ElmiaWood

The biggest forestry show on Earth was held in Sweden from 5 to 8 June

Elmia Wood 2013 had some of its highest attendance figures ever, with a record 18,400 visitors on the third day. Total attendance over all four days was 54,215. They came from all over the world, including many from Britain.

Reinventing the forwarder

Not given to understatement, the makers of the Eco Log Low Ground Pressure (ELGP) forwarder claim it to be the greatest leap forward in technology for 40 years. This improbable looking machine, which came straight from the factory, has yet to be operated in the woods.

The ELGP is a new concept in forwarder design. Its two heavy components, the engine and crane, are positioned at opposite ends of the forwarder. The crane is fitted as far forward of the front bogie casing as possible. The engine is fitted as far back as possible behind the rear bogie casing. The fuel, hydraulic reservoir and other technical items are positioned in the rear section, in front of the engine and underneath the load. The low centre of gravity and the distribution of the load spread ground pressure evenly.

The ELGP also has two load bays. The rear bay can be moved hydraulically one metre lengthwise to optimise ground pressure and facilitate loading. When this is done, the loader does not have to work at maximum extension and so can take more timber in its grapple in each work cycle. The double carriers also mean that 20 tonnes can be carried whilst exerting a ground pressure 20 per cent lower than a fully loaded 14-tonne forwarder. This increased load capacity also means that fuel consumption will be considerably less per cubic metre carried.

Two load carriers also facilitate the separation of different assortments of timber.

The towbar between the front and rear sections is articulated at both ends – 25 degrees in each direction, giving a total of 50 degrees. This makes the machine very manoeuvrable, and its double articulation also enables the rear load carrier to be moved 80cm to either side, so the front and rear wheels do not run in the same track.

The cab is fitted as far as possible from the engine, away from exhaust fumes and engine noise. It can be raised 1130mm. It can also be tilted from the horizontal, 15 degrees to either side, 15 degrees forwards and five degrees backwards. The cab is cushioned, raised and lowered, by three hydraulic pistons. It is free from vibration, and Eco Log say it offers comfort on a par with a car with air suspension.

Actually, the way the cab tilts, from side to side, and then moves up and down as it proceeds, looks distinctly weird – somehow reminiscent of a large insect.

www.forestryoftomorrow.com

The Salamander

Peder Hermodsson's day job is as a carpenter; but he is also a woodland owner. Consisting mainly of broadleaves, the wood is inaccessible to him by means of his tractor. It is quite rocky, with a lot of slopes. To travel over this terrain and between the trees, he needed something more flexible.

The Salamander forwarder is just that. All four wheels steer, and the rear pair acts independently of the front pair. There are two joysticks in the cab, one for each hand, each controlling a different axle. Thus the Salamander can move almost sideways through the stand if necessary. Also, as can be seen from the photo, the cab moves from side to side, as well as up and down, enabling the Salamander to snake its way between the trees.

Add to this the fact that the Salamander can tilt 15° either side, and you have a machine that enables you to work comfortably in areas you simply could not reach with a conventional forwarder.

Power is derived from a VW engine, salvaged from a Skoda pickup.

Whilst he is happy to keep the machine for his own use, Peder Hermodsson hoped it might be spotted by a manufacturer at the show, with a view to further development and, one day, serial production.

Peder Hermodsson +46 0709 370268 – www.pederssnickeri.se

Komatsu Forest

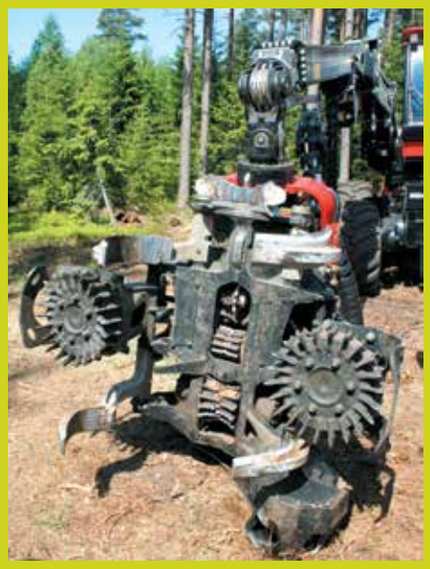
Komatsu enlivened proceedings with regular, and very loud, pyrotechnics, which shot flames into the air and left a pall of smoke in the treetops. Luckily, they failed to set the forest on fire.

