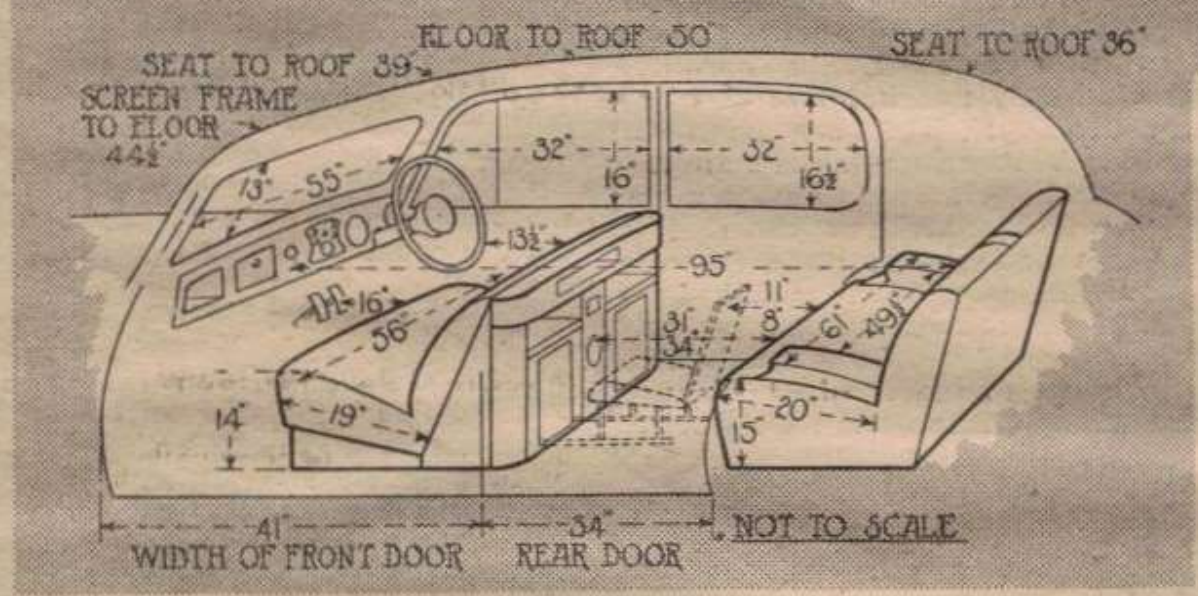
The Motor Road Test No. 15/47

Make: Daimler. **Type:** Straight-Eight Hooper 4-Light Limousine.
Makers: The Daimler Co. Ltd., Coventry.

Dimensions and Seating



In Brief

Price: Chassis £2,025. Body: £2,095. Plus Purchase Tax £2,290-7-10 = £6,410-7-10.

Capacity .. 5,460 c.c.
Road weight unladen 57½ cwt.
Front/rear weight distribution 51/49
Laden weight as tested 61 cwt.
Fuel consumption 11 m.p.g.
Maximum speed 82.8 m.p.h.
Maximum speed on 1 in 20 gradient 70 m.p.h.
Maximum top gear gradient 1 in 12
Acceleration, 10-30 on top .. 10.5 secs.
0-50 through gears 14.5 secs.
Gearing, 22 m.p.h. in top at 1,000 r.p.m. 69·8 m.p.h. at 2,500 feet per minute piston speed.

Test Conditions

Damp concrete, cold, light breeze, Pool petrol, rubber tyres.

Test Data

ACCELERATION TIMES on Two Upper Ratios

	Top	3rd
10–30 m.p.h.	10.5 secs.	6.5 secs.
20–40 m.p.h.	10.1 secs.	6.8 secs.
30–50 m.p.h.	11.5 secs.	8.6 secs.
40–60 m.p.h.	13.2 secs.	11.8 secs.
50–70 m.p.h.	16.8 secs.	—

ACCELERATION TIMES through Gears

0–30 m.p.h.	6.3 secs.
0–40 m.p.h.	9.8 secs.
0–50 m.p.h.	14.5 secs.
0–60 m.p.h.	21.4 secs.
0–70 m.p.h.	30.3 secs.
Standing quarter-mile	22.7 secs.

MAXIMUM SPEEDS:

Flying Quarter-mile

Mean of four opposite runs	82.8 m.p.h.
Best time equals	85.7 m.p.h.

Speed in Gears

Max. speed in 3rd gear	62 m.p.h.
Max. speed in 2nd gear	40 m.p.h.

