Roaring Raindrop

It's 40 years since MG's EX181 record-breaking car first sped across the Bonneville Salt Flats at over 240mph, piloted by Stirling Moss.

Imagine the scene, some 40 years ago, in August 1957, when MG took its last record-breaker to the desolate Bonneville Salt Flats in Utah, USA, in the hope of achieving 240mph from a tiny teardrop-shaped car fitted with a prototype 1489cc MGA twin-cam engine.

The Salt Flats—a vast shallow lake with a surface likened to a cross between desiccated coconut and concrete—had long been the venue for flatout racing endeavours. The enormous space and firm surface had obvious advantages over the alternative race circuits and beaches. Marked out over 14 miles by a perfectly straight line of black oil, the sight and sound of the teardrop-shaped projectile hurtling at high speed through the shimmering heat-haze across the white wilderness must have been surreal.

This wasn't the first such MG expedition, and nor would it be the last, but it would be the first time that a driver from outside the close coterie of MG associates would be the star attraction. The preliminary shake-down testing on the Flats was to be done by local hero Phil Hill, but the record-breaking proper was to be at the hands of Stirling Moss, the sensational British racing driver who was arguably at the height of his career.

For a while, the project went on the back-burner; in all probability because the launch of the MGA was so near. "Syd came to me and said that we'd have to get on with it," Mitchell recalls, "but nothing happened. So I asked him when we were going to do something, and he suggested that we came in on Saturday and have a look. I got together some aeroflit sections and had to decide what to do with them." Unbeknown to Mitchell, it transpired that Ennever—whose inventive mind was never rested—had MG's model maker, Harry Ferring, make up some models with much of his own ideas for record-breakers and even though Mitchell was working on the design for very few rounds, Ennever's models bore no relationship to what he was doing. "To be frank, I got the impression that Syd didn't seem at all interested in what I was doing or EX181" concludes Mitchell.

Once the basic packaging was settled—with the engine mid-mounted for compactness and stability—the work began on the basic frame. The chassis for EX181 included two massive 3½ inch diameter 14-gauge tubular steel side-members, which were made by Thompson Chassis of Wolverhampton. The rest of the frame was constructed of mainly 1-inch square section steel tubing which was drilled for lightness. "I remember MG Developments' Deputy Foreman Henry Stone doing the drilling," says Mitchell. "We'd have a short drill bit in a steady (air-powered drill) and spend hours and hours making all these holes everywhere. In fact, we tried to lighten the normal MGA in this way but we only saved about 1lb!"

When it came to the sleek 16-gauge Hiduminium 33 alloy-panelled body, the work was entrusted to Midland Sheet Metal of Nuneaton; recalls Mitchell, "I remember..."
Roaring Raindrop breaks cover

By the summer of 1957, EX181 was revealed to the eager motoring press and the car was soon dubbed the 'Roaring Raindrop' on account of its distinctive teardrop shape.

In July, it was announced that the car would be tested on the Bonneville Salt Flats by US Formula One driver Phil Hill, and for the 'proper' runs by Stirling Moss.

In the same month, Moss took time out of his busy schedule to visit Australia for a fitting, following which some minor adjustments were made to the seating and instrument positions. Soon after EX181 arrived in Australia, more than 24,000 miles had been undertaken on the Salt Flats.

Along with EX181, a re-worked EX179 was also taken to the Salt Flats, fitted with a 940cc A-series engine and liveried as a 'BMW Development Project'.

On Thursday 11 July, the driver of the car, Stirling Moss, had a change of heart and decided not to compete.

Following arrival in New York, EX181 was met by the local BMC and Castrol contingent, and the car was driven onto the Salt Flats four days later.

However, there were problems. Phil Hill found that inadequate ventilation allowed a heady mixture of fumes to invade the cockpit on the over-run, with very obvious safety implications for the unfortunate driver. The radiator was flapped open to allow fresh air into the cockpit.

The legendary Stirling Moss checked out the cockpit of EX181 in 1957. He later went on to pilot the car into the record books.

Above: EX181 was powered by a prototype 1486cc MG A engine, as engine wear was a major issue on the Salt Flats.


The legendary Stirling Moss checks out the cockpit of EX181 in 1957. He later went on to pilot the car into the record books.

Exhaustion and mechanical problems resulted in two dry runs being driven by Stirling Moss, who then handed the car over to Phil Hill. The car was then driven by a number of drivers, including Phil Hill, Jimmy Hillier, and Jimmy Cox.

The car was then sold to an American family and was later sold to a British collector.

Time from his other commitments - which, at the time, mainly comprised racing in Formula One - and so all eyes were on Moss's race at Pescara. Moss won the race in his Vanwall and flew straight out to Utah on Sunday 12 August, the intention being to have a crack at the record the very next day. However, Moss's arrival was met by heavy rain - clouds of thunder echoing across the eerie wilderness during the preceding days having given the team an ominous warning.

Thursday brought an improvement, with sunshine and a light wind slowly drying out the surface of the salt. But it was not until 5pm on the Friday that Moss could begin runs over the 14-mile course, carefully marked out with a narrow sliver of black engine oil. Official observers stood by with their 'Electromatic' timing equipment to ensure pinpoint accuracy. Moss set out northwards, only to find at the end of the run that the speed was below the target. The return run was better, so the runs were changed and EX181 was turned round for another northwards run.

