Small Green Wonder

A long-lost works Healey discovered and restored in time for its 25th birthday at this year's Le Mans – described and tested by Tony Dron

THE scrutineers at Le Mans in 1965 threw out the two streamlined, lightweight Austin-Healey Sprites entered by the Healey Motor Company because their Dayglo green paint was too bright and was thought to pose a danger to other competitors at night. The team withdrew and carried out a rapid but surprisingly neat respray with conventional green paint; they were then accepted for the race and one of them won its class in the 24hrs.

Yet, apart from the attention caused by that unusual incident, little notice was taken of these remarkable cars and they were almost instantly forgotten, it seems: though the programme continued, and more advanced versions were developed and raced in the late Sixties, there's precious little to be found in print about them even in the best books on Austin-Healey, with the single exception of Geoff Healey's own book *More Healeys*.

Thanks to Denis Welch Motors, and indeed the whole Welch family, due credit is now being given to these very special cars. One of them, the class-winning ENX 417C driven by John Rhodes and the late Paul Hawkins, is on display in the excellent Patrick Collection. Last year Denis discovered the long-lost sister car, ENX 416C, which was driven at Le Mans by Clive Baker and Rauno Aaltonen; derelict and knocked about, it was nevertheless remarkably unmodified and quite simply one of those dream finds for enthusiastic restorers. We should be grateful that it found the right home, for Denis is well known as one of the leading Austin-Healey specialists in the world. His son Jeremy, having served his apprenticeship, was given the task of bringing the Sprite back to life as his first major personal project. He has done a wonderful job.

Why should these cars be so important? First of all, it's fairly obvious that the restoration of any ex-works machine commands a certain extra interest but, above that, I feel that the very concept of these cars has a message for us today. It's just a personal observation, of course, but it seems to me that modern cars in general are getting heavier and heavier as they are equipped with more and more gadgets, ever more powerful engines and, I admit, safer structures to protect the occupants in a crash. There may be no substitute for cubic inches in some quarters but there's a lot to be said for an ultra-light, aerodynamically slippery small car with a highly efficient small engine and quite long gearing. These 1965 Austin-Healeys were quick but very modest in their consumption of tyres, fuel and brakes.

Based as they were on production sports cars, they were extremely light at about 13cwt (660kg), which meant that their 1965 Formula Junior-type BMC A-series engines, which produced at least 105bhp, gave the Sprites a minimum



Right, main picture, ENX 416C at Le Mans in 1965. Note the dull green colour: the original Dayglo green is just visible around the headlights (paint came off with tape removed during the race). Inset, the same car as discovered by Denis Welch last year

Small Green Wonder

". . .the second you got in you thought: 'Let's go!'"

power to weight ratio of 162bhp/ton.

Even though it has to be admitted that the high speed aerodynamic stability left something to be desired, there was and still is something basically right about the concept. Donald Healey's son Geoff was in charge of developing this pair of cars for Le Mans and he went all out for speed on the straight.

Geoff Healey told us: "We took the concept to BMC and they came back with a specification. The project was handled by John 'Doc' Weaving's department and John Ebrey did the actual work. We were given detailed instructions on the shape of the front, the slope of the screen, the optimum high point of the car behind the screen in inches and the tail length or alternative cut-off point. We went away, drew it up and made it; BMC then tested it for us and their only criticism was over a detail at the rear, which we left."

The first of these cars to compete was sent to Florida for the Sebring 12hrs on March 27, 1965, where it won its class and finished 15th overall, just ahead of the Banks/Hawkins 3000 in a race that was notable for stifling heat followed by torrential rain and flooding. That car was left in the States and, according to Geoff Healey, has since been rescued and restored by Bill Wood of Boston.

The two Le Mans cars were then built up for Rauno Aaltonen/Clive Baker (number 48) and Paul Hawkins/John Rhodes (49).

John Rhodes liked the little Sprite: "I was impressed; the very second you got into it you thought, 'Let's go!' I was doing a lot of Formula Junior driving at the time and its lively responses seemed just fine." John got on well with his co-driver, the late Paul Hawkins: "He was a superb professional, even insisting that we rested like invalids in bed for the day before the race." John recalls Paul Hawkins as a great man for detail who was driving very sophisticated cars in those days; apparently he was not happy with the skittish behaviour of the Sprite, especially on the Mulsanne Straight, and was already suggesting radius arms and a Panhard rod to help its directional stability.