The most notable new item on display was the 845 forwarder, which replaces the 840TX. It features a new chassis, a new engine, a new crane and a new bunk. With a carrying capacity of 12 tonnes, it has a 10-metre crane. Power comes from a 4.9-litre EU Stage IV engine. The 845 will be available 'next winter'.

Also on show were two new heads. The C144 is a larger version of the 365, with a felling diameter of 710mm. It has four feed motors and four feed rollers in an unusual configuration; the fourth roller is positioned in the feed path, above the frame roller, providing better contact with the stem, to increase feed force.

The smaller C93 replaces the 350, and has a felling diameter of 600mm.

Komatsu Forest Ltd 01228 792018 – www.komatsuforest.com



New Komatsu heads: the C144 (left) and the C93. (Bottom left) The new 845 forwarder.

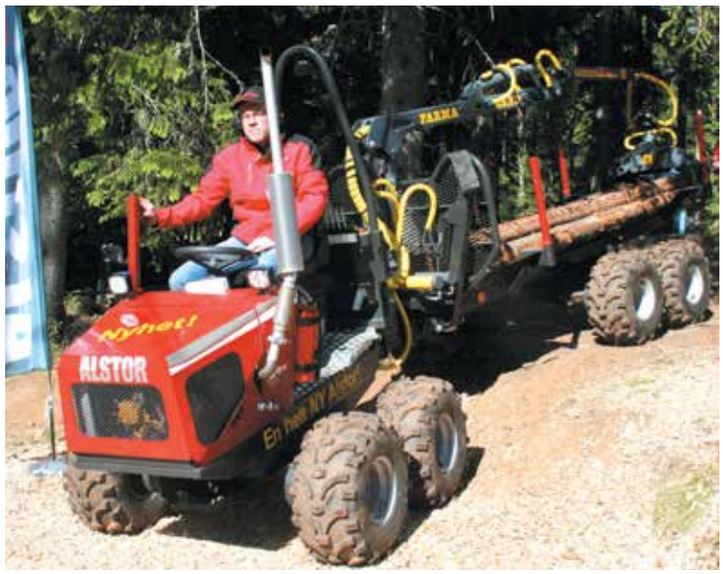
Dieter Biernath

Alstor

Alstor used the Elmia show to introduce their new 821 mini forwarder.

With a carrying capacity of 2,500kg, and greater ground clearance despite a lower centre of gravity, the 821 offers 40 per cent more traction than its predecessor, with a redesigned drive-line and a three-cylinder diesel engine. It also features heavy-duty bogies and three-speed gearbox, and has a tighter turning circle.

Three crane options are available, with reaches of 3.5 and 3.8 metres, while the new Farma 4.2 telescopic crane becomes available this autumn. *Home Forestry 1746 718456 – www.homeforestry.co.uk*



Chain track

Bema Kättingmäster was showing off the Duetta, a hybridised bogie track/chain, for which they have applied for a patent. They claim it has many benefits over conventional tracks.

The first is reduced tyre wear, since its design eliminates wheel spin in the chain. Also, it weighs approximately half as much as a normal track, reducing fuel consumption. It grips well on both hard and soft surfaces, is kinder to the terrain than a normal track, and is far less likely to slide sideways, which is a great advantage on side slopes.

The self-cleaning track is constructed of surface hardened, nickel-manganese stainless steel. Sections of the drive chain can be replaced if necessary, instead of having to replace the entire track.