BRAKES at 30 m.p.h.
0.83 g. (=36¼ ft. stopping distance) with 180 lb. pedal pressure.
0.60 g. (=50 ft. stopping distance) with 100 lb. pedal pressure.
0.39 g. (=77 ft. stopping distance) with 50 lb. pedal pressure.

FUEL CONSUMPTION
Overall consumption for 313 miles, 29.5 gallons equals 10.6 m.p.g.
15¼ m.p.g. at constant 30 m.p.h.
14 m.p.g. at constant 40 m.p.h.
12¼ m.p.g. at constant 50 m.p.h.
11¼ m.p.g. at constant 60 m.p.h.
10¼ m.p.g. at constant 70 m.p.h.

HILL CLIMBING
Max. top gear speed on 1 in 20 .. 70 m.p.h.
Max. top gear speed on 1 in 15 .. 61 m.p.h.
Max. gradient climbable on top gear, 1 in 12 (Tapley 135 lb. per ton).
Max. gradient climbable on 3rd gear, 1 in 7¼ (Tapley 290 lb. per ton).
Max. gradient climbable on 2nd gear, 1 in 5¼ (Tapley 390 lb. per ton).

STEERING
Left- and right-hand lock .. .. 50 ft.
4¼ turns of steering wheel, lock to lock.

Specification

Engine	
Cylinders	8 in line
Bore	85.1 mm.
Stroke	120 mm.
Cubic capacity	5,460 c.c.
Piston area	70.5 sq. ins.
Valves	Pushrod o.h.v.
Compression ratio	6.3
Max. b.h.p.	150
at	3,600 r.p.m.
B.h.p. per sq. in. piston area	2.12
Piston speed at max. b.h.p.	2,835 ft./min.
Carburetters	2 S.U. Downdraught
Ignition	Lucas Coil, 12 V.
Sparking plugs	Lodge CB14
Fuel pump	A.C. mechanical
Oil filter	Tecalemit full-flow
Transmission	
Clutch	Fluid Flywheel
Top gear	4.09
3rd gear	6.25
2nd gear	9.67
1st gear	17.1
Propeller shaft	Hardy Spicer
Final drive	Hypoid bevel
Chassis	
Brakes	Girling hydro. mech.
Brake drum diameter	14 ins.
Friction lining area	222 sq. ins.
Tyres	8.00/17 Dunlop
Steering gear	Marles double roller

Performance Factors (At laden weight as tested)

Piston area, sq. in. per ton	23.1 sq. ins.
Brake lining area, sq. in. per ton	73 sq. ins.
Litres per ton-mile	2,440

Chassis described in "The Motor," April 24th 1946.

Maintenance

Fuel tank: 20 gallons. **Sump:** 17¼ pints. **Fluid Flywheel:** 11¾ pints. **Gearbox:** 8 pints. **Rear Axle:** 6 pints. **Radiator:** 48 pints. **Chassis Lubrication:** Luvax Bijur. **Ignition Timing:** Marked on flywheel. **Spark Plug Gap:** 0.30 in. **Contact Breaker Gap:** 0.12 in. **Tappets** (hot): 0.15 in. on No. 1 tappet with No. 16 fully open. **Front Wheel Toe-in:** ⅛ in. **Camber Angle:** 1½ degrees. **Trail:** ¾ in. **Tyre Pressures:** Front 34 lb., rear 36 lb. **Brake Fluid:** Wakefield Girling Thin. **Shock Absorber Fluid:** Wakefield Girling Thin. **Battery:** Lucas 110 amp. SLTW/23D. **Lamp bulbs:** Head and Pass Lights, Lucas No. 87, 6 watt; Side, Rear Light, Brake Light, Rear Number Plate, Lucas No. 207, 6 watt; Reversing Light, Lucas No. 1, 24 watt.

