

LIFT LATHE AND LOAD

WHEN KEITH RHODES MACHINERY INSTALLATIONS WAS CALLED IN TO MOVE A 55-TONNE LATHE A MILE DOWN THE ROAD EARLIER THIS YEAR, CAREFUL TEAMWORK WAS REQUIRED WITH TWO SPECIALIST SUB-CONTRACTORS TO ENSURE THE JOB WENT OFF SMOOTHLY. ROBIN MECZES FINDS OUT MORE.

PHOTOGRAPHY: CRAIG PUSEY

Even the simple jobs in heavy haulage call for careful planning and disciplined teamwork. When Keith Rhodes Machinery Installations, based in Gloucester, was given a contract by an engineering services firm on behalf of aerospace components manufacturer Advanced Manufacturing Sheffield (AML) to move a 55-tonne lathe from the Advanced Manufacturing Research Centre (AMRC) at The University of Sheffield to an AML site just a mile down the road, it was clear – despite the short distance involved – that it was going to need some specialist assistance.

The 12.7m long, 3.5m wide, 3.5m high lathe, which would cost about £1m to replace, needed shifting earlier this year from AML's rented site at the AMRC, where it had been carrying out prototype work for some of the biggest aerospace companies in the world, to move into a manufacturing role at its new home.

"They [AML] were just renting the space out at the AMRC and waiting for a suitable time to take it out," explains Ian Franklin, director of Keith Rhodes Machinery Installations. "There were a couple of ways



the job could have been done. We could have just jacked the machine up and put it on skates, moved it outside and then used two cranes, in a tandem lift, to load it onto a trailer. But the area outside the AMRC isn't the strongest ground, so it would have needed a lot of steel plate, and their loading area isn't that big either. When I looked at it, I thought 'hang on – we're going to struggle to get the two cranes in here and get the transport in as well'."

Franklin also wanted to minimise the amount of time the lathe spent exposed to the elements, of course. "Lifting it up outside would leave it pretty exposed and if it's pouring with rain, you've got a job to protect it," he explains. "It's a high-accuracy piece of equipment and with some machinery, even slight exposure to the elements can make them start to rust."

Lifting the lathe inside the building and putting it straight onto a self-propelled modular trailer (SPMT), on the other hand, seemed like a good way around these problems. "I put it to our client, and they were OK with it, so I spoke to Projector Lifting Service about putting a gantry lift in and then spoke to Collett & Sons about putting an SPMT underneath it," says Franklin.

Both Olney, Buckinghamshire-based Projector Lifting Service and Collett & Sons, based in Halifax, Yorkshire, were selected from past experience, he says. "Basically, if I've used someone before and they've done a good job for us, I'll go back to them," says Franklin. "I've worked with Projector Lifting on-and-off over the years – in fact the first job I did with them was back in 1996. And if I've ever needed someone a bit different or up north, I've always gone to Collett. They're brought a few loads in for us from Europe and they've always delivered on what they've said they were going to do. The teamwork aspect was pretty straightforward, once they were both involved."

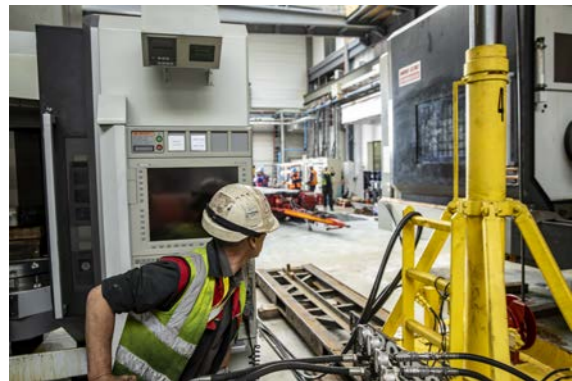
Planning for the move was carried out by Keith Rhodes Machinery Installations as the main contractor and was also straightforward, says Franklin: "We just had to do the site survey, work out what equipment we were going to use, then write the method statement, the bridge assessment and the lift plan. Effectively, the only person on the planning side was me!" he laughs. "Though the guys from Collett came up and helped me on site. Projector Lifting just relied on some pictures and dimensions I supplied, so it was all pretty straightforward."

The move itself, carried out over a week in mid-May, began with the engineering services client they were working for taking a couple of days in which to remove a number of ancillary systems from the lathe such as coolant tanks and guarding panels and prepare the machine for transport more generally. The ancillary items were transported separately by Keith Rhodes to the destination site in advance of the main move.



By mid-week, Projector Lifting had arrived to set up its hydraulic gantry and conduct a trial lift of the lathe, which all went smoothly. "We just wanted to make sure it all slung up right so there were no delays the next day," comments Franklin. The next day, it was time for the real thing. The lathe was lifted up once again on Thursday morning, allowing Collett to manoeuvre its SPMT underneath it and move it outside. There, the SPMT was simply hitched up via its drawbar coupling to Collett's Mercedes-Benz Arocs SLT and driven the mile or so to its new home at about 20mph, accompanied by an escort van also supplied by Collett. It was left on the SPMT overnight at the destination. Meanwhile, the gantry lift was deconstructed and moved over to the AML site, put back together and left in position for the final lift-off the next morning.

Getting the lathe into position at the new site had to be done slightly differently, says Franklin. Due to site constraints, the SPMT was not used to manoeuvre the lathe right into its final position. Instead, it was brought to within a few feet and then transferred onto a skate set for the final positioning.



“There would have been a way of getting the gantry in, but there would have been a lot more beams involved and it would have been quite complicated,” explains Franklin. “The easier solution was just to lift the lathe up, set it onto the skates and push it into its final position with a forklift, using a block of wood for protection.”

