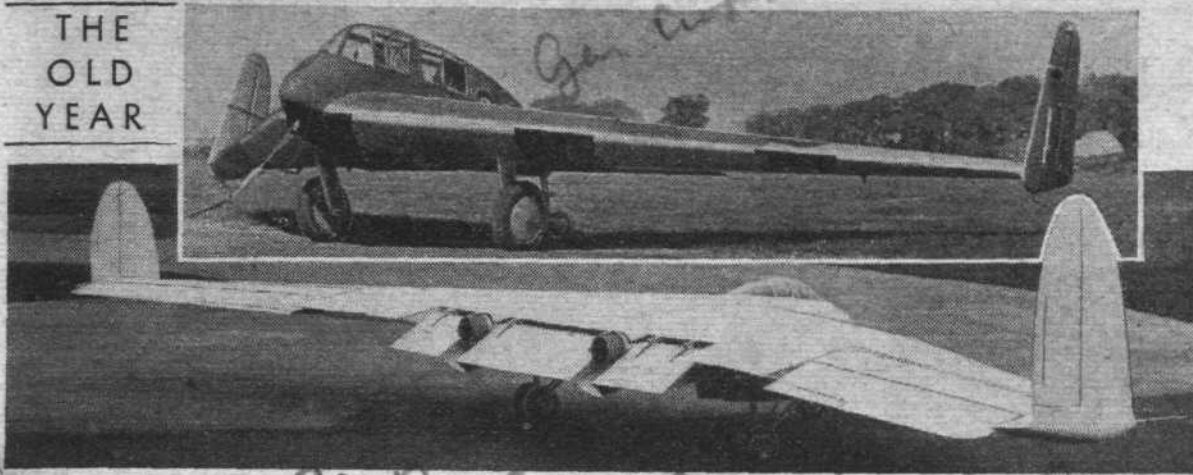


THE OLD YEAR



Like the AW 52G research glider, the General Aircraft glider (top) has been used to provide data for the design of large tailless aircraft. Below is the twin-engine AW 52, completed during December.

important information was derived from tests with the Armstrong-Whitworth AW52G tailless glider, frequently towed to a height of about 16,000ft by a Whitley and released, measurements being taken by automatic recorders during the glide. The AW52G was followed by the AW52 twin-jet experimental mailplane, introduced to the Press during December and described in *Flight* of December 19th. Measuring 90ft. in span, and powered by twin Rolls-Royce Nene turbine-jet units, the AW52 incorporates boundary layer control by suction, thermal de-icing, a pressurized crew compartment, and a steerable nose wheel. It promises to be one of the most important British aeronautical achievements of recent years.

General Aircraft, Ltd., have contributed further to the study of tailless aircraft design by building gliders to a Government order. One of these, first flown late in 1944, was described for the first time during 1946.

Another comparatively old machine of which particulars were released during the year, was the Supermarine 322 "Dumbo." This was originally designed as a deck-landing torpedo-bomber, but, with its variable-incidence wing, is a research aircraft of note.

At about the time of the S.B.A.C. Display, Miles Aircraft, Ltd., were permitted to publish many details concerning their M52 supersonic design, abandoned by the Ministry of Supply and the Air Ministry for reasons of economy. With its span of 27ft. and its special Power Jets unit the M52 was intended to attain an ultimate speed of about 1,000 m.p.h. The touchdown speed was to be 170 m.p.h., requiring a two-mile landing run.

The basic design of the M52 is reproduced in the Vickers pilotless transonic research model, a number of which are now being built for experimental launching from a Mosquito.

POWER UNITS OF 1946

THE past year has been one of great activity for the manufacturers of power units, and among gas turbines in particular several entirely new designs have made their bow since last January. Many existing piston and gas turbine engines have undergone intensive development, and despite opinions to the contrary, it is apparent that piston engines of all sizes will continue in regular service for at least five years to come.

True, it has now been stated that for military purposes only gas turbines will be ordered in future. The facts remain that a number of excellent piston-engined types are still among our first-line fighters, that all airscrew turbines are still in the development stage, and that, except for fighters, no airframes specifically designed or suitable for

pure jet power are as yet past the early experimental stage.

Turning first to the large piston engines, the most important developments concern the Bristol Hercules 230 (civil 730), Napier Sabre VII, and the Rolls-Royce Griffon 130 and Merlin 620. In addition the special coupled Centaurus units for the Bristol 167 prototype are noteworthy. They are two modified type 578s, renamed Type 20, and give, as a pair, over 5,100 h.p.

The Hercules 230, which gives a maximum output of 2,055 h.p., is of 38.7 litres capacity. For an increase in weight of 20 per cent over the early Hercules an improvement in power output of 50 per cent has been achieved. Using 100/130 grade fuel the specific consumption of 0.428 lb/h.p./hr for W.M. cruising is very creditable.

Fast and commodious, the Avro Tudor II (top) is seen demonstrating. Below is the first of twelve Short Solents for B.O.A.C. The Solent is the civil counterpart of the Seaford, delivered to Coastal Command Squadrons during the year.

