

Road Test Report of
THE
CITROEN SAFARI

Reprinted from

Motor

June 12, 1963

THE Motor

MAKE: Citroen

TYPE: Safari

MAKERS: Citroen Cars Ltd., Trading Estate, Slough, Bucks.

ROAD TEST • No. 23/63

TEST DATA:

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CONDITIONS Weather: Mild, dry, fresh wind 10-20 m.p.h. (Temperature 50°-56°F., Barometer 30.0 in Hg.) Surface: Dry tarmacadam. Fuel: Premium grade pump petrol (98 Octane by Research Method).

MAXIMUM SPEEDS

Flying Quarter Mile
Mean of four opposite runs .. 94.0 m.p.h.
Best one-way mile time equals .. 95.1 m.p.h.

"Maximile" Speed: (Timed quarter mile after one mile accelerating from rest)
Mean of opposite runs .. 87.2 m.p.h.
Best one-way time equals .. 90.0 m.p.h.

Speed in gears

Max. speed in 3rd gear .. 92 m.p.h.
Max. speed in 2nd gear .. 60 m.p.h.
Max. speed in 1st gear .. 32 m.p.h.

ACCELERATION TIMES

From standstill
0-30 m.p.h. .. 5.2 sec.
0-40 m.p.h. .. 8.0 sec.
0-50 m.p.h. .. 11.7 sec.
0-60 m.p.h. .. 17.8 sec.
0-70 m.p.h. .. 26.1 sec.
0-80 m.p.h. .. 38.0 sec.
Standing quarter mile .. 21.2 sec.

On upper ratios

	Top gear	3rd gear
10-30 m.p.h. ..	10.6 sec.	10.6 sec.
20-40 m.p.h. ..	16.8 sec.	10.1 sec.
30-50 m.p.h. ..	18.3 sec.	9.9 sec.
40-60 m.p.h. ..	20.4 sec.	10.5 sec.
50-70 m.p.h. ..	22.3 sec.	13.6 sec.
60-80 m.p.h. ..	26.8 sec.	19.9 sec.

HILL CLIMBING

Max. gradient climbable at steady speed
Top gear .. 1 in 16.5 (Tapley 135 lb./ton)
3rd gear .. 1 in 9.5 (Tapley 235 lb./ton)
2nd gear .. 1 in 5.6 (Tapley 390 lb./ton)

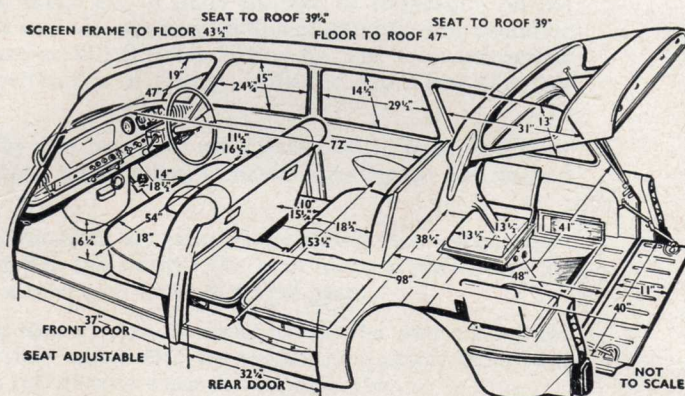
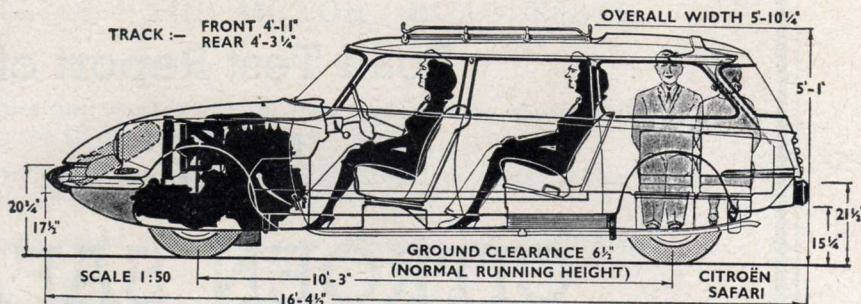
FUEL CONSUMPTION

