

The operation of the harvesting head is controlled by computer, but technological advances do not end there. A constant feedback of data from the head not only records the quantity of each specification produced but can also pinpoint the location of the produce within the wood or in the stack. It is a simple process to monitor the proportion of timber being removed in the operation, even from different sections of the contract site.



Spread the risk, share the load

Estate efficiency ensured with teamwork.

NORTHUMBERLAND estate owner James Cookson is convinced that a 'mixed regime' in land usage is the most sustainable way forward to maximise the potential of the limited rural acreage available to the inhabitants of the British Isles.

James has been analysing the returns from the land he owns and has come to the conclusion that stakeholders must be objective in their vision of the rewards that their stewardship of the land can supply.

Of course, the prospect of a new season will always give those in the agricultural sector renewed hope. Whether cereals are being grown or lambs being raised for the autumn sales, the prospect of turning a loss into a profit – or a slight profit into a larger one – is a temptation that is hard to resist. James Cookson takes the long-term view. If land has produced a marginal return for the last five years, it will probably do so for the next five. The promise of one good campaign should not cloud the vision.

As it happens, a proportion of the less

productive land on the estate has been earmarked for woodland creation. While it is a daily duty of the farmer to estimate the weight of the lambs bought in for fattening, or to check the strength and colour of the foliage of the cereal crop, watching trees grow is a different matter.

James Cookson is in the fortunate position of being able to see the results – and profit from the benefits – of a plantation that he remembers seeing established on the estate 40 years ago.

The second thinning of the Sitka spruce at Broad Wood had been entrusted to forestry harvesting company Euroforest's Tommy Milburn, who had engaged Simon Scott of Langbank Forestry Services to carry out the harvesting contract.

As James Cookson noted: "Tommy and Simon make a good team and between us we all have a good understanding."

Before James took charge of the estate, the 400 acres of woodlands were seen as something of a negative asset. Making the best use of the timber and seeing a steady



flow of income from the produce has raised the profile of the woodlands in economic terms. Poorer-quality softwood material remains on the estate for use in the biomass heating system, while hardwoods that fail to make the grade are destined to be seasoned for the firewood side of the business.

Euroforest takes care of marketing the better-quality material and Tommy Milburn is always available to assess the most profitable destination for the produce and vary the specifications if necessary.

The imminent arrival of a mobile sawmill for converting timber to supply the estate's fencing needs may well see some grades best utilised in the timber yard. Such diversifications should also see an increase in efficiency in the estate's own workforce.

In most estate woodland work there are constraints that need to be taken into account. In the case of the Sitka spruce thinning at Broad Wood, Tommy pointed out that there was an overhead power line running through the site and archaeological remains, in the form of Roman fortlets, that were not to be damaged in any way by the harvesting operations. Access over a weight-limited bridge would require secondary uplift. Simon Scott's tractor and forwarding trailer was available to make timber accessible for wagons or move produce to various locations on the estate.

Simon's Komatsu 901 harvester and John Deere 810E forwarder certainly fit the bill when it comes to working in the estate



woodlands. The lightweight forest machines are endowed with all the attributes of top-of-the-range timber harvesting equipment but are nimble enough and light enough to keep damage within the woodland to a minimum. In this type of work there will always be occasions when the machines are obliged to cross agricultural ground and any reduction in the ground damage occurring is to be welcomed.

Based near Coldstream, Simon Scott was in fencing for ten years before moving into timber harvesting. The range of machinery he had available made it natural that he would find much of his work in estate and farm woodlands. The Komatsu 901

replaced a 'zero tail-swing' Doosan 140 and SP561 harvesting head. Used to the boom rotating with the cab during harvesting operations with the excavator base, Simon soon became used to the Komatsu's similar format.

At 17.4 tonnes, the wheeled harvester weighs in at about three tonnes heavier than the Doosan. A generous ground clearance of 630 mm makes for easy travelling within the wood. Simon finds it a stable platform from which to work. The fast and responsive crane allows the C93 harvesting head to be swung accurately and rapidly through the trees to select the next candidate for removal. Theoretical maximum felling



Above left: Left to right: Simon Scott, James Cookson and Tommy Milburn. For James, the revenue from timber is set to play an ever more important role on his Northumberland estate. He is determined to improve both the yield and the quality of the timber he grows. Langbank Forestry Services and Euroforest, in turn, are keen to play their part and make the harvesting operation as efficient as possible.

