

BREAKING NEW GROUND

We'll have forests in the future – thanks to Shanks

For the last 25 years DA Shanks have been preparing ground for tree planting across Scotland, using 360-degree excavators to build mounds of earth into which new trees can be planted. Davey Shanks was one of the first to pioneer this method in Scotland, and he now has his son Dave working alongside him.

Davey started in the woods when he was eighteen, extracting timber using horses on local estates before moving on to forestry ploughing for a number of contractors using a Caterpillar tractor. Dave told me, a lot of the time when he was a youngster was spent travelling all over Scotland with his mother, Christine, including trips to the Nairn and Forres area to join his father on sites where he had been working all week. The family spent time together in the caravan that was Davey's home, and whilst there, Dave got his introduction to working in the woods.

After twenty years of working for others, Davey decided it was time to set up for himself, and he purchased a second-hand tracked Fiat 70 tractor with the intention of continuing the ploughing work he knew so well. He gained employment with private estates and Fountain Forestry, who knew the standard of his work. In Dave's words, his father, "Worked all day, and fixed all night." Dave's own forestry education also continued,

as he was given pocket money for cleaning drains with a hawk, which he described to me as being something like a bent garden fork, alongside his father.

After a year or so, Davey bought another machine, a second-hand Caterpillar D5 crawler and plough with a bulldozer blade. His intention was to continue ploughing, but also to seek work finishing forestry roads. Disaster struck though, with Maggie Thatcher's overnight removal of grants for forestry plantations, which saw an almost complete cessation of mass tree planting across the country. Apart from the forestry road side of the business, Davey was left with little else.

Fortunately, by the early 1990s the Forestry Commission was looking to develop mounding using the 360-degree tracked excavators on restock sites. Two types of mounding were to become the way forward. The first was 'ditch dollop', which involves using an excavator to dig a trench, then taking the earth from it to make spoil dirt mounds at 1.9-metre intervals all around the machine. Into these mounds of the good topsoil, 2,700 trees are planted per hectare, while brash left from the felling is pushed into the trench.

On steeper ground, hinge mounding is used to avoid spoil trenches carrying water

downhill. In this process a sod of earth is simply turned over to allow planting.

Dave told me that the Forestry Commission had become convinced about the merits of the new process of mounding, and that then left his dad with a decision to make. Should he aim to go full time into this new area of forestry, or continue ploughing and road making? He hired an excavator for the first mounding sites before he committed to buying a brand new Hitachi EX100 10-ton machine from Claremont Machinery in Cumbernauld.

A number of modifications were made to the Hitachi, based on Davey's experience of working with excavators in the woods. These changes would become the template for all future machines the company bought.

Two additional track guides were fitted to the bottom rollers to ensure that there were three on each track. In the woods, stumps can push the chain up on the roller, causing the tracks to come off.

They fitted a three-quarter-inch steel plate to protect the slew ring on the bottom of the Hitachi, as this is where the hydraulic pumps and pipes are housed. The standard 2mm plate that protected the engine was replaced by 5mm plate. The windscreen was replaced with 6mm Margard to give better driver protection. "Dad felt it was needed, having seen sticks fly through cab windows, shattering glass all over the driver, during the years he'd been in the woods."

The final modifications were more around improving the efficiency of the excavator in the woods, and included a second fuel tank to increase the operating hours on site. Finally, extra floodlights were mounted on top of the cab. "When you are operating in the winter, it's dark up to 10am in the morning, and the light fades at 4pm. Dad needed to work much longer hours than this."

Armed with this new machine, Davey worked for the Forestry Commission all over Scotland, from Fort William to Thurso to Inverness and Lochaber. Again, Dave and his mum would travel up to join him at weekends.

Within the year, work levels were good enough for the original EX100 to be traded in for another one. Davey moved the plates, fuel tank, lights and other extras to this machine. Dave was at this stage getting close to school-leaving age, and all he wanted to do was to join his father driving the machines.

Dad had other ideas, and insisted that he continue his education, so Dave set off to Penrith College to do an HND in forestry management. Unfortunately after two years Dave had to give up the course when his mother took ill.

He returned home to help look after her and to take over the firm's paperwork from her. Sadly, his mother died and Dave and his father decided the best option would be for him to join the business full time. For a while they continued to work with one machine, both of them operating it on full shifts. As time moved on they began swapping their machine for a newer one on an annual basis, initially sticking with Hitachi, but then changing to Caterpillar.

Their first Caterpillar was a 13-ton 130BL. "Dad had a lot of faith in Cats after his previous experience with them; unfortunately, with this particular machine we had a lot of problems – silly electrical and mechanical gremlins. For us, the Hitachis definitely proved to be better quality machines," Dave told me. But, with the business still performing well, they started the search for a second excavator so they could operate one each.

The search ended with a JCB JS 130, but whilst they both liked the machine, they felt it was short in the undercarriage and liable to damage from the stumps. They spoke to the factory and found there was a different model on the



Case 130B being loaded on to a Second World War landing craft at Kyle of Lochalsh for onward transportation to Totaig where DA Shanks repaired and replaced an old forestry road.

