

THE AUSTIN HEALEY "100" SIX.

Most members will no doubt be interested to hear something about the new Austin-Healey that was announced recently - so here goes.

The main changes in the car are that the well tried Austin six-cylinder engine has now been installed and two small seats have been installed in the rear of the car. These seats are designed primarily for children, but the writer has found it possible to squeeze two adults in these seats when returning from the local hostelry.

Naturally the new engine gives much smoother performance, and it would appear that although the initial acceleration will not have changed much, the top end performance is definitely much better than the old four-cylinder job. Petrol consumption remains virtually the same, and the necessary extra two inches in wheelbase and re-designed weight distribution have produced a car with vastly improved comfort, road holding and cornering ability. In fact, as John Bolster of "Autosport" puts it: "The new Austin-Healey must be one of the most comfortable sports cars ever built."

Great attention has been paid on this model to the weather proofing and it is quite definitely a water-tight and draught proof car. New sliding side curtains are fitted to allow ventilation and the hood fitting has also been modified extensively.

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In fact, generally speaking, we feel that this new car is going to be even more popular than the old one has been, and we understand that the Donald Healey Motor Company will be only too pleased to attend to our members' enquiries at both their London and Warwick offices, where the new car may be seen.

Donald Healey recently made a trip to the States for record attempts and, as most people will know, managed to bring back quite a bagful. The car which collected records in the region of 150 m.p.h. was a modified version of the new '100' Six - the main modification being some streamlining and raised compression and an extra carburettor on the engine.

Another car modified somewhat similarly and fitted with a super-charger achieved a speed of 203 m.p.h. when driven by our Patron himself. We feel that this was an extremely good method of demonstrating the high speed reliability of the new car and augurs well for the '100' Six.

THE AUSTIN HEALEY "100" SIX

Last month we gave you our own impressions of the new Austin Healey. Now, just for the record and for the benefit of anyone who actually missed it, we reprint the Road Test which appeared in the 'Autocar' on November 2nd, 1956. We are extremely grateful to the Editor of 'Autocar' for his permission to reproduce the article.

Several quantity-production sports cars are made today by the larger firms, and they incorporate power and transmission units similar to those used in their more sedate products. They have performance equal to that of pre-war specialist cars, but their price remains reasonable. The new Austin-Healey 100 Six, a logical development of its popular predecessor, falls into this category. The 2.6-litre four-cylinder engine has been replaced by the C series, 102 b.h.p., six-cylinder unit of fractionally smaller capacity, as fitted in the Austin A.105 saloon, and there are two additional forward-facing occasional seats for children.

Externally there is little noticeable difference between the old and the new - a sure indication of good basic design. The air inlet on the bonnet top and re-styled radiator grille - rather more ornate than in the past - bearing the unmistakable imprint of Longbridge, distinguish the 100 Six from the former Hundred at a quick glance. The wheelbase has been extended by 2in to 7ft 8ins, and this extra length sensibly has been incorporated in the door opening, thereby making for easier entry and exit. A fixed windscreen, neatly shaped and of quite large area, is now fitted.

The Austin engine is exceptionally smooth, and its useful torque range extends to very low crankshaft speeds. Thus the revised Austin-Healey is even more tractable than its predecessor, and is as much at home pottering about on a shopping expedition as speeding along routes nationales and autobahnen. For purely experimental purposes, one can move off from a standstill in top gear and accelerate in this ratio to over 100 m.p.h. without protest from engine or transmission.

The Laycock-de Normanville overdrive, which was fitted to the car tested, is an optional extra and operates on third and top gears only. It is allied with a 4.1 to 1 rear axle ratio, which confers an overdrive ratio of 3.19 to 1, whereas in standard form the final drive is 3.91 to 1.

Whilst many buyers will prefer to pay extra for the overdrive, the standard ratios would probably allow maximum speed to be reached more quickly and thus more often. During the road test it became standard practice to use first gear from rest, and to change up to second immediately the car was moving; normal third was engaged at approximately 40 m.p.h., and it was then simply a matter of flicking the facia-mounted overdrive switch to obtain overdrive third, a ratio which embodies a useable speed range between 15 and 90 m.p.h.

