

The Motor Road Test No. 16/59 (Continental)

Make: Armstrong Siddeley.

Type: Star Sapphire.

Makers: Bristol Siddeley Engines Ltd., Parkside, Coventry.

Test Data

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CONDITIONS: Weather: Warm and dry with light wind (Temperature 57-69° F. Barometer 29.4-29.8 in. Hg.) Surface: Dry concrete and tarred macadam. Fuel: Premium-grade pump petrol (approx. 96 Research Method Octane Rating).

INSTRUMENTS

Speedometer at 30 m.p.h. 1% fast
 Speedometer at 60 m.p.h. 3% fast
 Speedometer at 90 m.p.h. 4% fast
 Distance recorder accurate

WEIGHT

Kerb weight (unladen, but with oil, coolant and fuel for approx. 50 miles) 35 cwt.
 Front/rear distribution of kerb weight 53/47
 Weight laden as tested 38½ cwt.

MAXIMUM SPEEDS

Flying Half Mile.
 Mean of four opposite runs 99.6 m.p.h.
 Best one-way time equals 100.6 m.p.h.

"Maximile" Speed (Timed quarter mile after one mile accelerating from rest).
 Mean of four opposite runs 96.4 m.p.h.
 Best one-way time equals 97.8 m.p.h.

Speed in Gears automatic change-up speeds)
 Max. speed in 2nd gear 63 m.p.h.
 Max. speed in 1st gear 37 m.p.h.

FUEL CONSUMPTION

21.0 m.p.g. at constant 30 m.p.h. on level.
 19.0 m.p.g. at constant 40 m.p.h. on level.
 18.0 m.p.g. at constant 50 m.p.h. on level.
 16.5 m.p.g. at constant 60 m.p.h. on level.
 15.5 m.p.g. at constant 70 m.p.h. on level.
 14.0 m.p.g. at constant 80 m.p.h. on level.
 12.5 m.p.g. at constant 90 m.p.h. on level.

Overall Fuel Consumption for 3,361 miles, 233½ gallons, equals 14.4 m.p.g. (19.6 litres/100 km.)

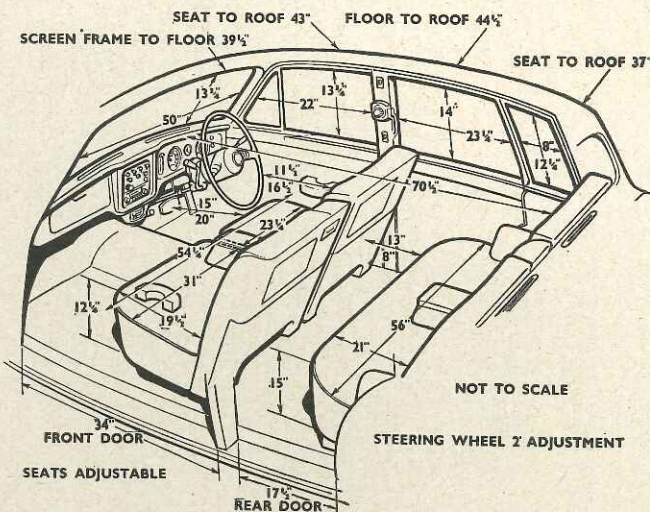
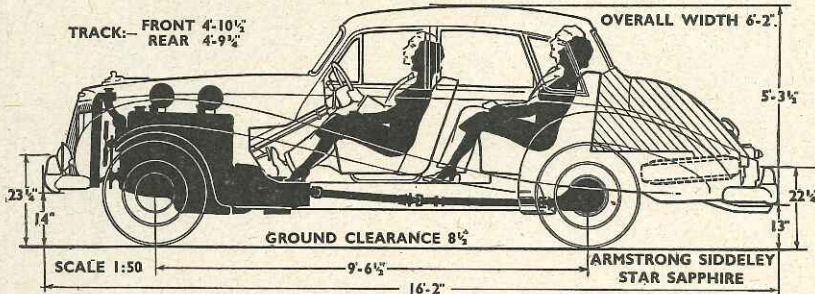
Touring Fuel Consumption (m.p.g. at steady speed midway between 30 m.p.h. and maximum, less 5% allowance for acceleration), 15.4 m.p.g.
 Fuel tank capacity (maker's figure) including reserve 16 Gallons.

