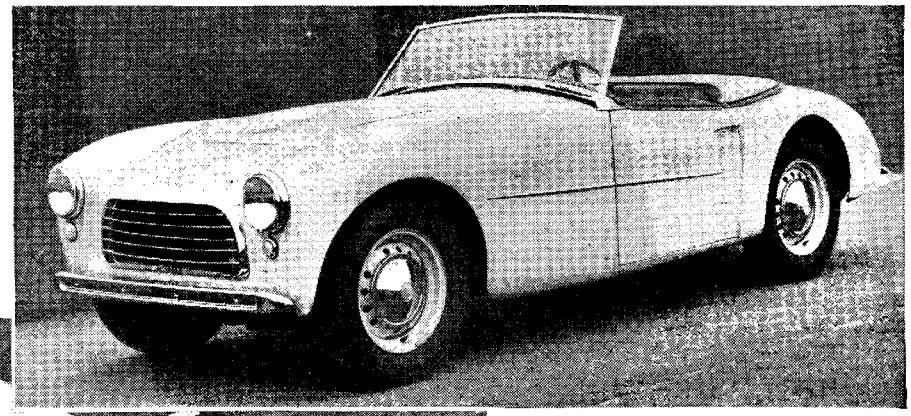
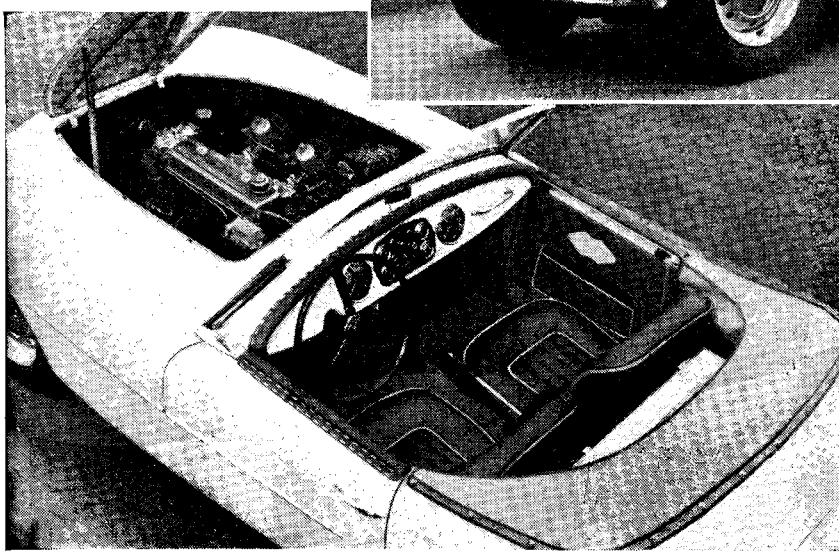
The SWALLOW DORETTI

A New 100 m.p.h. Sports Car



NOTABLY smooth lines make the Doretti a very attractive car. Cockpit and engine layout are visible in the photograph below, the two S.U. carburetters, sensibly-shaped seats, and large circular instrument dials being points of interest.



A NEW British two-seater sports car designed to combine elegance, comfort, good road manners and a maximum speed of over 100 m.p.h. is being shown in public today for the first time in California, U.S.A. Built by the Swallow Coachbuilding Co. (1935), Ltd., The Airport, Walsall, Staffordshire, it is called the Doretti and is the result of close collaboration between Mr. Eric Sanders, managing director of the company, their agents in the United States and Sir John Black, chairman and managing director of the Standard Motor Co., Ltd.

The project originated during a visit by Mr. Sanders to the United States in July, 1952, when the Swallow Company's agents there suggested the production of a sports car specially tailored to suit the vast potential U.S. market. There was much coming and going across the Atlantic before the design was finally settled, including a seven-week visit to America by Mr. F. G. Rainbow, chief designer of the car. Mr. Rainbow found that the car would have to meet the requirements of two distinct classes of American customer. First, it would have to appeal to those who require a fast and distinctive car for prestige reasons only and who therefore want a car with the ease of handling of their normal saloon, rather than a road-racing car. Secondly, it would have to sell to the numerous very knowledgeable enthusiasts in California who know precisely what they want. Both classes of owner are united in demanding a very high standard of finish of both chassis and body.

