

## Volvo 122 1,780 c.c.

**I**N reporting on our industry's overseas rivals one is faced with two problems that do not exist so far as British cars are concerned. The first is to overcome—without appearing to do so—an inherent prejudice against foreign cars that is possessed by many British motorists. The second is to ensure that, in doing so, one does not appear guilty of having an in-built bias in the opposite direction—an extremely difficult compromise to strike if the “foreigner” in question is a particularly good one. It is perhaps best first to outline the salient points, before going into details of the road test findings, and locate the Volvo 122 in the general motoring picture, so that readers can assess the car themselves, comparing its specification and price with those of known makes and models.

The car falls into the 1,600 to 2,000 c.c. category for competition purposes, with its engine capacity of 1,780 c.c. This larger engine was introduced last October as an alternative to the 1,582 c.c. unit of the 122S model, the re-engined version then becoming the 122S B18. This has recently been redesignated the 122. With a compression ratio of 8.5 to 1, and output of 90 b.h.p. at 5,000 r.p.m. it is, in fact, a somewhat detuned version of the 100 b.h.p. unit used in the P1800 G.T. coupé. The new engine gives the car a mean maximum speed of 94.7 m.p.h., and a best in one direction of 99.5 m.p.h., a fair turn of speed for a 4-5-seater family saloon, with no pretensions to being a sporting car.

Girling disc brakes are fitted to the front wheels of the

122, and other improvements include a changeover from 6- to 12-volt electrical system, a larger clutch to deal with the extra power, a new headlamp flasher, right-hand drive for the British market, and an optional Laycock-de Normanville overdrive, operating only in top gear.

In general conception, there is nothing out of the ordinary about the Volvo's unit construction, coil-spring and wish-bone independent front suspension, coil-spring and live axle at the rear, and its straightforward pushrod overhead valve four-cylinder engine. In its basic form, however, the car incorporates a great many features which one has grown to look for as optional extras on cheaper cars and as standard equipment only on the considerably more costly.

As might be expected of a firm which pioneered the standardization of such equipment, seat belts are provided, of a particularly convenient design embodying the lap and diagonal strap layout. Cigar lighter, heaters, headlamp flasher, two-speed (and particularly good) windscreen wipers, screen washer, map-reading lamp, radiator blind, rheostat control to the panel lights, and front seats with three-position adjustment to the backrests' rake (as well as the normal fore-and-aft movement of the seats as a whole), all these come with the car. The sole items listed as optional extras are the Laycock-de Normanville overdrive, the radio and a brake servo.

The basic price ex-works in its native Sweden is £855, which, with the addition of import duty and British purchase tax, increases to £1,293 10s 3d (£1,376 0s 3d with overdrive) in this country.

First impression of the car—and an impression that grows as one gets better acquainted with it—is that everything about it is extremely serviceable, strong, and well finished. There is no polished timber, no leather, and there are no pile carpets, but there is an excellent moulded-rubber floor covering which fits perfectly, is almost indestructible, and is very easy to clean; the facia is topped with a matt-black non-reflecting plastics material, the instruments being grouped directly ahead of the driver beneath a hood. The driving position is good, the wheel being more nearly vertical

### PRICES

Basic (with 4-door saloon body) ... ..	£940
Purchase Tax ... ..	£353 10s 3d
<b>Total (in G.B.)</b>	<b>£1,293 10s 3d</b>
Extras	Basic Inc. Tax
Laycock-de Normanville overdrive ...	£60 £82 10s 0d

# Autocar road test • No. 1872

Make • **VOLVO** Type • **122 Saloon**

Manufacturer : A.B. Volvo, Gothenburg, Sweden

Concessionaires : Volvo Concessionaires Ltd., 28 Albemarle Street, London, W.1

### Test Conditions

Weather ..... Dry and sunny, 5-10 m.p.h. wind  
 Temperature ..... 32-36 deg. F. (0-2 deg. C.)  
 Barometer 29.85in. Hg.  
 Dry concrete and tarmac surfaces.

### Weight

Weight (with oil, water, and half-full fuel tank)  
 21.4cwt (2,394lb—1,085.6kg).  
 Front-rear distribution, per cent: F, 54; R, 46.  
 Laden as tested ..... 24.4cwt (2,730lb—1,238.6kg).

