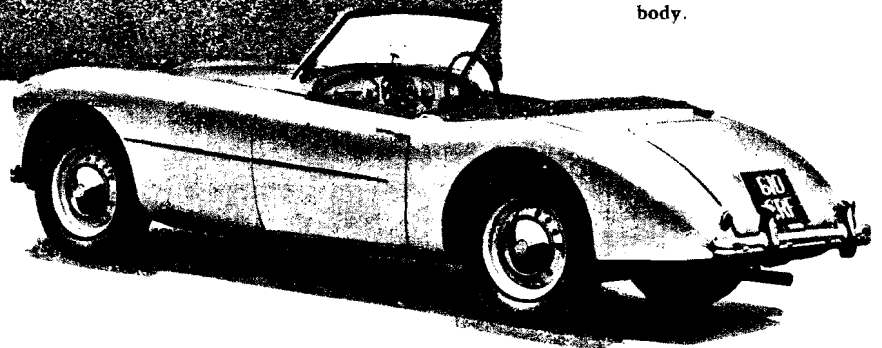


The Doretti has a full-width body style with open wheel arches at both front and rear. The doors are fitted with push-button locks and there is a bright decorative strip running along the sides of the body.

An unusual feature at the rear is the bright horizontal fin fixed to the rear wings at bumper height. To give increased protection, bumper overriders are fitted. Combined stop, tail and indicator lamps are built into the rear of the body.



The Autocar ROAD TESTS

No. 1546 : SWALLOW DORETTI

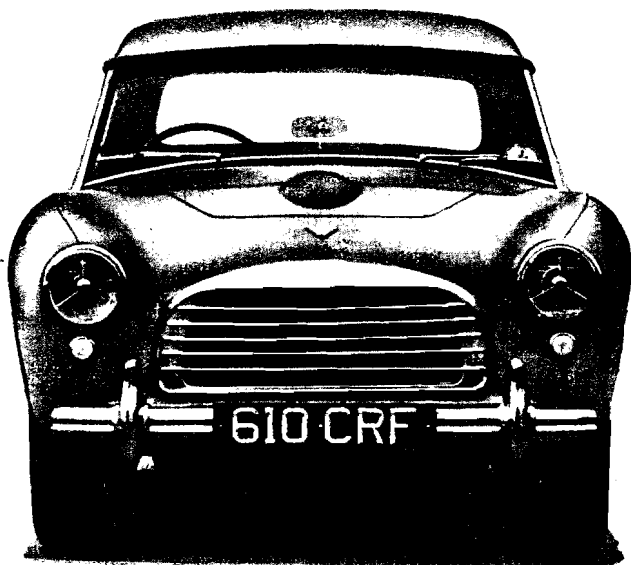
ONE of the most recent sports cars to be introduced, by a company well known for both car bodies and sidecars, is the Swallow Doretti, which was described in *The Autocar* of January 15, 1954, and one of the first production versions of this new open two-seater has recently been put through its paces by this journal. This car was designed initially to cater for the large potential market that exists in America for a small and compact European sports car to complement the large "home produced" sedan used for normal day-to-day transport. Many of the mechanical components used to make up this vehicle, such as the engine, transmission and front suspension, are similar to those in the now well-known Triumph TR2, but for the Doretti these have been built into a new tubular frame on which is mounted a neat two-seater body with full-width styling. The car tested was fitted with optional equipment in the form of the Laycock-de Normanville overdrive unit which, in conjunction with the four-speed gear box, provides five forward ratios. The combination of the 90 b.h.p. engine and an unladen weight of under a ton results in a car with