Bema Kättingmäster +46 340 87050 – www.kattingmaster.se

Electricity-free

Naarva had their S23 guillotine stroke head on display. This is an extremely simple device, weighing just 230kg, and is designed to be easily interchanged with a grapple. It is controlled by the grapple open/close valve – there are no electrics.

Maximum cutting diameter is 23cm, and firewood wedges can be fitted, enabling the head to split logs as it delimbs and cuts them, dropping them straight into a trailer.

Pentin Paja +358 13 825051
www.naarva.fi

Tubex

Not many exhibitors from Britain at Elmia, but Tubex were there for the first time. Since Elmia is a truly international show, attracting people from every continent, they were able to present their product to many who had never seen a tree shelter before. In fact, this included the majority of the people coming onto the stand, and many said it was a solution they had been seeking for a long time. Some had tried to come up with home-made alternatives, using bamboo, chicken wire, *etc*, with little success.

The Scandinavians seemed particularly interested. They have EU grants available for broadleaf planting, but suffer a lot of damage from hares, voles, deer and elk. The latter will require a little research, but Tubex could make a two-metre shelter, probably double-staked. It would also have to incorporate ventilation.

Meanwhile, visitors from Central and South America came up with a wide variety of tree species to protect. All in all, Elmia opened the door for Tubex to many new markets, including the horticultural and landscaping industries as well as forestry. *Tubex 01621 874273 – www.fiberweb.com*

Wood-Mizer

Famous for their narrow blade technology, Wood-Mizer have now begun producing a wide-band sawmill.

Having visited Poland last year and been impressed by the high-tech factory and state-of-the-art manufacturing process, whilst at the same time being given loud and clear the message that narrow blades produce as good a cut as blades up to about 4" wide, we wondered why this departure from Wood-Mizer's norm had occurred.

The answer was simple: market acceptance. There is a perception among 'traditional' wide-band sawmillers that wide blades produce a more reliable finish. Wood-Mizer simply commented that, "Sometimes it is easier to fit in with people's expectations rather than to attempt to change their mind." When it comes to blades that are 5" or wider, physics takes over in terms of the transmission of power from the blade wheels to the blade, and the beam strength of the blade itself is greater, allowing faster stable cutting.

In actual fact, the major difference between the two types of blade is that wide ones need more saw doctoring and are more difficult to maintain.

The new wide-band sawmill, with its 90mm blade, is scheduled for release next year, and neatly bridges the 'disputed area' of 3-4" blades – and leaves the user to decide which technology is better. In this arena Wood-Mizer is now offering the customer a choice.

Wood-Mizer UK 01622 813201 – www.woodmizer.co.uk

The Mantis

When the organisers of Elmia read a newspaper report on the Mantis, it must have given them a sense of *déjà vu*.

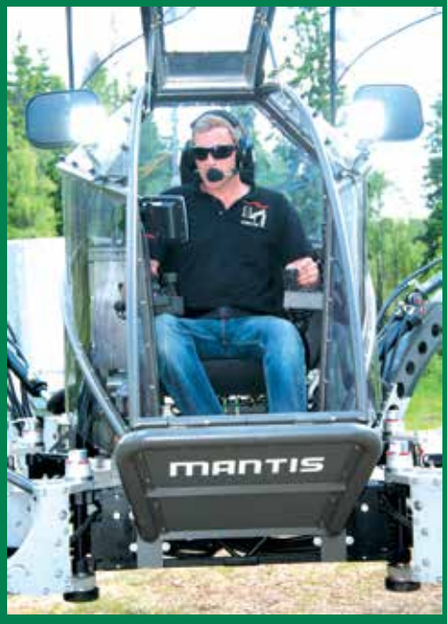
We all remember the Timberjack walking harvester, now consigned to a museum, that was a fixture at European forestry shows for a number of years, although we never saw it actually fell any trees. Micromagic Systems, the British company that is developing the Mantis, which is a very similar machine, were sent an invitation from Elmia Wood to have a stand at the show.