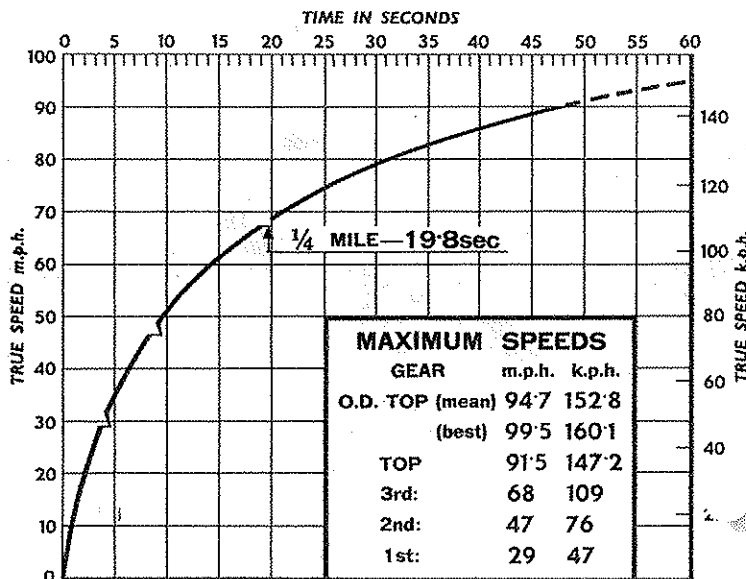
### Turning Circles

Between kerbs ..... L, 34ft 5in.; R, 34ft 0in.  
 Between walls ..... L, 36ft 4in.; R, 35ft 11in.  
 Turns of steering wheel from lock to lock..... 3.5

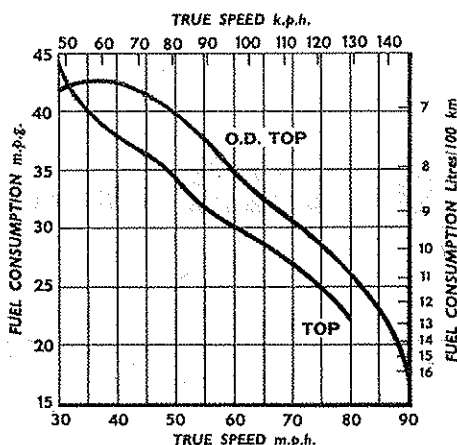
### Performance Data

Overdrive top gear m.p.h. per 1,000 r.p.m. .... 21  
 Top gear m.p.h. per 1,000 r.p.m..... 16.2  
 Engine revs. at mean max. speed..... 4,520  
 Mean piston speed at max. power .....2,760ft/min  
 B.h.p. per ton laden ..... 65.7

### MAXIMUM SPEEDS AND ACCELERATION (mean) TIMES



### FUEL AND OIL CONSUMPTION



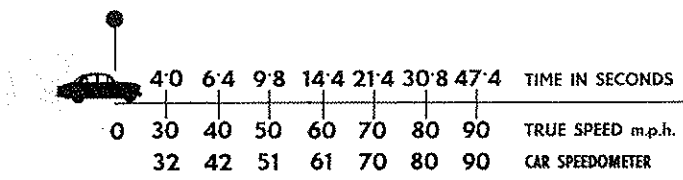
FUEL ..... Premium grade (97 octane RM)

Test Distance ..... 1,342 miles

Overall consumption ..... 25.3 m.p.g. (11.16 lit/100 km.)

Normal Range ..... 24 to 32 m.p.g. (12.8-8.83 lit/100 km.)

OIL: SAE 30 ..... Consumption, 10,000 m.p.g.