Overall Fuel Consumption for 1,231 miles, 52.1 gallons, equals 23.7 m.p.g. (11.92 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) 29.6 m.p.g.
Fuel tank capacity (maker's figure) .. 14 gallons

Direct Top Gear

	at constant 30 m.p.h. on level
41½ m.p.g.
39 m.p.g. ..	at constant 40 m.p.h. on level
36 m.p.g. ..	at constant 50 m.p.h. on level
32 m.p.g. ..	at constant 60 m.p.h. on level
28½ m.p.g. ..	at constant 70 m.p.h. on level
25 m.p.g. ..	at constant 80 m.p.h. on level
22½ m.p.g. ..	at constant 90 m.p.h. on level



BRAKES

Deceleration and equivalent stopping distance from 30 m.p.h.
0.98 g with 65 lb. pedal pressure .. (30½ ft.)
0.85 g with 50 lb. pedal pressure .. (35 ft.)
0.44 g with 25 lb. pedal pressure .. (68 ft.)

STEERING

Turning circle between kerbs:
Left .. 37 ft.
Right .. 36 ft.
Turns of steering wheel from lock to lock .. 2½

INSTRUMENTS

Speedometer at 30 m.p.h. .. 2% fast
Speedometer at 60 m.p.h. .. 3% fast
Speedometer at 90 m.p.h. .. 2% fast
Distance recorder .. 1% fast

WEIGHT

Kerb weight (unladen, but with oil, coolant and fuel for approximately 50 miles) .. 26½ cwt.
Front/rear distribution of kerb weight .. 61½/38½
Weight laden as tested .. 30 cwt.

Specification

Engine

Cylinders .. 4
Bore .. 78 mm.
Stroke .. 100 mm.
Cubic capacity .. 1911 c.c.
Piston area .. 29.6 sq. in.
Valves .. Overhead (pushrods)
Compression ratio .. 8.5/1
Carburettor Weber 24-32 DDC (double choke)
Fuel pump .. AC mechanical
Ignition timing control Centrifugal and vacuum
Oil filter .. Gauze strainer on oil pump
Maximum power (gross) .. 83 b.h.p. at 4,500 r.p.m.
Maximum torque (gross) .. 105 lb. ft. at 3,500 r.p.m.
Piston speed at maximum b.h.p. 2,950 ft./min.

Transmission

Clutch .. 8½ in. Ferodo single dry plate
Top gear (s/m) .. 3-31
3rd gear (s/m) .. 4-77
2nd gear (s/m) .. 7-35
1st gear (s/m) .. 13-79
Reverse .. 14-82
Propeller shaft .. None F.W.D.
Final drive .. 8/31 spiral bevel
Top gear m.p.h. at 1,000 r.p.m. .. 23.2
Top gear m.p.h. at 1,000 ft./min. piston speed .. 35.3

Chassis

Brakes: Hydraulic, inboard discs at front, outboard drums at rear; high pressure servo operation
Brake dimensions: 11½ in. discs, 10 in. drums
Friction areas: 73 sq. in. of friction lining operating on 338 sq. in. of rubbed surface
Suspension: Independent all round by oleo-pneumatic compression chambers
Front: Double transverse arms and anti-roll bar
Rear: Trailing single arms and anti-roll bar
Shock absorbers: Hydraulic valves incorporated in suspension units
Steering gear: Citroen rack and pinion with hydraulic power assistance
Tyres: Michelin X, 165-400



The Safari is an impressive and purposeful looking car. Rubber overriders protect a projecting front which houses the spare wheel, tools, gearbox and radiator, the last having a ducted feed from a low air intake.

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LAST week the British Citroen Company announced a new high performance version of the Safari which supersedes the previous model. Instead of the 69 b.h.p. ID 19 engine it has the higher compression 83 b.h.p. unit which normally propels the DS 19 saloon and from the same source it inherits power-assisted steering. Mechanically the new Safari now has every hydraulic servo aid available on the DS 19 except the automatic clutch and gearshift—it retains normal manual operation of an all-synchromesh four-speed box.