Matt Denton is attempting to reinvent the six-legged concept, but not with forestry in mind. "It's more about the software behind it," he says, though he has had some interest from a mining company in Brazil who need to carry out test drilling in a rainforest. Exerting no more ground pressure than a human foot, the Mantis should make it easier to get a permit to enter the forest, and will demand less deforestation to carry out exploration work.

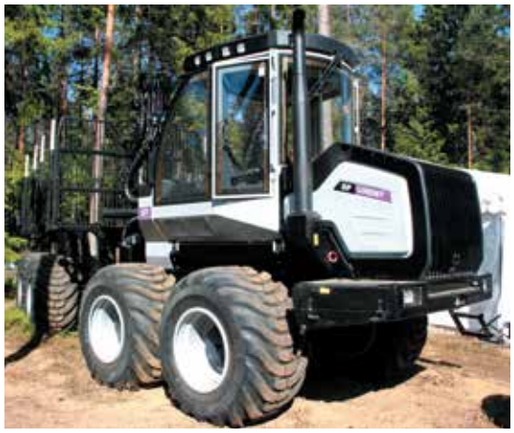
Matt Denton's background is in films, and among other things his team was responsible for building a six-legged turtle that appeared in the Harry Potter films.

Development work on the Mantis has already cost 'hundreds of thousands of pounds'. It is a shame that Matt Denton was so tied to his own stand that he didn't manage to call in on John Deere, where he might have had the opportunity to talk to those who have trodden the hexapod path before him.

www.mantisrobot.com



Logset



Logset showed off a number of enhancements to their product range at Elmia. Stability has been increased on their harvesters by extending frame length. The 8H GT, with a 205kW engine, is the main model for the UK, and RJ Fukes have a demo machine in the UK at the moment. It carries either a TH65 or a TH75 head, which replaced the 7 and 8L series back in 2011. Double work pumps can be fitted if required, and the new 10.4-metre Mesera (Loglift) 240 crane is 25 per cent more powerful than its predecessor, the 220. It has a similar design to the 11-metre 280 crane which is used on the 10H GT harvester, and has a lower centre of gravity. The harvesters also have a redesigned levelling system. The cab now tilts in all four directions automatically, and rotates through 90º, although a non-rotating cabin remains available with either a two- or four-way levelling system.

Logset also presented the latest additions to their GT forwarder series: the 205kW 10F GT which had an 8.5 metre single extension Mesera 122F crane with internal dipper hosing, and the four-cylinder 5F GT with a 125kW 4.9-litre multi-valve engine.

Logset's newly appointed export sales director Pascal Réty will be visiting the UK shortly. No stranger to Britain, he studied forestry for a year in Inverness. He had lodgings in Balloch – although he still can't pronounce it!

Southern England and Wales 01550 721641
Northern England, Scotland and Ireland 01228 792500

Absolute positioning

In a development uncannily similar to John Deere's Intelligent Boom Control, Cranab were showing off absolute position loader monitoring on one of their forwarder loaders.

The system uses sensors on all the joints on the loader, and a barcode on a piston (see picture), which enable software to take over certain aspects of loader control, making the job of the operator much easier. This reduces training time, and increases the productivity of those new to the job.

Knowing where the loader is in relation to the rest of the machine makes it possible to avoid accidentally hitting the pins or cab, and the software can be used to combine complex loader movements – the lift boom, outer boom, slew and telescope movements – into a single control.

90 per cent of loader movements follow the same path, and these repeat movements can be largely automated.