### Speed range and time in seconds

m.p.h.	O.D. Top	Top	Third	Second	First
10-30	—	—	7.3	4.4	—
20-40	13.5	8.8	6.5	4.6	—
30-50	14.1	8.9	6.4	—	—
40-60	14.5	9.4	8.0	—	—
50-70	17.8	11.4	—	—	—
60-80	—	14.9	—	—	—
70-90	—	26.0	—	—	—

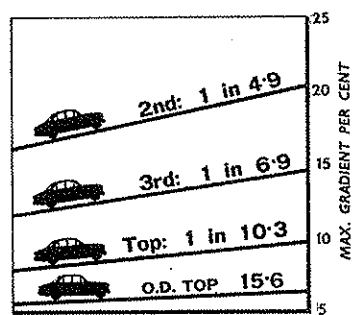
### BRAKES

Pedal load	Retardation	Equiv. distance
25lb	0.14g	216ft
50lb	0.33g	90ft
75lb	0.50g	62ft
100lb	0.74g	40ft
150lb	0.83g	36ft

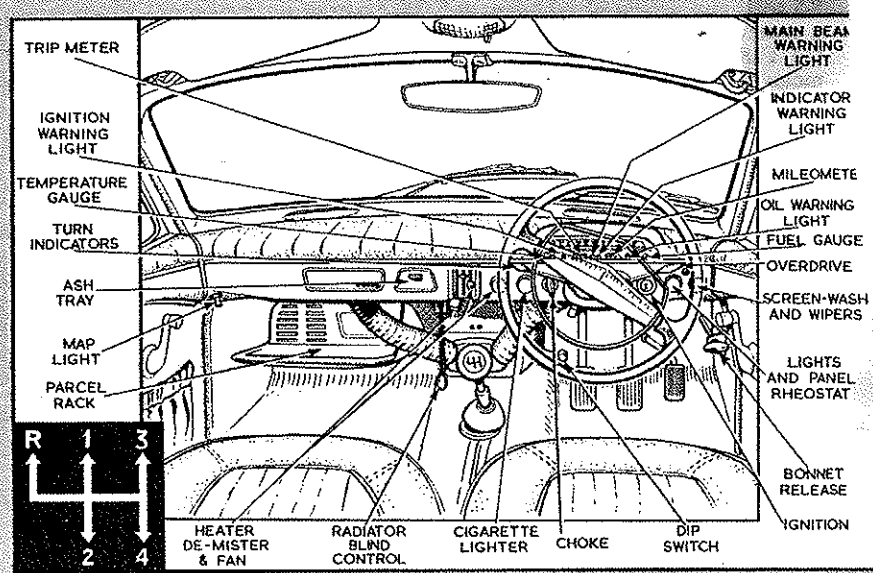
### CLUTCH

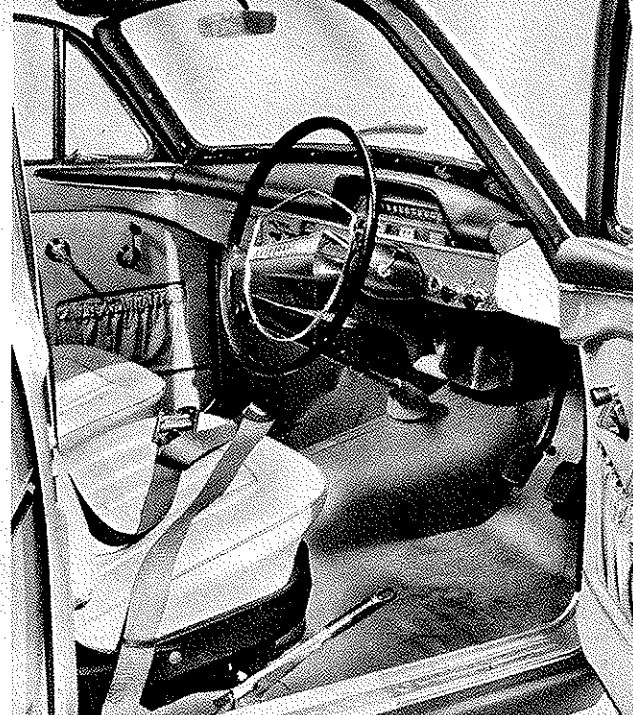
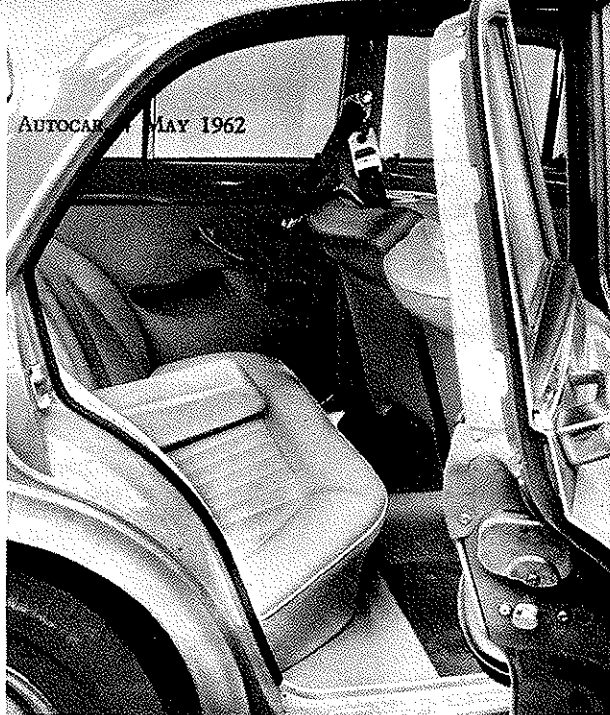
Pedal load and travel—50lb and 4.75in.

