

# The Motor Road Test No. 17/60

**Make:** Lotus

**Type:** Elite

**Makers:** Lotus Cars Ltd., Delamare Road, Cheshunt, Herts.

## Test Data

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**CONDITIONS:** Weather: Mild and fine, with light wind. (Temperature 55°-70°F., Barometer 29.9 in. Hg.) Surface: Dry tarred macadam and concrete. Fuel: Super-premium grade pump petrol (approx. 101 Research Method Octane Rating).

### INSTRUMENTS

Speedometer at 30 m.p.h. . . . .	6% fast
Speedometer at 60 m.p.h. . . . .	6% fast
Speedometer at 90 m.p.h. . . . .	6% fast
Distance recorder . . . . .	2% fast

### WEIGHT

Kerb weight, (unladen, but with oil, coolant, and fuel for approx. 50 miles) . . . . .	13½ cwt.
Front/rear distribution of kerb weight . . . . .	46/54
Weight laden as tested . . . . .	16½ cwt.

### MAXIMUM SPEEDS

**Flying Mile.**

Mean of four opposite runs . . . . .	111.8 m.p.h.
Best one-way time equals . . . . .	113.2 m.p.h.

**"Maximile" speed.** (Timed quarter mile after one mile accelerating from rest.)

Mean of four opposite runs . . . . .	102.3 m.p.h.
Best one-way time equals . . . . .	104.7 m.p.h.

**Speed in gears (at 6,500 r.p.m.)**

Max. speed in 3rd gear . . . . .	83 m.p.h.
Max. speed in 2nd gear . . . . .	50 m.p.h.
Max. speed in 1st gear . . . . .	30 m.p.h.

### FUEL CONSUMPTION

51.0 m.p.g. at constant 30 m.p.h. on level.
54.0 m.p.g. at constant 40 m.p.h. on level.
52.5 m.p.g. at constant 50 m.p.h. on level.
48.5 m.p.g. at constant 60 m.p.h. on level.
43.0 m.p.g. at constant 70 m.p.h. on level.
37.0 m.p.g. at constant 80 m.p.h. on level.
33.0 m.p.g. at constant 90 m.p.h. on level.
29.5 m.p.g. at constant 100 m.p.h. on level.

**Overall Fuel Consumption** for 2,025 miles, 59.4 gallons, equals 34.1 m.p.g. (8.3 litres/100 km.)

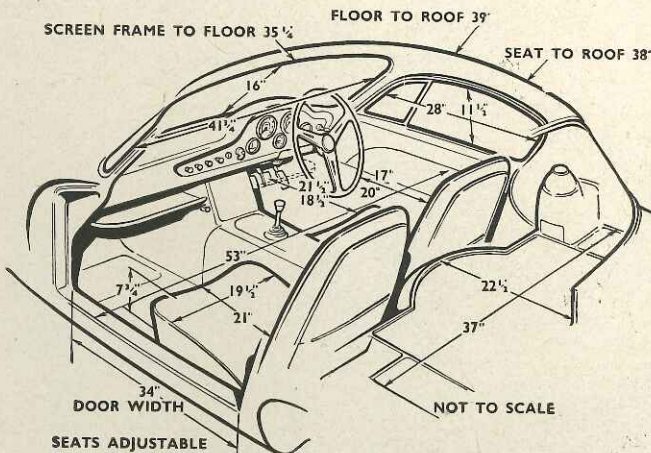
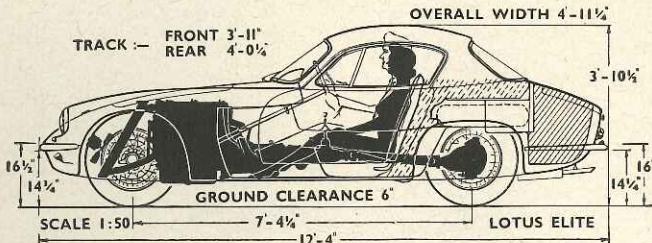
**Touring Fuel Consumption** (m.p.g. at steady speed midway between 30 m.p.h. and maximum, less 5% allowance for acceleration). 40.5 m.p.g. Fuel tank capacity (maker's figure) 6½ gallons.