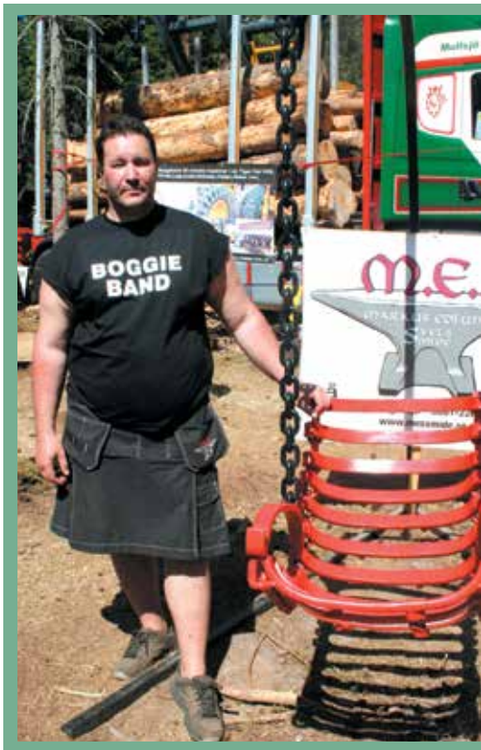
www.cranab.se

The Beauty

If you can remember as far back as the 2005 Elmia Wood, you may recall 'the Beast', a driverless harvester that was controlled from the cabs of the succession of forwarders that took turns to come and collect the wood it harvested.

The Beast's inventor, Jan Carlsson, has now come up with the Fiberdrive 1750, aka 'the Beauty'. This is described as a final felling harwarder. Weighing around 25 tonnes, including the tracks, it can carry 20 tonnes of timber in its revolving, 7.5-square-metre load bay. The crane can lift 2 tonnes at 10 metres, and its 10 individually suspended wheels decrease ground pressure by 60 per cent compared to a traditional forwarder, according to Fiberdrive AB.

But the outstanding feature is the quick change from harvester head to grapple, or vice versa. This takes no more than ten seconds, and is achieved without the operator leaving his cab, thanks to a patent pending quick coupling device, which includes eight hydraulic connectors and a single electrical contact. Another interesting fact is that the harvester head transmits felling and cutting data wirelessly to the Beauty's computer. *Fiberdrive AB +46 70 343 1019 – info@fibertech.se*



John Deere

Star attraction on the John Deere stand was the long awaited eight-wheel 1270E harvester. It should become available somewhere round the end of the year.

Also on the stand was an 1110E forwarder with a fixed cab. A company statement read: "In response to many customer requests, John Deere is now offering an alternative for the revolutionary rotating and levelling cabin in its E-series forwarders. The fixed cabin option features the same control panels and the same seat options as the rotating model. Also other components and optional equipment are similar to the rotating cabin, which secures easy maintenance and good spare part availability. Despite a different machine concept, the fixed cabin also offers good visibility to the work area and an ergonomic operator environment."

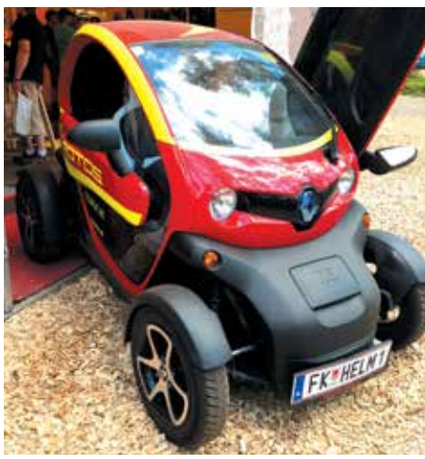
Interestingly, the double-telescope outer boom on the 1110E's loader was manufactured by Cranab.

Perhaps the feature about which the Deere staff seemed most excited was their Intelligent Boom Control (IBC).

"Intuitive boom tip control has been on the forest machine wish list for 30 years," they said. "IBC makes the boom operation accurate, fast and easy, as the operator now controls directly the boom tip instead of controlling each independent boom joint movement. When extra movements are eliminated, IBC will also increase the durability of boom structures and hydraulic cylinders. In the test machines, this new control system has significantly increased even experienced operators' working speed. The productivity of unseasoned operators has improved enormously. IBC provides it all in one package: more productivity with the best possible fuel economy and boom lifetime."

