

*Final stages of connecting Bloodhound to its ground supplies at North Coates. One of many guard dogs looks on. A diagram of a complete Bloodhound site appeared in "Flight" for September 12*



Bloodhound's supersonic cruise propulsion is provided by two Bristol Thor ramjets and it is accelerated from its zero-length launcher by four solid-fuel motors which fall away after burn-out. After boost-motor separation, Bloodhound flies much like an aircraft, by banking and steering towards the target, though it is controlled by the differential and combined movement of its main wings; the tailplane is fixed. The wings are hydraulically actuated in accordance with signals derived from a gyro-stabilized scanner system which receives and computes radar energy reflected from the target. This energy is transmitted by a British Thomson-Houston semi-automatic target-illuminating radar called Sting Ray.

Each flight of a fire unit has its own Sting Ray, the pulse-rate and frequency of which can be varied. A receiver in the rear portion of Bloodhound is tuned to its own Sting Ray so that it cannot follow guidance information from the wrong source. This discrete guidance method also renders jamming much more difficult. If an attacking aircraft were to carry the ponderous equipment required to locate and jam all the Sting Ray frequencies, it might not also be able to carry an offensive load and the task of Bloodhound would to that extent have been achieved.

When Bloodhound sections arrive at a station in their various special cases the forebody containing the electronics is set up on a trolley and positioned opposite a unit transmitting calibrated guidance signals. Using an external power source, a full "go-no-go" check is made of the response from the forebody systems. The missile's internal power source is then brought into operation and the checks repeated. The main body with its motors attached is mounted in a neighbouring bay and "go-no-go" checks made on the hydraulic and fuel systems and wings and engines. The two sections are finally joined and tested as a whole to ensure that they are compatible. Hydraulic pressure is raised by pumps driven by ram-air turbine motors and alternators are driven by hydraulic motors. The ram-air system can be tested from ground supplies.

Bloodhound is then lifted in a gantry on to its launcher-loading trolley and towed by Land-Rover to the wired-off explosives area, where warheads, boost motors and other dangerous components are added. It is then towed to the launching site and mounted in readiness for firing. When its time in the open is up, or should it go unserviceable, the missile is removed and towed back to the explosives area, "de-loused" (as the term goes) and returned to the assembly and servicing hangar. This hangar, incidentally, is heated and is slightly pressurized to discourage ingress of dust and foreign matter. Here the missile receives a further "go-no-go" check and any faulty components are removed to the repair section. Because the technical wing is thus organized on a flow pattern, and repair is by replacement, highly trained personnel are required only in the repair section; all other work entails the relatively unskilled "go-no-go" process.

In the fire-unit area each launcher is bolted to a concrete pad with an encased electrical and hydraulic power system mounted close by. The pads can be laid out in a geometrical pattern quite close together, as blast from the boost motors is considered relatively innocuous and no personnel would normally be exposed in the immediate area. The two Sting Ray trailers of each fire unit, with their display caravans next to them, are at

## First SAGW Wing

BLOODHOUND AND ITS RADAR IN SERVICE WITH FIGHTER COMMAND

**S**INCE July last year R.A.F. Station North Coates has been pioneering the introduction of the Bristol/Ferranti Bloodhound into Fighter Command service. The stage has now been reached where, although trials are still under way, the station could go on permanent watch and (in the words of the C.O., G/C. J. A. Leathart) "become operational overnight." Based on the experience now gained at North Coates, preparations are well under way for erection of further Bloodhound sites.

Last week much of the organization and equipment of the new SAGW system was exhibited and explained to an invited party of visitors. Basically North Coates is organized very much on the lines of a fighter station, with administrative, servicing and operational wings, the last-named including three squadrons, each divided into two flights. The squadrons are at present known as "fire units." Each operational wing has its own tactical control radar and operations room, both being located somewhere in the region of the launching site. G/C. Leathart pointed out that the similarity to a traditional fighter station did not end at the organizational features, since Bloodhound itself was regarded much as an aircraft—"and a damn good one at that."

*Left, the mighty Metrovick three-dimensional tactical radar, showing transmitter aerial at right, reflector at left and receiver horns in the centre. Below right, the B.T.H. Sting Ray target-illuminating radar, and its display caravan. The two radars at right are not for Bloodhound*