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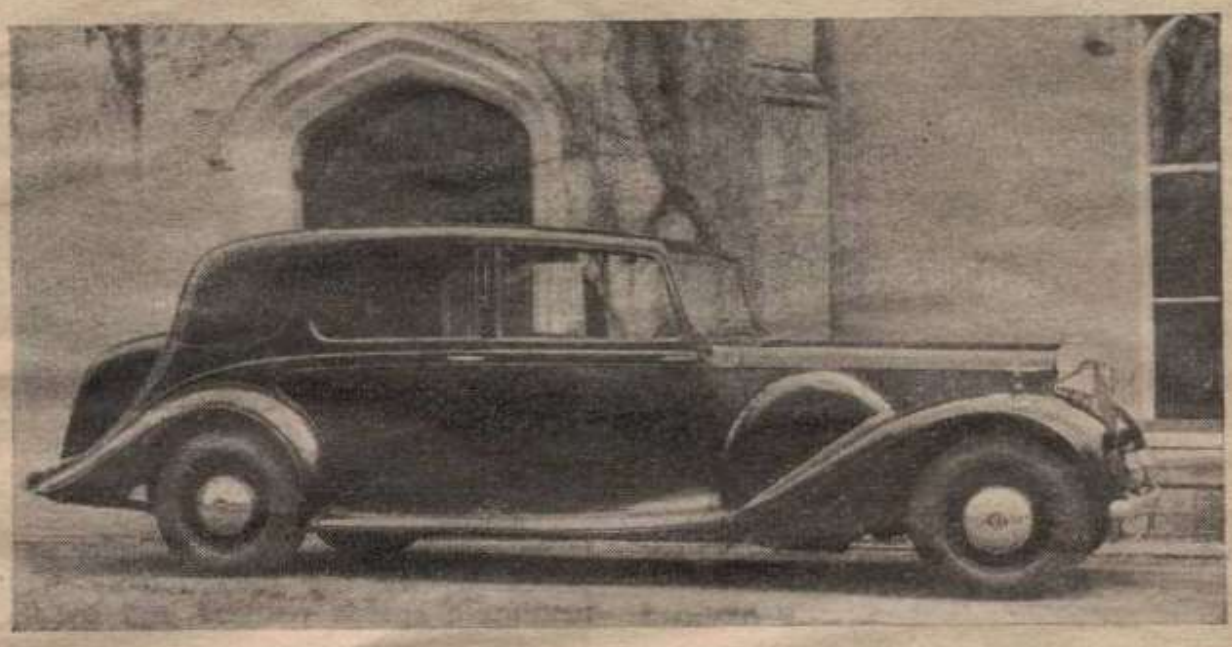
—The Daimler Straight-eight Limousine

Outstanding Performance, Refinement and Dignity Characterize the World's Most Expensive Car



The Hooper body, with its flowing lines and excellent proportioning, reduces the impression of size.

THE post-war Straight-eight Daimler is an entirely new design and is a car of such striking performance and qualities that one searches, almost in vain, for the appropriate adjective. Possibly "fabulous" is the most embracing term for a car that is considerably the most expensive in the world, has the largest wheelbase and biggest body space of any European car, has all the qualities of silence and dignity of which Daimler is a synonym, with speed, acceleration, and road-holding which would evoke praise in a sports model.

The chassis design is virtually identical with that employed on the six-cylinder 4-litre car which was fully described in "The Motor" of April 24, 1946.

It will be remembered that salient features are an immensely stiff cruciform braced box-section frame, independent suspension at the front, with coil springs and wide-based wishbones swinging on rubber joints, and semi-elliptic springs at the back, the axle movement being controlled by radius arms.

The traditional Daimler worm drive has now been abandoned in favour of a hypoid bevel gear, which gives a low propeller-shaft line, but the world-famous combination of fluid flywheel and epicyclic gearbox with preselector gears known as the Daimler transmission has been retained. On the eight-cylinder model the wheelbase of 12 ft. 3 ins. gives an overall length of well over 18 ft. The six-cylinder engine was widely used during the war in the Daimler armoured car and thus had very exacting testing. The eight-cylinder has the same cylinder dimensions, giving it a capacity of 5 litres and an output of 150 b.h.p. at 3,600 r.p.m. As will be seen from the performance of the car, this power ouput must be treated as of a very genuine kind, and one can rely upon it being continuously available over very long distances.

The induction system is a very interesting design feature, the two S.U. carburetters being attached to a water-heated manifold, which is isolated from the radiator until the thermostat opens and thus gives very rapid warming-up of the engine. Cylinder wear is reduced by the use of chrome molybdenum liners of exceptional hardness.

Transmission System

The Daimler transmission has now been in steady use on private cars, commercial and armoured vehicles, for some 15 years, and is too well known to need a detailed description. For the benefit of overseas readers it is, however, worth recapitulating that power is delivered to an hydraulic coupling, which offers 100 per cent. slip at, say, 500 r.p.m. of the engine and nearly zero slip at, say, 1,200. As the engine speed is raised from the lower to the higher figure, the drive is taken up with complete freedom from shock, and on the level the car may be readily started in any gear, including top. Hydraulic coupling by itself, however, does not increase torque, and a gearbox is also required. On the Daimler the gears are of epicyclic form, engaged by external contracting brake bands within the gearcase and controlled by what is normally the clutch pedal. A lever is placed beneath the steering column, and it can be freely set in any of the marked gear positions. Changes can then be effected by depressing the left pedal, which will engage the gear previously selected on the lever. As the engagement is effected by a contracting band within the gearcase, it is impossible to make a noise, and as the bands are arranged to engage gently on the overrun, a clumsy change into the lower ratio does not result in shock or undue stress. The driver thus has complete control over the gear ratio and an entirely foolproof change. Moreover, the take-up of the coupling from rest is smoother than can be effected by the most delicate operation of a friction clutch, and in military use it has been found that this feature is of great value when operating on very greasy or slippery surfaces.