Once in position, the lathe needed jacking down to the required height and rough levelling onto temporary pads. After that, it was just a case of assisting the engineers in putting the ancillary systems back on, and the job was done. “It all went pretty much as anticipated,” comments Franklin. “It was on the ground by about half seven that morning.”

Although the job was relatively straightforward, it involved a lot of equipment to carry out, one way and the other.

Keith Rhodes Machinery Installations brought along two DAF 510 FTS 6x2 rear-lift tractive units, one coupled to a three-axle Faymonville ramped forklift trailer and the other hauling a standard Euroliner, to



bring in its own equipment and also to transfer the gantry lift between the two sites for Projector Lifting. It also supplied the HTS iX48L/iX48S 100-tonne skate set and Enerpac 50-tonne cylinder jacks required, as well as three counterbalanced forklifts for general handling purposes, including construction of the gantry lift – a Hoist 25/35 with jib attachment, a five-tonne Hyster and a three-tonne Nissan.

Projector Lifting’s gantry lift was a 160-tonne capacity unit manufactured by Four Point Lift Systems in the US, which was brought to site by a third-party haulier (Bedfordshire-based Holmes Haulage) on a semi-low loader along with the steel tracks required to ensure the gantry remained stable and level in operation. The tracks also potentially allow for some longitudinal travel, though this wasn’t really required on this job.

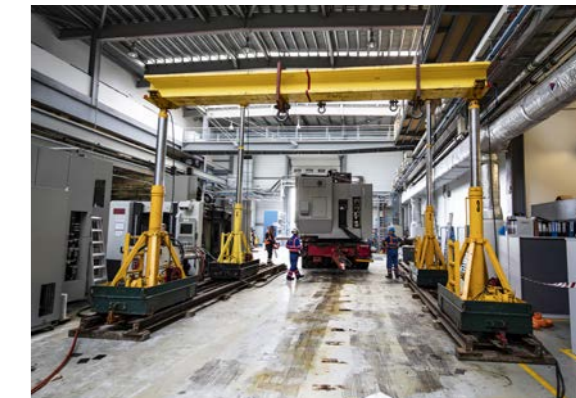
Collett contributed a Scheuerle InterCombi PowerBooster PB remotely-controlled eight-axle SPMT, with both mechanical and electronic steering,



as well as the Merc SLT 8x4 ballast truck to pull it, plated for 250 tonnes GCW and powered by a 625hp, 15.6-litre six-cylinder engine (the OM 473).

Altogether, the tractor, trailer and load came to a hefty 132 tonnes but the short journey from the AMRC to the ALE site was a doddle, says Franklin. "The transport distance was negligible. It was only about 10 minutes from start to finish and that was only through the industrial estate. Collett had the route well covered. There was a bit of camber on a roundabout, but nothing to worry about really," he says.

Building the gantry lift up, which Keith Rhodes assisted Projector Lifting with, was also a simple matter, he says. "In setting up a lift system, measurements are key. You've got to make sure it's parallel and lined up properly. If you get it wrong, there's a lot to go wrong! But it's no major weight - it's just a big Meccano set really," comments Franklin.



"We'd done all the lift plan and Projector Lifting was just working to our instructions. They supplied the lift gantry while we supplied all the slings and lifting gear. We just lifted the lathe up, got underneath it [with the SPMT], lowered it down and strapped it up. Then we de-rigged the gantry system and moved it down the road, before reassembling it, lifting the lathe onto the skates and pushing it into the shop with a forklift."

Duncan Rogers, managing director of Projector Lifting, confirms there was really nothing difficult about his company's part of the operation. "It was just straight up and down," he comments. "There was no drama attached to it. Some projects are more complicated - there's another project we're looking at right now that involves offset loading, with hydraulic jacks placed at different levels, and that kind of thing can cause a few headaches. But this all went smoothly. Erecting the rig normally takes a couple of hours, then the lift itself took another hour or so. We only had two guys on the job but it went ever so well." Working with Collett and Keith Rhodes was enjoyable, adds Rogers. "They're a couple of good family-run outfits," he states.

Those sentiments are echoed by Liam McLoughlin, head of projects at Collett & Sons. "There were no particular challenges on this job - everything was pretty straightforward. We did the pre-planning



with Keith Rhodes Machinery Installations and worked everything out, so there was some level of assurance there before we took on the job," he says. "For us to get into position at either end with the SPMT took about 20 minutes. I think the most challenging thing on the job was from Keith Rhodes' point of view, in terms of getting all the resources and interfaces in place to make sure the right equipment was in the right place at the right time.

"We're well used to working with other parties and I think that's the main challenge in heavy haulage now – the preparation and lead time are key," adds McLoughlin. "Sometimes, you don't get that and it's a challenge to get everyone aligned. But that wasn't the case here, I'm happy to say. Everything went as planned with all three companies working hand in hand to complete the project."

It's good to hear there are still some simple jobs out there, he agrees. "I'd say they're probably in a minority nowadays!" he laughs.

"I was pleased with this project," adds Franklin of Keith Rhodes Machinery Installations. "It was a relatively simple job, but it still involved pulling three companies together. They were all there when they said they were going to be, everything went smoothly and everyone did what they needed to do. The Projector Lifting guys clearly knew what they



were doing with the lift system and Collett's guys, who came in with the SPMT, were straight in, no messing. It was a nice controlled environment and there was no shouting or horror!

"It's all about making sure you get all your eggs in the right basket and it all follows as planned," says Franklin. "Although this was a simple job, it was pretty important for the AMRC to have the machine out by Thursday night, because they'd arranged to have the floor redone on the Friday and had some other machinery to move around as well. But it was a nice straightforward job and we got it all down and executed on time," he concludes. "In fact the whole thing was finished a day earlier than we'd allowed for."