Bodily, the changes are confined to detail refinements, a dipping rear-view mirror, courtesy switches on all five doors and a luxuriously thick foam rubber underlay to the carpets. At £1,698 it costs some £74 more than before—a very moderate increase for improvements which have transformed its performance on the road. With seats for eight people, a large built-in luggage rack on the roof, a payload of 13 cwt. and oleo-pneumatic suspension which adjusts itself automatically for load the Safari is possibly the most spacious and luxurious European estate car.

Much more performance

WHEN we last tested a Safari three years ago it seemed very much at home on fast main roads but rather lethargic in give-and-take conditions. Even now with an engine of only 1,911 c.c., a weight of 26½ cwt. (amazingly low for its size but 2 cwt. more than the DS 19) and exceptionally high gear ratios it is not a nimble performer at very low speeds although the figures show an improvement of some 20-30 per cent in this region. At high speeds, however, the increase in power has wrought a transformation greater than one might expect. Maximum speed has risen from 80 to 94 m.p.h. and the time to accelerate from 50 to 70 m.p.h. in top gear has been more than halved, although our test car, at under 2,000 miles, was too new to have reached its performance peak.

Top gear is essentially a cruising ratio; even at maximum speed the engine barely exceeds 4,000 r.p.m., which is well below peak power, and the car will go nearly as fast in third. To get the best performance the driver must be willing to make very liberal use of the gearbox, taking 50 m.p.h. in second and 80 m.p.h. in third as optimum change-up speeds, but in return for this trouble he gets a car which is entirely effortless when averaging 90 m.p.h. down a motorway and which is astonishingly economical. In spite of the improved performance, which we used to the full, this Safari returned an overall fuel consumption of 23.7 m.p.g., 3.3 m.p.g. better than the last one, and the steady speed fuel figures all showed an improvement of 4½ to 7 m.p.g. Driving more gently, 30 m.p.g. should be easily within reach. This combination of speed and economy is a tribute both to low aerodynamic drag and to the efficiency of a twin choke Weber

carburettor with compound throttle opening which also gives very easy starting and quick warming up.

Whilst one must respect this engine for its performance and for its undoubted sturdiness, it must be admitted that it sounds and feels rather cumbersome and old-fashioned in a car which is otherwise ahead of its time. At low speeds it is mechanically audible and the fact that it is a large long-stroke four-cylinder can be felt; at higher r.p.m. it is smoother and betrays its presence mainly by a high-pitched moan from the fan and by a slight transmission shudder when accelerating in the lower gears at mid-range r.p.m. A heavy flywheel prevents very rapid throttle response in neutral and with a long travel clutch and gear lever this makes the gearchange comparatively slow, in spite of good synchromesh and a very positive linkage to the forward mounted gearbox. On the other hand, it is interesting to note that the heavier Safari was faster through the gears from rest to 60 m.p.h. than the last DS 19 we tested, and it may be concluded that an ordinary clutch and manual gearchange give appreciably quicker getaway than the automatic ones. All the ratios are indirect and they are all quiet.

Bottom gear gives only a marginal ability to restart on a 1 in 3 gradient even with the aid of furious clutch slip, but the under-facia off-side handbrake held the car firmly on this gradient. The footbrake, of course, is one of the many unorthodox features; it is operated by a button like a dipswitch responding to pressure rather than to movement (which is negligible). Variations of static load cause automatic re-distribution of front/rear braking effort through a movable fulcrum, and as a further refinement hydraulic pressures for operating the brakes (disc front, drum rear) are bled from the corresponding front and rear suspension units; in this way there is further compensation for dynamic weight transfer during braking and it is therefore possible to

In Brief

Price (as tested) £1,405 plus purchase tax
£293 5s. 5d. equals £1,698 5s. 5d.

Capacity 1,911 c.c.

Unladen kerb weight 26½ cwt.

Acceleration:

20-40 m.p.h. in top gear 16.8 sec.

0-50 m.p.h. through gears 11.7 sec.