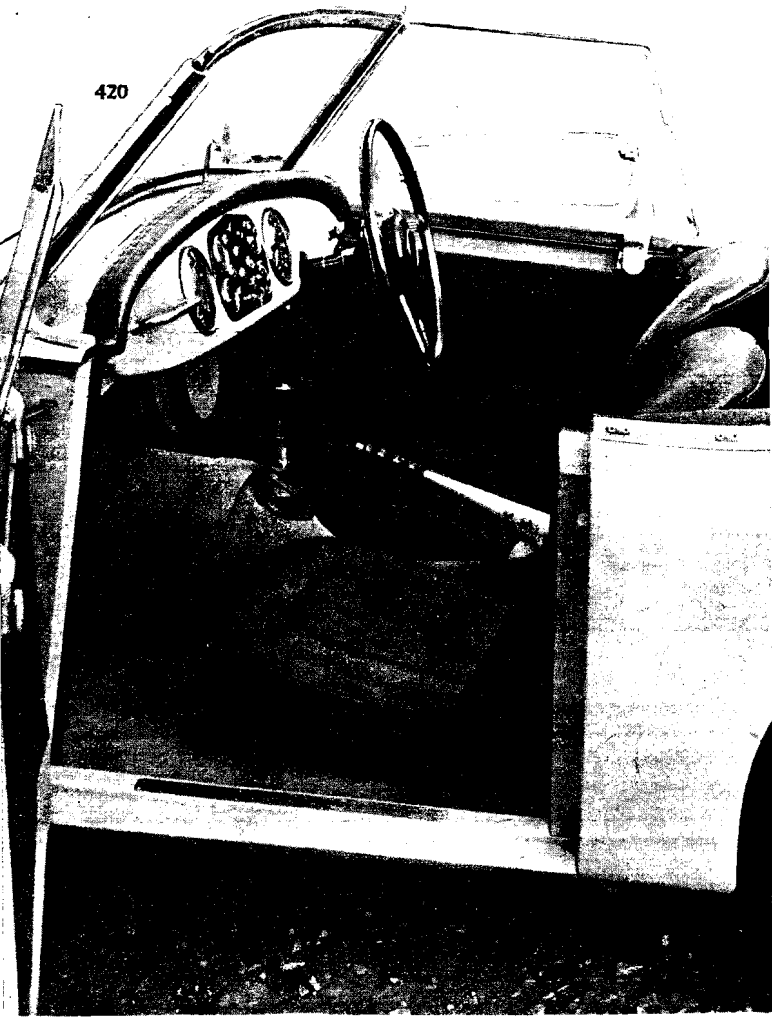
a very lively performance, a satisfactory maximum speed to suit the normal requirements of most people, lively acceleration, and, in view of the performance, a modest thirst for fuel.

Under test conditions the mean maximum speed was 97.25 m.p.h., while the best speed in one direction was 101 m.p.h., using direct top gear, and no increase in maximum speed was recorded if the overdrive was switched in when the car was completely wound up in direct top. This is not surprising, as the function of an overdrive is primarily to reduce engine speed and to improve economy in the cruising range of the car, rather than to increase its maximum speed, which is, of course, a question of power required and power available and not merely one of reducing the gear ratio. The Doretti will cruise very comfortably at around 80 m.p.h. on the speedometer—equal to a genuine 74 m.p.h., leaving plenty of power in hand should it be required. As well as providing a good top end performance, and in spite of its high compression ratio, the engine has plenty of power at low revs and is very flexible, and under test conditions it was found that it would accelerate smoothly in top gear from a speed as low as 11 m.p.h. This bottom end flexibility is particularly useful in dense traffic.

The clutch, with an hydraulically operated withdrawal mechanism, is both smooth to operate and well able to cope with the demands that are likely to be made on it by an enthusiastic sports car driver. The pedal has a satisfactory length of travel and is quite light to operate. The gears are selected by a particularly robust central remote control lever which has a very pleasing short travel from gear to gear. The synchromesh, on top, third and second gears, is effective, but can be beaten if snappy changes are made.

A neat and simple frontal treatment gives the Doretti a smart appearance. Overriders are placed wide apart on either side of the grille, and separate side lamps—which also contain the flashing type of direction indicator—are mounted below the head lamps.





