

Austin-Healey

STREAMLINER



THEORY INTO PRACTICE.—The Austin-Healey Streamliner in full flight across the Salt Flats in the process of approaching within 0.6 m.p.h. the maximum speed predicted for it by Austin aerodynamic experts who tested the complete car in their wind tunnel before it left England.

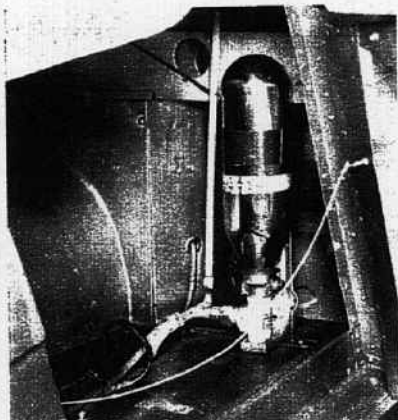
EVEN in these days when large saloons will surpass the 100 m.p.h. mark with heater and radio in full blast, any speed over 150 m.p.h. is still outside the experience of many racing drivers, while the rate of three miles a minute and over was beyond the reach of land speed record cars within the memory of most motorists. To reach 192.6 m.p.h. with a modified production car is therefore so outstanding an achievement that it is little wonder that many have assumed the Austin-Healey which achieved this speed at the Bonneville Salt Flats in Utah, U.S.A., was so modified as to bear little resemblance to the production Austin-Healey. This impression has no doubt been heightened by the much-altered appearance of the sleek, streamlined record-breaker.

In actual fact, although the building of a special streamlined record car was considered by the Austin-Healey works, time did not permit of its construction and a standard chassis and body unit had therefore to be used as the basis of the new car, but was given a new nose and tail and a bubble-type Perspex cockpit cover to improve its aerodynamic properties. The form these modifications should take was decided upon as a result of wind-tunnel tests undertaken by Sir W. G. Armstrong Whitworth Aircraft, Ltd., on a scale model. The completed car was later tested in Austin's own full-scale wind tunnel, and

as a result of these tests and of tests carried out on other cars Austin technicians were able to give an estimate of the potential maximum speed of the Streamliner. The record runs at Utah proved them to be just 0.6 m.p.h. out.

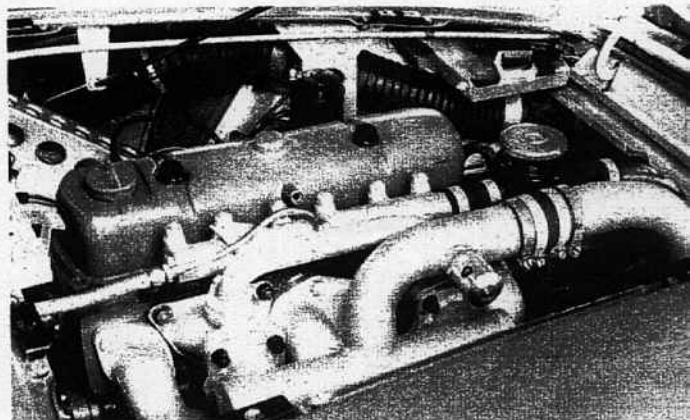
The new nose and tail were welded onto the body with such skill that the joins are quite difficult to detect and would in fact pass quite unnoticed by anyone who did not know of their existence.