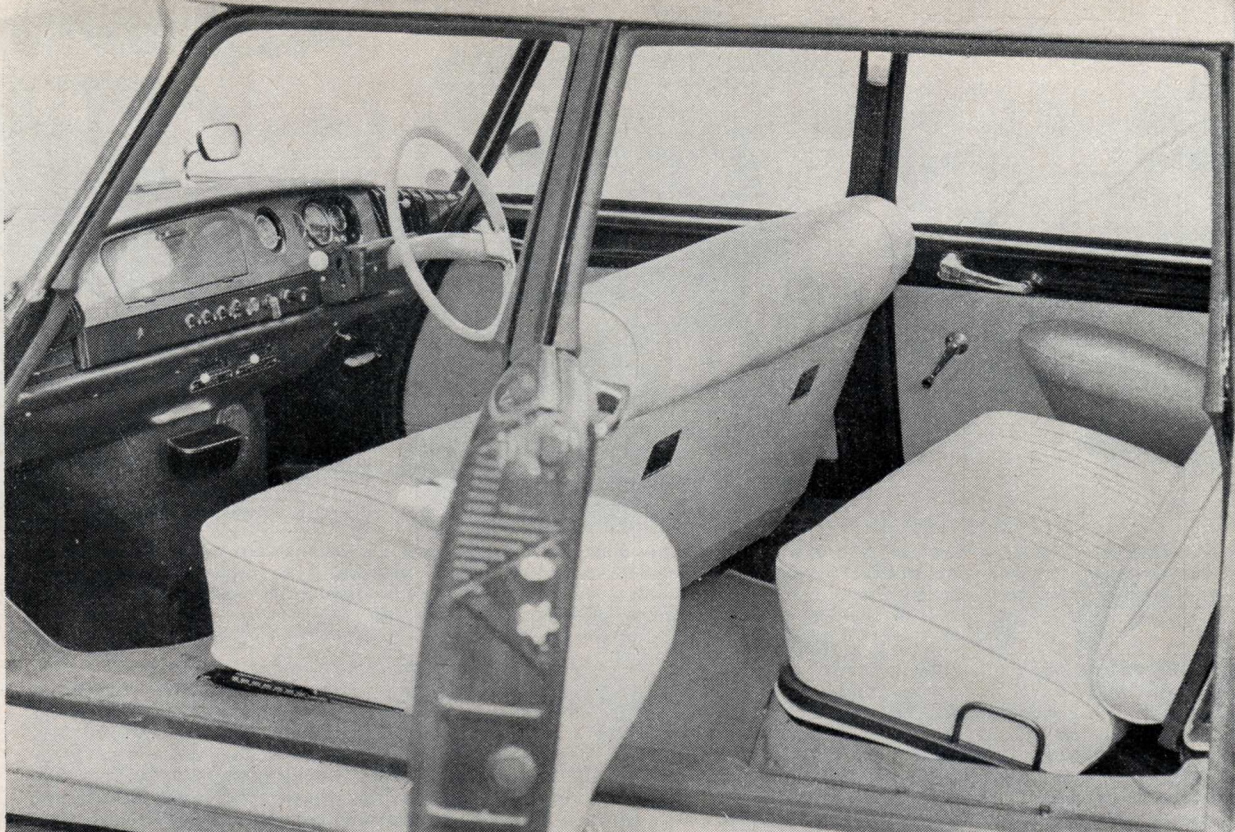
Maximum top gear gradient 1 in 16.5

Maximum speed 94.0 m.p.h.

Overall fuel consumption 23.7 m.p.g.

Touring fuel consumption 29.6 m.p.g.

Gearing: 23.2 m.p.h. in top gear at 1,000 r.p.m.



These two views illustrate some of the passenger features, including the central "bulge" below the fascia which houses the rear of the engine. The front seat has a folding centre armrest. The rear view mirror could well be wider to increase the field of view and a lower mounting would decrease its forward obstruction.

