

Trailers & Cranes

A flexible and economical solution for timber extraction.

The self-loading timber trailer may be seen by some as just the poor man's version of a forwarder. The truth is, however, that the versatility of this type of machine not only means that it can shift a good proportion of the world's timber production, but that it can also allow those who invest in it the flexibility to earn their incomes from diverse sources. A few manufacturers have taken this into account and have developed a modular design, allowing the basic system to be upgraded as the contractor's requirements change.

Current forestry trends in the British Isles seem to favour conversion to continuous cover and the restoration to productivity of neglected woodlands. To take advantage of the premium rates available for this type of work a contractor needs to be adaptable. The self-loading timber trailer itself is an adaptable system and for many the ability to drop off the trailer for a couple of days and hang a chipper on the 3-point linkage is a real bonus... not to mention the possibility of delivering tipper loads of firewood or woodchips as and when the customer requires.

In many parts of the world, however, farm implements take the place of the trailer for part of the working year and it is no coincidence that many manufacturers have built their reputations fabricating agricultural machinery. Ranges are generally quoted as available for part time or for professional use – Swedish standards institutes, for example, even test component strength on this basis and the professional units built there are correspondingly more sturdy.

Not all makes are readily available in the UK and Ireland. It is doubtful whether the US-built Magnolia forest trailers – simple and robust, but at predictably higher stateside prices – will ever find a niche on this side of the Atlantic. Guerra from Spain, on the other hand, with a huge reputation in their home country, have managed to make the odd sale over here.

A name to watch out for, though, is Kronos. One of the oldest manufacturers of agricultural equipment

in Finland, Wikar Oy AB started business almost one hundred years ago as a forge in Kronoby on the shores of the Baltic. Their timber cranes and trailers first saw the light of day in 1979 and now the ranges ('for self-reliant forest owners and for dedicated forest professionals') have dealerships from France to Eastern Europe. It may only be a matter of time before they reach these shores.

While there may be woodland owners in the UK who have a use for the self-loading timber trailer, there will be few farmers with large enough areas of woodland to justify the capital outlay. Indeed, much of the marketing of the European manufacturers is geared to the farmer-forester. A larger proportion of the units employed in the British Isles may be engaged in more specialised forestry and timber operations and the range of configurations available can make the acquisition of a self-loading trailer an even more attractive proposition.

Compliance with road traffic legislation (some makes can be upgraded to 'road-legal' status from the basic economy model) is of great benefit to those working in urban areas. The avoidance of transport costs means that it can also be viable for this type of unit to step in and keep the timber flowing on more 'mainstream' production sites; for example, if the purpose built forwarder is tied up on a previous contract.

A steering drawbar enables the trailer to 'track' the tractor more closely and reduces the side push of the loaded trailer on down slopes. One development favoured by some manufacturers to improve the steering drawbar performance is to place the pivot behind the bunk grill. A feature of the Norwegian Iglund 450, 480 and 490 Swingtracs (which carry 8.5, 9.5 and 10.5 tonnes respectively) is the steering of the bogie itself. Aside from increased manoeuvrability, by braking the wheels on one side and swivelling the bogie it is said that a 4Tm push can be provided to the trailer for climbing and overcoming obstacles. The design has a patent pending. It will be interesting to see



Mowi Skog III-WD with Mowi 400 crane carrying heavy logs.

if this is going to be the form of the timber trailers of the future.

Older refinements such as the 'Trysil' geometric bogie (the leading wheel swings back on encountering an obstacle and transfers the weight to the trailing wheel) have long gone in favour of the central pivot suitable for hydraulic roller drive. Integral wheel drive is available on some larger models, with a corresponding increase in tractive power.

One often overlooked and underrated option is the hydraulic winch on the crane boom. This can go a long way to compensating for the terrain limitations of the tractor / trailer combination. We recently thinned one and a half hectares of smallish spruce on peaty ground with a single circular rack – minimising the reversing – with the winch hauling logs and tree-lengths to the rack. Surprisingly quick and easy; as was hauling logs out from a section hemmed in by grass verges that were not to be damaged.

