tains the equivalent of 6,720 litres of gas and only loses 3 lb. in 24 hours. Filled, the unit weighs only 57 lb. and has an operative pressure of 300 lb./sq. in. A vacuum-insulated, pure-aluminum, air-transportable storage tank of 500 Imp. gals. capacity has an evaporation loss rate of only 1.5% in 24 hours. Empty it weighs 2,300 lb. and filled 7,080 lb.—the charge of 4,780 lb. represents 57,500 cu. ft. of gas. Although the operating, i.e. evaporation, pressure of a LOX convertor rises to 300 lb./sq. in. gage, the storage and filling pressure is only 20 lb./sq. in. gage.

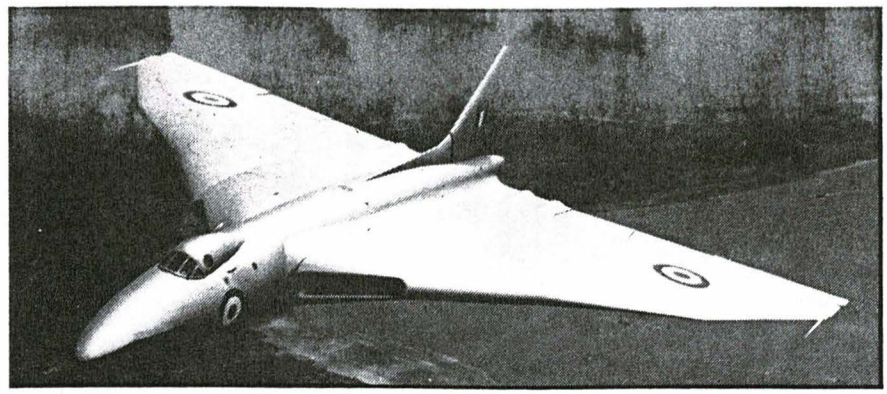
The Aircraft

THE FIRST pre-production MoS Folland Gnat, with its highly-successful gun-blast suppressors, flew as well as fighters with more than twice the thrust under the shadow of the impending $8,500,000 Indian Air Force contract—eventually signed on September 15. Roll this year was markedly more rapid and the new control jacks are capable of giving up to 180 deg./sec. Ted Tennant's fast 7 g circuits inside the airfield boundary put the clock back ten years in manoeuvrability.

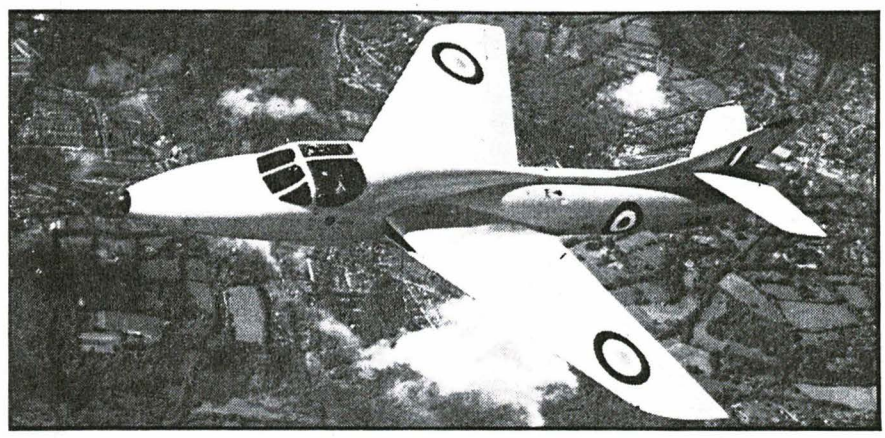
Cures for transonic wing compressibility troubles were to be seen on a number of the fast airplanes. These modifications (not all of which were new this year) take the form of devices for raising the critical Mach number, the speed at which airflow separation starts, of the outer part of the wing—generally covering the aileron span. Basically, two approaches are used: either the airfoil section is modified to give it a lower thickness/chord ratio, usually with a downward droop to the leading edge, or the boundary layer is re-energized with the help of vortex generators.

High-speed airflow separation occurs on the upper surface of the wing at transonic speed and has several unpleasant results. First, it causes buffeting, which although perhaps not serious for a short time, can be both exhausting to the crew and fatiguing to the structure on, say, a long bombing mission. Second, it reduces control effectiveness and, naturally enough, the buffeting on a movable part like the ailerons seeks out any play in the hinges or controls. Third, the "buffet boundary" limits the amount of "g"

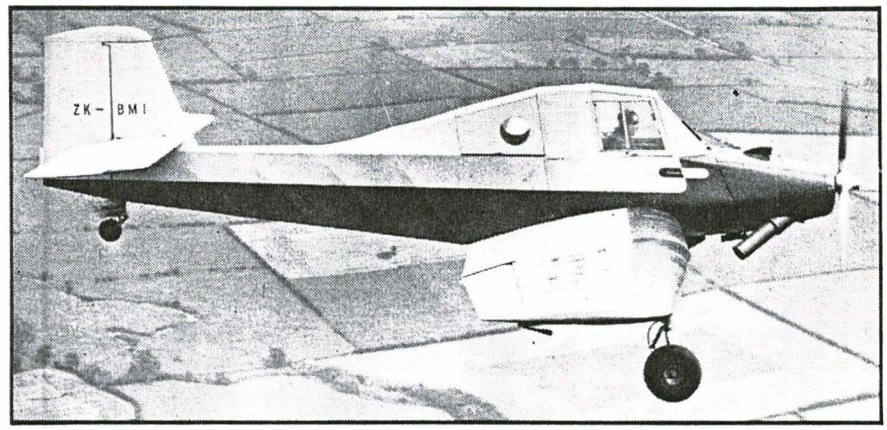
(Continued on page 101)



Above, the delta Vulcan acquires a crescent wing. Leading edge extensions and vortex generators on the production Vulcan are said to allow smoother flying near the buffet boundary and the pulling of more G at great heights and speed.



Above, the Hawker Hunter T-7 operational trainer has been adopted by the RAF. It was flown during Farnborough by a Red air force general. The Hunter T-7 has enlarged cabin fairing, evident in photo, to improve airflow trans-sonically.



Two new British types which could not appear at Farnborough because they are powered by U.S. engines. Auster's Agricola, above, has a Continental, while the Edgar Percival EP-9, below, has a Lycoming. Both for dusting and spraying work.