Finally, of course, the car will run down to zero speed on top gear. The Daimler transmission system thus eliminates a clutch problem which can be a severe one on a heavy car

The Hooper body is a masterpiece of modern coachbuilding. A variety of less costly styles are available on this chassis, but the car submitted for test was primarily designed as a chauffeur-drive car, and although the front compartment contains comfortable seats, the leg room cannot be considered generous and the fittings and facia panel are more useful than ornamental. The passenger compartment is separated by a glass division, which can be raised or lowered by an electric motor controlled by switches on the facia panel at the front and on the arm-rests at the back, and this feature is repeated in electrical operation of all four drop side windows. Many hundreds of miles of motoring have convinced us that this item is no whim or absurd luxury, but a feature offering real convenience and practical merit. Convenience in the sense that windows can be rapidly adjusted to any position, practical because the absence of handles for winding eliminates the possibility of tearing clothes when entering or leaving the car.

The interior is automatically lit up as the doors are opened, a practical feature being the provision of further small lights in the rear quarters of the body, so that the passengers can read without glare distracting the driver. Two occasional seats are provided, of sufficient size to comfortably accommodate a large passenger, and have adequate upholstery to ensure comfort over long distances. The furnishing in respect of woodwork, cloth upholstery at the back, a telephone to the driver, and other minor details is on the highest plane and makes this car a worthy representative of English craftsmanship

It will be seen that the Daimler radiator is retained, but slightly swept back, while the long, flowing, front mudguards are used as a mounting for two spare wheels, which have quickly detachable covers. This leaves the

Five passengers can be comfortably accommodated in the rear compartment. When not in use the occasional seats fold forwards into the centre division.

whole of the rear compartment free for luggage, an obviously desirable feature on a car which is manifestly destined for long-distance and trans-continental touring, in addition to employment as a town carriage.

It is, of course, in traffic that the virtues of the fluid flywheel are most apparent. The engine can be allowed to idle with, say, second gear engaged and third already preselected, the driver holding the car by slight pressure upon the brake pedal. At the moment this pressure is released, the car will gather way, and, with an experienced driver, the rear passenger will find it almost impossible to know when a gear-change has been made or in what gear the car is at at any given moment. The high performance in town traffic belies both the appearance and the weight of the vehicle. On the other hand, the steering, which has a very strong castor action, becomes somewhat heavy when the car is being taken round corners at low speeds, and a *chauffeuse* might well find town work unduly exhausting. Similarly, despite the use of a vacuum servo motor to assist the Girling hydromech braking system, the pedal pressure required for normal stopping is on the high side.

Planning the suspension on extremely large cars is a matter of great difficulty, as the passenger load may vary between, say, 300 lb. for two people up to 1,400 lb. for eight people and luggage. The Daimler design department has had many years of experience in this matter, and on the new car they have provided a comfortable, but essentially firm, suspension, which is wholly free from the floating motion which is characteristic of many very large vehicles. The result is a car which gives reasonable comfort for one passenger at 20 m.p.h. in London, and altogether abnormal stability and safety at high speeds on the open road. To say that this seven-passenger limousine behaves like a sports car so far as high-speed steering and cornering is concerned, might seem absurd, but such is indeed the case. For example, we normally test and time for speed all cars capable of over 75 m.p.h. abroad, as the test course employed in this country is approached around large radius bends. The Daimler surprised us by the unexpectedly high maximum speeds realized and by the fact that it took these bends, as it were, in its stride. Sharp corners can, if required, be taken at, say, 60 m.p.h. with a very slight rear-wheel drift, which is fully under the control of the driver, and although a chauffeur-driven car is not normally handled in this fashion, one must remember that alternative owner-driver bodies are offered and that high-speed stability can often be a safety factor of the very highest importance. Additionally, in this country, it is often found that very softly sprung cars have to be driven at unduly low speeds on cross-country journeys if the passengers are to be freed from physical discomfort and nervous anxiety.