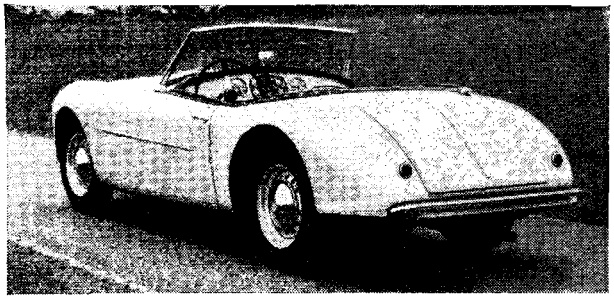
Sir John Black came into the picture when it was decided to use a Triumph Sports power unit, gearbox, rear axle and suspension units, and the most helpful co-operation of Sir John and his company is gratefully acknowledged by all concerned with the new car. Although based on many of the same components as the Triumph TR2, the Swallow Doretti is designed to appeal to the type of owner who is willing to sacrifice a little of the very high performance of the Triumph for increased luxury. The Swallow is therefore 7 in. longer in the wheelbase than the Triumph and has a wider track.

Basis of the Swallow is a most interesting chassis built up from 50-ton tubular steel. The side members are two big-diameter steel tubes with additional strengthening steel plates above and below. They are joined by numerous tubular cross-members, and

SWALLOW DORETTI DATA

Engine Dimensions	
Cylinders	4
Bore	83 mm.
Stroke	92 mm.
Cubic capacity	1,991 c.c.
Piston area	33.5 sq. in.
Valves	Overhead (push rods)
Compression ratio	8.5 to 1
Engine Performance	
Max. b.h.p.	90
at	4,800
Max. b.m.e.p.	140 lb./sq. in.
at	3,000
B.H.P. per sq. in. piston area	2.69
Peak piston speed, ft. per min.	2,900
Engine Details	
Carburetters	Two S.U.
Ignition	Coil
Plugs: make and type	Champion L10S
Fuel Pump	AC Mechanical
Fuel capacity	12 gallons
Oil filter	Purolator by-pass
Oil capacity	13 pints
Cooling system	Pump, fan and thermostat
Water capacity	14 pints
Electrical system	12-volt
Battery capacity	51 amp./hr.
Transmission	
Clutch	9 in. Borg & Beck s.d.p
Gear ratios: Top (s/m)	3.7 (O/drive 3.03)
3rd (s/m)	4.9
2nd (s/m)	7.4
1st	12.5
Rev	15.8
Prop. shaft	Hardy Spicer, open
Final drive	Hypoid bevel

Chassis Details	
Brakes	Lockheed hydraulic (2LS on front)
Brake drum diameter	Front, 10 in.; rear, 9 in
Friction lining area	148 sq. in.
Suspension: Front	Independent (coil and wishbone)
Rear	Semi-elliptic
Shock absorbers	Front, Armstrong telescopic; rear, Armstrong piston-type
Wheel type	Steel disc
Tyre size	5.50 x 15
Steering gear	Bishop cam.
Steering wheel	16 in., 3-spoke
Dimensions	
Wheelbase	7 ft. 11 in.
Track: Front	4 ft. 0 in.
Rear	3 ft. 9½ in.
Overall length	12 ft. 8 in.
Overall width	5 ft. 1 in.
Overall height	4 ft. 0½ in.
Ground clearance	6 in.
Turning circle	36 ft. 6 in.
Dry weight	16¼ cwt.
Performance Data	
Piston area, sq. in. per ton	40.4
Brake lining area, sq. in. per ton	178
Top gear m.p.h. per 1,000 r.p.m.	20.1 (O/drive 24.5)
Top gear m.p.h. at 2,500 ft./min. piston speed	83.5 (O/drive 102)
Litres per ton-mile, dry	3,600 (O/drive 2,940)



THE elegant lines of the car are also very evident at the rear; the large boot lid and prominent fuel filler cap may be noted.

