

CLASSIC PLANT & MACHINERY

60 YEARS OF JCB LOADER-BACKHOES

Continuing with the 60th anniversary celebrations of the JCB loader-backhoe, we look at Julian Carder's stunning JCB 3CMKIII. Julian has put thousands of hours into the restoration to get it right, including tracking down the correct JCB parts in their original boxes from North America.



JCB 3C MKIII

Julian Carder combines business with pleasure with the restoration of a classic loader-backhoe.

Perhaps the most important machine for JCB in the 1970s was the classic 3C, and in particular the last of that line, the 3C MKIII. The 3C was a landmark machine for JCB for many reasons, and was based on the JCB 3 which was the first to use a sideshift-backhoe mounting for one.

Many operators will have driven a 3C III at some time in their careers. In 1979, this single loader-backhoe was outselling all of its worldwide competitors put together, so there were plenty of them around. The 3C III in this feature belongs to JCB's worldwide loader-backhoe marketing manager, Julian Carder. He is no stranger to machinery renovation, having carried

The 3C MKIII pictured against the skyline.



out a number of previous projects, but nothing as in-depth as this machine.

SPECIFICATION

Although he wasn't actually in the market for a new project, or in need of a busman's holiday, Julian saw the machine

in February 2013. It was described as a 'barn find', but what intrigued him most was its specification. Originally sold to a local authority, the machine had the rare JCB jaw bucket fitted to the excavator, the

torque converter transmission and the original hand-held breaker mounted on the side.

Aththough a runner, much of the bodywork had simply rotted away over the years and the painstakingly detailed restoration has taken months to complete.

The result is quite stunning. The 1978 JCB 3C III, complete with hand-held breaker and 6-in-1 shovel with forks, looks as good now as it did as a new machine when it rolled off the line at JCB's Rocester headquarters 35 years ago.

LEWISHAM

Taking on a bare metal restoration is never an easy task, and this 3C III was to be no exception. The machine had originally been built in for the London Borough of Lewisham's environmental services department.



The key to the success with the 3C MKIII range was the loader-backhoe.

Priced at £19,400, ex-works and sold by local dealer, Berkeley JCB, the 3C III was specified with that torque converter transmission, with a 6-in-1 front bucket, an excavator jaw bucket at the rear and the hand-held breaker mounted on the side.

It was mainly used on road maintenance and sewer and drain repairs, but in the winter months was pressed into service loading the council's gritter lorries with salt.

Unsurprisingly, despite the relatively good condition for its age, working with salt had resulted in serious corrosion to the front end and on the loader arms of the machine.

HOURS

Julian isn't sure exactly how many hours the machine has worked, but typically for a local authority backhoe, the 3C III has obviously been very well-looked after.

Lewisham sold the machine at auction in 1990 and a trader in Northampton then moved the JCB on to a chicken farmer who only really used it to clear snow in the winter. It was hardly being worked at all and, after an extensive inspection, Julian paid £4,500 for the machine.

The good news in terms of the renovation was that the 3C III was in mechanically good order, with the engine starting easily and both brakes and steering in good working condition.

The hydraulic fluid, torque converter and transmission oils were also very clean when checked, demonstrating how well the machine had been cared for and how little hard work it had completed over the last 35 years.

Julian said: "The steering was good and the brakes too. The transmission worked and the bushes and pins were all good. That was an indication to me that it had been looked after."

The cab, however, was an altogether different proposition. It was completely rotten with many of the panels virtually non-existent. The seat base had also been consumed by corrosion and the council salt

Comparing the modern JCB 3CX with the similar-sized 3C MKIII from four generations earlier is certainly an interesting exercise.

had taken its toll on one side of the front of the machine and the underside of the lift arms.

This structural metalwork would provide the hardest task for the renovation team, as a new cab or replacement loader arms cannot be found.

Julian wanted to keep as much of the 3C III original as possible, only fitting new parts where there was no alternative and then seeking out genuine components where possible.

"Sourcing all of the parts took a long time, as I wanted to keep it original," explained Julian. "I started ordering parts as soon as I got the machine as I knew it wouldn't be easy." However he does have a head start on any similarly-minded renovation enthusiasts, being in charge of marketing within JCB's loader-backhoe division.

That position provides unparalleled access to data and to parts departments around the world. After much searching, he was eventually able to find many of the necessary parts buried deep within the spares stores of JCB dealers in Ireland, Cyprus and Denmark. Missing components were traced via the internet.

Julian also found quite a few of the missing parts, such as engine fan belt guards, in the rear footwell of the machine, where they had no doubt been left by previous owners.