### STEERING

Turning circle between kerbs:	
Left . . . . .	35 ft.
Right . . . . .	33½ ft.
Turns of steering wheel from lock to lock	2½

### BRAKES from 30 m.p.h.

0.99 g retardation (equivalent to 30½ ft. stopping distance) with 130 lb. pedal pressure.
0.90 g retardation (equivalent to 33½ ft. stopping distance) with 100 lb. pedal pressure.
0.65 g retardation (equivalent to 46 ft. stopping distance) with 75 lb. pedal pressure.
0.47 g retardation (equivalent to 64 ft. stopping distance) with 50 lb. pedal pressure.
0.27 g retardation (equivalent to 111 ft. stopping distance) with 25 lb. pedal pressure.



### ACCELERATION TIMES from Standstill

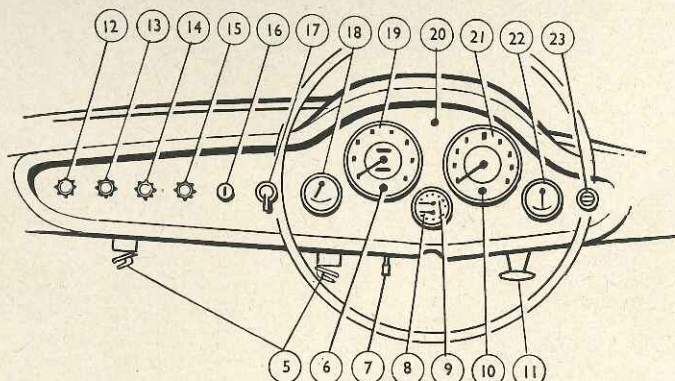
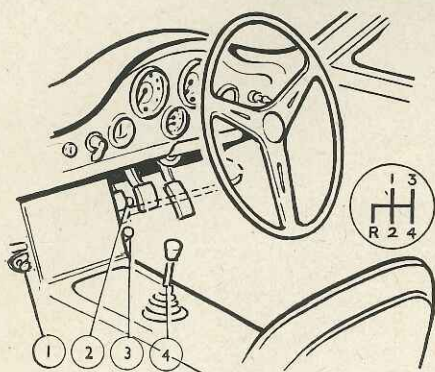
0-30 m.p.h. . . . .	3.8 sec.
0-40 m.p.h. . . . .	5.8 sec.
0-50 m.p.h. . . . .	8.0 sec.
0-60 m.p.h. . . . .	11.4 sec.
0-70 m.p.h. . . . .	15.5 sec.
0-80 m.p.h. . . . .	20.4 sec.
0-90 m.p.h. . . . .	28.3 sec.
0-100 m.p.h. . . . .	41.1 sec.
Standing quarter mile . . . . .	18.4 sec.

### ACCELERATION TIMES on Upper Ratios

10-30 m.p.h. . . . .	Top gear	3rd gear
20-40 m.p.h. . . . .	12.3 sec.	8.3 sec.
30-50 m.p.h. . . . .	10.3 sec.	7.4 sec.
40-60 m.p.h. . . . .	10.1 sec.	6.7 sec.
50-70 m.p.h. . . . .	11.3 sec.	6.5 sec.
60-80 m.p.h. . . . .	10.8 sec.	7.8 sec.
70-90 m.p.h. . . . .	10.7 sec.	9.0 sec.
80-100 m.p.h. . . . .	13.1 sec.	—
	20.1 sec.	—

### HILL CLIMBING at sustained steady speeds

Max. gradient on top gear . . . . .	1 in 9.7 (Tapley 230 lb./ton)
Max. gradient on 3rd gear . . . . .	1 in 6.2 (Tapley 355 lb./ton)
Max. gradient on 2nd gear . . . . .	1 in 3.9 (Tapley 560 lb./ton)



1. Heater temperature control. 2. Windscreen washer button. 3. Headlamp dipswitch. 4. Gear lever. 5. Heater air outlet shutters. 6. High beam indicator lamp. 7. Trip re-setting knob. 8. Water thermometer. 9. Oil pressure gauge.