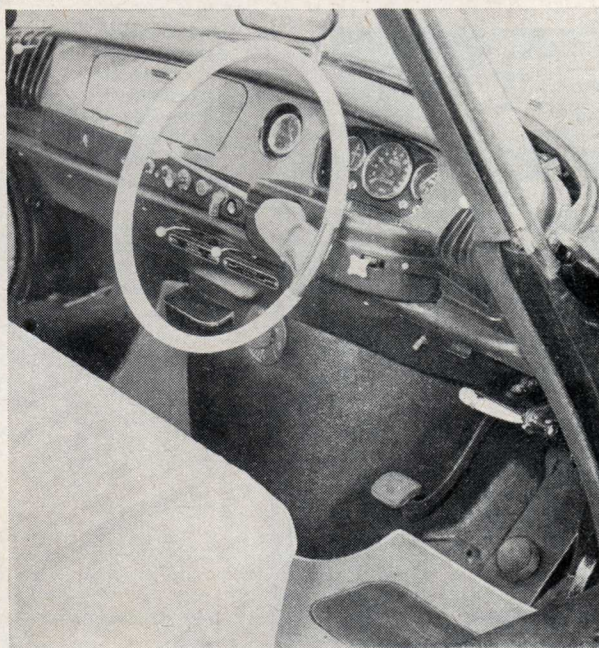
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avoid premature wheel locking at either end in almost any road surface conditions. A little practice is needed to get used to the low pedal forces and there is a surging or juddering tendency at very low speeds which is probably due to the use of inboard front brakes with a very flexible transmission—if the car is brought to rest on the handbrake, which works on the front discs, it rocks to and fro for a little while.

More hydraulics

POWER steering on the Safari is a great improvement. Not only is it very much lighter than the manual arrangement but also more direct since the previous ratio of four turns from lock to lock is reduced to under three. It has very little castor and very little feel; at low speeds one sometimes tends to turn the wheel too far since resistance to movement is almost constant beyond the point where power assistance comes in, but high-speed stability is excellent and it has a degree of precision which makes it easy to hold an exact line on bends. Unlike most front-wheel drive cars, it is difficult to detect any difference at all in the handling characteristics with power on and power off. The Michelin X tyres can only be made to squeal with some difficulty and a slight understeer persists under most conditions—only on wet roads does it sometimes develop into a front-end breakaway.

In judging possible cornering speeds, the Citroën is one of those very rare cars where road roughness can virtually be ignored as a factor—there is, however, quite a lot of roll. So much praise has deservedly been lavished on the all-independent suspension with its ultra-soft oleo-pneumatic spring units that it now sets standards by which other cars are judged. For this reason the first reaction of many strangers to the car is disappointment in finding that they are still aware of road imperfections. At low speeds it makes quite a lot of noise in passing over cat's-eyes, ridges and potholes, whilst hump-backed bridges show it at its worst and must be taken more slowly than in most cars to avoid a most unpleasant heave. Between these extremes it is remarkably comfortable—there is a little slow up-and-down movement but no unpleasant float, no pitching, little or no nosedive on braking (although acceleration makes the tail dip) and no variation with load as the suspension is controlled automatically to a constant ground clearance and effective spring rate, since estate cars often need stiff rear springs to cope with maximum loads, this is an important point in a true dual-purpose vehicle. Because of all these negatives the Citroën passenger seldom realizes what



insulation this suspension provides until he rides over the same bad roads in a variety of other cars.

Eight seats

THE standard of interior comfort is also generally high, although some reservations must be made about the driving position. In general one observes that the French seem to press themselves against the steering wheel and even crouch over it; the Citroën clutch and accelerator are well placed for such a position since they require a downward movement like piano pedals rather than a fore and aft push. Those who like to sit further back find their ability to do so limited not by seat adjustment, which is ample, but by the possibility of fully opening the throttle. The front bench seat (with folding centre armrest) is very high, very upright and very softly upholstered—the fact that one sinks into it deeply provides some measure of side support which would otherwise be lacking and could still be better. Although not to the initial taste of most of our staff, this seat remained unexpectedly comfortable on very long journeys and the driving position is unusually adaptable to drivers of very different height.

Three people can be accommodated in the front, another three



Twin reversing lamps, a drop down tail board, with two number plates at right angles, and a loading door which opens wide enough for a tall man to stand under are rear view features. The flat floor is low and can be lower if the suspension is dropped for ease of loading. Two transverse occasional seats fold away below the carpet when not in use and the bench rear seat also folds away to leave an unobstructed floor length of over 7 ft.

in the comfortable rear seat (with ample leg room) and another two transversely in occasional chairs which unfold from the flat rear floor. Rather strangely there are no clips or fastenings to hold these down when they are folded away, and we found that they rattled loudly on bad roads. In some ways this Citroën was not quite so quiet as previous models we have tried. The sighing of the suspension height adjuster and the chirruping of the power steering valves are intermittent friendly noises one ceases to

notice; the main hydraulic pressure pump has now been subdued until it is only audible at rest but wind noise seemed greater at speed. A piercing whistle from the back was traced to a very loosely fitting tail door and cured by adjustment of the catch.

