

## S. B. A. C. Show Preparations

THIS year's Farnborough display is to include a guided-missile park nearly half as large again as last year's. One reason is that "live" demonstrations will be staged with some of the weapons, crews showing launching operations and the use of certain equipment in an operational rôle—everything, in fact, but the firing.

Among other new features this year are a second road to the exhibition building, a 30 per cent larger outside equipment display and an improved public address system. There are 330 companies exhibiting, and as several of these will be represented by more than one stand the total number of stands will be rather more than last year.

The display opens on Tuesday, September 2, the preceding day being a Press and technicians' preview day. September 2, 3 and 4 (Tuesday, Wednesday and Thursday) are reserved for S.B.A.C. guests and on Friday, Saturday and Sunday—September 5, 6 and 7—the public will be admitted. Tickets can be obtained at the gates on all three days, but for Friday—and Friday only—they may be bought in advance through the usual agencies. The flying display starts each day at 3 p.m.

## Mosquito Memorial ?

AN appeal has been launched for the preservation of the prototype de Havilland Mosquito. This was designed and built at Salisbury Hall, London Colney, near St. Albans, Herts, and on May 15, 1941, flown from there (out of a field 405 yd long) to Hatfield by Geoffrey de Havilland. The intention is that the machine should now be housed permanently at Salisbury Hall, which is open to the public as an historic monument, as a memorial to all those concerned in the aircraft's construction and to all who flew Mosquitos.

The de Havilland Company has offered to re-assemble and maintain the Mosquito, but suitable accommodation is required to house and protect it. An opportunity has arisen of obtaining a hangar for £1,000 and all those who would like to contribute to this cost should send donations to the Mosquito Appeal Fund, c/o Midland Bank, Ltd., 122 Finchley Road, London, N.W.3.

## Regional Gliding Winners

COMPETING not only against each other but with most unkind summer elements as well, pilots in the 1958 National Gliding Week (which ended last Monday) put up some sterling and plucky performances. What they had to contend with is indicated by the gloomy statistics that at Dunstable (London Region) there were three "no contest" days out of nine, at Nympsfield (Western Region) four and at Portmoak (Scottish) also four. Moreover on the remaining days conditions were sometimes extremely bad: thus at Dunstable last Sunday, though five pilots got to Podington (near Rushden, Northants), none could get back.

Nevertheless some excellent flights were made on the contest days, pride of place going to Nick Goodhart's to Yarmouth from Nympsfield on Saturday last in his Skylark 3 at an average speed of 60 m.p.h., beating the existing U.K. 200 km speed record.

Sgt. Andy Gough, one of the six pilots in the R.A.F. team at Dunstable, won the London Region contest in his Olympia 419 with 426 points. C. Ellis of the London Gliding Club (Skylark 3) put up strong local resistance to the R.A.F. challenge, coming second with 379 pt; but not far behind him were two other R.A.F. participants—W/C. N. W. Kearon (Skylark 3) with 342 and F/O. D. Cretney (also in a Skylark 3) with 339. Two awards were made for meritorious performances. The B.G.A. prize went to Cretney for his 3 hr 50 min flight to Martlesham Heath and the London Gliding Club prize to R. Ruffett, one of its members, for his flight to Acle, near Great Yarmouth, in the club's Olympia.

Cdr. H. C. N. Goodhart and John Williamson (Skylark 3) were joint winners of the Western Region competition with 274 points; second was G. Burton (Olympia) with 195; third, J. C. Neilan and M. V. Laurie (T.42), with 193; and fourth, Peter Scott (also T.42), one point behind with 192.

G. H. Stephenson (Skylark 3) came first in the Scottish Region; W. N. Tonkyn and B. J. Davey (Skylark 3) were second with 353 and Philip Wills (Skylark 3) had 343 pt; but Stephenson and Wills, who had come to Portmoak to get an experience of Scottish conditions, did not accept prizes—which went to Tonkyn and Davey, A. J. Thorburn and W. Adamson (Olympia), who had 122 pt, and W. Lawson (T.42), with 64.

## A NEW GYRON JUNIOR

ALTHOUGH no thrust may yet be quoted, it is now permissible to publish a photograph of the de Havilland Gyrone Junior DGJ.10 turbojet. Its designation and appearance both make it apparent that it represents a major advance in the design of the Gyrone Junior, and the manufacturers state that, compared with the 7,000 lb-thrust DGJ.1, the new unit gives "greatly enhanced output."