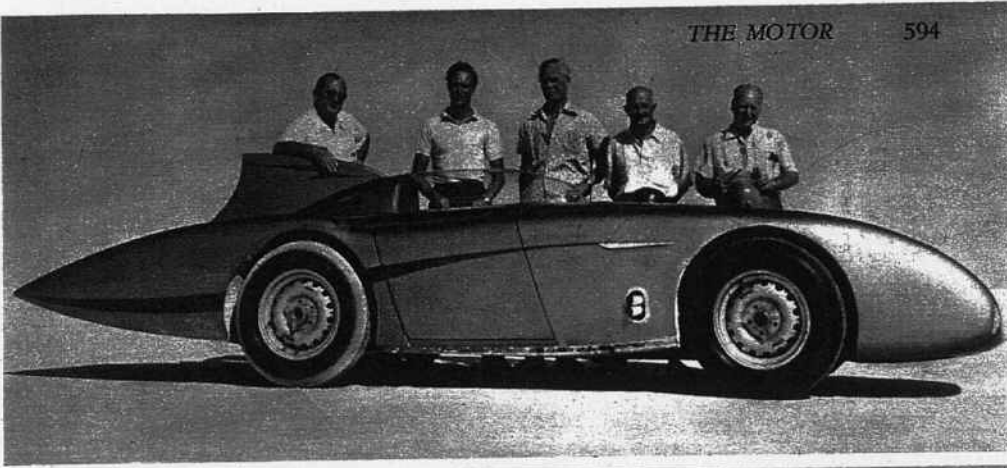
The engine is the type used in the new Austin-Healey 100S competition model described in *The Motor* of October 20, and has the nitrided crankshaft running in trimetal bearings and the special cylinder head with enlarged valves and special porting which are the outstanding features of the new unit. For the Streamliner, however, the head was lapped to the block, thereby avoiding the risk of gasket troubles, and the water flow was slightly modified. In all other respects, however, the engine was a standard unit, but its output was increased from the 130 b.h.p. at 4,700 r.p.m. of the normal 100S unit to 224 b.h.p. at 4,500 r.p.m. This spectacular increase was obtained by Dr. J. H. Weaving, head of B.M.C. Gas Turbine Research, who was responsible for the preparation and tuning of the engine. Most important decision he made was to supercharge the engine, and a stock Shorrock Type C250B was obtained literally off the shelf from its manufacturers and coupled direct to the nose of the



THE FIRE BRIGADE.—Heart of the fire precaution system is this extinguisher which is piped to both the engine compartment and the rear compartment housing the fuel tank.

AIR, FIRE AND WATER.—The induction side of the engine which had an S-type cylinder head. The blower relief valve will be noted in the foreground, also the curiously positioned water filler cap owing to the header tank being carried on the scuttle.





BEFORE AND AFTER.—The car being pushed out for its record attempt (right), returning in triumph (below left) and its satisfied crew (left).*

Austin-Healey Streamliner - Contd.

crankshaft by two Layrub couplings. Maximum boost available was about 8 lb., equal to a manifold pressure of 1.55 ATA. In the streamlined nose of the car was a special radiator core produced by the Coventry Radiator and Presswork Co., Ltd., a Tecalemit combined oil cooler and filter and an air intake for feeding fresh air into the cockpit via a large-diameter trunk.

Very Low Drag

The only other special component used was a five-speed gearbox with built-in overdrive which gave a top gear ratio of 2.2 to 1 with the 16-in. Dunlop disc wheels fitted. Dunlop disc brakes—standard equipment on the 100S—were also fitted and had to work for their living owing to the very clean form of the Streamliner; how clean may be appreciated from the fact that on one occasion the engine was cut at 180 m.p.h. and the car then coasted for over six miles.

A number of very sensible safety precautions were built in to the car as a result of Donald Healey's great experience of competition work. For instance, a complete Graviner fire extinguisher system was mounted for both the engine compartment and the fuel compartment in the tail where the 25-gallon tank was located. The system was fitted with both an impact switch which brought it into operation automatically in aircraft fashion should the



