FIG. 1—THE START FROM CRYSTAL PALACE

LONDON—SYDNEY MARATHON

BY

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All automobile enthusiasts will have followed the London to Sydney Marathon both in the daily Press and in the motoring journals. From these they will be very conversant with the rigours of the journey, the excitements, the crowds, the thrills and of course the results. But what of the car itself? I am often asked whether a standard production car would have stood up to the marathon or not and my answer is that it would not. An indication of the work involved in conversion is that a further 200 per cent of the cost of the new car was spent on it, and this article tells you of the sort of work involved.

Our car, an Austin 1800, was given us new by the British School of Motoring and at once driven down to the old MG works at Abingdon where the Special Tuning Department of British Leyland stripped the car down to its component parts. The fact that a new car is stripped and completely re-built is not a criticism of the original builders but a token of the dedication of the fitters doing the preparation.

The unladen weight of a new 1800 is 2,500 lb but with a crew of three, spares, oil, water, etc., our car tipped the scales round 4,500 lb—an increase of 80 per cent. Also the car was prepared to be driven at speeds approaching 100 mph on rough tracks which may have caused it to jump 50 feet or more. Two tons dropping this distance can make quite a bang and it may well land on only one wheel first.

The all-spot-welded body seams were additionally arc-welded and extra supports were fitted to the jacking points, front and rear. Large front type

displacer units were fitted to all four wheels, an anti-roll bar was fitted to the rear and bump rubbers fitted to all four wheels. The roof was strengthened for the carrying of two spare wheels over the front seats, and hitching brackets fore and aft were fitted for large recovery vehicle hooks.

A new petrol tank of 26 gallons capacity was fitted into the boot and two pumps secured over it. Only one pump was connected electrically so that in the event of failure, one had only to change over the lead. The tank was filled through two Monza quick-release tank fillers fitted with padlocks. The petrol system was re-run inside the car for protection. The original petrol tank was replaced by a new one and used as a fresh-water tank, with the usual plastic shield over it and an SU pump supplying water to a tap under the dashboard. The filler cap was key operated which prevented over-enthusiastic petrol attendants filling the wrong tank.

The underneath of the car was shielded with a large engine protection plate of mild steel, direct onto the transmission case and then a rubber sandwich plate against the sump guard proper. This also protected the inner suspension mountings, drive couplings, exhaust manifold and gear change mechanism. The rear suspension mountings had skid plates fitted to prevent them being torn off, and the same was done for the silencer.

These guards, especially the sump guards, retain a large amount of heat normally dissipated and so it was necessary to fit an oil cooler and an extra radiator facing forward. The car was painted white to reflect the heat, except for the bonnet which was painted in non-shiny navy blue to prevent the glare.

The engine was a standard 1798 cc cylinder block, bored out to +0·040 in. and lightly honed, giving a capacity of 1846 cc. The centre 5/16 in. waterway between No. 2 and 3 bores (the most likely one to leak if any do) was blanked off. The cylinder head was a standard MG 'B' one (small valve) with hidural inlet and exhaust guides, nimonic inlet and exhaust valves and competition double valve springs. The combustion space 42·5 to 43 cc gave an approximate compression ratio of 9·6 to 9·8 to 1, quite high enough in view of some low octane petrol we were expecting. A hand-controlled ignition advance/retard was fitted, calibrated in octane numbers, just in case. The thermostat was removed and the blanking insert fitted. Special competition cylinder-head gasket, cylinder-head studs and thick head nut washers were used.

The pistons were four-ring, flat top with the top ring chrome, the second and third rings chrome with taper face and the scraper ring with a radial pressure of 350 lb/sq in.

Special competition nitrided crankshaft, main bearing set and con rod bearings were used but standard con rods, crack detected and balanced, with special bolts. The camshaft was the standard MGB one. The flywheel and the camshaft gear were both lightened and a standard 1800 S distributor was used.

We had two coils fitted (only needing to change over the head in the event of failure) special air cleaners, gearbox with latest production gears all crack detected, differential ratio 4·1 to 1, standard 1800 fan with blades shortened $\frac{1}{4}$ in., tappets set at 0·015 in., engine oil Castrol XXL 30/40, valve crash at about 6,700 rpm and approximate bhp developed at 5,500 and 6,000 rpm was 100.