After accelerating in this ratio, little was gained by reverting to normal top (with simultaneous movements of gear lever and overdrive switch), and it soon became customary to shift from overdrive third to overdrive top. Downward changes

depended upon circumstances - either lever engagement of overdrive third, or an electric selection of normal top. There was almost imperceptible lag during the engagement of overdrive. Upward changes are made - and indeed are much smoother - if the throttle is kept open, as recommended by the makers. Half the pleasure of driving a high-gear car is lost if the gear box ratios and control are unsatisfactory. With 23.18 m.p.h. per 1,000 r.p.m. in overdrive top, the Austin-Healey is quite high-gear, but its gear box scores full marks on both counts and one welcomes excuses to use it.

With hood and side screens erect, the 100 Six proved to have about the same mean and one-direction maxima as its predecessor, when tested by *The Autocar* in September of 1953, but the car under review had covered only a nominal mileage, and might well improve on this when more fully run-in. It is understood that the same car, subsequent to our test, lapped the M.I.R.A. circuit in 2 min 15 sec (107 m.p.h.); and it is worth recalling that the four-cylinder car, which was the subject of our 1953 test, achieved a mean speed of 111 m.p.h. and a best speed in one direction of 119 m.p.h., after the windscreen had been removed and an aero screen and tonneau cover substituted. The 100 Six would doubtless react equally well to the same treatment. Although it has, on paper, some 12 b.h.p. in hand over the four-cylinder car, it weighs over three hundredweight more, and the acceleration figures are not quite so good. This may also result from differences in the torque curves of the two engines, and in the gear box ratios, the earlier car having a three-speed box with overdrive. Thus, although 80 m.p.h. from a standstill in 22.6 sec is creditable enough, the earlier car was more than  $4\frac{1}{2}$  sec quicker.

The combination of an unladen weight of 22 cwt., high gearing and a reasonable power-to-weight ratio provides the essentials for fast motoring with a moderate fuel consumption. In addition, it is difficult to drive this car to the stage where the crew become physically tired; it has, in fact, the traditional Seven League Boots. The suspension and road-holding are a combination of old and new, as is now expected with a modern sports car. There is little or no heeling over or tyre squeal on fast corners, and the ride is unexpectedly smooth, especially so on Continental pavé.

One is conscious of slight firmness only when travelling over indifferent surfaces with the tyres at the high pressures recommended for sustained fast cruising speeds. Steering characteristics are neutral as near as no matter, and one is able, on sharp bends, to promote a degree of oversteer at will by intelligent use of the throttle pedal. There is a satisfactory amount of self-centring action.

The clutch action is faultless; full throttle starts produced no slip, and at all times the engagement was smooth. The pendant pedal is set at a comfortable angle, and only average pressure is called for. The three pedals seem unnecessarily close together, and it was not possible to indulge in "heel and toe" gear changes. Brake pedal pressure is light, except for full energy stops, and the brakes are adequate to the usable maximum speed. They are not prone to fade or grab. The parking brake lever is close to the driving seat, but causes no interference with the driver's movements, and is very efficient.

The general comfort of the car is praiseworthy, except that the leather-trimmed seat cushions are rather too short to support the thighs adequately, and shallow, so that the driver becomes rather conscious of the seat frame beneath after travelling some 200 miles. Backrests, which hinge forward to give access to the rear seats, are a little flimsy, and do not provide the stiff lateral support which one expects in this type of car. The angle of the backrests, however, is excellent, and they are tapered to allow plenty of elbow room.

As compared with the previous model, there is more foot room for the driver, and it is no longer necessary for him to rest the left foot on the clutch pedal. The layout suits a tall driver better than a short one, for the relationship between seat and pedals is such that a short person, having adjusted the seat so that he can reach the pedals comfortably, will find himself too close to the steering wheel.

The short, rigid gear lever, which protrudes from the left side of the gear box cover, is easy to reach and delightful to use. The movements between gears are short and precise, and the box is mechanically very quiet. The crew sit well down in the car, and there is excellent weather protection. The windscreen is a fixture, whereas the previous screen could be lowered along the scuttle to decrease frontal area during high-speed runs; and there are improved, rigid-framed sidescreens with sliding Perspex panels.