John Deere Forestry 01228 574055 – www.johndeere.com

Pfanner Protos



Pfanner of Austria showcased their Protos Integral safety helmets, which were highlighted by their colour-coordinated, helmet-shaped Protos electric car!

The helmet is by no means the cheapest on the market, but it integrates ear, facial, neck, and chin protection as well as offering active ventilation between the inner and outer shell. It is also designed for much greater comfort, especially when worn for long periods. "You've got to get one onto your head to fully appreciate the benefits," said Yvonne Clark. "The special neck protector hugs the neck area and keeps the helmet on your head even when bending over; and, with the ear defenders sitting inside the helmet at all times, there are no parts on the outside to get caught in branches, twigs, *etc.*"

There are many features to the Protos. For instance, the ventilation slider on the top can be open or closed so suit the weather conditions. Also, the simple press of a button will release the ear defenders, which are, naturally, very neatly integrated within the helmet itself. Also, the headband covering the forehead clicks out so that it may be easily replaced with a spare during the course of the working day, maintaining comfort and freshness.

Finally, the helmet balances perfectly on the wearer's head, since the visor and ear defenders are designed to be part of it, instead of being add-on extras.

Clark Forest 01387 860241 – www.clarkforest.com

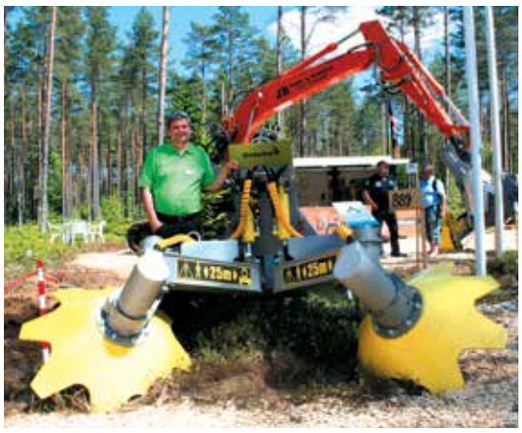
Tracks

They were back again, those crazy, kilt-wearing blacksmiths from northern Sweden.

Markus Edlunds Svets & Smide (Markus Edlund's Welding and Smithy) makes and repairs band tracks for forest machines, though the one in the photo has been put to another use.

They don't wear their kilts when welding. They don't find them quite suitable for the task, apparently.

MES +46 661 22000
http://messmide.se



Bracke

Bracke Forest presented a new version of their C16.b biomass felling head, nine of which are used by Network Rail to remove vegetation at track-side. The head is now equipped with a 55cc piston motor, which will have a longer service life than the previous gear motor. It can also work at much higher pressure, resulting in greater power. "A piston motor is in general more efficient than a gear motor," said Per Jonsson, export manager at Bracke Forest. "Customers will notice the difference, especially in hardwood."

The new motor is back compatible to all versions of the C16, meaning that older heads can also be equipped with it.

Also on the stand was a Bracke T21.a disc trencher, which was sold to the Forestry Commission in Nottinghamshire. They will mount it on a Valtra 143 Versu. It will be used to prepare land for restocking, but the purchasers also expressed an interest in adapting the machine for seeding, in which case a Bracke S35 seeder will also be supplied.

Bracke Forest +46 693 10575 – www.brackeforest.com

Farma

Fors MW's UK and Ireland representative, Tom Belton, is pictured standing beside a Farma T16 4WD Generation 2 (G2) trailer.

The octagonal, bent, centre profile is a feature of the new G2 models, making them more impact-resistant, and better able to deflect stumps and rocks in the forest.