STEERING

Turning Circle between kerbs:
 Left 34½ ft.
 Right 37 ft.
 Turns of steering wheel from lock to lock. 4

BRAKES from 30 m.p.h.

0.90 g retardation (equivalent to 33½ ft. stopping distance) with 60 lb. pedal pressure.
 0.80 g retardation (equivalent to 37½ ft. stopping distance) with 50 lb. pedal pressure.
 0.38 g retardation (equivalent to 79 ft. stopping distance) with 25 lb. pedal pressure.



ACCELERATION TIMES from standstill

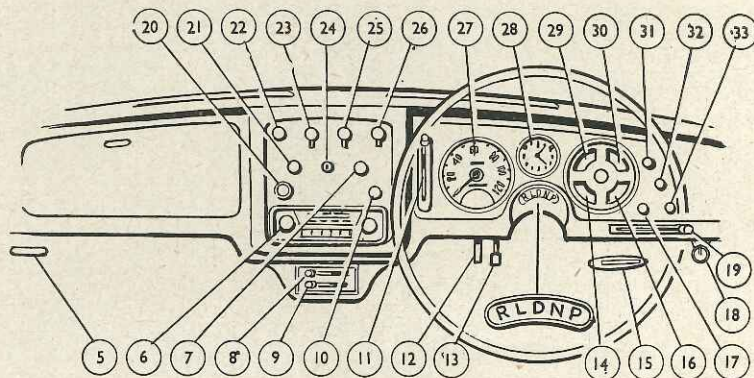
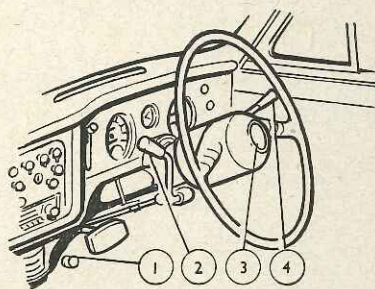
0-30 m.p.h.	5.9 sec.
0-40 m.p.h.	8.8 sec.
0-50 m.p.h.	11.3 sec.
0-60 m.p.h.	14.8 sec.
0-70 m.p.h.	19.6 sec.
0-80 m.p.h.	27.6 sec.
Standing quarter mile	21.1 sec.

ACCELERATION TIMES on Upper Ratios

10-30 m.p.h.	3.7 sec.
20-40 m.p.h.	5.1 sec.
30-50 m.p.h.	5.4 sec.
40-60 m.p.h.	8.0 sec.
50-70 m.p.h.	10.3 sec.
60-80 m.p.h.	13.5 sec.

HILL CLIMBING at sustained steady speeds.

Max. gradient on top gear, approx. 1 in 7.3 (Tapley 305 lb./ton)
 Max. gradient on 2nd gear, approx. 1 in 5.4 (Tapley 410 lb./ton)



1, Headlamp dipswitch. 2, Gear selector lever. 3, Horn button. 4, Direction indicator switch and warning light. 5, Bonnet release. 6, Radio. 7, Starter switch. 8, Heater temperature control. 9, Heater/de-mister air distribution control. 10, Fog and spot lights switch. 11, "2nd gear hold" control. 12, Scuttle

ventilator control. 13, Trip re-set control. 14, Oil pressure gauge. 15, Hand brake. 16, Fuel contents gauge. 17, Choke warning lamp. 18, Radiator blind. 19, Choke. 20, Cigar lighter. 21, Reserve petrol tap. 22, Panel and map reading lights switch. 23, Heater fan two-speed switch. 24, Ignition switch. 25, Windscreen

wipers two-speed switch. 26, Side and head-lights switch. 27, Speedometer. 28, Clock. 29, Ammeter. 30, Engine thermometer. 31, Head-lamp main beam warning lamp. 32, Dynamo charge warning lamp. 33, Windscreen washer control.

The Armstrong Siddeley Star Sapphire

SMOOTHER treatment of a radiator grille which continues to carry the traditional Sphinx emblem identifies the new Star Sapphire, which proved its comfort and stamina on Alpine as well as on British roads.