10. Dynamo charge warning lamp. 11. Handbrake. 12. Choke control. 13. Heater fan switch. 14. Windscreen wipers switch. 15. Lights, panel and interior lights switch. 16. Ignition and starter switch. 17. Direction indicator switch. 18. Fuel

contents gauge. 19. Speedometer. 20. Direction indicator warning light. 21. Rev. counter. 22. Ammeter. 23. Horn switch and headlamp flasher.

# The Lotus Elite

A Very Small Car Offering Speed,  
Comfort and Controllability

WHEREAS a great many manufacturers of touring cars have also built racing models, the Lotus organization is altogether unusual in having concentrated upon racing and other forms of competitive motoring for many years before ever attempting to build cars for everyday road use. Even this first "utilitarian" Lotus model, which made its debut at Earls Court as a prototype in October, 1957, has been tested-out with tuned engines in a wide variety of races before being put into production as a fully equipped and silenced car for daily business or pleasure motoring. This racing background has produced a car which is right out of the ordinary and, although expensive, a most attractive vehicle.

Throughout the history of the Lotus organization, Colin Chapman has concentrated on producing cars of low weight and wind resistance which had high standards of controllability, so that quite a moderate amount of engine power would provide very high speeds around a racing circuit or from point to point. Without pretending to be very quiet or very weatherproof, many Lotus two-seaters which were built for sports car racing during the past five years proved surprisingly comfortable, and the Elite has not needed to differ appreciably from them in dimensions, suspension layout or power unit type. One big innovation on the coupé model is that, instead of using a multi-tube chassis clothed in metal body panels, it has a chassisless "hull" of polyester resin plastics and glass fibre which combines strength with lightness, smooth contours and quiet, weatherproof comfort.

Fundamental to appreciation of the Lotus Elite is the concept that, although many people require their cars to be fast, comfortable and safe, bigness is no virtue and can, in fact, be a serious disadvantage. The Elite is no larger than its designers have thought necessary for the transportation of two people and their luggage at speeds up to 110 m.p.h. or so, with uncramped elbow room and with racing car standards of road holding. It is a technical tour-de-force to have produced a comfortable, fully equipped car which does this very well indeed for a kerb weight of 13½ cwt., using a single-carburettor 1,216 c.c. Coventry Climax engine which is working very well within its known limits.

Economy of fuel cannot be regarded as of prime importance for a car costing over £1,900, but the features which have given the Elite its performance have also produced such outstanding petrol consumption figures as 52½ m.p.g. at a steady 50 m.p.h. and 29½ m.p.g. at a steady 100 m.p.h., the light

and compact 6½-gallon fuel tank giving a reasonably wide cruising range at 34.1 m.p.g. overall consumption.

Easier to enter than most other very low-built cars, the Elite is certainly a very comfortable two-seater. Individual seats upholstered in leathercloth of high quality have high backrests shaped to provide a reasonable amount of lateral support without making them hard to enter, and sponge rubber cushioning is supported on elastic webbing cross straps. There is plenty of room for long legs and for a straight-arm driving position, quite sufficient headroom, and as much elbow room as could be wished above the central transmission tunnel and in the hollowed-out doors.

Among the few points at which metal is used invisibly to reinforce the body structure is around the windscreen, so that the roof pillars are not so thick as to arouse serious criticism, but the steeply raked windscreen is rather shallow and, whilst a 6-foot-tall driver was exactly satisfied with the seat height, those of greater stature found that upward and forward vision was limited, whereas short drivers would prefer a raised seat to improve vision over the steering wheel rim and the hooded instrument panel.