There is a large tunnel in the front of the car to cover the gear box. The interior is neatly trimmed with carpet, and a large pocket is provided in both doors. The top of the scuttle has a leather-covered rubber roll, and there is a grab handle on the passenger side. The Perspex side screens have a hinged panel to permit signalling and ventilation. (Right) When the hood is raised there is some luggage space behind the rear seats. The T-shaped lever at the back of the body is a release for the spare wheel compartment lid.

ROAD TEST continued

The Laycock-de Normanville overdrive is operated electrically by means of a small switch on the facia so that it can be engaged at will by the driver, provided that the car is in top gear. If the overdrive switch is left on, the overdrive is automatically disengaged whenever one of the other ratios is selected, but in these circumstances overdrive and not direct top gear will be engaged as soon as the gear lever is moved back to top gear position. The change both in and out of overdrive is smooth and there is very little jerk on the down change, and it is, of course, possible to open the throttle slightly to adjust the engine speed when the clutchless down change is made.

Coil Spring i.f.s.

At the front the suspension system consists of a conventional arrangement of coil springs and wishbones, but at the rear torque rods are added to the open propeller-shaft drive to ensure that the rear leaf springs do not simulate a letter S under violent braking or accelerating. The suspension is inclined to be hard by modern standards, and this is particularly noticeable when the car is driven over rough surfaces. On normal roads the ride is satisfactory and the roadholding good, and there is very little roll on corners. With an unladen weight distribution giving 52 per cent on the front wheels there is a very slight degree of understeer. The car displays good manners generally and holds its line

well on corners. The steering is light and accurate, although a slightly smaller turning circle would be appreciated. With $2\frac{1}{4}$ turns from lock to lock, control is precise, yet no shocks are transmitted back to the driver's hands; conversely, the steering does not feel in any way dead, and variations in road surface can be detected through it.

The hydraulically operated brakes are very powerful and require only a moderate pedal pressure for maximum retardation. No fade was experienced either on the road or under the extreme conditions of performance testing, which require a very large number of brake applications in a short period of time. The hand brake is also effective, and the substantial lever mounted between the seats has a fly-off type of ratchet.

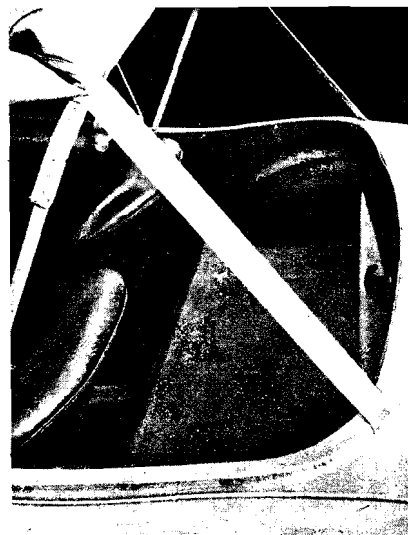
With the hood and side screens in position the general noise level is comparatively high, as the exhaust has a rather healthy note, particularly around the maximum torque point; on the other hand, the car is noticeably free from vibration. Apart from the exhaust noise there is also sound from the air intake cleaners, and some gear noise in the indirect ratios.

Pendant Pedals

Bearing in mind the length of the wheelbase, the cockpit space is rather limited and a little extra travel on the seat adjustment would be appreciated, particularly by a tall driver. The seat itself is quite large and gives good support, but even when moved back as far as the adjustment will allow it is comparatively close to the steering wheel, while the wheel itself is rather close to the inside of the door. Pendant pedals are used for both clutch and brake, and also for the throttle. They are well placed in relation to one another, but there is very little space for the driver's left foot between the clutch pedal and the central tunnel;

consequently, the dip switch is mounted on the side of the tunnel, with the result that it is closer to the driver than the other foot-operated controls.

From the driving seat there is very good all-round vision; the windscreen pillars are thin and both front wings can be clearly seen. With the car completely closed the vision is generally good, and the mirror is well placed in conjunction with the rear window in the hood to give good rearward



vision. Some degree of blind spot is caused, however, by the rear quarters of the hood. There is plenty of head room, although visibility when touring in mountainous country would be improved if the windscreen were a little deeper. The wipers are powerful and cover a satisfactory area of the screen, but they do not overlap to form a single wiped area.

