510 'On' hours over the 70 days.

Ben calculated that when used together, the winch-assist machine did indeed meet the Pan Pac 75% utilisation target, but overall that figure dropped to 53% when the off-tether work of the harvester was included.

With the winch-assist machine being 'Off' for 21 of the 70 days it was available to work, that leaves room for improved utilisation, says Ben, which is expected to come when a second harvester joins the operation shortly. The study, which is ongoing, will also need to determine what the winch-assist machine was doing when it was 'Off' and not actually parked up. (NZL)

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Winch-assist improving soil – study



AMERICAN RESEARCHERS BELIEVE TETHERED harvesters might be improving soil on steep slopes and the effect of tracked machine movements over the surface may also help it to absorb more moisture.

Woodham Chung, Associate Professor of Forest Operations at the Oregon State University, has been leading a study into the effects of cable-assistance operations on reducing soil disturbance during mechanical timber harvesting along machine corridors.

Soils can be improved with tracked winch-assist machines running over them.

It is widely acknowledged that a tethered machine reduces damage to the ground when compared to an untethered machine, but the Oregon State study alludes to more interesting results.

Prof Chung told the 6th International Forest Engineering Conference in Rotorua last month that the study was commissioned

as a result of more machines going onto slopes and the need to understand their benefits or otherwise. Weyerhaeuser alone has 21 winch-assist units working in its Pacific North West forests, which formed part of the 2017 pilot study.

It confirmed what contractors already knew, that tracks are better engaged through their entire length when the tethered harvester is heading down hill. There's less soil disturbance, too. But the study found the same is also true when the machine is working uphill.

Researchers were surprised to find that the top section of soil actually benefitted from a tethered machine walking over it, as the tracks mixed up the soil, which helps improve nutrient delivery to the tree roots.

The team also discovered that the top soil segment was able to better absorb moisture and this water-holding capacity might even reduce water flows, thus lessening the potential for flooding. This aspect still requires further research to quantify, as well as qualify, the results and what soil types it relates to.

When the final study is completed, Prof Chung and his team will produce best practice guidelines for environmentally-responsible use of winch-assist machines on steep slopes that could be of interest to New Zealand contractors as well as those in North America. ^(NZL)

US wood pioneer learns from New Zealand

PORT BLAKELY FORESTRY IS ONE OF THE EARLY PIONEERS OF the US tree harvesting industry, with its roots dating back to 1852, when business founder, Nova Scotia sea captain William Renton, built a sawmill in Puget Sound in Washington State.

But it has still learned plenty from its forestry operations here in New Zealand, according to Court Stanley, President, of Port Blakely's forestry divisions.

He told the 6th International Forest Engineering Conference in Rotorua last month that while the company has been harvesting wood from forests on steep land in both Washington and Oregon states for more than 150 years, it's methods have been updated recently thanks to technological advances made by contractors and others in New Zealand.

Blakely Pacific was its first international operation, created in 1993 to harvest forests purchased in New Zealand's South Island and has expanded into the North Island, which includes the Skookum barge business in Tauranga, servicing Matakana Island.

Through Blakely Pacific, recently renamed NZ Forestry, Port

Blakely has been exposed to the development of winch-assist technology and other advancements to improve safety and productivity on steep terrain.

Mr Stanley told the conference: "We've certainly taken some of the lessons from mechanised harvesting operations on steep forestry terrain developed in New Zealand on board for our US Forestry division."

He also gave the audience an overview of the environmental hoops foresters are required to jump through in Washington state before they can harvest trees, which includes a pre-harvest wildlife review five years out from cutting any trees. He went on to say that by comparison, the National Environmental Standard (NES) being introduced to New Zealand leads him to believe "there is nothing in there that scares me".

Mr Stanley says environmental responsibility is part of the Port Blakely stewardship policy and with the company still in the hands of the Eddy family (who purchased it from Captain Renton) after five generations, that is likely to continue. ^(NZL)

Roof-top camera records wind-blown timber

A UNIQUE GOOGLE EARTH-STYLE CAMERA mounted on top of an SUV was created to help Polish foresters record trees recovered from a massive windblow event suffered last year.

When a major storm struck Europe in August 2017 it flattened more than 10 million cubic metres worth of standing trees in central Poland, which sent the industry into overdrive to harvest the remains.

Poland has a significant forestry estate, amounting to 7 million hectares, and every year it harvests approximately 40 million cubic metres, much of which goes into furniture making. When the weather bomb struck, it effectively dumped a quarter of the annual harvest on the ground in one go.

Piotr Mederski, from the Poznan University of Life Sciences, told the 6th International Forest Engineering Conference in Rotorua last month that the windthrow event caused multiple challenges for the crews and the forest owners, especially as wind damage to forests on this scale is not common in Poland.

Not only did crews have to learn how to safely work around the tangle of downed trees without causing harm to themselves, they also needed to be able to recover as much of the wood as possible. Severe damage, such as long splits in the trunks of the mainly Scots Pines, complicated the job,



Just like a Google Earth camera car, this SUV has been set up with roof-top cameras to scale log stacks.

even with the use of mechanical harvesters.

Then, once it was cut, the massive stock pile had to be carefully managed so as not to flood the market with wood, crashing prices.

One of the biggest challenges, however, was timber scaling. Even though most of the logs had been put through a processor, the information was not always reliable and

trying to manually measure all those logs would have taken far too long.

So, a special photo-recording system was developed and the camera pod placed on top of an SUV that could drive through the stacks of logs and record the numbers at speed.

The drive-by scaling task across the scores of skid sites was completed quickly and quite accurately, with results of + or - 2% achieved. The Polish team wants to improve on that accuracy with fine tuning to their recording technology. **(NZL)**

Overseas investors keen on NZ forests

IT IS NOT ACCIDENTAL THAT NEW ZEALAND CURRENTLY IS ONE of the most desired locations for investors outside of their own countries, says a major forest owner.

Brendan Slui, CEO of Rayonier NZ, was quoting from the Forest Owners Association annual report for 2017 when he delivered those words to the 6th International Forest Engineering Conference in Rotorua last month.

And while that statement reflected the high international regard for our forests last year, the sentiment remains the same in 2018, in spite of a change of government.

Our business-friendly environment remains largely intact, we have fast-growing trees, good forest management practices, a high-quality workforce, an improving safety and technology outlook with an innovative culture, good infrastructure and good access to mills and ports, which all count in New Zealand's favour. When investors see our rising harvest numbers – both wood produced and prices gained – in recent years they are impressed.

And it's set to grow even further, with an additional 5 billion trees to be planted as part of the government's 10 billion trees in ten years programme, beginning with 70,000 hectares of new forest plantings in 2019, rising to 110,000ha in 2021.

That will take New Zealand's plantation estate from the current 1.7 million hectares to more than 2.2 million hectares.

There are good markets for our products, with China and other overseas customers readily accepting our logs, along with rising consumption by our own saw mills and wood processors.

Mr Slui told the conference that New Zealand forestry looks pretty good from a financial point of view, with \$12.5 billion in assets and annual revenue of \$4.2 billion, which provides a return on assets of 5.7%. You don't get that sort of return from putting money in a bank deposit.

He did, however, warn that there were challenges facing the industry, from low R&D investment to scarcity of new workers, though we do have a good base to build on for the future. **(NZL)**