Highly Civilized Motoring in a 4-litre Saloon with Power Steering, Disc Brakes and a Refined Two-pedal Transmission

GENERAL similarity of shape between the 1959 "Star Sapphire" model and the somewhat smaller-engined Armstrong Siddeleys which have been in production since October, 1952, has led many motorists to regard the latest model as just another "face lifted" old design. Driving and being driven in a Star Sapphire for several weeks, on British roads and also as far afield as southern Italy, we were delighted to find that what was a promising new design 7 years ago has, almost suddenly, now matured into a car offering the highest standards of refined motoring. At a price (inclusive of purchase tax) rather below £2,500, there is now offered a beautifully furnished car complete with almost every possible "extra," which accelerates effortlessly up to a quiet top speed of just about 100 m.p.h. and has finger-light brakes and steering.

Fundamental to the new refinement of this car is the use of an engine which, enlarged by 16%, is only asked to give 10% more power at maximum r.p.m. What is now available is really generous

engine torque at moderate engine speeds, so that excellent top gear acceleration and the ability to reach a 3-figure speed are both obtained on an axle ratio which provides effortlessly silent high-speed cruising. Apart from one sparking plug on which Italian fuel formed a "whisker," the engine proved delightfully inconspicuous, starting easily, warming up readily in early summer weather, needing a quart of oil only about once per 1,000 miles and using no water in Alpine pass-tormenting, and giving an unashamedly heavy car notably good acceleration and hill-climbing performance.

Educated Automaticity

Very happily mated to the 165 b.h.p., 4-litre engine is a Borg-Warner automatic transmission, incorporating a hydraulic torque converter and three epicyclic gear ratios. This works very well indeed either around town or on the open road, a light touch on the throttle easing the car smoothly away from rest and bringing top gear into use at about 20 m.p.h., whereas flooring the accelerator pedal gives a very fast getaway indeed and does not let top gear engage until 60 m.p.h. is exceeded. Whilst "kick-down" changes out of top gear are always possible below 60 m.p.h., only very firm pressure on the accelerator causes a change down at speeds above 40 m.p.h. and normal acceleration is obtained quietly and smoothly in top gear.

Twice crossing the Alps and the mountain backbone of Italy, we much appreciated a unique refinement, in the form of a "2nd gear hold" control on the fascia which is fully progressive in its action. Moved the whole way down its calibrated quadrant, this control keeps 2nd gear in use up to 63 m.p.h. regardless of throttle opening, but the control can be set intermediately to let top gear engage

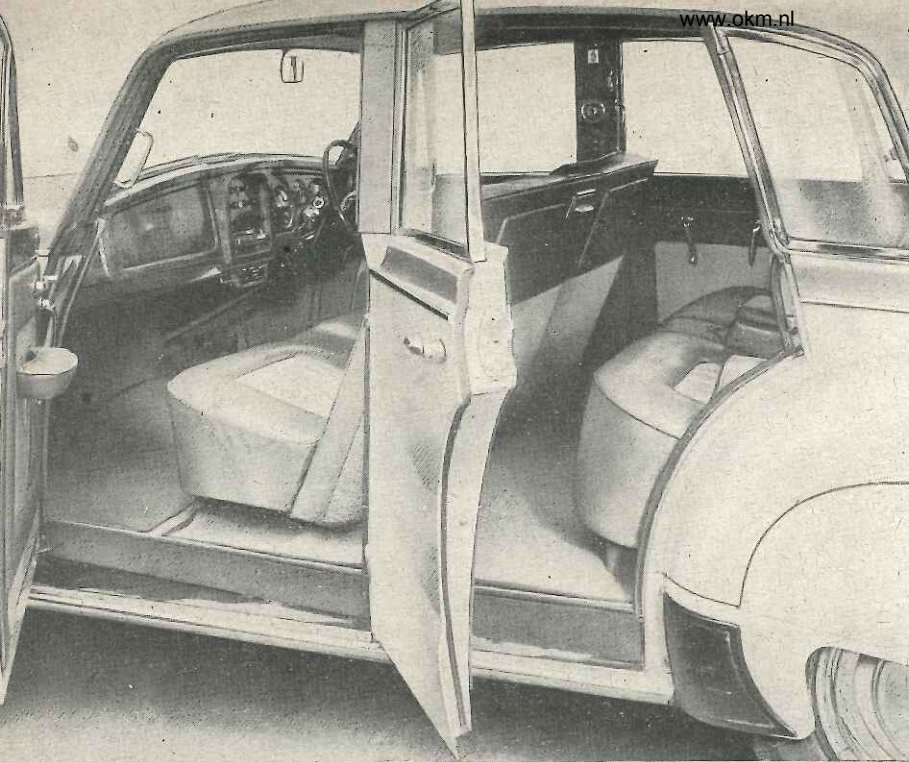
at any desired lower speed. Climbing an Alpine pass, it was often convenient to set this control to the 40 m.p.h. mark, so that on short sections of road linking hairpin corners 2nd gear remained in use, but whenever a more open length of road was reached top gear engaged normally. For a critical driver, this progressive control eliminates the main objection to the principle of automatic gearboxes by allowing him to regulate the frequency of upward and downward gear-changes, and it adds the final touch of perfection to a very attractive engine/gearbox combination.