Electrically we had a 35 amp alternator with breather and dust cover, a modified MGB starter, special waterproof battery, waterproof distributor, coil and alternator, two-speed wipers, two fog lamps, two European long range lamps, a battery condition meter, 80/60 headlamp bulbs, spot and fog lights wired to switch in with the dip switch or independently, a navigator's lamp, Mixo Minor horns with an extra floor-operated push in the centre of the front.

The brakes were fitted with harder pads and linings to resist fade with the extra weight and speed. The front and rear hydraulic pipes were run from

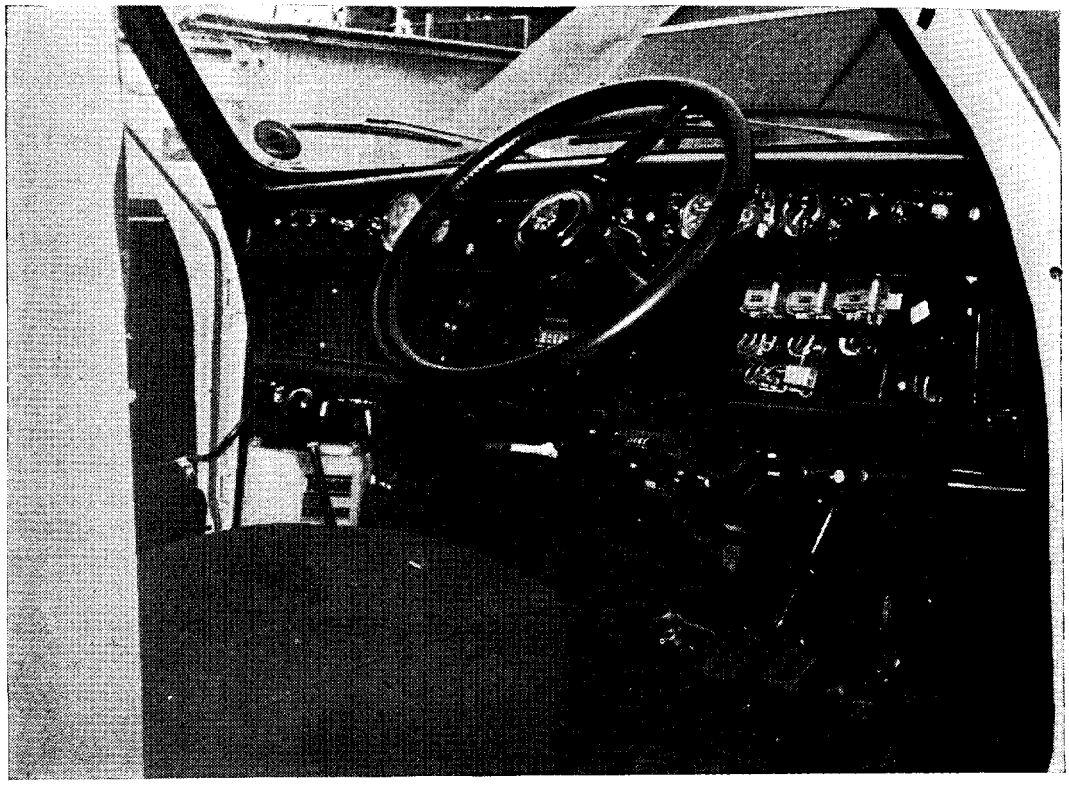

FIG. 2

separate master cylinders, so that in the event of failure we should not be left entirely at the mercy of the handbrake. When possible the brake pipes were run inside the body and the connecting flexible hoses were protected by spring steel coils. The hydrolastic suspension was also run inside the car and a small tank fitted in the boot with a pump on the rear shelf. With a connection in the rear floor area, one could pump up the suspension *en route* if required.

Instruments were re-grouped so that the driver had only the tachometer, oil pressure and water temperature in front of him (FIG. 2). The navigator had the mileometer/speedometer and most of the other instruments, including the Halda. The Halda Twinmaster is an accurate mileometer with two dials, reading to two places of decimals. You can run either dial or both dials either forward or backwards. Although the latter sounds odd, it is useful in the event of a navigational error; when you turn round to return to the correct route, reverse the Halda; when you get to the point on the right route where you left it, put it to + again and it will be reading correctly. The correct reading of the Halda is vital since the Route Book is based on accurate kilometers/mileages. A section of the book is shown in FIG. 3. The dot shows where you are approaching from and the arrow your way out.