John Rhodes adds: "You had to try to judge when the GT40s were coming past on the Mulsanne Straight and then steer into their slipstream, anticipating the tug which could throw you three feet across the road." Alec Poole, who drove the later fuel-injected streamlined Sprites in the late Sixties, confirms that stability was still a weak point even then: "If a GT40 came by when you were passing a gap in the trees on the Mulsanne there was a real danger that you might end up facing the wrong way! Then we discovered aerodynamic downforce. We put a spoiler on the back and tested a car at Silverstone. We found it hard to believe the results: the cars were more stable and Beckets was on in fourth instead of third gear."

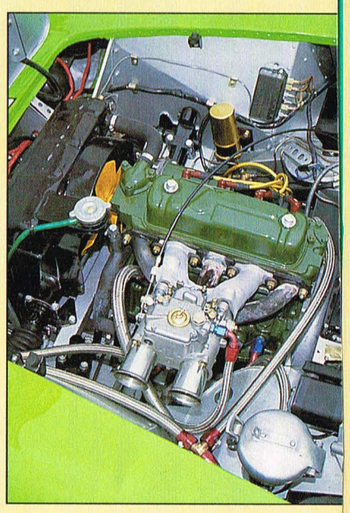
Such discoveries were still a long way off in 1965 when both the small Healeys ran very effectively for almost all of the 24hrs of Le Mans. Racing always has its problems, however, as *Motor* reported on June 26, 1965: "The two Sprites were coping with braking problems and overdrive top disengaging itself with startling effects on engine rpm and the main bearings."

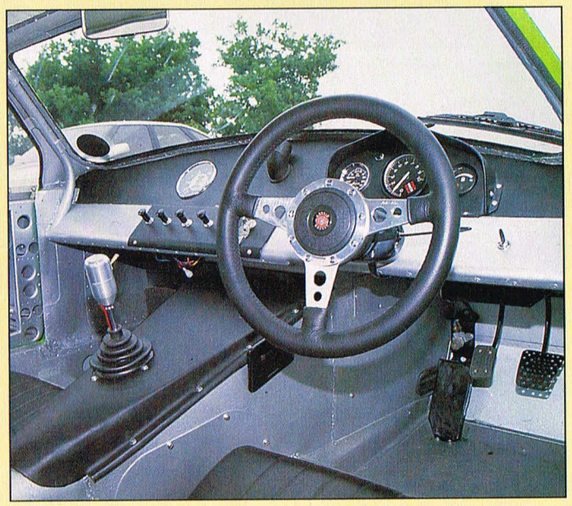
It was a different problem which brought disaster for ENX 416C, which unfortunately retired when leading its class and the the index of efficiency. Clive Baker: "I had finished my stint and had got changed. With 20 minutes to go we were ready to celebrate when the engine seized as Rauno was passing the pits. The distributor drive had sheared." So it was that the sister car went on to win the class.

For what they were, the performance of the little Sprites that year was amazing. According to contemporary reports they were timed at 148mph on the Mulsanne Straight, quicker than the works MGBs had gone, and both John Rhodes and Clive Baker confirm this today. Geoff Healey also told me that he did 150mph in one of these cars past the Watford Gap service area on the then-deserted M1: that was before the days of the 70mph limit.

Le Mans, 1965, was the sole racing appearance of ENX 416C as a works Healey; sometime after the race it was sold to Richard Groves, who apparently ran it for a couple of seasons, but its history between then and its discovery in Scotland by Denis Welch is something of a blank. A friend of mine recalls seeing it some ten years ago, he thinks in Northumberland, already somewhat derelict, but I have failed to discover









Right, these shots show the quality of this excellent restoration. The special body allowed this Sprite to reach 148mph at Le Mans in 1965. The hole on the nearside wing is the oil catch tank breather

Small Green Wonder

". . . nerve-racking . . ."

anything else. Perhaps some readers can fill in the missing years? Geoff Healey reckons that rear axle radius arms and, probably, a Panhard rod were fitted to the car in 1965 or 1966, to a specification which the Healey Motor Company would have supplied to Groves.