In the course of testing the Daimler, it was possible to drive two elderly non-motorists for 200 miles at speeds ranging from 50-70 m.p.h., and at no time were they made velocity conscious, except when they arrived at their destination much earlier than they had expected.

These remarkable qualities of high-speed control and safety are matched by the excellent behaviour of the brakes, which have a hard task in bringing to rest so heavy a vehicle. In addition to giving a good stopping distance, they provide very even pull-up, with entire absence of judder or flick from the front wheels, which is a tribute to the layout of the suspension arrangements. The car will maintain a very comfortable 70 m.p.h., and average speeds of between 40 and 45 m.p.h. are provided almost automatically.

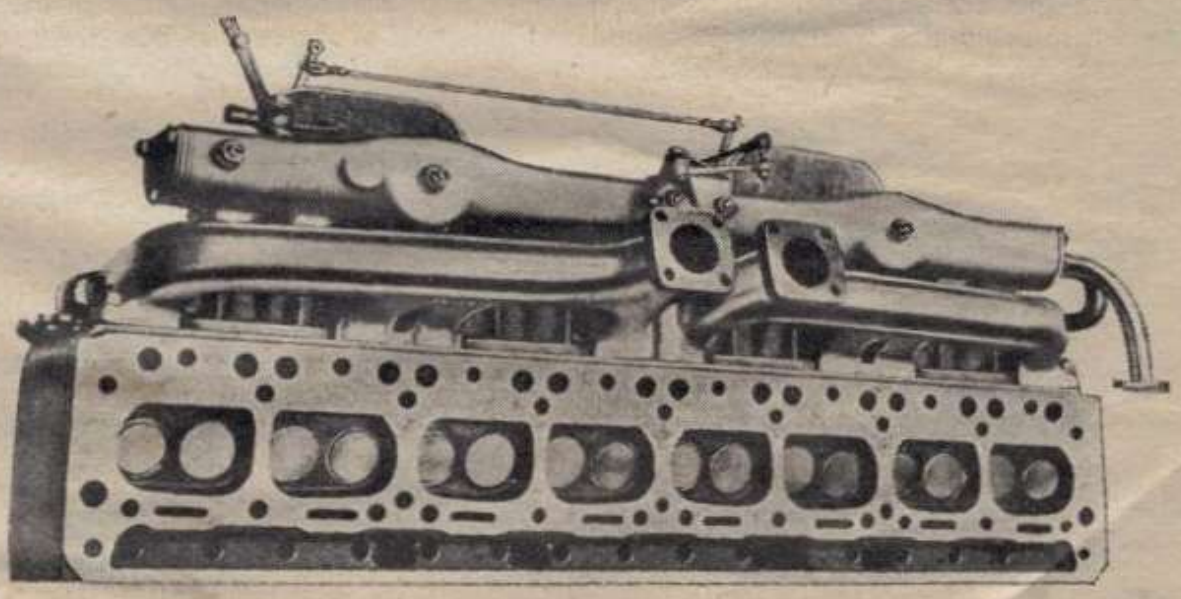
If the gears are used, outstanding acceleration figures are realized, the third gear being particularly useful in the country as well as in town, as, if required, 60 m.p.h. can be obtained on it, although normally changing to the top ratio at 50 m.p.h. is the best practice.

At night high speeds can be maintained by reason of the extreme range of the Lucas P100 head lamps. These give a concentrated beam, and a foot switch provides an alternative of a widely spread beam from two pass lights, one of which can be switched off from the dash. For moderate speeds on winding roads it may be preferable to work on the two pass lights, for these give a considerably better sideways illumination, which is of assistance in tackling a succession of sharp corners. The car has first-class forward visibility, the driver being situated above the bonnet, commanding an excellent view of the road, and two wing-mounted mirrors.

Heating and defrosting equipment was not supplied on the car tested, nor was a radio set, but the design is laid out to include these items as options at a price extra to the list figure of £4,120, plus purchase tax if sold in this country.

At the foregoing figure, the car is substantially the most expensive in the world, but it must be recognized that £2,095 is represented by the cost of the body; the chassis price of £2,025 cannot be considered excessive in relation to prewar figures, and the entire vehicle offers value for money in the sense that it presents a virtually unique combination of qualities.

This post-war Daimler Straight Eight is, indeed, a really great car and one which reflects the utmost credit upon the designer, Mr C. M. Simpson, and all who have been associated with its construction.



Specially shaped combustion chambers allow a compression ratio of 6.3:1 and careful regulation of mixture temperature prevents detonation.