### HILL CLIMBING AT STEADY SPEEDS



GEAR	O.D. Top	Top	3rd	2nd
PULL (lb per ton)	146	215	320	453
Speed range (m.p.h.)	36-40	35-40	32-37	27-33





Passengers are particularly well cared for in regard to comfort, leg-room and protection in the event of a sudden stop. Floor coverings are of strong, padded rubber; front seats are separately adjustable; seat belts are standard; instruments and controls are all within comfortable reach of the driver

than usual; and the range of seat adjustment is enough to give the ideal semi-straight-armed "stance" to drivers of widely differing shapes and sizes.

Throughout the interior is evidence that the manufacturers have had passenger safety very much in mind. All along the scuttle edge, for example, there is a very firmly padded roll which seems strong enough to keep the occupants off the underlying metal even in cases of severe impact. Over the front passenger's feet is a useful parcel shelf which, too, has a padded edge, and is made of a firm but collapsible material. The sun visors are soft and pliable, and the steering wheel, with its single, broad, horizontal spoke, is designed to present the largest possible flat area to the driver's chest on impact. Finally, the car clearly has been designed from the start with seat belts in mind; there is not a switch or control normally used in driving that cannot be reached easily when one is held in the driving seat.

Door handles and window winders are well placed, high up on the doors; and the swinging ventilator panels in the front doors—"Point of entry No. 1" in the car thief's *mecum*—have locking safety catches. There are perhaps too many warning lights of one sort or another disposed along the instrument panel—ignition, main beam, traffic indicators, oil pressure and overdrive. It is odd that the overdrive light should be red, a colour which is universally accepted as a signal that something is wrong. Until one remembers that the Volvo is by no means a sporting car, one finds oneself feeling that the horizontal, moving-column speedometer is strangely out of character. This instrument proved to be 100 per cent accurate at speeds from 70 to 100 m.p.h.

### Quick to Warm Up

Throughout the test period the engine started immediately, usually without the use of the choke, though once or twice after a night in the below-freezing open it required momentary use of this control. It warms up quickly, helped if necessary by the radiator blind, and develops its full power very soon. It is one of those rare cars in which one feels at home immediately, driving it well from the start, without having to go through the usual period of acclimatization.

The engine is smooth and reasonably silent at all normal speeds and degrees of throttle opening, though it becomes somewhat more obtrusive when the throttle is opened fully or at high speeds. Presumably this is due to the lack of silencing by the small pancake-type air filters on the two

S.U. carburetors, compared with the more usual, large cleaner-silencer found on family saloons. The car responds immediately to the throttle, and will pull away perfectly happily from a standstill in second gear; first gear, in fact, is superfluous save in very hilly countries, or where a great deal of dead-slow traffic crawling is required, for it is very low.

Apart from this, the four ratios are well spaced, giving maximum speeds of 29, 47, 68, 91.5 m.p.h. There is synchromesh for all four gears, and even during the particularly harsh conditions of the test the synchromesh was unbeatable. The substantial central gear lever is spring loaded into the right-hand plane of the "gate," so that provided only fore-and-aft pressure is used it will select only top or third gears. The gear change is excellent, being clean and precise, the slight extra pressure required to move the lever over to the second-first plane being negligible; yet it is sufficient to prevent one selecting first gear when trying for third, a possibility with synchromesh on first.