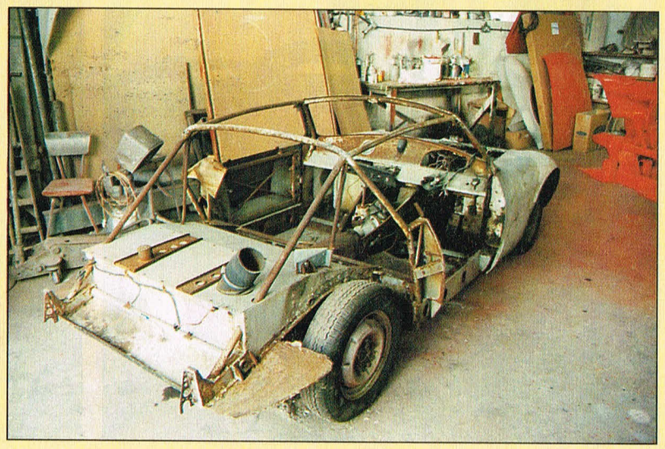
These radius arms were missing from the car when Denis and Jeremy began to strip it down before last Christmas. There was provision for them to be fitted, as well as brackets for a Panhard rod, which gave them a puzzle over what to do about rear axle location in the restoration. In the end they decided to fit the radius arms but omit the Panhard rod as that would have entailed a side exit exhaust, which the car probably had in 1966. They preferred the conventional rear exit exhaust which it had in 1965. The complete strip to bare metal revealed that the chassis was basically sound, but new aluminium rear arches had to be fabricated and sections of the floor had to be replaced. Remarkably, the entire original outer body has been retained. Non-original widened wheel arches had to be removed, straightforward enough at the rear but not so easy at the front, where the original wings had been beaten out. Jeremy Welch explains how it was done: "The body was restored in our own body shop but it was just about the only job I did not tackle myself, though I did watch over all the skilled work so that I knew exactly what was going on. Two inches had to be cut from the centre of each wing and the rewelding was nerve-racking: as fast as it was welded it wanted to crack but it came out right in the end. The whole body was completely stripped and we found some original but probably faded paint. There was also evidence of a small accident repair on the front offside, which had been filled. We had to straighten the whole wing assembly."

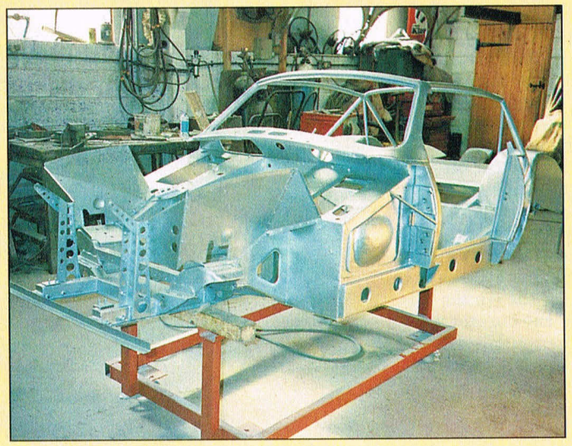
The only external panel that had to be renewed was the bonnet; even the lightweight doors are original, as is the tank filler recess fabrication which was set into the rear window. The rear window itself had to be renewed with Lexan, a plastic material that can be cold-formed in certain planes. New Perspex side windows and lamp covers were made, while the windscreen itself turned out to be a section from a Mini screen, so a new one of these was cut down to the right size. The 80-litre steel fuel tank was still in place though it was partly