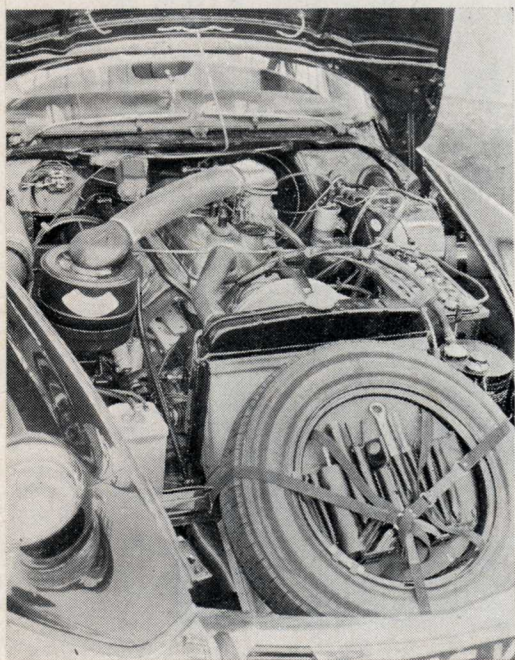
The rear seat, of course, can be folded away and at the expense of suffering a rather cramped driving position, a flat floor over 7 ft. long is left which can be extended another foot by dropping the small tail gate—a second number plate makes this legal. Easy loading is facilitated by the low floor which is possible without rear wheel drive and also, of course, by the four-door design. When eight people are carried there is little room left for luggage inside, but a large roof rack is provided for the purpose. Strangely enough, much less thought has been given to carrying small parcels and maps and there is only one fascia cubbyhole in the car.

The standard of interior finish and equipment is extremely high and essentially British rather than French. Upholstery is in high quality leather and a foam underlay 1½ inches thick beneath the floor carpets adds a further touch of luxury. For both driving and touring purposes superb visibility through very deep windows with exceptionally slender pillars is only marred in wet weather by an unwiped V in the centre of the screen between the two wiper blades and by the fact that they lift off the glass above 70 m.p.h.

Citroëns were pioneers of proper ventilations systems; there are no quarter lights but open windows cause few unpleasant draughts. Without opening them at all, however, controllable blasts of cold fresh air are available from large grilles at each end of the fascia and there are further vents below to direct cold air downwards. In conjunction with the heater it is possible for the driver and front passenger independently to produce a variety of cool and warm air patterns, and there is also a direct supply at foot level to the rear compartment.

The front-wheel drive layout, flat floor, long wheelbase and self-adjusting suspension give this chassis unique advantages for a really capacious estate car. In taking full advantage of them, Citroën have now produced one of those rare specialized cars which has few rivals for its purpose—fast, comfortable and economical long-distance touring.

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Underbonnet appearance is impressive but accessibility suffers from the size of car which makes some engine parts difficult to reach from the side. The radiator duct is visible below the spare wheel.

Coachwork and Equipment

Starting handle Yes
Battery mounting Nearside under bonnet
Jack: Stand for use in conjunction with hydraulic raising and lowering of suspension.
Jacking points Centre of each side of body
Standard tool kit: Jack stand with peg and hub plate remover, grease gun, screwdriver, pliers, 3 open-ended spanners, ring spanner, 2 box spanners, wheelbrace and starting handle extension.
Exterior lights: 2 side/head lamps, 2 reversing lamps, 2 stop lamps, 2 tail lamps, rear number plate lamp, offside parking light.
Number of electrical fuses Two
Direction indicators Flashers

Windscreen wipers Self-parking electric
Windscreen washers Trico
Sun visors Two
Instruments: Speedometer (with total and decimal trip mileage recorders), ammeter, fuel gauge, clock.
Warning lights: Ignition and oil pressure, main beam, hydraulic fluid level, fluid high pressure.
Locks—with ignition key: Both front doors and tail door.
Glove lockers One in fascia
Map pockets None
Parcel shelves None
Ashtrays: One below centre of fascia and one in the back of each front seat.