### Stronger Clutch

The clutch pressure is light, and with the increase in plate diameter to 8.5in. introduced with the larger engine, it will stand full throttle gear changes without superfluous slipping; it has no trouble whatever in moving the car away on a 1-in-3 test gradient without any undue revving of the engine. There were no vibration periods in the engine, though there was a light rumble, or tremor, from the transmission at all speeds.

Without the optional servo assistance, the brake pedal load was somewhat on the heavy side, particularly for a woman driver, and it would improve driving ease if this extra were fitted. Apart from this, the brakes provided plenty of "feel" through the pedal, showed no signs of fade within the relatively demanding conditions of use during the test period, and gave powerful straight-line stopping power that was fully up to the car's performance. However, the rear wheels would lock when the brakes were applied really hard at low speeds, pedal pressures of over 100lb being required to produce this. The rear wheels would bounce or patter, and the impression that the rear damping may have been at fault is confirmed by the car's performance over a single artificial hump, the rear wheels bucking, and being thrown clear of the road.

The handbrake lever is very well placed, horizontally to the right of the driving seat. A sensible guard to the release button prevents it being touched accidentally into the "off"





The rear window's shape is repeated in that of the driving mirror, so that the rearward view is first class. Mud flaps protect following traffic in wet weather. A reversing lamp is not included as standard in the specification

position; and the handbrake held the car on a 1-in-3 test gradient, facing either uphill or down. It is also powerful enough to pull the car up reasonably quickly should the main braking system fail.

Suspension is fairly firm at low speeds and over the smaller bumps; yet at high speeds and over long-frequency irregularities the ride is unexpectedly soft and very comfortable. There is, however, rather excessive road noise on certain types of surface. At 25 m.p.h. over a washboard surface the ride was rough, as in any car, but at 45 m.p.h. it levelled off to the extent that the passenger was able comfortably to write perfectly legible notes. This was also the case over the extremely rough *pavé*, on which the suspension behaved better than most. Driven as a family saloon, the Volvo provides extremely effortless motoring; and even driven as a sports car it requires very little more concentration.

Light, even at manoeuvring speeds in heavy traffic, the steering is very positive and precise and transmits almost no road shocks, though one can feel through the steering wheel exactly what the car is doing, and when the tyres are nearing the limit of adhesion. There is little roll on corners, and to all intents and purposes the steering is

neutral, with perhaps a shade of understeer that is not normally apparent. Curiously, the Firestone tyres fitted as standard do not give the grip in wet weather that one would expect after sampling the performance in the dry; a driver who is proposing to treat the car as more than a workaday family saloon might do well to take advice on other tread patterns.

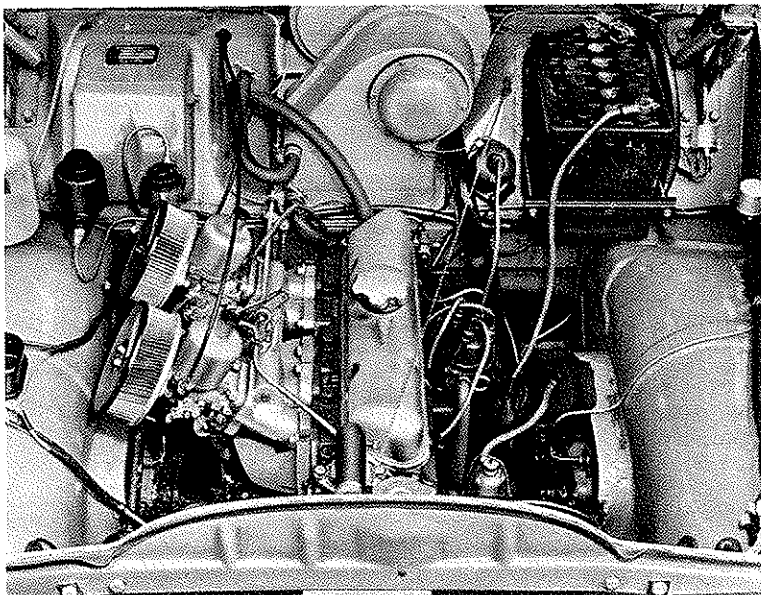
Though a child can be carried in relative comfort in the middle of the rear seat, or a fifth passenger on short journeys, the bodywork is essentially for four, those on the rear seat having ample leg room by virtue of the big recesses beneath the separate front seats. The upholstery is deep and comfortable, both at the back and front, though sometimes one gets the impression on cornering that the backrests of the front seats are scarcely secure enough. Closer inspection reveals that the framework is perfectly rigid, but that the backrests' side-pads flex sideways and thus one loses support in cornering, unless using the seatbelts. There is no doubt, however, about the comfort and quality of the upholstery; the squab shape is excellent, and after a long run occupants have no signs of stiffness.