The Swallow Doretti - - - - Contd.

special attention has been paid to securing great rigidity at the front of the chassis, for the front suspension mountings are braced by tubular supports running back from the tops of the mountings at an angle to join the main side-members, and by pierced channel section members running diagonally from the front cross member to the side-members.

Running parallel to the main side members between the wheels are secondary side-members of channel section which provide additional support for the body. These outriggers are supported at the rear by a tubular cross-member which also carries the front shackles of the semi-elliptic rear springs. Additional stiffness for the scuttle is provided by a tubular steel arch, also supported by the outriggers, with its ends welded to the main side-members.

Front Suspension Mounting

Although the coil spring and wishbone front suspension follows the same lay-out as that employed for the Triumph TR2, the suspension units are mounted on a tubular cross-member instead of a pressed-steel member and have strengthened lower links. The patented bottom bush and top ball-jointed wheel swivels are, however, retained. Steering gear is of the Bishop cam type and is operated by a 16-in. three-spoke steering wheel. Rear-axle torque is looked after by radius rods running forward from the axle casing parallel to and above the rear springs with their forward ends secured to the tubular cross member supporting the front rear spring shackles.

It will be recalled that the four-cylinder overhead valve engine of 1,991 c.c. is a variant of the tried and tested Vanguard power unit which, thanks to development work, has an output of 90 b.h.p. at 4,800 r.p.m. The engine is mounted sufficiently far back in the chassis to give a weight distribution of 50-50 on front and rear wheels and provides the car with a maximum of over 100 m.p.h. The four-speed gearbox with its attractive remote control may also be obtained with a Laycock-de Normanville overdrive unit as an optional extra.

Past experience gained by the company in the production of aircraft components has been put to good use in the design of the body, for a double-skin technique is employed. The inner skin is of 22-gauge steel and is pierced in numerous places for lightness and also ribbed for strength where required. The outer skin is of 16-gauge aluminium and the complete body shell is bolted to the chassis to form a single very rigid structure. Provision has also been made for the easy removal and replacement of main body panels and wings should they be damaged.

The car is normally fitted with a one-piece curved windscreen but this can be easily removed and replaced by aero screens should the owner wish to enter competition work. Other speed equipment will include an undershield, a cockpit cover, semi-spats for the rear wheels and wire wheels in place of the piereed-disc type fitted as standard. Driver and passenger sit in adjustable bucket seats and the instruments fitted as standard include a speedometer, rev. counter, fuel gauge, water-temperature gauge, and oil-pressure gauge. A rear boot with opening lid houses luggage, the spare wheel and the tool kit.

Although work did not begin on the drawings of the Swallow Doretti until January 1, 1953, by September last the first car had not only been completed but had shaped so well in extensive tests in this country that it was dispatched to the United States where it has since covered many thousands of miles and, incidentally, has been matched privately—but successfully—against its rivals in this particular field. So good was its reception that a further batch of cars was at once put into production, and it was in one of the first of these to be completed that Sir John Black was involved in a high-speed crash when being shown how well the car performed. The accident could certainly not be attributed to any failing on the part of the car; in fact, the sturdiness of its construction was amply proved by the survival of its occupants.

Production Prospects

At present, the cars are being produced in small numbers and are practically hand-built, but a great deal of new plant is being installed specially for their production for the Swallow Company is taking its entry into the motor industry very seriously indeed and has no intention of merely playing at car manufacture. In charge of this side is Mr. J. P. Johnston and he is confident that by the middle of 1954 the Swallow will be leaving his new production lines in very substantial numbers. Although designed primarily for the American market, once production has expanded sufficiently to take care of the demand from that country the Swallow Doretti will no doubt be made available to British motorists as well.

SIMILARITY in certain respects to the Triumph TR2 will be seen in this picture of the Doretti's "skeleton," but the chassis frame, with a basis of large steel tubes, is in fact an original design.