Cigar lighters None
Interior lights: One on each door pillar and one at rear.
Interior heater: Standard fresh air heater and demister with separate duct for rear passengers.
Car radio Optional extra, Ekco 917, 921
Extras available: Radio, foglamps, towing attachment, driver's door armrest.
Upholstery material Leather
Floor covering: Carpet with thick foam underlay.
Exterior colours standardized: Five; others at extra cost.
Alternative body styles Normal saloon models

Maintenance

Sump 7 pints, S.A.E. 20 or 10W/30
Gearbox and final drive: 2½ pints, S.A.E. 90 EP.
Steering gear lubricant Grease
Cooling system capacity: 18 pints (2 drain taps).
Chassis lubrication: By grease gun every 1,250 miles to 8 points.
Ignition timing 12° before t.d.c.
Contact breaker gap016 in.

Spark plug type Champion H8
Spark plug gap020-.024 in.
Valve timing: Inlet opens 3° b.t.d.c. and closes 45° a.b.d.c. Exhaust opens 45° b.b.d.c. and closes 11° a.t.d.c.
Tappet clearances (cold) Inlet .008 in. Exhaust .010 in.
Front wheel toe-in04 in. — .12 in.

Camber angle ¼° negative
Castor angle 1½°
Steering swivel pin inclination Vertical
Tyre pressures Front 25½ lb. Rear 27 lb.
Brake fluid Castrol HF
Battery type and capacity: Exide 12-volt, 57 amp.-hour.

AN EXPLANATION OF SPECIAL TERMS IN THE DATA PANEL OF "THE MOTOR" ROAD TESTS

THE following notes may assist readers of these reprints who are unfamiliar with some of the special terms regularly used :

Kerb weight : The weight of the car ready to be tested with oil, water, tools and fuel for approximately 50 miles.

Laden weight : Kerb weight plus driver, one passenger and standard test apparatus.

Tapley figures : Acceleration and hill-climbing ability of the car measured by the instrument of this name, which consists of a damped pendulum. Gradients climbable in top gear equivalent to the Tapley figure recorded are set out separately.

Braking figures : With the friction coefficient between tyres and road at the normally accepted maximum coefficient of unity the rate of retardation on the car cannot exceed 32.2 ft. per second²—the acceleration of gravity : this would be equivalent to stopping the car in 30.1 ft. from 30 m.p.h. The recorded figures are therefore set out as a percentage of gravity, with the equivalent stopping distances.

Maximum speed : Timed by two observers on a level road in both directions with sufficient run-in (between 1 and 3 miles) to ensure that the car has reached its terminal velocity.

Acceleration : Top-gear accelerations are taken from rolling starts—i.e., when timing between 30 and 50 m.p.h. full throttle has been given at well below 30 m.p.h. This applies to other acceleration times in a fixed gear.

Standing start acceleration times : Are the best that can be recorded by the testers using the fastest possible rather than the smoothest getaway from rest, and upward gear changes on full throttle when this is practicable.

Fuel consumption : The steady speed figures are the average of runs in opposing directions consuming a measured 1/10 gallon. The overall figure is based on a mixture of town and country driving and reflects the natural pace of the car so that if an unchanged engine and transmission system were transferred from a car having moderate road holding to one outstanding in these characteristics the overall consumption would tend to suffer.

Touring fuel consumption : Based, empirically, on the m.p.g. at a steady speed midway between 30 m.p.h. and the maximum, less 5% to allow for acceleration, this figure will be found close to that obtained by many private owners in the course of normal week to week motoring.

Under and oversteer : An understeering car will tend to be naturally straight-running and be stable in cross winds, but will require unexpected steering lock to carry it round a corner of given radius. An oversteering car corners willingly but may wander on the straight and is often sensitive to cross winds.

Equipment : This is correct as at the time of road test, and should be checked if a purchase is contemplated at some substantially later date.