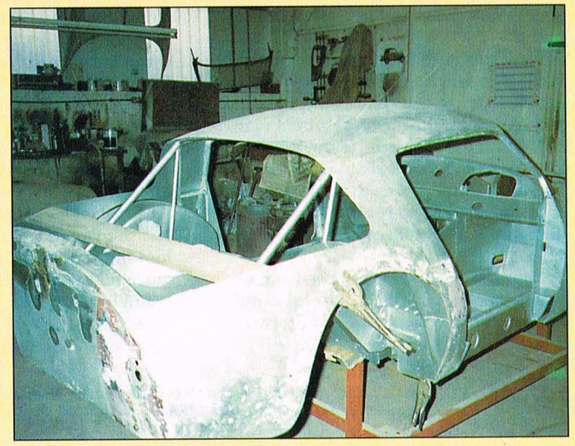
Right, revealing views of the restoration under way in the workshops of Denis Welch Motors











Small Green Wonder

". . .They have got it absolutely spot on."

rotted away; wisely, Jeremy replaced it with a foam-filled aluminium safety tank of the same dimensions. The dead mouse in the dry sump oil tank was removed and given a decent burial!

Inside the cockpit the instrument and switchgear layout is all perfect and to the original specification. The only modern instrument is the rev counter, but the speedometer, reading kph, is original and currently shows 12,550km. Richfield seats, correct for the period, have been found and a leather-rim steering wheel has been fitted. Apparently, the drivers at Le Mans in 1965 were made to use a standard Sprite wheel, a fact which caused much complaining at the time!

As you might expect with a tuned A-series engine, the original specification was easy enough to establish: steel crank and rods in the XSP 'experimental' block, a special '649' camshaft with provision for dry sump oil pump drive, a race-modified Cooper S cylinder head giving a 12:1 compression ratio, forged pistons, a Weber 45DCOE carburettor and AP competition clutch.

Only two of these XSP gearbox castings were ever made, but rebuilding this was easy enough as standard MGB internals were used originally: the Laycock J-type overdrive, which gives a 28% change in ratio, was also rebuilt. The final drive is a 4.2:1 with ZF limited slip; during the rebuild it was discovered that extra needle bearings had been incorporated to support the outer ends of the driveshafts and these were renewed.

Choosing the right colour was another problem. Everybody has their own ideas as to what colour the cars were: the Welch answer was to get the original paint analysed. The same shade of green was then reproduced in conventional paint.