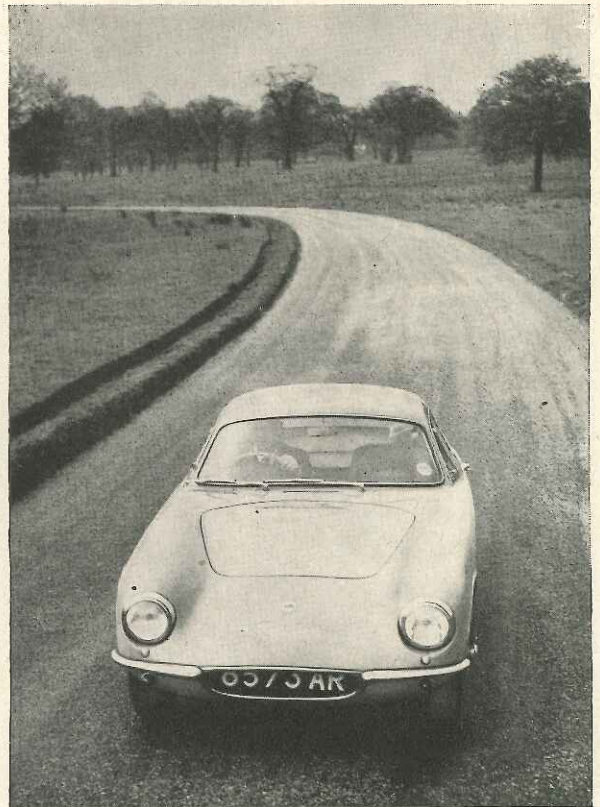
Early examples of this model which have been seen in races were rather austere furnished, but the interior trim of current production Elites (the hull of our test car was one which had been moulded by the Plastics Division of Bristol Aircraft) was of very pleasing quality. Inside and out, a discreet touch from the hands of professional stylists has combined neat appearance with honest functional merit. Racing ancestry is recalled by the lightweight wood-rim steering wheel and by the full set of clear, circular-dial instruments, but the touring motorist finds deep and well-fitting pile

carpets with rubber inserts, an interior lamp with door-operated switches, variable-brightness instrument lighting, twin windscreen wipers, capacious door pockets, parcel shelves and turn indicators with a time switch to cancel them. Optional extras which were built into our test model comprised a heater and screen demister taking fresh air from an intake on top of the scuttle, and a toe-operated pair of windscreen washing sprays.

## Docile Power

Developing 75 b.h.p. in this single-carburettor form as compared with 98-100 b.h.p. when tuned for competitions (with higher compression ratio, twin carburettors, different camshaft and other modifications) the Coventry Climax engine is a potent performer yet very docile. Prompt in starting from cold, it is perfectly happy down to 20 m.p.h. or less in top gear (recording acceleration times from 10 m.p.h. in this ratio seemed no more than mildly cruel) yet gave a timed maximum speed of 111.8 m.p.h. (as the mean of runs in opposite directions) after a rather limited amount of running-in. As the top gear acceleration times recorded on the data page make clear, this engine pulls well at speeds as low as 1,000 r.p.m., but its best torque is not felt until 3,500 r.p.m. is approached, the peak of the power curve is at 6,100 r.p.m., and the red sector on the rev. counter dial starts at a speed of 6,500 r.p.m. which was only just reached in top gear during our timed runs on level road. This is not a silent engine mechanically when the bonnet is open, but a lot of felt and foamed plastic keeps the car interior reasonably quiet, and twin silencers subdue the exhaust note with a completeness which permits unhesitating use of full power on the road at almost any time and place.

