



Epic Restoration

'It was much rustier than a US import'

When you're building a Fifties sports car to your perfect upgraded specification, there are better starting points than a rust-ridden UK **MGA 1500** – yet the end point matters much more

Words NIGEL BOOTHMAN Photography GERARD BROWN



It's a fantasy many of us have shared: we see a listing for a sad-looking MG project and we plan our own perfect tick-list of features. Start, perhaps, with an American dry-state import to keep the cost down and dodge the rot, then build in more power and better gearing, stronger brakes, brighter lights and numerous other advantages. David Eales of Oselli Ltd has been doing just that, and after 25 years of restoring MGAs, he's developed a definitive specification – an MGA that will easily keep up with modern traffic and behave itself with an obedience that most Fifties classics could never hope to attain.

The latest car to receive this extensive program of works, this 1958 MGA 1500, arrived not from the dusty plains of a hot southwestern state in America, but from a moist English lock-up. Painted an unlovely orange butterscotch colour with blooms of red primer showing through, the car began its journey through Oselli's restoration process as the Covid restrictions hit, turning a well-drilled and relatively rapid process into a more drawn-out rebuild that sees the car road testing in the summer of 2023. David Eales explains what lay in store for it.

'The core of the new specification is a 1950cc B-series engine teamed with a Mazda five-speed gearbox and many more subtle changes to make it work as well as it possibly can – braking, suspension, cooling, durability and so on. This one was much rustier than a US import, but there's kudos in a genuine UK-market car, so we decided to go for it.'

Oselli has been around for 60 years and developed a reputation for rebuilding and modifying BMC engines, based on its machine shop facilities.

'Developing these modified restorations has come about since I took over the business in the Nineties,' says David, 'even though my background was with Aston Martin. So now we have this unusual dual identity, specialising in Aston Martin and MG, but with a shared foundation in our engine-building work that allowed us to engineer this MGA in-house.'

Low point

'Seeing just how bad this one was – chassis repairs required as well as lots of work to the bodyshell. A long job before we could even start the build'
David Eales

A bracing experience

David and his team plucked the MGA's body from its chassis using the crane mounted on the wall of the main workshop space (see My Favourite Tool, p85). With obvious signs of corrosion in the bodyshell, they braced it until there was reasonable confidence that the structure wouldn't fold inwards or droop outwards when raised from the chassis. The body went onto a support jig, where it remained when work commenced.

'We'd hoped that most of the rot would be in the body,' says David, 'but the chassis was affected too. In fact, we could see significant chunks of the main chassis rails would need replacement.' The remedy included slicing away the inner and outer surface of the main rails under the door sill on each side. A rustproofing wax sprayed inside the box sections ensured no repeat of the problem. One side was completed before the other was started to give the frame no excuse to droop, but at this point, it seemed a long way back for the project. The mood lifted, however, when the chassis was painted.

'We often have to choose between powder coating and painting,' says David. 'Powder coating can give a very nice finish, but you get excellent protection from well-applied paint, too – and for a pitted surface, you can achieve a much smoother result with a high-build primer and then a glossy finish than with a powder coat. So we went with black paint.'

The body departed on its jig to the small team at MW Bodyshop in Olney, long-term sub-contractors for Oselli and David's one-stop shop for both panel repairs and refinishing. With the aluminium doors already off, removing the outer wings revealed some alarming perforation, where it was clear that new sills, A-posts, B-posts and repairs to the inner wings would be required. 'Mark Huffer at MW Bodyshop is used to coping with this sort of thing, but even so, it took a methodical approach,' says David. 'The sill positioning is crucial because we use it to align the door, which in turn dictates the fit for the front and rear wings. So that became the datum, and with a great deal of measuring and checking, Mark was able to position new sills and then replace the A and B-pillars.'

Mark used spot-welds to stay consistent with the factory approach and also to reduce the heat input that could distort some of the larger, less stiff panels. As with the chassis, only one side was tackled at a time, with the jig providing stiffness while the strength was returned to the sill structure and two pillars. Compared with this, the repairs to the outer wing panels were insignificant – a strip along the lower rear edge of each front wing and front lower corner of each rear wing. A new valance panel behind the front bumper completed the job.

New spec, old tech

Marine plywood isn't something you find a lot of in modern cars, or even most Fifties cars. BMC used it to create the floors

in the MGA, and it's one period aspect of this car that needed no updating. With the freshly painted chassis up on axle stands, the refurbishment of the running gear could continue while the panels of ply were cut, drilled, treated and lacquered to offer a longer life. There is one for the rear of the cockpit, blanking off the gap between the floor and the crossmember that crosses above the transmission tunnel, behind the seats. A piece fits under each seat, two more pieces cover the footwells and a final pair make up the bulkhead below

the chassis' scuttle member. They are bolted in place with the addition of large, load-spreading washers.