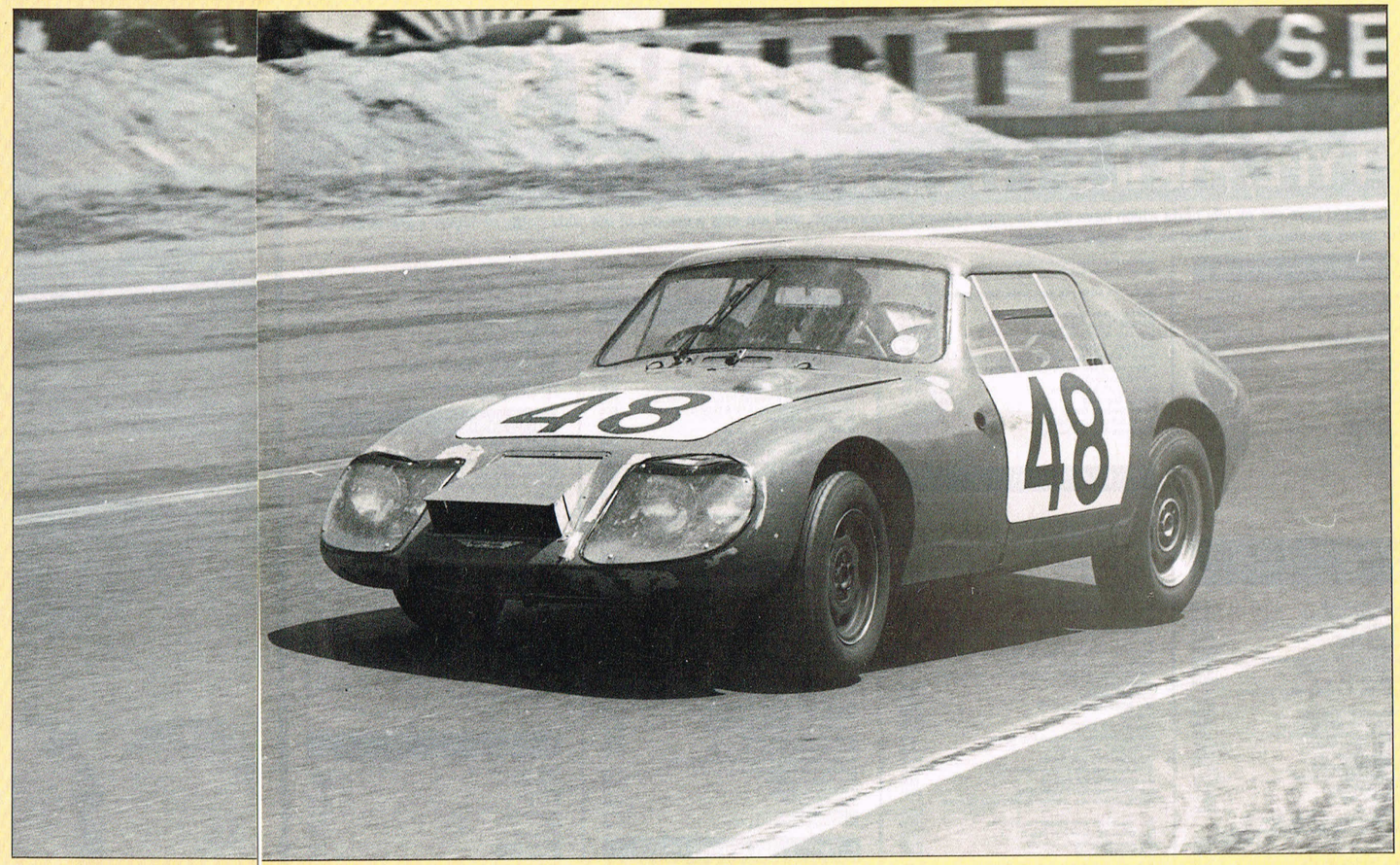
New standard front springs gave the right ride height and have proved satisfactory in use. The stiff front anti-roll bar which has been retained is in fact a standard Austin-Healey 3000 part. The original special rear springs, flatter and with fewer leaves than standard parts, needed to be reset. The lever arm dampers, adjustable on the rear, were all rebuilt.

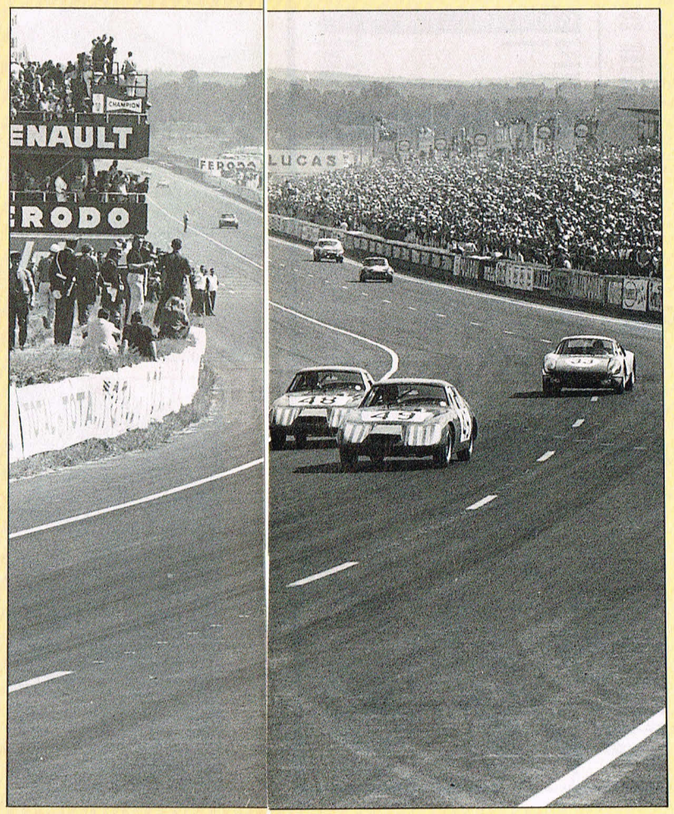
Rebuilding the brakes posed some problems: first of all the special brake master cylinder was one of only two made in 1965 but it was completely beyond repair. With much help from Lockheed, a replacement was found. At some point somebody had fitted Frogeye rear drum brakes. Jeremy Welch's research revealed that the rear brakes should be Wolseley 1500/Riley 1.5 drums, though some people think the 1965 Le Mans cars had discs all round like the later cars. It seems likely that Jeremy has got this right but there is still a chance that more information will be obtained. In testing he found that the small slave cylinders on these drums gave too much brake pedal travel. Correct slave cylinders, compatible with the master cylinder, have been fitted and the pedal travel is now as it should be. The front discs are standard Sprite parts.