Our test car was equipped with a

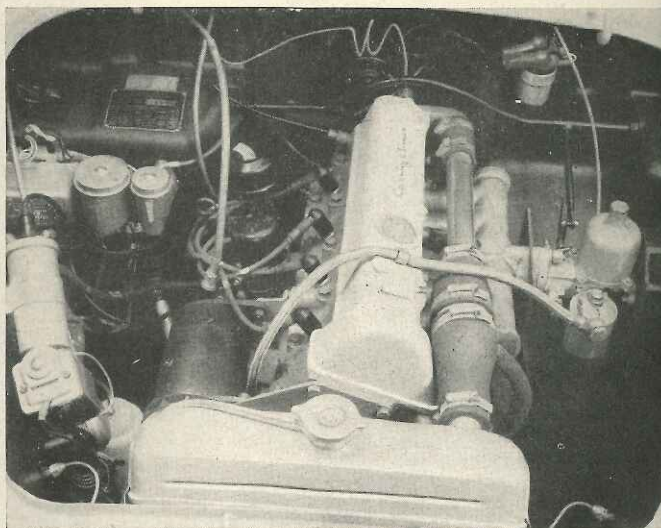


## In Brief

Price with 4.22 axle	£1,387 plus purchase tax	£579 0s. 10d. equals	£1,966 0s. 10d.
Price with 4.55 axle ratio (including purchase tax)	£1,949 0s. 10d.		
Capacity	.. .. .	1,216 c.c.	
Unladen kerb weight	.. .. .	13½ cwt.	
Acceleration:			
20-40 m.p.h. in top gear..		10.3 sec.	
0-50 m.p.h. through gears		8.0 sec.	
Maximum direct top gear gradient:			
		1 in 9.7	
Maximum speed	.. .. .	111.8 m.p.h.	
"Maximile" speed	.. .. .	102.3 m.p.h.	
Touring fuel consumption	.. .. .	40.5 m.p.g.	
Gearing: 16.85 m.p.h. in top gear at 1,000 r.p.m.:		38.6 m.p.h. at 1,000 ft./min. piston speed.	



The low, sleek Elite has no cooling apertures to mar its frontal streamlining, even the radiator air intake being used to house the number plate. A hinged panel gives access to the engine bay in which almost every item is easy to reach.



## The Lotus Elite

4.22/1 rear axle ratio which is listed as one of several extra-cost alternatives to 4.55/1 gearing. Whilst the latter may be suitable for rallies or for races on slow circuits, the easy and economical speed provided by higher gearing on our test car was something which we would not have wished to sacrifice in order to gain even livelier acceleration in top gear. The four-speed gearbox with central remote control was by no means the car's best feature, third being a good ratio with its maximum of just over 80 m.p.h. but second (in which maximum r.p.m. represented a bare 50 m.p.h.) low enough to be used as a starting-from-rest gear on many occasions: extra running-in would no doubt loosen up a gear-change which was rather stiff, first gear being distinctly awkward to find with the car at rest.

Even with its stiff gearbox and an engine which had enjoyed little running-in, the Lotus Elite can produce very rapid acceleration indeed, from a stand-still or for overtaking from any speed in the range. On a car as light as this our usual test load of two men and their

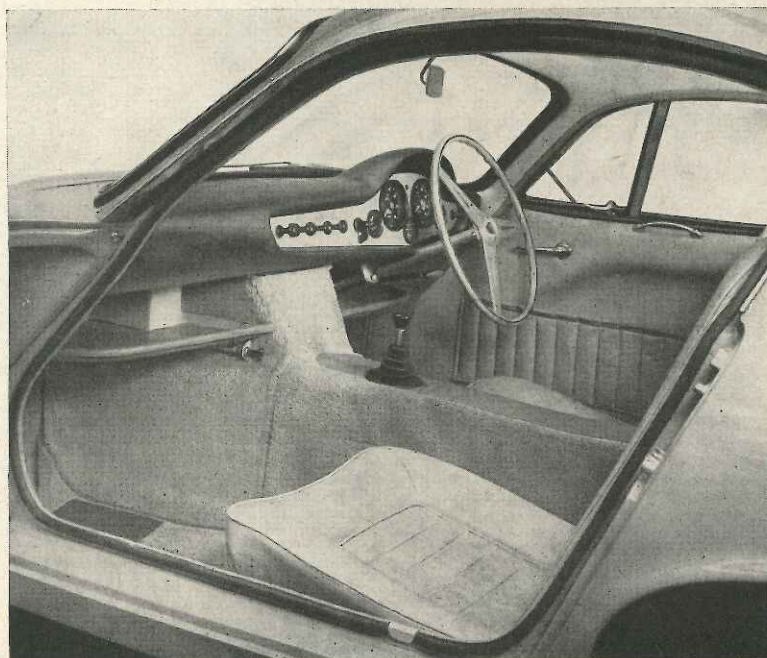
test instruments is a substantial burden, but such figures as 0 to 60 m.p.h. in 11.4 sec., 0 to 100 m.p.h. in 41.1 sec., and 60 m.p.h. to 80 m.p.h. in 10.7 sec., using top gear or 9.0 sec. using third gear, are outstandingly good for so compact and comfortable a closed car.