There were a number of other alterations to the car which may be of interest. We had adjustable front shock absorbers; the heavy gauge rear and vertical engine mounting brackets had modified 45-degree angle rubbers; a bar was fitted from the radius arm alloy casing to the front of the wing valance; the top front suspension arms were fitted with Timkin roller bearings (instead of rubber bushes) and special bottom suspension arms with bushes. Our steering wheel was a 15 in. leather-covered wheel and the seats were rally type tilting high-backed ones. We had a tinted laminated windscreen, all perspex windows except the driver's, a heater pipe to the rear seat the top of which had been cut off to make room for a stowage for personal gear. The third crew member was supposed to sleep on the back seat, the floor space being taken up with

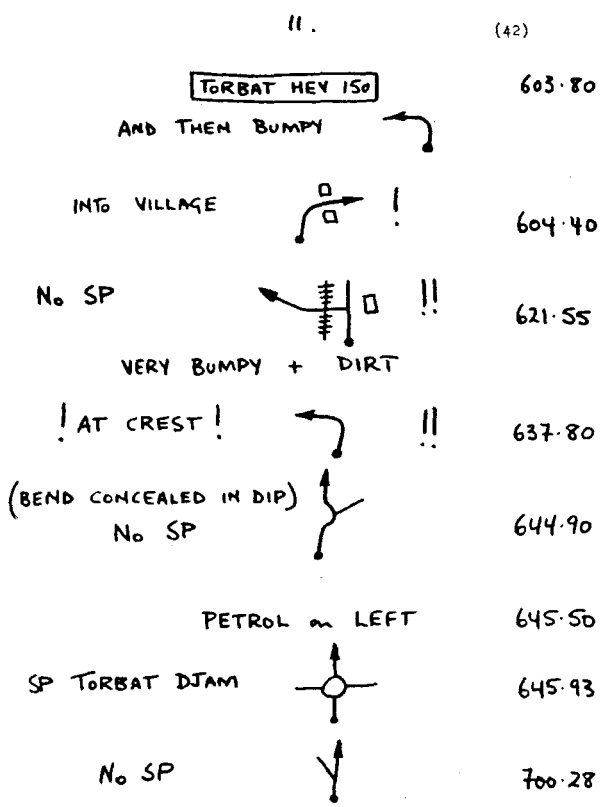

FIG. 3

food. We had a compass, a small 12-volt fan, a bonnet release inside the car, aluminium roll over bar, dipping driving mirror. We had Minilite wheels (magnesium alloy) and Dunlop SP 44 tyres. The boot was full of petrol tank, hydrolastic fluid tank, two spare wheels and a mass of spares. We had a spare fan belt clipped round the timing cover so as to reduce the time of renewal but even so it is no easy job.

We had a radio and tape recorder fitted on the navigator's side under the dash.

These were the main alterations done to the car and it may be of interest to discuss what went wrong. Remarkably few things went wrong and up until Bombay (7,500 miles) they were only the sort of things which occur on most of our long runs on a summer holiday. We had a number of punctures; in the mountains between Kandahar and Kabul the alternator started to fail and in the bitterly cold night we changed the fan belt, only to find a short while later that something was still wrong. By an incredible stroke of luck the engine stopped in such a position that we could see a stone jammed in the top pulley. The radio aerial was broken off by some enthusiastic well-wisher. The tape recorder became jammed solid with dust in Turkey and never played again; sparking plugs were renewed at Istanbul, Bombay and Gunbar; air filter elements were renewed at Bombay and Ceduna, clogged solid with dust; the horns fell off twice; the disc brake pads were replaced at Teheran and Quorn. The alternator air breather assembly continuously came loose; carburettor dashpots were always sticking due to the ingress of dust; the windscreen was cracked at Indore by some enthusiast lobbing half a brick at us. The special aluminium doors all gave trouble with their catches and locks. The bulkhead between the boot and the back seat was not petrol-tight and a great deal of petrol poured into the boot by enthusiastic natives seeped through into the back seat causing petrol burns to the person who was supposed to be asleep there, and a grave fire risk.