### Fuel Economy

Despite a performance that is nothing short of amazing—completion of the standing start quarter-mile in 19.8sec, and reaching 30 m.p.h. from rest in 4.0sec and 60 m.p.h. in 14.4sec—the fuel consumption is very reasonable indeed. On the M1 Motorway, at cruising speeds between 75 and 85 m.p.h., the car gave a figure of 26 m.p.g., and at a fast-touring average over give-and-take roads this figure increased to almost 30 m.p.g. With the 10-gallon tank capacity, a range of some 250 miles between refills could be expected. For the 1,500-mile road test period the overall consumption worked out at 25.3 m.p.g.—much better than many a smaller car with a lower performance can achieve.

The Laycock overdrive on the car tested was well adjusted, and engaged remarkably smoothly whether under power or not. It is a true overdrive, in the sense that it is a fuel- and engine-saving gear for cruising, and not merely a higher top gear. As a result, the car's performance in this ratio is influenced very much by winds and gradients. In still air, for example, it will reach 94.7 m.p.h. in overdrive top, and 91.5 in normal top. Against a slight headwind, however, the time taken from 70 to 90 m.p.h. in overdrive was 97sec—compared with 27.3sec in the opposite direction; a while later, when the wind force had increased, the car would not even reach 90 m.p.h. in overdrive top, whereas it would do so in normal top.

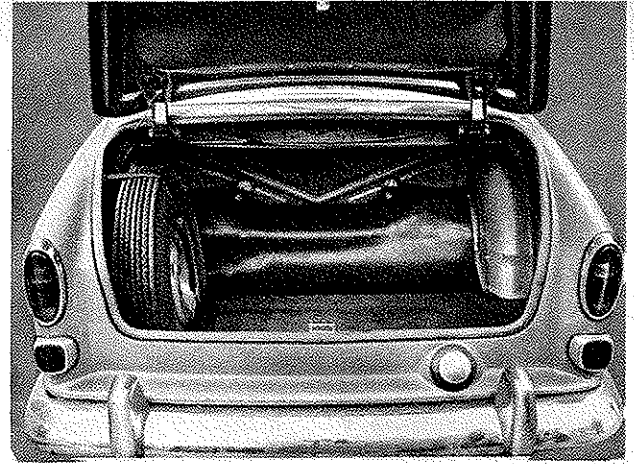
Underbonnet accessibility is excellent, as this photograph shows. Attention has been paid to the finish throughout the engine compartment, the engine being painted scarlet, with aluminium valve cover



Those who preserve their copies of *Autocar* Road Tests will no doubt be as surprised as were the road test staff to find that the 1,583 c.c. Volvo Amazon, tested on 6 June, 1958, out-performed the current larger-engined car on every one of the standing-start acceleration figures. Only on the standing quarter-mile was the current car quicker, by one-tenth of a second. Unfortunately, this confirms what was suspected at the time, that the 1,583 c.c. car provided direct from the factory at Gothenburg, and tested on the Continent, was in an above-normal state of tune. The figures achieved by the current car should be regarded as normal, and not considered in comparison with those of the earlier test car.