Silence cannot be claimed for the body interior, there being various resonances from power unit, transmission and road surface which still escape the silencing and sound insulating measures, but the noise which is heard is neither persistent nor ever unduly loud. With the Chapman strut-type independent rear-wheel suspension there are no splined driving shafts to cause transmission snatch, but a vague thud was heard from the hull-mounted final drive unit as the clutch was engaged after changes of gear. Subconsciously, a driver slightly adjusts the throttle opening one way or the other and avoids cruising at the more audible combinations of speed and load, a critical member of our staff who drove and rode more than 800 miles in the Lotus Elite within a 48-hour period being less tired than he would have expected after similarly

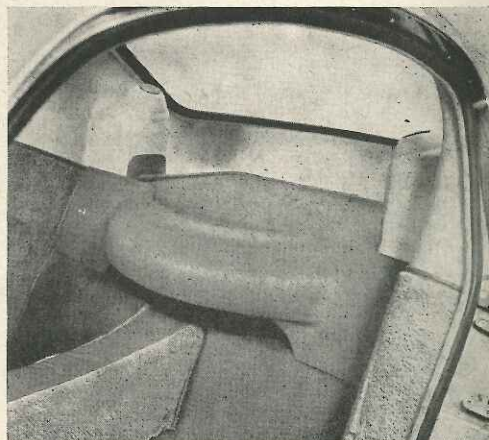
intensive motoring in almost any other car. The body is well ventilated, with a fresh air heater and screen demister, hinged ventilator flaps of safety glass which really do their intended job, and framed side windows of transparent plastic which lift out completely when a catch is released and can be stowed safely in pockets behind the seats. Thanks to quite exceptionally smooth air flow around the bodywork, removal of the side windows does not result in great noise, draughtiness or appreciable entry of rain during fast driving.

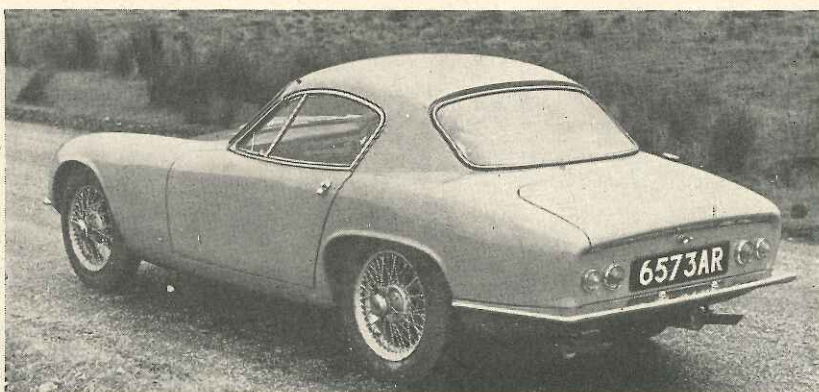
### Smooth Riding

Moderately firm springing has been combined with very low unsprung weights to make this car ride exceptionally well over almost any surface. Farm tracks do not worry it (there is reasonable ground clearance despite very low overall height) and the irregularities of fast main roads are ironed out excellently, the shock-free and completely flat ride being very pleasing to passengers. Occasional "bottoming" of the rear springs did, however, raise doubts as to whether the range of spring travel would prove entirely adequate for fast Continental



Two comfortable seats are divided by a high transmission tunnel from which projects the central gear lever. Instruments and fittings are to a keen driver's liking. The seats can be tipped forward to give access to the detachable moulding concealing the spare wheel, above which is a useful shelf between the suspension mounting "domes."