Ben Harris was responsible for the build-up of the chassis and later, of the car as a whole. 'With the object of this job being a better-than-new car, there was no real need to reclaim old pieces that were past their best. So when I began building it back up, I was using new rear leaf springs, new brake cylinders, brake shoes and linkages, while the brake drums were skimmed and powder coated. We fitted a new fuel tank too.'

The rear axle is the one the car arrived with, however, and was entirely stripped, shot-blasted and rebuilt with new bearings and seals before receiving a coat of gloss black to match the chassis. At the front, the brakes were not replaced like-for-like with new, but with MGB disc brakes for better stopping power.

'We used remanufactured lever-arm dampers on this car,' says Ben, 'which are fine for road use – there's no need to upgrade to telescopic damper kits. Likewise, we stripped and rebuilt the steering rack, cleaned up and painted the front springs, though we did use more durable polyurethane bushes in the suspension, having blasted and powder-coated the wishbones and linkages.' Ben also installed new brake lines and a fresh wiring loom, getting everything in place for the arrival of the engine and gearbox.

Rebuild or remanufacture?

The engine had been undergoing such a profound process that Oselli's experienced engine man, Robin Large, describes it as



Car arrived with repairs started – much more to do



David Eales talks Nigel through the new spec



Body off the chassis, serious work begins



Paint chosen over powder coat for smooth finish



Post-repair, body in bare metal before paint



Rear axle stripped, ready for blasting



MGB disc brakes in place of MGA's drums



1500's pretty single tail lamps preferred to 1600 or MkII units



Block stripdown revealed original cylinder bore size



Ben Harris describes door capping challenges



Standard crank is retained for increase to 1950cc



Oselli rocker cover and larger SUs flag extra power



Old English White much loved by Oselli's customers



New loom – of course – as part of build



Grille and nose panel shaped together before paint



Panel gaps and finish better than new

more of a remanufacturing or blueprinting approach than a conventional rebuild. 'I wasn't just assessing it for damage and putting those bits right, I was using the engine block, cylinder head and other major components as a starting point and taking it forward to a very different specification,' he says.

Robin first dismantled the cobwebbed old B-series and dunked each useable component in an acid bath for a deep clean. He's encountered all the frailties of the BMC B Series over the years, including cracks to cylinder head and engine block, and corrosion bad enough to scrap the major castings. Getting it properly clean is the only way to assess it. 'This one looked okay and hadn't been re-lined – if the bores have had new liners fitted then you can't do anything much with them. So the next step was a re-bore to 83.5mm.'

This gives 1950cc with the standard crankshaft; Oselli has found that the extra expense of a long-stroke crankshaft to get up to 2.2-litres isn't justified for road use, when the installation of a performance camshaft and other modifications to the 1950cc engine give such a pleasing increase in output.

'We have Omega pistons specially made and we can machine the crowns to get the compression ratio right,' says Robin. 'I used a burette on the cylinder head to check the volume of each combustion chamber, then I could make sure the compression ratio came out as close as possible to 9.75:1 across all four.'

Robin also went to work on the head casting, opening the inlet ports and polishing them to a mirror finish before fitting bigger inlet valves. He used an oversize Tuftrided rocker shaft so it was possible to hone the rocker bushes out, taking out the wear and bringing them back to new – he even re-faced the rockers themselves. For the camshaft timing, Robin fitted a vernier gear for perfect set-up. Further down in the engine, one major change was to the connecting rods, swapping from a press fit to small-end bushes, balancing each piston and rod combination with its neighbours.

'Balance is crucial for this blueprinting approach,' says Robin, who explains that every aspect of the engine needs to be built beyond the original standard to release the benefit of the upgraded spec, 'The crank and flywheel were individually balanced and then balanced in our machine shop as a rotating assembly.'

This new assembly was capped off with a pair of SU carburettors of the MGB type, with needles suited to the slightly greater capacity and flow of this 1950cc fast-road engine. A high-flow (rather than high-pressure) oil pump replaced the standard unit, but the standard water pump is fine for the job – when working! Robin installed a new one.

Line up and bolt down

The last major modification came with the fitting of the Mazda gearbox, which is now used in the same way the old Ford Type 9 once was, to offer a five-speed option to fit behind BMC engines. 'The kit comes with the gearbox itself, a bellhousing and crossmember,' explains Ben Harris. 'You just have to drill a few holes to mount it, which we'd done for this chassis before it was painted. It feels like a tight, racey gearbox and the ratios are just right for this engine in this car.'

With the engine and gearbox resting in place, the major step of reuniting chassis and body – freshly painted in Old English White – could begin. The MGA's chief difference from the later MGB is the way it's built – the separate chassis of the MGA should make for a more straightforward restoration as the bodyshell bears very little load, but it introduces the challenge of aligning the panels and then maintaining that alignment when fixing the shell down to the chassis, as Ben Harris explains.

'The bottom of the door has to align with the sill, which is your fix point. This gives you the position of the front wing and rear wing. It looked good on return from the paint shop, but when this one first went together, we couldn't get decent gaps once it was mounted on the chassis.'