Raising and lowering the hood is a rather long and involved procedure. It would be impossible to raise the hood in the event of a sudden shower without the crew getting wet, and this would be more than ever true if the driver were travelling alone and had to do the job himself. Once up, however, it is extremely taut, and the leading edge of the hood is particularly safely secured to the top of the windscreen frame. With hood and sidescreens erect, the car is commendably quiet up to 80 m.p.h.; above this, wind noise becomes much more evident and conversation correspondingly more difficult.

Visibility with the hood up is excellent, but the height of the rear view mirror above the scuttle is insufficient to make full use of the large rear window panel. One is not conscious of any draughts in the car when closed; in fact, after some miles of fast driving, the cockpit is apt to become rather too warm, even when the fresh-air intake is opened. The two rear seats are suitable for small children, and it is possible for an adult to sit across the car. He would, however, find his head well above the windscreen level, and with the hood erect would be unable to sit upright.

Provision of these seats has restricted the volume of the luggage locker, which now also houses the spare wheel and battery, and it is virtually impossible to stow even a small suitcase. The wisdom of placing the battery there also seems questionable. The occasional seats, moreover, have a central hump which likewise prevents a suitcase from fitting there, and this lack of properly shaped luggage accommodation might prove a severe handicap for the many who will be driving their Austin-Healeys on trans-Continental marathons. Such inadequacy of baggage space calls for the use of an external rack, but a more satisfactory solution might be to arrange external stowage of the spare wheel when it is necessary to carry extra luggage.

Stowage for small articles in the cockpit is provided by a deep pocket in each door and a shelf below the left side of the fascia panel. Part of this shelf is, somewhat unexpectedly, occupied by the screen-wash bottle. Locking of the doors is rather awkward, for the left door locks with the ignition key, and the right by means of a small interior catch. It would be better if this arrangement were reversed, or if both doors could be locked by the key, since it is none too easy for the driver to move over the central gear box hump and handbrake.

The instrument panel is well laid out, and the dials easily read and well lit. There is no rheostat switch, but the lighting is not strong enough to annoy the driver, nor is there any reflection in the windscreen. In full ahead and dipped positions the head lamps earn good marks, and the twin high-frequency horns have powerful notes. The windscreen wipers are efficient, and clear a reasonable area of the screen. The ribbed tonneau cover is

exceptionally neat, and can be used with the driver only in the car. An improved feature is that the fuel tank filler is now on the outside of the body rather than inside the locker, and that it can take the full flow from a garage pump; the cap, however, proved difficult to release or replace.

The Austin-Healey 100 Six is fast, safe, efficient and easy to drive. It is equally well suited to the elderly owner who has no intention of travelling at 100 m.p.h., but enjoys driving for its own sake and prefers it with a breath of fresh air, and to the younger sportsman to whom speed and acceleration mean almost everything. Any who seek even more performance than the car offers in standard form will know that the engine has a considerable untapped reserve, and that the car as a whole is exceptionally tough.

PERFORMANCE

ACCELERATION: from constant speeds.  
Speed Range, Gear Ratios and Time in sec.

M.P.H.	*3.19 to 1	4.1 to 1	*4.25 to 1	5.46 to 1	7.84 to 1	12.61 to 1
10-30 ...	-	7.7	-	5.8	4.2	3.4
20-40 ...	10.2	7.7	7.6	5.8	4.0	-
30-50 ...	10.6	8.0	7.8	5.8	4.9	-
40-60 ...	11.8	8.3	8.1	6.5	-	-
50-70 ...	12.6	8.8	8.7	7.9	-	-
60-80 ...	14.7	10.6	10.7	-	-	-
70-90 ...	19.2	15.3	16.0	-	-	-

\*Overdrive

From rest through gears to:

M.P.H.	sec.
30 ...	4.3
50 ...	9.3
60 ...	12.9
70 ...	17.5
80 ...	22.6
90 ...	32.3

Standing quarter mile, 18.8 sec.

SPEEDS ON GEARS:

Gear	M.P.H. (Normal and max.)	K.P.H. (Normal and max.)
O.D. Top (mean)	103	165
(best)	107*	172
Top (mean)	98.5	158
(best)	101	162
O.D. 3rd	80-95	129-153
3rd	60-73	97-117
2nd	40-50	64-80
1st	24-31	39-50

\*See text

TRACTIVE RESISTANCE: 16 lb per ton at 10 M.P.H.