The T16 4WD has hydraulic drive as standard, both forward and reverse, adjustable from 0 to 4 km/h. It is equipped with double steering cylinders, and has good ground clearance, with 600/50x22.5 Trac tyres. As standard, the trailer is equipped with drum brakes on all four wheels.

The trailer is equipped with a Farma C 8.5 loader. This has a double telescopic extension with a stroke length of 3 metres. Additionally, the top of the headboard can be folded down to improve access and visibility.

Tom Belton 07860 951485
www.forsmw.com

Looking forward

The 'Forest Falcon Head-Up Display' uses what the makers describe as 'fighter aircraft technology' to project harvesting data into the operator's field of vision while he works, enabling him to read it while still watching the harvesting head as it fells and processes trees.

A simple device, it works by using a projector to beam the computer image to a transparent sheet between the operator and the windscreen, which reflects the constantly changing data.

Tests on a simulator by Swedish forest research agency Skogforsk suggest a 10 per cent time saving can be achieved by using this method. A normal monitor is still retained in the cab for touch-screen operations.

According to the makers, the system can be fitted in under an hour.

Optea +46 8519 70800 – www.optea.com

Perfectly clear

Well, all harvester operators like to leave a nice, tidy site, so how about attaching a clearing saw to your harvesting head? (Seriously!)

This is another brilliant idea from Finland. The MenSe RT25 can be fitted to any make or model of head. All it requires is a small, steel bar to be welded onto the head, and then it can be mounted or taken off in a couple of minutes using a quick-coupling device. One simple on/off valve is all that is required for the pressure line, which can be branched off the valve in the head. The return oil flows directly into the tank line.

One area of work where the RT25 comes into its own may be when working under power lines.

MenSe Oy +358 5 610 6900 – www.mense.fi

Vimek gets a bit bigger

Vimek launched their largest forwarder to date at the show. With a 60hp Cat engine, the 610 has a Bosch Rexroth hydrostatic transmission, and a carrying capacity of five tonnes. Its Mowi P25 crane has a lifting capacity of 330kg at 5.20 metres and may be fitted with a Vimek felling grapple.

Vimek also launched an upgraded version of their 404 harvester, the T5.

Caledonian Forestry Services 01764 663798
www.caledonianforestryservices.co.uk

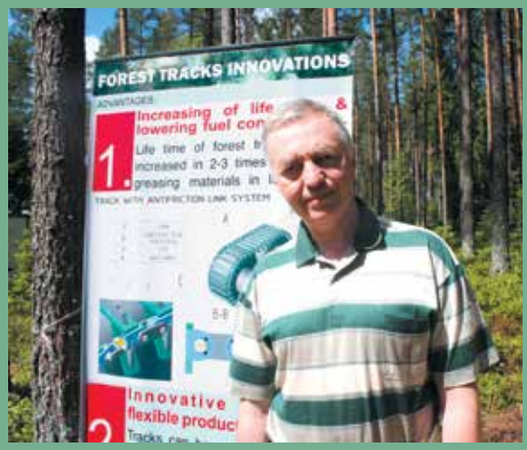
Rottne

Rottne now have a heavyweight, 8WD harvester – the H21D. Still in prototype form, it took centre stage on their stand, and was about to go for serious testing after the show. "Rottne do not rush machines onto the market," we were told.

The company claims to be the first to fit a full Tier 4 compliant engine. The cab swivels through 180°, and the H21D is fitted with dual pumps, one of them dedicated to the harvester head, which can therefore be operated at much higher pressure. Also, the crane has been boosted by 20 to 30 per cent compared to the H20, in terms of both lifting and slewing.

Wilson Machinery 01556 612233 – www.rottne.com

Sound tracks



Andrey Kozin dealt with Olofsfors for eight years. When he was first introduced to the forestry track, it appeared to him to be a fairly simple product. It was only over time that he came to appreciate how high-tech it is, with a lot of fine detail, and entailing much knowledge of steel.

