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Below and far right: This 1969 JCB 6D excavator has been restored down to the last nut and bolt to factory-fresh mechanical and cosmetic condition.

ICONIC JCB DUO REBORN

Nick Drew reports on the immaculate restoration of two early JCB machines, undertaken on behalf of Dorset-based Peter Andrews

Right: Dorset-based Peter Andrews, the owner of Andrews Plant, has been in the plant business for over 50 years. His next excavator will be a brand new JCB 370X.

"AN UNBELIEVABLY CORRECT EXAMPLE OF A JCB 6D, AS IT WOULD HAVE APPEARED ON A SHOW STAND IN 1969"

Early machinery memories, whether cars, motorcycles, tractors, trucks or diggers, often stay with us for a lifetime. And so it is with Peter Andrews, the owner of Dorset-based Andrews Plant. Peter is a long-standing customer of JCB and has been in business for 50 years.

To celebrate this milestone, he decided to source two examples of machines that played an important part of his early life, then have them restored to their former glory. First is a JCB HydraDigga Loadall backhoe loader, the first machine he operated back in the early 1960s on behalf of Brooks Diggers. It was to be joined by a JCB 6D hydraulic tracked excavator, which was the first machine he purchased for his own business, bought second-hand from then local dealer F. English Plant in 1972. It was operated by Terry Brown who, remarkably, still works for Andrews Plant to this day.

Peter then set about the task of locating a late 1950s JCB backhoe loader and a late 1960s excavator for restoration, which is no easy task nowadays. He eventually found suitable candidates, but they clearly required extensive work – more remanufacturing than rebuilding.

Left and below: The excavator's undercarriage required considerable work, including rebuilding the motors and brakes, together with commissioning custom-made rollers.

FIRST IMPRESSIONS

Andrew Shields, MD of local dealer Holt JCB, suggested that Peter get in touch with Julian Carder. Julian is a senior JCB manager who, in his spare time, restores classic plant. Over the decades he has gained an enviable reputation for his work, to bring machines back to factory-fresh looks and performance.

Due to their condition, the scarcity of parts and the significant work that was going to be required to get them back to original showroom condition, Julian rates this pair of early machines as the most challenging restorations he has undertaken to date.

An issue with UK-built machinery of this age, before the widespread adoption of the metric system in the mid-1970s, is that they feature a range of different imperial-sized and -profiled bolts and other fastenings. Although there is a good supply chain to serve the needs of classic car enthusiasts, larger and more structurally important imperial fasteners are harder to come by.

A significant chunk of time was taken investigating and recording individual bolts, not only their dimensions, but of critical importance, what thread profile and pitch was used.

6D EXCAVATOR

Julian started work on the 6D excavator in December 2022. He had already discovered that it was built on 23 April 1969, configured with a long dipper stick and 24in-wide track pads. Equipped with a 30in digging bucket, it was sold by dealer East Anglian Trading.

The first task was a total machine strip-down. Not that there was much left of the cab, which had suffered from the inevitable rot. The cab structure was completely remanufactured, then fitted with a new old stock seat. The control levers were re-bushed and generally refurbished, and custom-made cables assembled to connect them to the valve blocks.

The 126hp Perkins six-cylinder engine underwent a complete rebuild. New radiator and air induction hoses were custom made by JCB's supplier. Likewise, a new exhaust system was also specially fabricated and the hydraulic oil and engine radiators re-cored.

Fortunately, the valve blocks were found to be in good condition and just required re-sealing, although the hydraulic cylinders were rebuilt and the main hydraulic pump refurbished to factory condition, and Julian made-up a set of hydraulic hoses.

At the business end, the boom and dipper arm were fully line bored, while ➔

This 1959 JCB backhoe loader was at the forefront of mechanising the construction industry in the UK and Ireland, improving both site safety and productivity.

→ all new pivot pins were made to the original specification. JCB had some of the bushes in stock, others had to be specially made up. Completing the working equipment, a tipping link and lever were remanufactured, as was a bucket to original period spec.

The glass-fibre covers for the engine and hydraulic bays were in a particularly bad state, even back in the day they were vulnerable. If they had been made from metal, the rusty remains could have been measured and remanufactured. The remains of these GRP panels took a specialist weeks to repair. It took far longer to source the metal fold-down securing latches for the restored panels doors.

TRACKED UNDERCARRIAGE

The resulting cab, upper-structure, engine, hydraulic system and working equipment are to a standard that would have been the star attraction at trade events during the late 1960s. However, for my money, the undercarriage is the star attraction of this immaculately restored classic 360-degree hydraulic excavator.

Many of the components, including the track rollers, had to be custom built. The sprocket carriers were completely worn out. A specialist welded them up and then machined them down to size. Then made tooling to enable the seal retainers to be pressed into place.

The track motors were refurbished and new friction plates fitted to the track brakes, alongside some especially fabricated internal springs. The track brake master cylinders were beyond all hope and replacements sourced. Finally, a new set of track chains were fitted, which carried the original track pads.