TRACTIVE EFFORT:

	Pull (lb per ton)	Equivalent Gradient
Top	244	1 in 9.1
O.D. Third	402	1 in 5.5
Third	464	1 in 4.7
Second	579	1 in 3.7

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BRAKES (at 30 m.p.h.)

Efficiency	Pedal Pressure (lb)
49 per cent	30
66 per cent	50
79 per cent	75
85 per cent	130

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FUEL CONSUMPTION:

23.3 m.p.g. overall for 941 miles (12.12 litres per 100 km).  
Approximate normal range: 20-27 m.p.g. (14-10 litres per 100 km).  
Fuel, first grade.

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WEATHER: Cloudy, slight headwind, dry tarmac surface.  
Air temperature 58 deg F.  
Acceleration figures are the means of several runs in opposite directions.  
Tractive effort and resistance obtained by Tapley meter.  
Model described in The Autocar of September 28, 1956.

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SPEEDOMETER CORRECTION: M.P.H.

Car speedometer:	10	20	30	40	50	60	70	80	90	100
True speed:	13	20	29	38	48	58	68	78	87	96

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DATA

PRICE (basic), with occasional four-seater body, £762.  
British purchase tax, £382. 7s.  
Total (in Great Britain), £1,144 7s.  
Extras: Heater £23 5s. inc. P.T.  
Overdrive: £69 15s inc. P.T.  
Wire wheels and Road Speed tyres £46. 10s inc. P.T.

ENGINE: Capacity: 2,639 c.c. (161 cu in).  
Number of cylinders: 6.  
Bore and stroke: 79.4 x 89.0 mm (3.125 x 3.5in).  
Valve gear: overhead valves and pushrods.  
Compression ratio: 8.25 to 1.  
B.H.P.: 102 at 4,600 r.p.m. (B.H.P. per ton laden 81.1).  
Torque: 142 lb ft at 2,400 r.p.m.  
M.P.H. per 1,000 r.p.m. on top gear 18.08.  
M.P.H. per 1,000 r.p.m. on overdrive 23.18.

WEIGHT: (with 5 gals fuel): 22 cwt (2,478 lb).  
Weight distribution (per cent): F, 49; R, 51.  
Laden as tested: 25 $\frac{3}{4}$  cwt (2,803 lb).  
Lb per c.c. (laden): 1.06

BRAKES: Type: F, two-leading shoe; R,  
leading and trailing.  
Method of operation: F, hydraulic; R, hydraulic  
Drum dimensions: F, 11 in diameter; 2 $\frac{1}{4}$  in wide.  
R, 11 in diameter, 2 $\frac{1}{4}$  in wide.  
Lining area: F, 95 sq in. R, 95 sq in (151.8  
sq in per ton laden)

TYRES: 5.90-15 in.  
Pressures (lb per sq in): F, 20; R, 23 (normal).  
F, 26; R, 29 (for fast driving).

TANK CAPACITY: 12 Imperial gallons.  
Oil sump, 12 pints.  
Cooling system, 20 pints (plus 1 pint if heater is fitted).

TURNING CIRCLE: 35 ft 0 in (L and R).  
Steering wheel turns (lock to lock): 2 $\frac{3}{4}$ .

DIMENSIONS: Wheelbase: 7 ft 8 in.  
Track: F, 4 ft 0 $\frac{1}{4}$  in; R, 4 ft 2 in.  
Length (overall): 13 ft 1 $\frac{1}{2}$  in.  
Height: 4 ft 1 in.  
Width: 5 ft 0 $\frac{1}{2}$  in.  
Ground clearance: 5 $\frac{1}{2}$  in.  
Frontal area: 16.6 sq ft (approximately) with hood up.

ELECTRICAL SYSTEM: 12-volt; 51 ampere-hour battery.  
Head lights: Double dip; 42-36 watt bulbs.

SUSPENSION: Front, independent with coil springs  
and wishbones, anti-roll bar.  
Rear, half-elliptic leaf springs and Panhard  
rod.