The only serious trouble occurred in Australia and we noticed this at Quorn. The right front wheel was touching the back of the mudguard. We thought at first that the mudguard had been bent by the tremendous hammering the car had taken. However, we noticed that the front right wheel was about $1\frac{1}{2}$ inches further back than the front left wheel. In a front-wheel-drive car, as can be seen from FIGS. 4 and 5, this is a complicated problem. Not only must the tierods have pulled or elongated their bolt holes but the upper suspension arm must have twisted in its bearings, or alternatively, have twisted its bearings. In our case these were roller bearings instead of rubber bushes. However, we

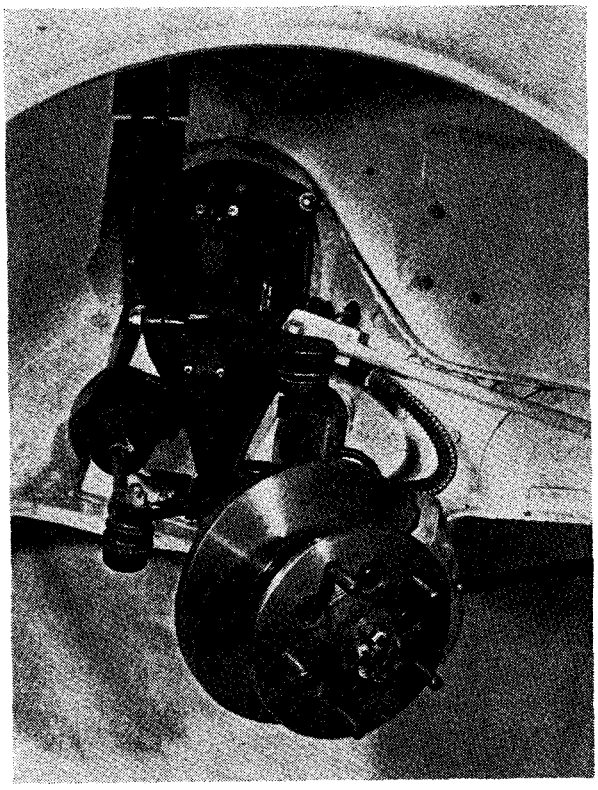

FIG. 4

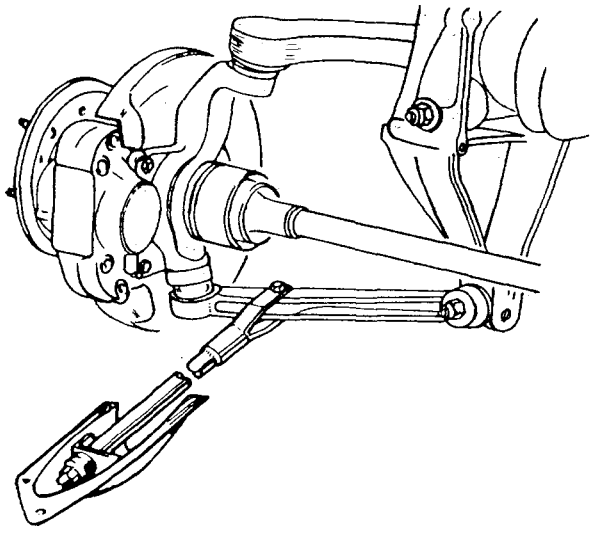

FIG. 5

had the assembly jacked for'd into its right position and a new tie-rod fitted. We took the second half of the trip across Australia with more caution than we would have liked to because we were afraid that something catastrophic might occur and we would not make Sydney.

One of the most annoying things that happened was the speedometer/mileometer packing up in Iran. The drive to this was the same cable as that of the Halda up to a point just behind the speedometer where they split. This meant that we were dependent entirely upon the Halda right through from Iran to Sydney. The tachometer, of course, gave us our speed, but as I have said before, accurate mileages and kilometers were essential. The British Leyland route book was written in kilometers to Bombay and in miles in Australia and so we had to change the drive wheels in Bombay. With no mileometer we decided to give the Halda a rest in Afghanistan since the road was good, navigation easy and should have been signposted. To our dismay from leaving Herat only one signpost, that at Kandahar, was in recognizable writing the whole way to Kabul and so we were driving 'blind' except for signposts which looked like this:-