All the instruments are grouped around the centre section of the facia, with two large dials containing the speedometer on the right and the tachometer on the left. Between these are placed four smaller dials containing a water temperature gauge, oil pressure gauge, ammeter and fuel gauge, while in the extreme centre section are mounted the small switches and overdrive control. The bonnet release is placed in a rather unusual position in the centre of the facia, directly above the side and head lamp switch, and in this position it might easily be inadvertently operated at night, as the knob is of the same proportions as the other

switches; however, as the bonnet is hinged at its leading edge, this would not have dangerous results. There is no rheostat in the instrument lighting switch and the illumination is rather bright and causes a certain amount of reflection in the windscreen at night.

The doors are hinged on their leading edges; they are of a useful size and are arranged to stay in the fully open position when required, to assist getting in and out; a useful grab rail is provided on the left side of the facia. In place of facia glove boxes, large pockets are provided in both doors, and the inside door handles are built into the top of these compartments so that they do not project into the car. A built-in heater unit is fitted as standard; it is controlled by a switch on the right of the facia which regulates the heater fan, and a water tap placed under the bonnet, ducts being provided in the top of the scuttle to direct the air to the inside of the windscreen in the normal

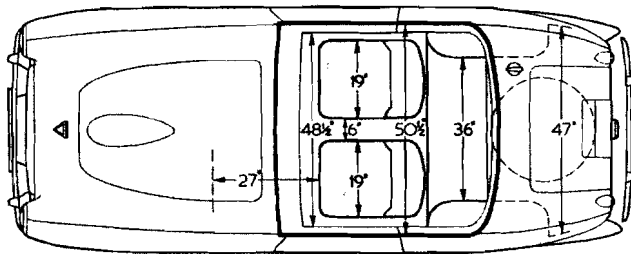
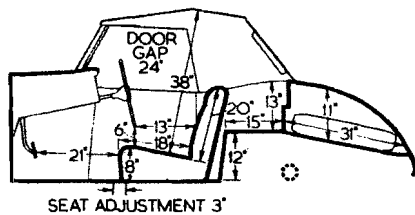
way. The heater unit is carried inside the car below the centre section of the facia.

The neatly fitting plastic hood is quickly detachable via a row of fasteners around the back of the body and two screwed fastenings which connect with the windscreen frame, while the sidescreens are attached by screwed fastenings. With this equipment in place the car is quite warm and snug, and there is very little draught even at high speed. When it is not required the hood can be quickly folded down into the well behind the seats and enclosed by a tonneau cover, which is provided with a central zip so that the passenger seat can be enclosed when the car is driven solo. During the test the car was driven in quite heavy rain, and under these conditions the equipment was completely waterproof.

Luggage accommodation in the Doretti is, quite frankly, rather limited. With the hood up there is space for a

SWALLOW DORETTI

WHEELBASE	7' 11"
FRONT TRACK	4' 0"
REAR TRACK	3' 9½"
OVERALL LENGTH	13' 0"
OVERALL WIDTH	5' 1"
OVERALL HEIGHT	4' 3"



Measurements in these ½ in to 1 ft scale body diagrams are taken with the driving seat in the central position of fore and aft adjustment and with the seat cushions uncompressed.

PERFORMANCE

ACCELERATION: from constant speeds. Speed Range, Gear Ratios and Time in sec.

M.P.H.	3.03	3.7	4.9	7.4	12.5
to 1	—	9.3	7.0	4.6	—
10-30	—	—	—	—	—
20-40	11.6	9.0	6.7	4.5	—
30-50	11.8	9.1	6.7	5.0	—
40-60	12.7	9.6	7.1	—	—
50-70	14.6	10.4	8.5	—	—
60-80	15.8	12.3	—	—	—
70-90	24.7	18.1	—	—	—

From rest through gears to:

M.P.H.	sec.
30	3.8
50	9.4
60	13.4
70	17.9
80	23.9
90	35.3

Standing quarter mile, 18.8 sec.