Scandinavian market. "It was really designed to be a harvester; it had a 13-ton top and a 16-ton undercarriage which was longer and wider and better suited for the job. It weighed only 14.5 tons – perfect for what we wanted."

The other thing they found with this machine was that, since it was designed with harvesting in mind, it came with extra guarding, lights and an extra fuel tank as standard, straight from the factory. There's the second such model in the UK. Davey drove it while Dave drove the Cat, but with ongoing issues with Dave's machine, they were soon seeking a replacement.

Davey was reluctant to have two machines from the same manufacturer, so their next was a Komatsu PC 130. "We went for this because of Japanese reliability, based on our experience with Hitachi," Dave told me. Their faith was repaid and they had very few problems.

Further machines from JCB and Komatsu followed over the years, including two brand new Komatsu PC 160s in 2004. "We moved up in size again. They had bigger, wider undercarriages, making them great for working on boggy, peaty ground. They were powerful machines and much more capable in the sometimes extreme conditions of steep, stump covered ground," said Dave.

They then acquired a third machine and took on an employee. Dave moved on to a 16-ton Case 160CX which had wider track pads (800mm rather than the 600mm norm) which again helped to spread the weight on poor ground.

But then their employee left. At the same time, Davey had to have an operation and was laid up for two months. "Three machines and one operator – me! So we sold our newest Komatsu and I worked as much as I could to keep the business going until Dad was fit to come back," Dave said.

Once Davey had returned, they bought two 18-ton Case 180s, just as the recession in the forestry and housing market began. Whilst forestry work had been their mainstay, they had also used their excavators in house building. "In 2009, for six months, we had no work at all. These new machines were effectively negative equity. We had no option but to ride it out."

I wondered how things were now. "The market is picking up,



Dave and his father Davey pictured with one of their Case CX 180Bs and Dave's springer spaniel Megan – a constant companion while he operates his machine.

and has done for the last two years, but the money paid per hectare is the same as ten years ago. Back then, red diesel was 10p a litre. Now it's 80p. Other costs have increased too, so our margins have been eroded, and we have no alternative but to run our machines harder and keep them longer," Dave said, with more than a hint of annoyance.

DA Shanks are one year into a three-year contract with the Forestry Commission on the west coast of Scotland, and they also carry out work for Tilhill, Scottish Woodlands and several Highland estates. The rising costs, Dave told me, were making the future for ground preparation uncertain. "The industry is looking at alternative methods of planting, including just scarifying the soil, clearing the brash and then simply forcing the trees into the ground and letting them take their chance. Things are certainly at a crossroads, and a lot will depend on fuel costs."

A necessary evil, but also adding to costs over the years, in Dave's opinion, has been increasing legislative control and the need for complete compliance to allow you even to tender for contracts. And tender documents themselves can number up to sixty pages nowadays. "It's the right thing to be doing in the industry, as everything needs to be in order, but all these processes add to the cost of the job."

Over the years DA Shanks have carried out some unusual projects, as Dave told me. At Cannich, near Beauly, they used their excavators to build badger

setts for the Forestry Commission in an old quarry site that they wanted to start using again. At Invermoriston, on a 40-hectare site that had been ploughed in the 1970s, but where the trees had not taken, they were employed to backfill the furrows and flail the bracken to promote habitat for black grouse for the Forestry Commission and the RSPB.

Also at Invermoriston, the low impact ground capability of their machines was proven on a job for Trees for Life's Dundreggan Estate, where they produced completely flat, inverted mounds to allow the planting of a new natural woodland. "The project wanted as little ground disturbance as possible, and we were able to show that our machines caused less damage and disturbance than a 7-ton digger," Dave told me proudly.

They also took their machines to Totaig, Glenshiel, on Second World War landing craft, to restore an old public footpath that had been destroyed. They had to wait on the tides to get equipment there!

Such diverse jobs have allowed them to develop specialist experience in dealing with sensitive sites, and that has helped to set them apart from others. "It can be a cut-throat business and very much cost driven, but we feel that we are

known for the quality of work that we do. We never advertise; we do not have a website; we get our work based on word of mouth and from the people we have worked with over the years," Dave told me.

With less thinnings being carried out now, Dave told me that there is still a stable demand for mounding because the 1.9m by 1.9m planting spacing is even more critical. He also told me that no one really knows how the modern day harvesters will cope in 10 to 15 years' time when they start felling trees on mounded sites.

DA Shanks have recently reaffirmed their commitment to mounding with the purchase of another new Case CX180B to complement their two others. "Dad was one of the first to do this job, and whatever happens – even if there is a return to ploughing – we will still be part of this less glamorous side of the industry," Dave told me positively, as I took my leave. *James Hendrie*

A mound taken from a spoil ditch. Trees are planted into the mounds which are created at 1.9-metre intervals all around the machine.