Mowi

On offer from Fuelwood (Warwick) Ltd is the Mowi range. Mowi have been manufacturing cranes and trailers for nearly 20 years and are now part of FTG – Forest Technology Group – based in Vänersborg, Sweden. The manufacturer has built its reputation on its predominant use of parallel configuration cranes. These have now gained such acceptance in Sweden that Mowi has a 40% share of the domestic market for cranes worked by agricultural tractors. The cranes have a unique parallel arm movement with many advantages over conventional cranes. The attachment end of the loader moves in a straight line with a single control lever. It is quick with a smooth inward and outward movement. This makes the crane easier to learn

for the beginner and at least 10-15% more productive in the hands of an experienced operator.

A telescopic boom is unnecessary, and so there are no dangling hoses to get caught in branches. All Mowi cranes have excellent reach and yet can tuck right in for manoeuvring timber past standing trees and for loading short lengths at the front of the trailer. Reach is also good both above ground level for building high stacks and below ground level for lifting timber off steep banks. The centre of gravity is low so the crane is very stable.

Mowi cranes are designed to work with low oil flows and often they can be used with an older tractor without incurring the extra expense of a separate PTO pump and tank.

Mowi also manufactures sturdy trailers with hydraulic steering as standard. They are designed for a long service life of transporting full loads of timber over rough terrain. Although there are many potential combinations of trailer and crane, Mowi have put together a package of two ranges: the low cost Greyline Skog 65 – 6 tonne trailer and 4.6 m reach crane and the Greyline Skog 75 – 7 tonne trailer and 5.1 m reach crane (lighter units for thinning and less continuous use); and the standard range of Skog 85 – 8 tonne trailer and 4.6m reach crane and Skog 105 – 10 tonne trailer and 5.6m crane (for general purpose forwarding units for estates and contractors). The Skog 125 – 12 tonne trailer and 6.7m reach crane is geared towards full time professional users.

Mowi cranes are well suited for special purposes, especially applications such as harvesting work and feeding chippers with continuous in / out movements. Here the parallel movement can lead to significant increases in productivity.



A British export; Botex hard at work amongst the Belgian hardwoods.

"We work to a modular design and so a request for a 'tailor-made' solution is welcomed rather than treated as a nuisance," explains Fuelwood's Tony Phillips.

Fuelwood (Warwick) Ltd
01962 484673

Moheda

The Moheda range of loaders and trailers from AT Osborne are also part of Swedish group FTG. Mohedavagnen AB pioneered the central box beam fabrication of trailers in the 1950s and in 2000 merged with Källefäll Maskin AB. The latter company specialised in smaller machines primarily for the farm forestry market, so the Moheda Källefäll trailers now range from 6 to 12 tonne capacity.

The trailers and traditionally configured loaders are built of high strength material to increase the lifespan of the machines and to reduce the weight. The top mounted main boom ram provides extra framework strength. A linkage system between the main and outer booms provides for superior move-

ment and enhances the performance of the crane over its complete working area.

Only the smallest loader, the Källefäll 200, lacks this latter refinement. The 305 and 306, also equipped with the KG180 grapple and the FR7 rotator, are linkage fitted and have longer reaches of 5.1m and 6.3m respectively. At full extension they can lift 500kg and 365kg.

The loaders on offer in the Moheda section of the range are numbered 400, 500 and 600. The last two are available in the extended reach 'L' versions. The 500L, for example, has a full extension of 7.64m and is fitted with the MG210 grapple. For heavier work the Moheda 600 is the version to choose, lifting 610kg at a few centimetres short of 6m. High and steady slewing power from the four cylinders at the base of the kingpost is also one of the Moheda crane's plus points.

On the trailer front, the K70, K90 and K100 are developments of the Källefäll section of the business and

more suited to the smaller operator and motive power unit. Moheda's Skogsvagn 100 also makes the smaller tractor into a handy and inexpensive timber forwarding unit, especially with the Moheda 400 crane. It can, however, be supplied in a 4-WD version and with its own hydraulic pump, if required. The 120, too, has 4-WD as an option.

Designed for full-time demanding work, the 135 4-WD and the 155 4-WD have sturdy bogie fastenings and standard double bunk configuration. Construction is based on the Moheda single central beam and as with all the trailers the hydraulics are well-protected, meaning less down-time for broken and leaking pipes. Other features include a choice of wheel sizes, advanced bogie design and swinging bolsters to reduce standing crop damage.