SPEEDS ON GEARS:

Gear	M.P.H. (normal and max.)	K.P.H. (normal and max.)
Top	(mean) 97.25 (best) 101	156.51 162.55
3rd	60-75	97-121
2nd	40-50	64-80
1st	20-28	32-45

SPEEDOMETER CORRECTION: M.P.H.

Car speedometer	10	20	30	40	50	60	70	80	90	100	109
True speed	12.5	20.5	29.5	38	48	57	66	74	83.5	92	101

TRACTIVE RESISTANCE: 15 lb per ton at 10 M.P.H.

TRACTIVE EFFORT:

Gear	Pull (lb per ton)	Equivalent Gradient
Overdrive	200	1 in 11.5
Top	250	1 in 8.9
Third	330	1 in 6.7
Second	500	1 in 4.4

BRAKES:

Efficiency	Pedal Pressure (lb)
83 per cent	75
70 per cent	50
40 per cent	20

FUEL CONSUMPTION: 28 m.p.g. overall for 450 miles. (10.1 litres per 100 km.) Approximate normal range 26-38 m.p.g. (10.9-7.4 litres per 100 km.) Fuel, First grade.

WEATHER: Fine, dry surface; wind negligible. Air temperature 71 deg F. Acceleration figures are the means of several runs in opposite directions. Tractive effort and resistance obtained by Tapley meter. Model described in *The Autocar* of January 15, 1954.

DATA

PRICE (basic), with open two-seater body, £777.

British purchase tax, £324 17s 6d.

Total (in Great Britain), £1,101 17s 6d.

Extras: Radio £42. Heater standard equipment. Wire wheels £25 (basic). Overdrive £40 (basic).

ENGINE: Capacity: 1,991 c.c. (121.5 cu in).

Number of cylinders: 4.

Bore and stroke: 83 x 92 mm (3.26 x 3.62 in).

Valve gear: Overhead; push rods and rockers.

Compression ratio: 8.5 to 1.

B.H.P.: 90 at 4,800 r.p.m. (B.H.P. per ton laden 79.7).

Torque: 116.6 lb ft at 3,000 r.p.m.

M.P.H. per 1,000 r.p.m. on top gear, 20.

(Overdrive 24.5).

WEIGHT (with 5 gals fuel): 19½ cwt (2,156 lb).

Weight distribution (per cent): F, 52; R, 48.

Laden as tested: 22½ cwt (2,526 lb).

Lb per c.c. (laden): 1.27.

BRAKES: Type: F, Two-leading shoe; R, leading and trailing.

Method of operation: F, Hydraulic; R, Hydraulic.

Drum dimensions: F, 10in diameter; 2½in wide. R, 9in diameter; 1½in wide.

Lining area: F, 87.5 sq in. R, 60.5 sq in (131 sq in per ton laden).

TYRES: 5.50-15in.

Pressures (lb per sq in): F, 22; R, 24 (normal).

F, 28; R, 30 (for fast driving).

TANK CAPACITY: 12½ Imperial gallons.

Oil sump, 11 pints.

Cooling system, 14 pints.

TURNING CIRCLE: 36ft 6in (L and R).

Steering wheel turns (lock to lock): 2½.

DIMENSIONS: Wheelbase: 7ft 11in.

Track: F, 4ft 0in; R, 3ft 9½in.

Length (overall): 13ft 0in.

Height: 4ft 3in.

Width: 5ft 1in.

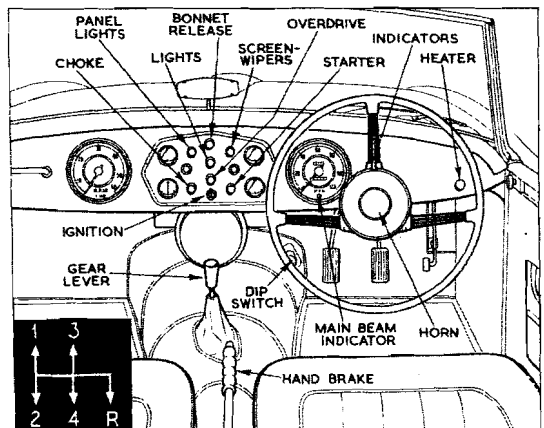
Ground clearance: 6in.