Ben discovered a small discrepancy that was creating a bigger problem. With the body resting in place but not bolted down, everything looked good. With the bolts installed, the door gaps suddenly weren't right any more. Small gaps between the body's rear fixing points and the chassis were allowing the bolts to pull the rear of the body down and causing it to distort very slightly.

'A couple of millimetres here is exaggerated to a larger gap a few feet away,' says Ben, 'but all it needed was careful shimming so it could be bolted down properly without moving at all – then we had the gaps back.'

Delighting in details

Ben hit the final assembly phase in the knowledge that the last 10% of the job takes most of the time, but with many other MGAs under his belt, he's aware of the pitfalls that await the unwary.

'There are one or two examples. The door cappings and the top edge behind the seats do not fit without fettling – and it was the case on this car.' They're made in some places from wood and others from steel pressings, with the leather over the top of it all. The steel can be tweaked or bent by hand, the wood can't – but it can be re-drilled or shaped if need be. 'It's all just patience. When it's right, you walk away... but I spent a long time getting that right. Another thing to be aware of is the bonnet catch alignment. Get that wrong the first time and you can't get it undone again if you've already fitted the grille, so you learn to do things in a certain order.'

The interior trim, with burgundy leather and matching carpet is a cut above most replacement kits offered for MGAs. Ben explains the choice. 'It's from a company called PJM in Worcestershire and it's really nice quality. I've found that carpets from some kits go threadbare when asked to bend over angles in the floor or the tunnel, but these rubber-backed carpets solve this, though they need heating to bend tightly.'

David Eales used a trimmer based at Bicester Heritage, Harry Frazer, to install the new roof fabric over the restored frame and to fit the trim on the seats. With the soft and expensive-looking fluted hide perfectly snug, it's a fine result. 'The fluting isn't actually correct for a MkI MGA,' says David. 'That came in with the MkII, but we all like the seats this way, and so do our customers.'

All the brightwork on this MGA is new. There are two reasons for this – first, what survived

High point

'Taking the car for a drive for the first test during our routine 500-mile shakedown procedure – the sun was out and it's far from a chore!'

David Eales

MY FAVOURITE TOOL



Body Crane

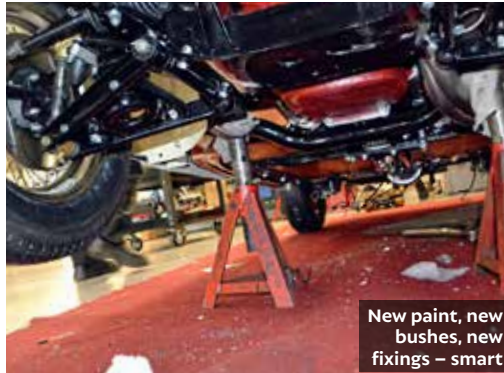
'This was installed for lifting engines, back when the building had an engine building room up on the mezzanine,' says Ben Harris. 'You can control it from the remote box on the cable, either standing down at floor level or up above. It'll comfortably lift a fully-built Aston-Martin V8 engine so a 250kg MGA bodyshell is easy. We use bolt-in braces in the trim holes in the edge of the cockpit, which together with straps under the belly of the shell gives us something to lift it by.'



Ben details interior options open to the customer



Even single-piston calipers stop the light MGA very well



New paint, new bushes, new fixings – smart



Vinyl in period, MkII's fluted leather now

with the car wasn't a complete set and some pieces, like the grille, were badly corroded. Second, for a consistent finish throughout the car, mingling salvaged pieces with new pieces is less satisfactory than renewing everything, and while it's all available, why not make use of the excellent supply?

'We were careful to send the new grille to the bodyshop with the rest of the car, because the curvature between grilles and nose sections can vary, thanks to Fifties manufacturing standards,' says Ben. 'It was important that the guys shaped the grille and the nose together before the car was painted.'

Topping off the build were a number of further practical upgrades to ensure the car does not let down its next owner when conditions get challenging. Ben fitted cooling fans to the uprated radiator and sited a small thermostatic control box in a rear corner of the engine bay, out of sight unless you know where to look. Appearances are still important – David and Ben both take the view that more modern technology shouldn't have to spoil the car's classic appeal.

'One example is the alternator conversion,' explains Ben. 'Changing the car to negative earth rather than positive means you can run the alternator in place of the dynamo for better output, brighter lights and so on, but it makes the voltage regulator redundant, because there's one in the back of the new alternator. So I changed it to act as a junction box; it looks the part and still has a function.'

Negative earth allowed Ben to fit electronic ignition too, which he matched with an electronic rev counter – but one that looks entirely at home in the MGA's dashboard. And because the



New windscreen seal means no rainwater on your legs

British summer is unpredictable, Ben fitted a new heater matrix and an uprated blower motor.

'The spec we've developed is all about making the car useable,' says David. 'This one was a bigger job than most, but was worth doing because it's a UK car, and it's now ready to go anywhere, and built to a standard that means it will last far longer than it did the first time around. In our opinion, it's the best an MGA can be.'



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