Fully automatic transmissions which engage top gear whenever the throttle is closed can impose severe loads upon brakes, but in all our crossings of mountain passes we never discovered any weakness of this car's disc-type servo brakes; we never used the emergency 1st gear setting of the transmission to provide engine braking, yet there was never any fade, "hot smell" or loss of adjustment when Alpine passes were descended at a pace which required acceleration out of every corner followed by as rapid braking as was acceptable to passengers in a well-laden car. Furthermore, the brakes did not grab, or lose power in rainy weather, our one mildly critical comment being that the slight contact involved in their self-adjusting character occasionally made a faint rubbing noise audible as the car was driven between buildings.

Complementary to the high-torque engine and powerful brakes of this car is a standardized installation of power assisted steering which, without eliminating all "feel" from straight-road driving, makes this car at least as effortless as an 8 h.p. model to drive along winding roads—and much lighter to park. Cornering on wet roads, a driver sometimes had the impression that even greater "feel" would have let him approach the limit of tyre adhesion with more confidence that this limit would

In Brief

Price (including power steering, disc brakes and automatic transmission)	£1,763 plus purchase tax £735 14s. 2d.
	equals £2,498 14s. 2d.
Capacity	3,990 c.c.
Unladen kerb weight	35 cwt.
Acceleration:	
20-40 m.p.h. in "kick-down" gear	5.1 sec.
0-50 m.p.h. through gears	11.3 sec.
Maximum direct top gear gradient	Approx. 1 in 7.3
Maximum speed	99.6 m.p.h.
"Maximile" speed	96.4 m.p.h.
Touring fuel consumption	15.4 m.p.g.
Gearing: 21.6 m.p.h. in top gear at 1,000 r.p.m.; 36.6 m.p.h. at 1,000 ft./min. piston speed.	



The Armstrong Siddeley Star Sapphire

CONCEALED running boards assist entry to the four-door body, but greater angles of door opening would be welcome. Luxurious as well as handsome, the seats can accommodate six people when required.

"bench" is split to the right of the armrest so that individual adjustment of the two halves is possible when a central passenger is not carried. There is good room in the back, but if slight heel-wells could be contrived it would be possible to use the available toe-room even more comfortably. On first stepping into the Star Sapphire, the facia and controls seem rather to crowd upon the driver and front passenger, and limited amounts of door opening were criticized by the elderly, but after covering 1,076 miles within a period of 32 hours it was still possible to say that the seats were as comfortable as they look.

Well Furnished

A fine air of luxury is conveyed by the interior furnishing, the generous glazed areas nowadays expected being combined with polished walnut furnishing, nicely fitting pile carpets and well-applied leather upholstery. Rather small and awkward front ashtrays were criticized (that in the rear compartment is excellent), but in almost every other detail this car is furnished with all that is needed to let an owner "live" happily with it. On the facia the big glove box has a lid which opens to form a flat Formica-surfaced picnic table, and concealed in the doors are pockets which swallow up a veritable library of maps.

Screen washing sprays are standardized, as are two-speed wipers which work quietly and park themselves. Twin fog lamps (one of wide-beam pattern and the other a spotlight) supplement headlamps with commendably long but rather narrow beams which serve best on straight, uncrowded roads; there is also a reversing lamp. The steering column is adjustable for length, and the armrests on the front doors can be set to any desired height. In the tail of the body, the spare wheel and a fitted tool drawer lie below the flat car-

not inadvertently be exceeded, and at times a reduction in the movement needed to attain full lock would have been welcomed, but in the main this is a big car which offers small-car driving ease without making its driver unsure of himself.

So light are all the controls, in fact, that smooth motoring depends very much upon the driver. With the amounts of effort needed by the steering and brakes hardly greater than are applied to the accelerator pedal, the controls are (in aeronautical parlance) "well harmonized"; but, if a driver unaccustomed to such effortless controls is clumsy, it is easier for him to discomfort his passengers with alternate extremes of acceleration and braking than it is on lower-powered, less well-braked models. Driven sympathetically, the Star Sapphire is certainly one of the smoothest cars which money can buy, around town and also on open road.

