

Weapons

AS noted in our issue of August 29, the first generation of British guided weapons consists solely of systems designed to destroy manned aeroplanes. These still represent a major part of the effort, and anti-aircraft missiles, fired both from the surface and the air, completely dominated the missile picture at the 1958 S.B.A.C. Show. The four chief missiles in this category are: the Bloodhound, the R.A.F.'s surface-to-air weapon with an airframe by Bristol Aircraft, propulsion by Bristol Aero-Engines ramjets, and semi-active radar homing guidance by Ferranti; the Thunderbird, the Army's surface-to-air weapon (also being developed for the R.A.F.), the prime contractor for which is English Electric, with semi-active radar homing guidance by Marconi and propulsion by an I.C.I. solid sustainer (which in future versions of Thunderbird will doubtless have a very high specific impulse); the Seaslug, the ship-to-air missile of the Royal Navy, with an airframe by Armstrong Whitworth, control by G.E.C. and guidance by Sperry; and the Firestreak, the air-to-air missile of the R.A.F. and Royal Navy with the bulk of the work, including infra-red homing guidance, handled by de Havilland Propellers. The curtain of security surrounding these weapons was lifted but slightly this year, and the bulk of the new revelations concerned the non-flying portions of these weapon systems—as distinct from the missiles themselves—and their method of employment.

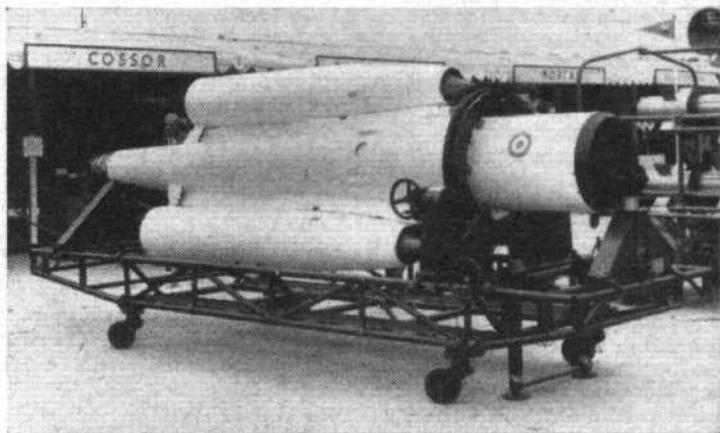
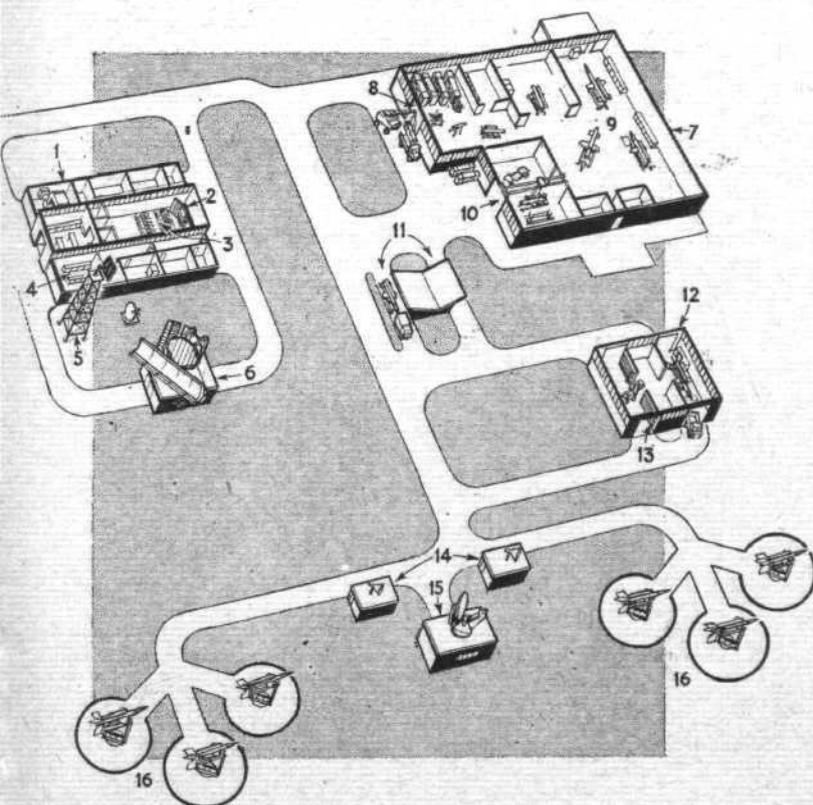
This year a great deal of the Bloodhound weapon system has, at least in so far as external appearance is concerned, been revealed for all the world to see. The standard surface-to-air missile of the R.A.F., and already being delivered in bulk to Fighter Command, Bloodhound has been designed and developed by the Guided Weapon Division at Bristol Aircraft in collaboration with Bristol Aero-Engines, Ferranti, B.T.H. and other companies (the



On the Ground

Dynamic Developments Seen at the Static Show

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| 1 Control building | 10 Loading on to transporter |
| 2 Operational display on glass wall | 11 Kerosine pressure-fuelling |
| 3 Sixteen 'scope operators | 12 Arming shed |
| 4 Storage racks | 13 Boost motors on wall racks (fork-lift handling) |
| 5 Radio-link tower | 14 Plant buildings |
| 6 Tactical radar | 15 Target-illuminating radar |
| 7 Missile servicing shop | 16 Missiles in launchers |
| 8 Crated-missile receiving section | |
| 9 Basic assembly of wings, guidance and warhead | |



The Bloodhound weapon system is now in quantity production for the R.A.F. Above is the M.L. mainbody and assembled-missile rotary trolley, described overleaf. It is used in the section numbered 8 in the sketch on the left, which—although not drawn at Farnborough—reveals for the first time details of an R.A.F. Bloodhound site.

Bloodhound work-force is stated to exceed that applied to any other weapon in Europe). The choice of propulsion by twin ramjets and control by a monoplane moving wing were arrived at in order to provide a weapon with the maximum inbuilt development potential. It is claimed to be the longest-ranged missile in the Western world with semi-active radar homing, and strong hints have been dropped that future versions are already in the advanced development stage.

Bristol Aircraft make the airframe at their Cardiff factory and some notes on its construction appeared in our issue for September 13, 1957. Ferranti's contribution can be summed up as follows: the guidance and control systems; assembly of rounds up to a condition in which they are fit to be loaded on to their launchers; diagnosis and rectification of difficulties in components or complete missiles; fire-control necessary for target-selection, missile preparation and launching; and mobile equipment for the periodical testing of the electronic circuits of missiles on their launchers. Extreme care has been taken to minimize the routine servicing necessary to maintain the whole system at an advanced state of readiness. All portions have been made readily transportable; the radar and control units can be housed in vans, and although the zero-length launchers require a prepared base they can be quickly provided with a cross-country chassis.

At Farnborough Bristol announced their inability, on security grounds, to display a model of a Bloodhound installation with any greater detail or trueness to life than the rudimentary display seen last year. The R.A.F., however, have constructed a most