Frontal area: 16½ sq ft (approximately).

ELECTRICAL SYSTEM: 12-volt; 51 ampere-hour battery.

Head lights: Double dip; 60-36-watt bulbs.

SUSPENSION: Front, Independent; wish bones and coil springs. Rear, Half-elliptic leaf springs and torque rods.

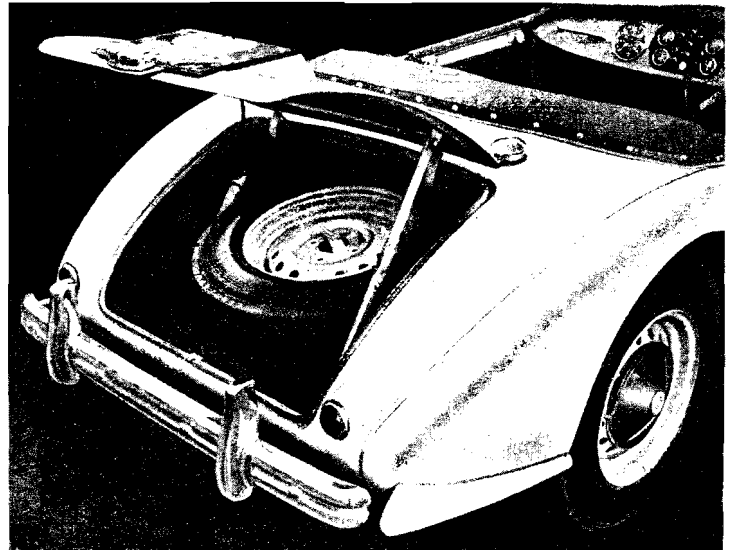


ROAD TEST . . . continued

suitcase in the well behind the seats, but this compartment is, of course, partly filled by the hood and its frame when the car is opened. There is some space for small items in the rear locker, although most of the space in this compartment is filled by the spare wheel. The locker lid is hinged at the top and there is a remote control release for the catch, placed inside the body; on the car tested this was rather stiff to operate, and it is difficult to get at it if the hood is lowered. It would be better if an external handle and lock were fitted to this compartment so that small items could be locked away safely when the car was left unattended.

The Doretta has very good head lights which give an adequate range and spread of light in both the main and the dipped positions. The self-cancelling flashing type of direction indicators are controlled from a lever on the steering column, and there is a yellow warning light on the facia to show that the indicators are working. A two-point jacking system is provided, and to place the jack in position it is necessary to roll back the carpet and remove a cover plate in the floor just in front of either of the seats; the jack is then inserted through this hole and clipped on to a jacking bracket fixed to the frame. Thirteen lubrication points require attention with a grease gun at intervals of 1,000 miles. The large fuel tank has a quick-action filler and it can be quickly replenished without risk of blowing back. It provides an adequate range between refuelling stops.

The Swallow Doretta is a neat and compact two-seater sports car which has a very lively performance together with a very satisfactory fuel consumption. It is a trim



The rear locker is used to carry the spare wheel, tools, tonneau cover and side screens; it is provided with a self-locking strut to keep it in the open position when required.

little car with pleasing lines, and the general finish indicates that it is a well-made, workmanlike job. It is moderately priced and should meet the needs of those requiring a medium-sized sports car that will stand a lot of hard work and be fun to drive.

The one-piece bonnet is hinged at the front and permits easy access to the engine and its auxiliaries. The oil and water filler caps are close together towards the front of the engine, while the ignition distributor is conveniently placed on the left-hand side of the power unit. The battery is mounted in the centre of the bulkhead, with the regulator unit and other electrical gear grouped on the left. The small tap on the right-hand side, to the rear of the valve rocker cover, is the water cut-off valve for the heater.