In harmony with other characteristics of this highly civilized car is a suspension system which lets it glide over reasonably well surfaced roads such as prevail in Britain and the U.S.A. in beautifully smooth fashion. At speed on the indifferently surfaced highways of some poorer countries, the suspension proves to have less damping than is desirable, the car showing a fair amount of up-and-down movement; but, whilst not at its best on bad roads, the Star Sapphire does not

bottom its springs when covering them or otherwise protest at hard work, its standards merely dropping from "exceptional" to "good average." For the sort of conditions associated with the adjective "colonial," however, a driver needs to bear in mind rather limited ground clearance beneath a central silencer and also beneath the exhaust tail-pipe.

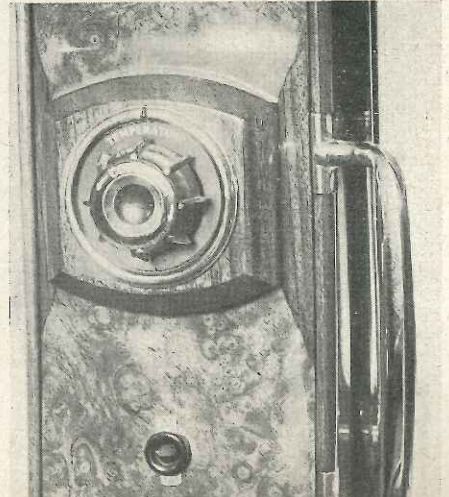
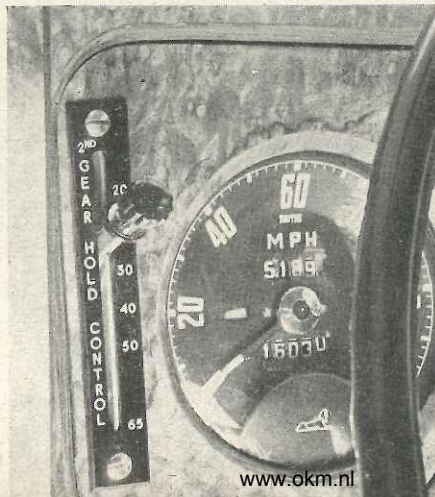
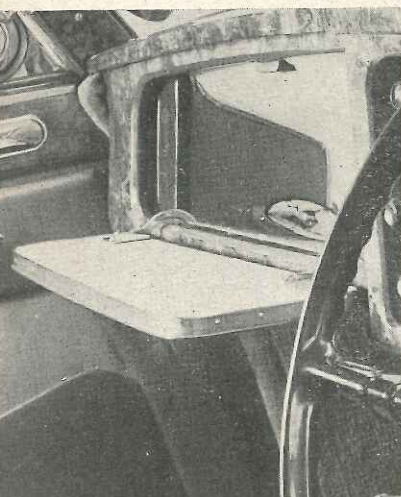
Not in any sense of the word a sports car, this model behaves quite vicelessly when cornered fast, but with the tyre pressure recommended for sedate motoring some body roll is accompanied by easily-provoked tyre squeal. Too much extra air in the tyres provokes some body shake on rough surfaces (rubber insulation between steel body and X-braced chassis contributes to the model's exceptional quietness but not to its rigidity) but a compromise setting can be chosen which retains good comfort yet allows very fast company to be kept on winding roads. Almost entirely shock-free, the power-assisted steering nevertheless has effective self-centring action.