Above: Forwarder operator Bruce Borthwick has been with Simon Scott for 7–8 months and the pair are becoming accustomed to the capabilities of the Komatsu 901/John Deere 810E team. Langbank Forestry Services are keen to offer timber harvesting services between the Firth of Forth and England's River Tyne.

Left: In the tight confines of Sitka spruce plantations, finding the candidate for removal and severing it from the stump is just the start of the harvesting process. The Komatsu 901 allows the operator to coordinate machine, crane and head functions simultaneously. The passage of the tree's crown down through the canopy is eased, and improved presentation of the produce for the forwarder operator is possible.

width is 60 cm and with the four knives fully opened stems can be delimitted from 40 cm diameter.

One of the advantages of the new Komatsu harvesters is the ability to allow several crane and head functions to operate simultaneously. This attribute allows the experienced operator to reduce the time taken for take-down – often a bugbear in Sitka spruce thinning – to a minimum. The width of the Komatsu 901 on 600 mm tyres is only 2.65 m.

The working width of the John Deere 810E is slightly less at 2.53 m on similar tyres. Where Simon Scott has harvested he can be sure that he will not put Bruce Borthwick,

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following in the forwarder, in difficulty. Bruce will have enough leeway to prevent the tops of the bolsters skinning the stems of the remaining crop even if the load takes a bit of a swing.

With a nominal load rating of 9 tonnes, the 12.9-tonne forwarder is ideally suited to work behind the Komatsu 901. The 4.5l JD PowerTec engine produces 100 kW and gives the machine a top speed of 14.3 mph. For the harvesting contractor working thinnings on agricultural holdings or estates, long extraction distances can cause a major bottleneck in delivering timber to the roadside. A light wheelprint is, however, no less essential; both within the wood, where 'lop and top' is thin on the ground and also out on the open field where the integrity of the soil structure must be preserved.

One of the innovative features of Komatsu's latest forest machines is proving very useful on the Broad Wood thinning programme. Komatsu Forest's MaxiFleet Advanced informatic system provides peace of mind for Simon Scott in his recently acquired harvester. An engineer is not only constantly on hand but, by the marvels of modern technology, 'virtually' sitting in the cab beside him to sort out any problems that do occur.

The same system allows Tommy Milburn to fire up his computer screen and see where the harvester is, see where it has been, and immediately have a handle on the quantity of timber produced, the proportion of each specification and the position of stacks on the pre-programmed map of the harvesting site. The thinning intensity of each section of the site is available at a glance and adjustments can be made accordingly without the necessity for a site visit.

Such hi-tech solutions are, of course, already available in the agricultural sector. A sprayer can be set to steer along the 'tramlines' of a cereal crop to the exact centimetre. Information from an on-board camera can feed data into the computer and a few square metres of less prolific growth can be given an increased dose of nitrogen on the next pass.

Even so, James Cookson is not convinced that keeping every acre of his farmland devoted to agricultural production is his best option.

The future economics of agricultural production in the UK are looking a little uncertain at the moment – to say the least. Woodland creation not only presents an opportunity to spread the risk but it also gives landowners the chance to plan for impressive timber production and increased revenue. Farm accounts will pinpoint the more marginal land that will still be ideal for growing timber; judicious planning can allow for provision of roading infrastructure



The John Deere 810E forwarder picks up timber destined for chipping and subsequent use in the estate's three biomass boilers. It is hard to justify loading poor-quality softwoods onto wagons and shifting it across the country when there is a profitable use on the doorstep.



Simon Scott with the Komatsu C93 harvesting head. For the specialist thinnings contractor a neatly designed head that handles responsively through the standing crop speeds up the operation and avoids damage.

to increase the efficiency of timber removal.

Areas with access across weak bridges, alongside power lines or bordering busy public roads can be avoided. They all present huge difficulties for the harvesting contractor and the landowner and subdue the offers when the contracts go out to tender. Who knows, they may even qualify in the future for some sort of 'set-aside/environmental' payment?

Over in Northumberland, James Cookson has highlighted another, not insignificant,

benefit of growing timber. He will still be watching and worrying about the weather when the hay meadows are due to be cut, and later when the cereals are almost ready to be harvested. When it comes to harvesting his timber, he can engage an extremely competent forestry harvesting company, who will in turn find a keen and committed timber contractor.

If the price is not right he can postpone forestry operations for another year... or two.

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