The original floor matting has deteriorated greatly and had become an unidentifiable heap in the floor of the machine, covering many of the components.

BASICS

Having stripped the machine back to a basic skid, the metal fenders, tool box, light brackets and pump guard had to be specially made by Allmet Fabrications in

One thing that stands out between the two machines is the relative size of each of them.



Julian Carder's efforts to get everything right mechanically, inside and out, even took him to North America for parts.



Stoke, along with the re-plating of the underside of the loader arms and a full refurb of the front shovel.

CRAFTSMEN

Rebuilding the cab alone took £5,000 worth of painstaking work, with a local craftsman spending more than a month recreating the original structure.

The roof was littered with holes, but rather than use car filler it was opted to repair using lead for added strength. So much filler was required on the bonnet that it now takes two people to safely lift it to access the engine. The nose of the machine was also rotten, so new pressings were made and welded in.

Again, Julian had the benefit of inside knowledge, as he was able to access original drawings and specifications from within JCB's loader-backhoe division.

"Some of the guys here in our office actually remembered designing the machine, which helped," he said. "But the big thing was doing the metalwork. It cost thousands."

HYDRAULICS

The hydraulic system was in good condition, with all but two of the rams in good condition. Those two cylinders were resealed and all of the perished hoses replaced and the hydraulic pump resealed and drive shaft replaced. Consumables such as filters, batteries and tyres have all been replaced, along with the exhaust, manifold and the radiator.

The wheels that were on the machine when purchased were not original, having been replaced by a more modern set from a 3CX, but Julian eventually sourced a replacement set – in bent and corroded condition – on a farm. These have since been straightened out, cleaned up and repainted.

Talking of which, even painting the machine was far from straightforward. Once the metalwork and the mechanical renovation had been completed, the entire machine was steam-cleaned and approximately 35 hours were spent shot-blasting the metal work ready for repainting.



The 3C MKIII can still do a day's work.



The 1970s machine at the model launch.



The loader-backhoes take a break.



Julian Carder's pride and joy at JCB's HQ.



Thousands of hours went into the restoration.



JCB chairman, Lord Anthony Bamford, with Julian Carder and the JCB 3C MKIII.

After much research, Julian eventually found someone who could mix paint to the correct JCB yellow, red and white colours and the machine now looks stunning, with its glossy paintwork showing real depth.

STICKERS

There was work still to be done. Over the years the JCB logo has remained pretty much the same, but the company's stickers and decals have changed greatly. Once again Julian was able to raid the archives and find the original drawings.

"Every single sticker on the machine has been recreated to the exact design of the original," he said. "Even the raised lettering on the embossed metal badges was hand painted by a skilled signwriter to get the correct period look."

While a full restoration of this kind can take many years, Julian and his team have managed to bring the 3C III back to life in a matter of months.

In 2013, he discovered that JCB Branded Products was planning to launch a 3C III scale model, made by Britains, and quite rightly felt that having the real thing present at the launch in September that year would really make the day.

"On the Sunday before the event, myself and ten friends worked all day and finished putting the windows in the cab at 3am," he said. "Overall in excess of one thousand hours were spent restoring the machine to its former glory."

The result is a faithful restoration that returns the JCB to showroom condition. Julian plans to exhibit the machine at shows around the country, though he is looking for somewhere to store the loader-backhoe between shows.

SITEMASTER

The 3C III took part in a photo shoot where it worked alongside a current model 3CX Sitemaster.

Sitting side by side it is easy to see the shared ancestry of the two machines. Climbing into the cab though, is like two very different worlds, with the bare metal



The road drilling equipment was introduced from the 3C MKII model, it is understood.



The vintage loader-backhoe turns the clock back with a working display.

of the 3C cab in sharp contrast to the smoothly contoured plastics of the modern machine.

The 3C III's Leyland engine fires easily, settling into a rather lumpy idle. In its prime, this engine would have put out a heady 70hp, backed up by a strong 258Nm of torque. While today's lowest powered 3CX is not that much more powerful, at 74hp, the torque that provides the pushing power is in a different league at 400Nm. That's not to say that the older machine

is left behind once the digging starts however, and the 3C III holds its own on a side by side trenching test.

A bucket from a modern excavator was used for the digging, so as not to scratch Julian's original jaw bucket. Surprisingly the bucket pins and link geometry are unchanged from the 3C III to the latest 3CX, showing that JCB got things right in 1978. "It really was a very good machine in its day," said Julian. **CPM**



The progress that's been made between both models is clear for all to see.