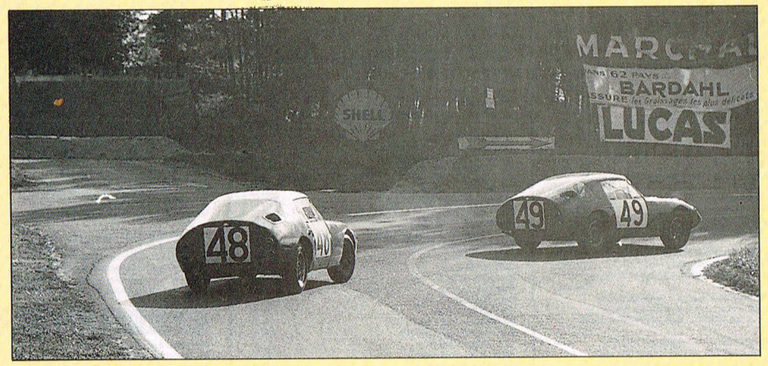
Everybody who has seen the car has been impressed: as John Rhodes said, "They have got it absolutely spot on."

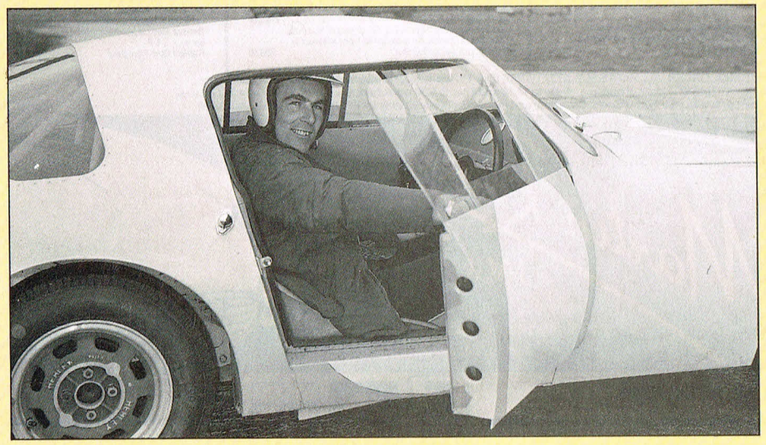
The first outing was the Historic Parade to Le Mans at the time of this year's race, a most fitting occasion for the car to reappear as it marked the car's 25th birthday: Denis took his wife on this enjoyable trip and, on the way, stopped to show me the car and allow me to drive it. On the road, the Sprite is very lively and responsive. It turns into corners extremely well; in fact its reaction to slight steering movements is almost instant and the stopping ability is very impressive, though I did make a note of the long pedal travel at the time. The very low weight makes the engine seem very potent: it accelerates well and it is obvious that the quality of the whole restoration is absolutely first class. At speed it certainly is a lively machine, and it feels as if it could flick about – one can easily imagine the effect of those GT40s thundering past! – but equally it would not be hard to catch.

Since then Jeremy Welch has demonstrated the quality of his work: in the Donington 100-mile event he finished seventh overall and second in class. He also drove it at the Silverstone international meeting and had the satisfaction of showing the car off amongst the large group of racing Austin-Healeys. The car is not for sale but the Welch family are currently looking around to see if there is a museum in which this fine little car could be displayed over the winter. It is surely an offer which any curator would be glad to take very seriously.









Opposite page, the Healey Sprites at Le Mans, 1965. Far right, Clive Baker in the original 1965 car which he shared with Rauno Aaltonen at Sebring