This run proved eventful, as the witness reporter from Road & Track subsequently related: "As the car pulled away, the peculiar flat note of its exhaust dominated the air. First and second gear acceleration were clean as Moss throbbed the throttle, avoiding wheel spin. The first indication of trouble came as the car, now almost a mile away, was seen to waver slightly off-course. The sound of a free-revving engine followed. After a split-second search for a third speed that was no longer there, Moss found he still had fourth and kept going." The consequence of this hiccup was that the northward run and the subsequent return south were under par, and so another run was called for.

Here, as Road & Track went on to report, Moss proved his mettle: "With the run disappearing behind the mountain, and the run apparently over for the day, he insisted that the plugs be changed and something done about the final drive gears that were being cooked in their own oil from the overheated single disc brake. He then called Capt. Eyston for permission to take one more run. Permission was granted, and this last run was successful - a new record had been established at 248mph."

EX181's debut had been a resounding success, and a further visit to the Salt Flats would take place in October 1959, in pursuit of 260mph - but that's another story.
EX181 facts

**BODY**
- 18 gauge aluminium alloy over tubular steel frame

**ENGINE**
- Twin-cam based on BMC B-series, with Sherwood supercharger and twin SU carburettors. Sodium cooled exhaust valves
- **Capacity** 1488cc
- **Bore/Stroke** 73.025mm x 89mm
- **Maximum power** 290bhp at 7300rpm

**TRANSMISSION**
- TC Midget-based four-speed without reverse gear

**SUSPENSION**
- Front: Modified MGA independent coil and parallel wishbone with lever--arm dampers and rack-and-pinion steering
- Rear: Split elliptical-leaf springs and radius arms with lever-arm dampers. De Dion rear axle

**BRAKES**
- Single 10 inch diameter disc acting on rear halfshaft

**WHEELS**
- 15 inch diameter

**TYRES**
- 114mm wide Dunlops inflated to 60-65psi. 214 rolling diameter

**DIMENSIONS**
- **Length** 4610mm
- **Width** 1632mm
- **Height** 972mm
- **Wheelbase** 2438mm
- **Weight** 867kg
- **Fuel tank** 7.9 gallons

**PERFORMANCE**
- **Maximum Speed** 245.64mph (maximum officially recorded speed in 1957)
- **Fuel Consumption** 61 gallons per hour — about 4mpg

---

**SPEEDY HISTORY LESSON**

**MG has an enviable history of record-breaking cars**

From the early days, the men at MG were determined to maintain the marque's pre-eminence in the arena of record-breaking. These efforts began with EX120 in 1930 at the hands of Captain George Eyston, who took this diminutive car to speeds of 100mph plus, which at the time seemed unbelievable for a 750cc engine.

EX120 was followed by a new car — EX127 — known as the 'Magic Midget' which took more records in the early 1930s — and the larger EX125 — or 'Magic Magneto' — which was intended to take the battle into larger engine classes.

The record-breaking antics reached fever pitch during the late 1940s, when the baton was effectively passed to Major 'Goody' Gardner, who bought Eyston's car and had it rebodied to a design by Reid Railton. After the war, Gardner returned to record breaking, adopting the Bonneville Salt Flats as the venue for his runs from August 1951 onwards, until an accident forced his retirement at the age of 67 in 1952.

That might well have been the end of MGs forays into the record books. However, George Eyston was by now a director of33333, and still maintained a keen interest in the affairs of his old friends at Abingdon. So when it became apparent that sales of the TF Midget were flagging in the USA, Eyston put forward the idea of building a new record-breaker which could use a derivative of the TF's classic XPEG engine.

Also part of the equation was MG's own proposal for a replacement for the T-series. EX175 — which would eventually lead on to the MGA — was designed by Syd Enever, who had arranged for two chassis to be made up, one of which was clothed by Morris Bodies in what would, with subtle changes, become the definitive MGA of 1955. The second chassis was set up as a suitable basis for a new record-breaker, and so the process of its creation began. The body was inspired by the EX135, and the engine was prepared to Syd Enever's brief by Morris Engines.

Success with EX179, took to nearly 150mph at Bonneville in the hands of George Eyston and Ken Miles in August 1954, appeared to vindicate the agreement of BMC to sanction the production of the enlarged XPEG engine for an improved version of the TF. This slipped quietly into production in July 1958 as the TF 1500 (the Midget name having been dropped), gradually displacing the TF 1250 which continued in production until September. By now, though, BMC were listening to their dealers and MG too, and only 3400 examples of the TF 1500 were built before the MGA took its place.

In the meantime, as we have seen, with affairs more under its own control, MG decided to return to the Salt Flats with a totally new record-breaker — EX181, or the racing Raindrop.

*Top: EX181 on display in 1981. In the background are panels of EX135 (left) and EX127 (right). Right: Unlike some earlier MG record-breakers, EX181 had its own purpose-built chassis.*

---

**AN MG RECORD-BREAKER FOR THE MILLENIUM?**

October 1999 will mark the 40th anniversary of the MG factory's last record-breaking exercise, when the reworked EX181 (minus tail fins) returned to the Salt Flats and broke through the magical 250mph barrier.

It would be fun to contemplate a new record-breaker, based upon the mid-engined MGF and perhaps with a 1.5 litre engine derived from the 1.4-litre K-series engine.

With the benefit of 40 years of advances in material technology, 100mph might well be within the grasp of a new generation of talented BMW/Rover/MG engineers.

The car's name, EX224 — of course — the next number on the EX Register.

David Knowles' sketches suggest what an MGF-based record-breaker might look like. How about it Rover?