Tracks are often crucial to the performance of a harvester or forwarder, and he began to wonder whether there were ways to increase their life expectancy. His first idea was to find a way of keeping them greased, but then he came across a group of products known as 'solid greasing materials'.

He managed to incorporate these into slots cut in the tracks, in the links where wear occurs. They consist of bronze/graphite plates. The constant motion of the track spreads a microscopic layer from the plate onto the surface of the link, where it decreases friction.

He made a prototype, which has now been working for three years on a Gremo 950F forwarder. The tracks have clocked up 4,000 working hours, and show very little sign of wear. Andrey Kozin estimates that it should be possible to at least double their working lives.

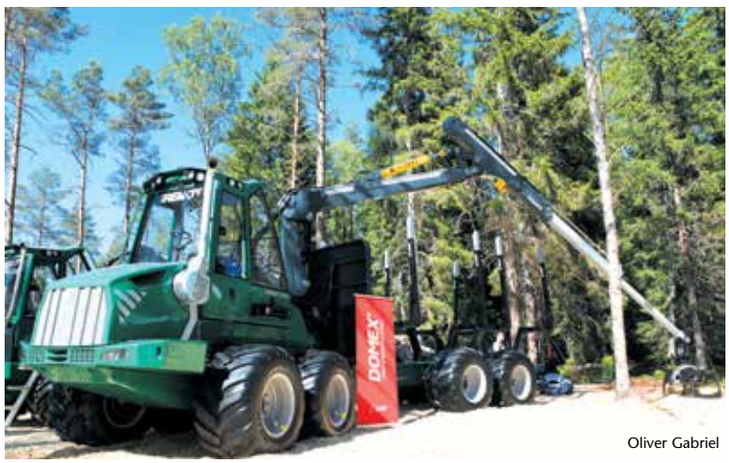
An additional benefit has been lower fuel consumption, due to the lower friction.

Andrey Kozin apologised for sounding slightly cynical when he wondered whether track manufacturers would actually welcome his invention. After all, doubling the life expectancy of tracks would mean halving production.

The idea is patented, and Andrey Kozin also wonders whether it might be possible to implement the system on excavator tracks.

He is also working on a new design of track, about which he would say little, apart from the fact that he is looking for a partner to help him develop it. Given his 'track record' to date, that might prove to be a sound investment.

Stalinvest +7 921 727 4188 – www.forwarder.ru



Oliver Gabriel

Gremo

Externally, Gremo's 1450F forwarder (pictured) is an updated version of the 1350F. Whilst load capacity has increased by 1,000 kilos to 14 tonnes, the machine has also become lighter in weight. The entire chassis has been completely redesigned to be as lightweight and strong as possible.

"We've worked with the Swedish steel manufacturer Svenskt Stål," said Gremo's site manager Martin Bredenfeldt, "and they nominated us for the international Swedish Steel Prize, where our design came in second."

Back in the 1970s forwarders could load more than their own weight. Since then, more powerful engines, air conditioning, self-levelling cabs and so on have all increased the machines' weight. New types of steel and lighter-weight designs are helping to reverse this trend. Martin Bredenfeldt adds that one day composite materials will also be found in forest machines.

Gremo also had four Silvatec harvesters on the stand. In a number of markets, including Sweden, the Danish harvesters are now sold under the Gremo brand. *www.gremo.se*

The Scorpion

Huge crowds gathered to see Ponsse's new harvester make its first public appearance at 13.00 on the first day of the fair, and it continued to produce something of a 'wow factor' for the duration of the show.

We covered the Scorpion in last month's magazine, but one point we did not pick up was the fact that both its 'centre' joints are of proven design. The joint between middle and rear frame is the cast unit taken directly from the Ergo. Between front and middle frames there's a conical bearing, which is used in the Wisent and was previously also used in the Ergo. *Ponsse UK 01576 203000 – www.ponsse.com*