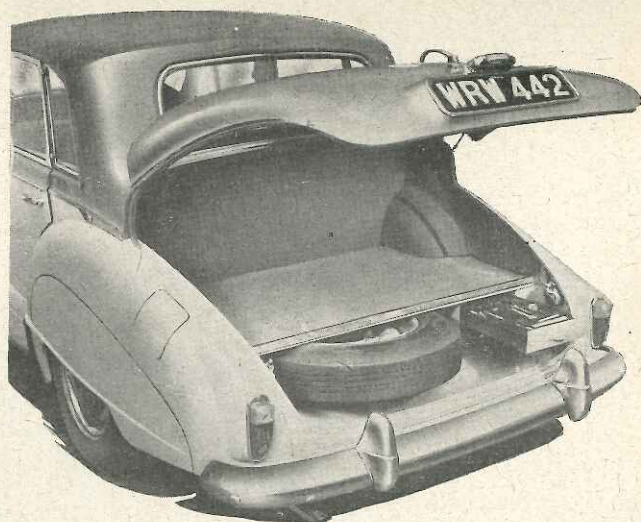
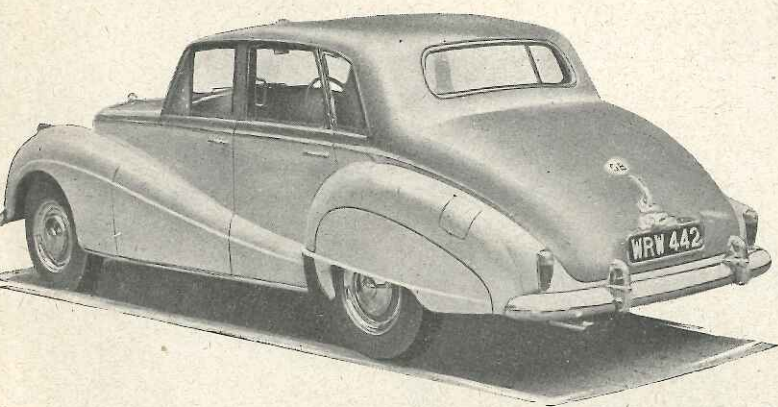
Without being as wide as are today's American cars, this model is quite able to seat three people abreast in either the front or rear compartment, the transmission-cover inconveniencing centrally seated passengers far less than it does in many lower-built cars. Both seats have folding central armrests, and the front

FORMICA lining of the glove-box lid invites its use as a picnic table. Also visible is the cover over a very large door pocket for guide-books.

PROGRESSIVE adjustment of the minimum speed at which top gear engages, by means of this facia-panel control, allows a driver to match the car to his personal tastes.

WARMTH for rear passengers is regulated by the temperature control and fan switch seen here mounted on a door pillar, a separate heater serving the front compartment.





STORAGE for luggage is provided beneath a counterbalanced lift-up locker lid, on a flat carpeted floor of substantial area. The spare wheel is on a lower shelf, as is the fitted tool drawer.

peted floor of a luggage locker which, less vast than is nowadays fashionable, nevertheless is of very large capacity. Apart from the criticism that the volume of fresh air admitted by a scuttle ventilator began to seem inadequate when the outside temperature rose beyond 80° F., this car has a good heating and screen de-misting installation, supplemented by a virtually inaudible two-speed fan, and with the desirable feature of a separately-controlled heater which can blow out warm air below the rear seat and on to the rear window. The driver has a reserve tap which proved to hold back rather less than the claimed 2 gallons of petrol, and can have either full instrument lighting or

an invisible glow which merely keeps the instrument pointers and figures gently fluorescent.

Although it is not likely to be a factor of prime importance to buyers of this car, the matter of fuel economy must be mentioned. In quite severe conditions 15 m.p.g. can be expected, and any British premium-grade fuel gives freedom from pinking, of which the 90-octane fuel of France produced only a faint trace. On the maintenance side, chassis greasing is only suggested at 2,500 mile intervals, the disc brakes are self-adjusting (and eventually very easy to fit with new friction pads), and the power steering requires only occasional checks on fluid level and

pump-belt tension (which were still normal after our extended test).

For those who do enough motoring to value a car which is truly untiring to drive or to be driven in, who need effortless high performance rather than sporting verve, and who can afford to buy and run a high-quality car but do not wish to pay an extremely high price, the Star Sapphire must have very strong appeal. At its best on reasonably well surfaced roads, and with effortless performance and controls to make the frustrations of heavy traffic more than usually tolerable, it nevertheless also tackles rough surfaces at least as well as most other cars, and either up or down a mountain pass is apt to surprise the drivers of sporting models by its rapidity.