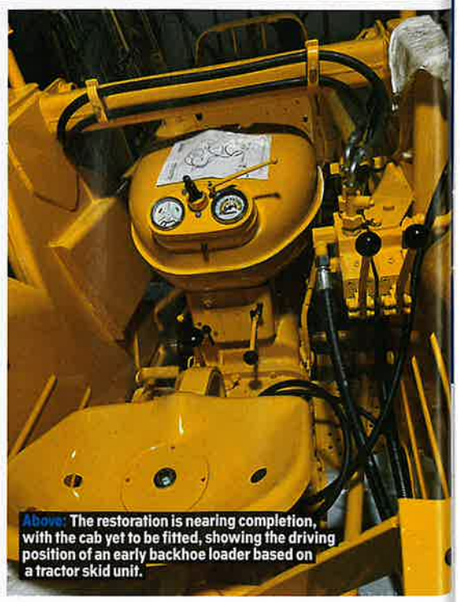
The tracking and slewing gearboxes were rebuilt, including sourcing rare replacement internal components and custom made gasket and seal sets.

The slew ring was worn, so every tooth was welded to build up the wear. Back to talking about bolts, there are 72 of them holding the slew ring in place. They were replaced with S-grade bolts to take loads, which was not a cheap exercise.

The restoration of the JCB 6D excavator took Julian seven months, after which it was straight on to the backhoe loader.

BACKHOE LOADER

This JCB backhoe loader rolled out of the factory at Rocester in May 1959. At the time, it could have been built around a BMC Nuffield tractor, but this example used a skid unit from the industrial version of the Fordson Super Major. An external chassis/frame wrapped round this tractor skid unit, which carried JCB's HydraDigga back actor and their Loadall front loading arms.



Above: The restoration is nearing completion, with the cab yet to be fitted, showing the driving position of an early backhoe loader based on a tractor skid unit.

Above and below: The front and especially the rear working equipment was seized solid, requiring drastic measures and fabrication of new pivot points.

Left and above: This example is based on a Fordson Super Major tractor skid, its external frame carrying a HydraDigga back actor and Loadall front loading arms.

Again, this example's as found condition was bad, and the first task was to strip it down to its constituent components. The industrial tractor skid unit was fully rebuilt, including the rear axle and engine, which benefited from a skimmed flywheel and a new clutch.

The hydraulics were a different matter, requiring a hydraulic pump to be custom manufactured to the original JCB specification. In addition to a routine rebuild of the hydraulic cylinders, the valve blocks required attention, as they were leaking badly and the control levers seized. New springs were manufactured for the spools and, incredibly, JCB had stock of the original seals.

The working equipment put up a bit of a fight. Most of the pivot pins in the front loader arms and the rear working equipment were seized solid into their housings in the main and rear frames. After several attempts to press them out, the 65-year-old joints eventually succumbed to the gas torch. A drastic measure on such a historic machine, but one that was necessary to move the project on. Every pivot point was then remanufactured and fitted with new pins and bosses, representing a substantial volume of work.

On the home straight, front and rear buckets were built to the original JCB specification. The original front bonnet was beyond repair; a slightly better example was found in Scotland and then re-built to suit this machine. The rear boom's protection cover was missing; fortunately Julian had a new one in stock, which he adorned with a 3D printed, period correct JCB logo.

As is the norm with such restorations, over the decades the original cab structure had rotted away. A new open-backed cab was fabricated.

SUMMARY

Back in 1959, I guess it was still common for gangs of labourers to dig foundations and trenches, then move a surprisingly large volume of material using a fleet of wheelbarrows. That may help to put the operating station of this early digger in context. This backhoe loader was a huge step forward in mechanising the construction industry and resulted in a flurry of new small business start-ups.

With modern eyes, it looks a spartan place to spend your days as an operator. Even gaining access is a monumental task, having to climb in over the rear frame. Operating the backhoe is done from a separate seat facing the rear, mounted higher up than the driving seat.

Driving and using the front loader is done from a centrally mounted steel tractor-style seat, mounted on a leaf spring arrangement. Ensconced within the heart of the mainframe, with limited visibility and surrounded by hydraulic pipes, controls and valves, this was the environment into which the UK and Irish trade of construction plant operator was born.

"THE WORLD'S BEST EXAMPLE OF AN ICONIC 1959 JCB DIGGER, AS SUCH, IT IS A KEY PART OF OUR INDUSTRIAL HERITAGE"

CONCLUSION

Julian Carder's restoration work of both machines is stunning and his attention to detail almost overwhelming. As far the backhoe loader is concerned, the result is probably the world's best example of an iconic '59 JCB digger. As such, it is a key part of our industrial heritage.

Peter Andrews should be congratulated for having the desire and funding available to commission what must have been eye-watering large restoration bills. The 1959 backhoe loader is such a historic machine that it will probably never be worked in anger. However, Peter would be happy for it to be on static display at local shows.

Peering into the factory-fresh, fully enclosed cab of the 1969 hydraulic excavator, in only a decade the industry had moved on in leaps and bounds. Although extremely spartan by today's standards, it was in such an environment that started the global dominance of 360-degree crawler excavators.

This is an unbelievably correct example of a JCB 6D, not necessarily as it would have left the factory, but as it would have appeared on a show stand at the time. Peter has not ruled out the possibility of its bucket losing some of its paint in the future, as a show machine would have done back in the day. EM