AT Osborne 023 8081 4340

Farmi

Farmi Forest have been producing machines in Iisalmi, central Finland since 1962. Their self-loading trailers of the Primero and Vario ranges are marketed by Corwen Forestry and M Large Tree Services.

The well established Farmi Primero 9000 trailer is designed primarily for the farm/forest market. It does however carry a payload of 9 tonnes and a choice of cranes can be fitted. The 3951 and 3967 loaders make the unit suitable for extraction to roadside, for firewood production or for day-to-day clearance on farms or large estates. A steering drawbar is fitted and it is said to be well suited to general farm or estate transport work. It can carry the larger 4066 crane if desired.

Farmi cranes have a number of attributes that guarantee a long and efficient operating life. Four cylinders and double rack slewing give power and reliability. Hexagonal boom profiles and fabrication from special steel ensure excellent sliding features and high torsional and bending strength on extension pieces. Hydraulic hoses and pipes are double fastened and seams are welded on unstressed zones. Optimum movement within the working area is assisted by a wide angle joint design.

The crane model numbering gives a clue to the loaders' capabilities. The Farmi 4066, for example, has a gross lifting torque of just over 40kNm and a maximum reach of 6.6m. The range continues with the 4571, 4581, 5767, 6266 and up to the 6280 – the latter having a double extension to reach out to 8m. The slightly different 4166P

has been developed for those with larger handling requirements.

The larger trailer range from Farmi Forest is the relatively new Vario series. The Varios come with climbing bogies, single beam construction and powerful hydraulic drawbar steering. Their modular construction allows 'add-on' accessories for optimum configuration for different forest haulage applications.

The Vario 101 is an all round robust trailer for professional forestry contractors and estate owners with an 11 tonne capacity. The heavier Vario 121 can be equipped with the biggest Farmi cranes to fill its 13 tonne loadspace. The 4-WD variant is said by the manufacture to 'equal the performance of traditional forwarders'. The KV155 radio-operated crane winch is an available option. The 45m of 6mm cable is said to spool perfectly and mounting on the crane or trailer is easy. A pulling power of 15.5kNm is provided by a 200cc hydraulic motor.

Corwen Forestry 01490 412146
M Large 02890 342838

Botex

Botex trailers and cranes are manufactured by EFM, a sister company of Jas P Wilson, at their Dalbeattie factory in Scotland. Botex is the only UK manufactured forestry crane and has been produced since the early 80s. The big lifting 500 series is the most popular and has been roof-mounted, fitted to timber trailers, agricultural tipping trailers and even self-loading lime spreaders. The 560TL, for example, is tested to lift (less weight of grapple and rotator) 2500kg at 2m and 700kg at 6m. Models are available in long- or short-post form.

The latest response to customer demand – stemming from those who crane feed chippers and work on railways – is an 8m reach loader in the Botex colours to be introduced from March 2007. Roof mounting of cranes further enhances the versatility of the forwarding combination, as well as improving operator vision.

John Wilson says: "We concentrate on the 500 series which has a massive lifting capacity compared to most other makes. Our customers need a multi-handling tool which can lift and carry large lumps of heavy timber as well as bundle and gather chip and pulpwood. Our 560/11.00 Euro gives incredible value for money when compared to other machines in terms of performance to cost ratio. We also offer the medium lifting 300 series



Kesla 8T trailer with 202T loader which has a 1.2 metre boom extension.

for those whose lifting needs are not so demanding. This, combined with a versatile trailer is an ideal thinning machine." The aforementioned Igländ Swingtrac with its steering bogie is one extremely versatile option available, but the tried and tested Botex Euro range of trailers may be more suitable for some.

With capacities from 6000kg to 14000kg the heavy duty trailers are all equipped with floating tandem bogies. Hydraulic brakes are standard on two wheels although four wheel air or hydraulic braking is an option. Heavy ply 400x15.5x14P tyres are also standard, with road tyres also as an option. Standard UK specification trailers have 4 bolsters and 8 pins, with steerable drawbar, road lights and extending main beam as extras.

Testament to the robust reputation that Botex has built for itself, a consignment of cranes was recently shipped to South America for the harvesting of eucalyptus pulpwood. Other less solidly built brands were, reportedly, unable to stand the demanding and abrasive conditions.