Specification

Engine	
Cylinders	6
Bore	97 mm.
Stroke	90 mm.
Cubic capacity	3,990 c.c.
Piston area	68.72 sq. in.
Valves	O.H.V. (2 lines inclined at 70°) operated by pushrods and rockers
Compression ratio	7.5/1
Carburettors	2 Stromberg DIV42 downdraught
Fuel pump	AC mechanical
Ignition timing control	Centrifugal and vacuum
Oil filter	Purolator full-flow
Max. power (gross)	165 b.h.p. (145 b.h.p. net)
at	4,250 r.p.m.
Piston speed at max. b.h.p.	2,510 ft./min.
Transmission	
Clutch	Hydraulic torque converter
Top gear	3.77
2nd gear	5.41
1st gear	8.674
Reverse	7.574
Propeller shaft	Hardy Spicer divided open
Final drive... ..	Hypoid bevel
Top gear m.p.h. at 1,000 r.p.m.	21.6
Top gear m.p.h. at 1,000 ft./min. piston speed	36.6
Chassis	
Brakes: Girling Vac-hydro power-assisted hydraulic (disc front, drum rear).	
Brake dimensions:	
Front discs	12 in. dia.
Rear drums	12 in. x 2½ in.
Fricition lining area	30.5 sq. in. front plus 90 sq. in. rear
Suspension:	
Front	Independent by coil springs, trailing wishbones and anti-roll torsion bar
Rear	Semi-elliptic leaf springs and rigid axle
Shock absorbers	Armstrong telescopic
Steering gear	Burman integral power steering
Tyres	Dunlop tubeless, 6.70—16

Coachwork and Equipment

Starting handle	No
Battery mounting	On scuttle
Jack	Smith's Bevelift
Jacking points	4 external (front bumper brackets and rear springs)
Standard tool kit: Jack, wheelbrace, set of open-jaw and box spanners in fitted tool drawer, adjustable spanner, pliers, distributor key, tyre valve key, carburetter jet key, timing pin, tyre pressure gauge, grease gun.	
Exterior lights: 2 headlamps, 2 sidelamps, wide-beam lamp, spotlight, 2 stop/tail lamps, number plate lamp, reversing lamp.	
Number of electrical fuses... ..	Two
Direction indicators	Self-cancelling amber flashers
Windscreens wipers	Electrical two-speed two-blade, self parking
Windscreens washers	Trico vacuum operated
Sun visors	Two, hinge mounted
Instruments: Speedometer with decimal trip distance recorder, ammeter, fuel contents gauge, oil pressure gauge, coolant thermometer, clock.	
Warning lights: Dynam charge, headlamp main beam, choke, direction indicators.	

Locks: With ignition key... ..	Ignition switch and driver's door
With other key	Luggage locker
Glove lockers	One on fascia, with lid
Map pockets: 2 large compartments in front doors, 2 pockets behind front seats.	
Parcel shelves	None
Ashtrays	2 in front doors, 1 behind front seat
Cigar lighters	1 on fascia panel
Interior lights: 2 on body pillars, with manual switch and courtesy switches on all doors.	
Interior heater: Fresh air type (with intake shutter closed, air is re-circulated) with screen de-misters. Separate re-circulating heater in rear compartment de-mists rear window.	
Car radio: Optional extra H.M.V. Radiomobile (provision for second speaker in rear compartment).	
Extras available	None
Upholstery material	Leather
Floor covering	Pile carpet
Exterior colours standardized: 9 colours (and combinations thereof) and 8 interior trim colours (also combinations thereof).	
Alternative body styles	None

Maintenance

Sump	14 pints S.A.E. 30 summer, S.A.E. 20 winter	T.D.C. and closes 48 degrees after B.D.C.
Gearbox	15 pints automatic transmission fluid	Exhaust opens 48 degrees before B.D.C. and closes 12 degrees after T.D.C.
Rear axle	2½ pints S.A.E. 90 hypoid gear oil	Tappet clearances (Cold): Inlet and exhaust 0.008 in.
Steering gear lubricant	Automatic transmission fluid	Front wheel toe-in
Cooling system capacity	26 pints (2 drain taps)	1/8 in. to 3/16 in.
Chassis lubrication: By grease gun every 2,500 miles to 17 points.		
Ignition timing	3-5 degrees before T.D.C. static	Camber angle
Contact-breaker gap	0.015 in.	¾ degrees to 1½ degrees
Spark plug type	Lodge HLN, 14 mm.	Castor angle
Spark plug gap	0.028 in.	1½ degrees to 1¾ degrees
Valve timing: Inlet opens 12 degrees before		Steering swivel pin inclination
		5½ degrees
		Tyre pressures:
		Front
		22-24 lb.
		Rear 22-26 lb., according to speed and load
		Brake fluid
		Girling heavy-duty Crimson
		Battery type and capacity: Lucas 12-volt, 64 amp. hr.