The neat lines of the Elite are evident from any viewpoint; broad but shallow bumpers surround the tail. Although spare wheel and petrol tank protrude into the boot there is reasonably good luggage room.

motoring with the sensibly shaped rear locker really full of luggage.

Extreme sensitivity of the steering and outstandingly good wheel adhesion are the key to the Elite's handling qualities. Collecting it from the factory with incorrectly set tyre pressures, it was brought home to us how sensitive it is to having the correct amount of air in each Firestone 4.80-15 Nylon Sport tyre, and some experiment led to us going somewhat beyond the recommended 20% front/rear pressure difference to use 19 lb. and 25 lb. pressure at front and rear respectively for most motoring. Too soft rear tyres can make the car hesitant directionally when it is being put into a corner or straightened out, although even then it is stable on the straight or when actually cornering. Given the right balance of tyre pressures, it becomes a car which, when tested on the circular steering pad, turns at the same radius for

any given steering wheel deflection regardless of car speed, showing neither under- nor over-steer. On the road, rack and pinion steering which feels utterly positive (in spite of a rubber-cushioned universal joint in the steering column which prevents excessive kick-back on rough going) lets the car be steered precisely with incredibly little movement or effort, and even on slippery wet roads remarkably high cornering speeds are needed to provoke a gradual loss of adhesion.

Very smooth control of the car's speed is provided by Girling disc brakes, those at the rear being mounted inboard to save unsprung weight. No brake servo has been thought necessary on such a light car, so these brakes ask for high enough pedal pressures before the wheels will lock to ensure virtual immunity from skidding, but the driver soon becomes supremely confident of their performance

on either wet or dry roads, from high speeds or around town. The convenient pull-out handbrake is reasonably powerful, although it would not be safe to leave the car parked on a gradient steeper than 1 in 5.

When a car as unusual as the Lotus Elite comes for test, there is far more which could be said than can be squeezed into four pages. Speed, controllability in all conditions and comfort in all its aspects make this compact two-seat coupé an immensely desirable property for anyone who wants to enjoy covering big daily mileages: expensive in relation to its size and weight, although realistically priced in relation to what it will do and how it does it, the Elite is a perfectly docile runabout for shopping errands and its buyer has no need to budget for a hack "second car" as well as this mettlesome thoroughbred.

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## Specification

<b>Engine</b>	
Cylinders	4
Bore	76.2 mm.
Stroke	66.6 mm.
Cubic capacity	1,216 c.c.
Piston area	28.2 sq. in.
Valves	Single chain-driven overhead camshaft
Compression ratio	10/1
(Optional 11/1 in stage 3 tune)	
Carburettor	One S.U. type H4 horizontal
Fuel pump	AC mechanical
Ignition timing control	Centrifugal
Oil filter	Full-flow
Max. power (gross)	80 b.h.p. (75 b.h.p. net)
at	6,100 r.p.m.
Piston speed at max. b.h.p.	2,660 ft./min.
<b>Transmission (as tested)</b>	
Clutch	Borg & Beck 8-in. s.d.p.
Top gear (s/m)	4.22
3rd gear (s/m)	5.57
2nd gear (s/m)	9.28
1st gear	15.49
Reverse	15.49
(Standard final drive ratio is 4.55, with options of 3.7, 4.22 as on test model, or 4.875.)	
Propeller shaft	Hardy Spicer open shaft to sprung final drive unit.
Final drive	Hypoid bevel
Top gear m.p.h. at 1,000 r.p.m.	16.85
Top gear m.p.h. at 1,000 ft./min. piston speed	38.6
<b>Chassis</b>	
Brakes	Girling hydraulic disc type, inboard mounted at rear.
Brake/disc diameters	9½ in.
Friction areas	26.88 sq. in. of lining working on approx. 320 sq. in. rubbed area of discs.
<b>Suspension:</b>	
Front: i.f.s. by transverse wishbones, anti-roll torsion bar, and coil springs mounted on Armstrong telescopic dampers.	
Rear: Chapman strut-type i.r.s. (Coil springs on Armstrong telescopic damper struts, unsprung double-jointed driving shafts and trailing radius arms.)	
Steering gear Alford & Alder rack and pinion.	
Tyres: Firestone nylon high-performance 4.80-15 tubed 4-ply.	