The original DGJ.1 first ran in August 1955, less than a year from the first issue of drawings. Engines of this general type have been extensively flown in a Canberra and also power the Blackburn NA.39 Naval strike aeroplane. One of the family has been exhibited carrying a large air-bleed manifold, and de Havilland Engines probably have more experience than any other company with engines designed from the outset for the supply of very high percentages of bleed air. In the Halford laboratory at Hatfield is a complete system which simulates the behaviour of blown flaps for super-circulation under all operating conditions. The new Junior does not carry an air-bleed manifold, but it is stated to have supersonic applications and to be capable of reheat to 2,000 deg K to give 40 per cent increased thrust (sea-level static). Such an installation would require a sophisticated intake and fully variable con-di nozzle.

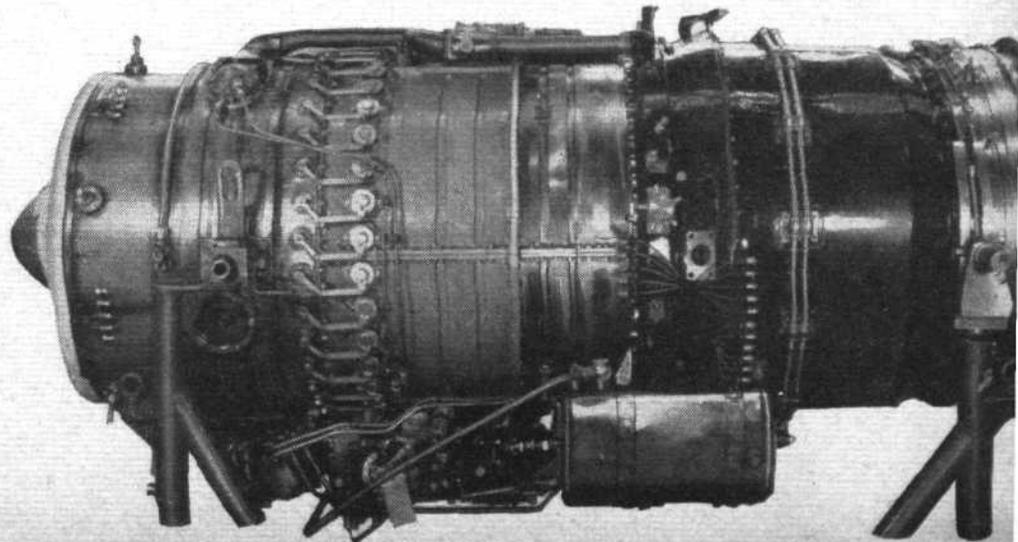
Inspection of the DGJ.10 shows that the engine is longer than its predecessors. At the front is an intake fabricated from sheet-steel, forming a stiff box structure with five struts carrying the front bearing (the Junior probably follows the practice of the larger Gyrone in having only two main bearings). The compressor itself is clearly longer than that of early Juniors, and apparently has eight or nine stages of blading. A radially mounted jack is fitted to control the incidence of the inlet guide vanes—like previous D.H. axials—but in the new engine these are also mechanically tied to the first row of stator blades, giving an approximate range of movement of 30 deg on both rows. This is the first time in which variable stators have been seen in a British gas turbine. As the photograph shows, the compressor casing is divided into four portions and the materials used are clearly titanium and steel. The use of titanium for the large forward casings probably represents the most extensive use of this material in a British engine.

There appears to be considerable axial distance

between the compressor delivery and the fuel gallery, and this suggests upstream burners (which are known to be used on the Gyrone). Two separate fuel galleries are used, in contrast to the single or concentric manifold of the earlier Junior engines, although the number of burners (twelve) is unchanged. The profile of the combustion chamber is completely new and, as previously noted, no air-bleed muff is visible. No illustration of the afterburner has yet been released.

Earlier Gyrones and Gyrone Juniors had an integral oil tank surrounding the intake. Presumably the design Mach number of the DGJ.10 corresponds to a ram temperature rise sufficient to cause the oil to coke, as the new engine has a separate oil tank prominently visible in the photograph (earlier Juniors also had a light-alloy intake). Hot air for intake de-icing at low speeds and altitudes is brought forward along the top of the compressor through twin ducts incorporating a Teddington double gate valve. The lowermost intake strut presumably contains drives to the accessory and control group mounted on the underside of the engine. A Dowty fuel system is fitted, the multiple functions of which are all controlled from a single large package integral with the main fuel pumps. It is safe to conclude that the starter is positioned inside the nose bullet and operates either on H.T.P. or low-pressure air.

Possible applications for the DGJ.10 may not be mentioned. It is known that a developed Gyrone Junior would have powered the S.R.177 mixed-power interceptor, but in the absence of this programme it must be concluded that the DGJ.10 is earmarked for some aeroplane not yet officially revealed. The new engine is to be exhibited at the S.B.A.C. static exhibition at Farnborough.



The Gyrone Junior DGJ.10 is a light and efficient turbojet developed for supersonic applications.