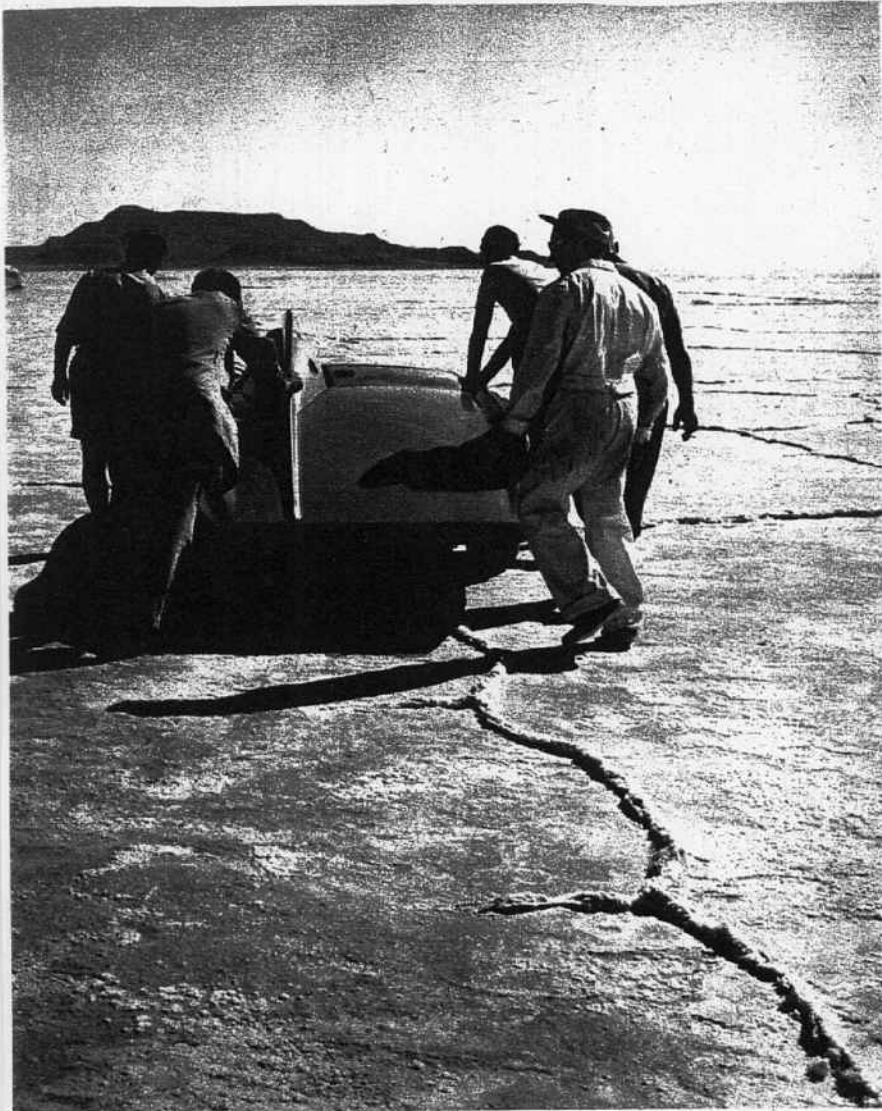
car sustain an impact above the set figure for the trigger switch, and with a driver-operated control in the form of a red push button which replaced the normal horn button in the centre of the steering wheel. This wheel, by the way, had to be specially built by the Austin-Healey works as it is of an odd, rectangular shape, for Donald Healey found that a normal wheel interfered considerably with his vision from the cockpit.

Other safety devices include a crash arch behind the driver, two levers, one on each side of the cockpit, to enable the driver to jettison the blister cockpit cover, and a special switch in the engine lubrication system which at once switches off the fuel supply

NIGHT AND DAY.

—Record attempts often involve much round-the-clock work for those concerned, and life is not made easier by the extremes in temperature experienced. The pushbutton, in the centre of the odd-shaped steering wheel, for bringing the fire-extinguishing system into action will be noted.





RECORDMEN.—George Eyston (right) asks Donald Healey how the car is behaving.



UNDER COVER.—Mortimer Morris Goodall and Geoffrey Healey shutting the Perspex cockpit blister while Donald Healey settles himself in the cockpit before setting off on a further run.

if the oil pressure drops below a certain figure, the idea being to prevent an outbreak of fire following an extensive engine blow-up.

On completion, the Streamliner was tested at an airfield by Geoffrey Healey at speeds up to 130 m.p.h., after which it was shipped to the Salt Flats. The condition of

the Salt Flats had deteriorated since the previous year, and it had been necessary to move the measured mile closer to one end of the timing stretch, thereby reducing the length of the run-in in this direction. Donald Healey drove the car on the straight-away runs and raised the International Class D records for 5 kilometres to 182.2 m.p.h., for 5 miles to 183.7 m.p.h., for 10 kilometres to 183.8 m.p.h. and for 10 miles to 181 m.p.h. The car was timed over the kilometre at 192.6 m.p.h., thereby breaking an American National record, but not the International Class D record, which is still held by a streamlined Mercedes-Benz which recorded 248.3 m.p.h. with Carraciola at the wheel in 1939. During one run, however, the Austin-Healey surpassed the magic 200 m.p.h. mark.

Great Circle Course

Then Carrol Shelby, the Texan driver who competed in many European events during the 1954 season, took over and attacked the International Class D record for the hour, which was duly obtained at a speed of 156.7 m.p.h. For this run, a 10-mile circle was used, a course which seemed almost one long straight when seen from behind the wheel of a normal saloon but which seemed more like a rather difficult fast bend from the Streamliner's cockpit. The car proved very stable, which was indeed fortunate, for conditions were by no means ideal, gusts of up to 30 m.p.h. sweeping across the Salt Flats. Moreover, owing to the complete absence of trees or any other vegetation, the driver receives no advance warning of a gust before it strikes the car. The tail fin proved of real value in such circumstances, the general opinion being that it would have been even more helpful if it had been made larger.