## Coachwork and Equipment

Starting handle	None
Battery mounting	In boot
Jack	Lazy-tongs type
Jacking points	2 points, one under each side of body
Standard Tool kit: Jack and handle, 3 spanners, adjustable spanner, sparking plug spanner, pliers, screwdriver, copper wheel nut hammer.	
Exterior lights	2 headlamps (Lucas 7-in. "Le Mans"), 2 sidelamps, 2 stop/tail lamps.
	2 number plate lamps.
Number of electrical fuses	1 plus 1 circuit breaker in lighting switch.
Direction indicators	Amber flashers with self-cancelling time switch
Windscreen wipers	Lucas two-speed self parking, with twin blades.
Windscreen washers	Optional extra (Tudor toe-operated)
Sun visors	None
Instruments	Speedometer with total and decimal trip distance recorders, rev. counter, oil pressure gauge, coolant thermometer, ammeter, fuel contents gauge.
Warning lights	Dynamo charge, headlamp main beam, turn indicators

<b>Locks:</b>	
With ignition key	Ignition/starter switch, driver's door, luggage locker
With other keys	None
Glove lockers	None
Map pockets	Two inside doors
Parcel shelves	One behind seats, shelves below fascia integral with ducts for optional heater
Ashtrays	None
Cigar lighters	None
Interior lights	One in roof with courtesy switches
Interior heater	Optional extra Smiths
Car radio	None offered
Extras available: Interior heater, windscreen washers, special colours, seat belts, Lotus stage 2 or stage 3 engine tuning modifications, close-ratio gears, and other racing equipment.	
Upholstery material	Leather/cloth
Floor covering	Carpet
Exterior colours standardized	3
	(Any other colour at £35 extra)
Alternative body styles	None

## Maintenance

Sump	8 pints, S.A.E. 20 winter, S.A.E. 30 summer
Gearbox	4½ pints, S.A.E. 40 winter, S.A.E. 50 summer
Rear axle	1½ pints, S.A.E. 90 hypoid gear oil
Steering gear lubricant	grease
Cooling system capacity	12 pints (1 drain plug)
Chassis lubrication	By grease gun every 1,500 miles to 14 points
Ignition timing	2°-3° before t.d.c. static
Contact-breaker gap	0.014-0.016 in.
Sparking plug type	Champion N3
Sparking plug gap	0.018 in.
Valve timing	Inlet opens 12° before t.d.c. and closes 56° after b.d.c.; Exhaust opens 56° before b.d.c. and closes 12° after t.d.c.
Tappet clearances (Cold)	Inlet 0.006 in. Exhaust 0.008 in.
Front wheel toe-in	¼ in. to ½ in.
Camber angle	1½° to 1¾°
Castor angle	7°
Steering swivel pin inclination	9°
Tyre pressures	Front 19 lb. Rear 23 lb. (see text)
	Raise pressures by 7 lb. for very fast driving.
Brake fluid	Girling crimson
Battery type and capacity	12 volt, 57 amp. hr.
Miscellaneous	Car should be jacked up ONLY by jacking points provided.