Jan P Wilson 01556 612233

Kesla Patu

The Patu range of cranes and loaders available from Caledonian Forestry is built in Finland. Kesla Oyj, the parent company, also manufactures the Foresteri range of cranes and harvester heads. Kesla's success, they say, stems from strong research and development. They can claim to produce machinery used by tens of thousands of forestry professionals in the most varied conditions. New products go through a rigorous testing programme before they are launched on to the market; as was the case with the entire Patu crane range which was renewed over the period 2001 to 2003.

The Patu 200 series are highly suitable for timber harvesting and for multiple loading and transport purposes. The 300 series are true contractors' machines. Excellent lifting capacity, outreach and slewing torque combined with optimum movements provide increased speed and reliability. The net lifting torque at 4m of the 201, 202 and 203 are 19.0kNm, 19.8kNm and 30.5kNm. The 202T and 203T have an outreach extended to 6.15m and 6.70m, respectively. The 304 and 305 reach to 6.9m, with the 304T and 305T extending a further 1.6m. The 305 can lift 1170kg at 4m.

The smallest Patu trailer is not available as a 4-WD version. However, the Patu 7T weighs in at

only 900kg. The 8T trailer is available with hydraulic drive. The 10T is fitted with three crossbeams as opposed to two in the smaller trailers and the driven HD and ND versions can travel at 4kmph with the traction engaged (giving approximately 1.5 tonnes of tractive force). The power drives of the larger 12MD and the 12MDH put them in an entirely different category, applying in the region of 5 tonnes force to the 12 tonne payload. Smaller trailers articulate to 38° and the larger ones to 40°.

Kesla was founded in Rantasalmi in Finland in 1962 and now has manufacturing plants in Joensuu, Kesälhätti and Iloماس. Since its establishment, Kesla is proud of the fact that it has accumulated both technical expertise and an ability to listen to the needs of machinery users.

Caledonian Forestry 01764 663798

Farma

Andrew Holmes Forestry Equipment of Ruthin, Denbighshire is the agent in the UK for Farma trailers and cranes. ARK Enterprises of Athboy, Co. Meath sells Farma products in the Irish Republic. Although the machines are produced twenty kilometres south west of the Estonian capital Tallinn in the town of Saue by AS Fors MW, the parent company is Swedish – FMW Farma Norden AB. Exports form the bulk of the sales and AS Fors MW has good access to the Baltic ports for shipping machines out to the customer.

Production of self-loading timber trailers started in 1992 and to date about 7000 units have been sold, making it the best selling brand in northern Europe. The main selling points are high quality, reasonable price and user friendliness, according to the company.

Farma's new designs were presented at the last edition of Elmia Wood in Sweden and the trailer capacities now range from 6 to 14 tonnes. All except the smallest have a long steering drawbar that reaches to behind the bunk headboard – almost frame steering in effect. The classification of the combinations, too, has been modified. T6 is a 6 tonne capacity trailer; C6.5D, a double slew cylindered crane with a reach of 6.5m; CT6.5D-14, that crane coupled with a 14 tonne payload trailer etc.

Trailers and cranes are available separately. The smallest suggested combination, the CT3.8-6 is the economy version suited for small tractors and those who may have timber to shift around the farm or



Farmi 4581 crane on a Vario100 4-WD trailer.

the estate. There is no frame steering and it cannot accommodate a winch. At the other end of the scale the CT6.5-14 can be equipped with its own hydraulic system and includes a hydraulically extending bogie controlled from the tractor cab. Use of the frame steering can extend the effective reach of the crane to 7.2m. Hydraulic power is conserved by electrical switching of the grapple, extension and rotator. "The trailer of choice for those who want a flexible, driven trailer for continuous operation," according to AS Fors MW.

One of Farma's specialities is the

frame adaptation of the machines to attach to the 3 point linkage of agricultural tractors. This, though, is not the only option available. There is a choice of grapples, rotators, extension pins and lights. Disc brakes can be fitted if required. A fitting is supplied on the boom of all but the smallest crane to accommodate the Farma hydraulic winch, which comes supplied with 35m of 6mm wire rope and a remote control facility.

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