Engine and auxiliaries, indeed all the under-bonnet equipment, are more than usually accessible, the engine being surrounded by plenty of clear space. The finish beneath the bonnet is particularly good, the scarlet paint of the engine and its polished valve cover looking very smart. In these days of bent-wire screwdrivers and cheap, soft spanners it is a pleasure to find a tool kit of reasonably high quality, one that is comprehensive enough to carry out the majority of roadside repairs. Together with the jack, the tools are stowed in the space beside the spare wheel, which, in turn, stands vertically to the left of the luggage boot.

Without being flashy the Volvo combines a high degree of quality, good workmanship and much attention to detail,



Luggage space is reasonable, though of a very irregular shape. The boot lid is spring-loaded; tools are stowed between spare wheel and body side. The fuel filler will take the full flow from an electric pump

with clear-cut functional serviceability. Throughout the interior of the car the care taken to protect passengers in the event of a violent stop is gratifying, and the body shell gives the impression of being extremely robust. With no sacrifice in flexibility or smoothness, the engine gives an impressive performance with surprising economy. The basic "inventory" is comprehensive for a medium-priced family saloon, and the car provides comfortable, effortless travel for its four occupants.

## Specification

### ENGINE

Cylinders ...	4 in line
Bore ...	84.1mm (3.31in.)
Stroke ...	80mm (3.15in.)
Displacement ...	1,780 c.c. (108.5 cu. in.)
Valve gear ...	Overhead, pushrods and rockers
Compression ratio ...	8.4 to 1
Carburettor ...	Two S.U. Type H56
Fuel pump ...	AC mechanical
Oil filter ...	Full flow, renewable element
Max. power ...	90 b.h.p. (gross) at 5,000 r.p.m.
Max. torque ...	105 lb. ft. at 3,500 r.p.m.

### TRANSMISSION

Clutch ...	Borg and Beck s.d.p., 8.5in. dia.
Gearbox ...	Four-speed, all synchromesh Laycock-de Normanville overdrive on top
Overall ratios ...	O.D. top 3.5, top 4.56, third 6.3, second 9.1, first 14.3, reverse 13.34 to 1
Final drive ...	Hypoid bevel, 4.56 to 1

### CHASSIS

Construction ...	Integral with steel body
------------------	--------------------------

### SUSPENSION

Front ...	Independent with coil springs and wishbones. American Delco telescopic dampers; anti-roll bar
Rear ...	Rigid axle; coil springs, radius arms, Panhard rod. American Delco telescopic dampers
Steering ...	Cam and roller; 17in. dia. steering wheel

### BRAKES

Type ...	Girling hydraulic; discs front, drums rear
Dimensions ...	F. 10.87in. dia. discs. R. 9in. dia. drums, 2in. wide shoes
Swept area ...	F. 226 sq. in.; R. 113 sq. in. Total 339 sq. in. (278 sq. in. per ton laden)

### WHEELS

Type ...	Pressed steel, 5 studs, 4.0in. wide rim
Tyres ...	5.90-15in. Firestone tubeless

### EQUIPMENT

Battery ...	12 volt, 38 amp.-hr.
Headlamps ...	45-40 watt
Reversing lamp ...	None
Electric fuses ...	4
Screen wipers ...	2, two-speed, self-parking
Screen washer ...	Standard, electrical pump type
Interior heater ...	Standard, fresh air type
Safety belts ...	Standard for both front seats
Interior trim ...	Plastic throughout
Floor coverings ...	Rubber
Starting handle ...	None
Jack ...	Screw pillar, winding handle
Jacking points ...	Four external sockets, under body sills
Other bodies ...	None

### MAINTENANCE

Fuel tank ...	10 Imp. gallons (no reserve)
Cooling system ...	15 pints (inc. heater)
Engine sump ...	6.7 pints inc. filter. Change oil between 2,500 and 5,000 miles, depending on driving conditions. Change filter element every 6,000 miles
Gearbox and overdrive ...	1.25 pints SAE 80. Change oil every 12,500 miles
Final drive ...	2.25 pints SAE 80 hypoid. Change oil every 12,500 miles
Grease ...	8 points every 3,000 miles
Tyres pressures ...	F., 20 p.s.i. R. 23 p.s.i. (normal driving); F., 22 p.s.i. R. 25 p.s.i. (fast driving)

Scale: 0.3in. to 1ft.

Cushions uncompressed.

