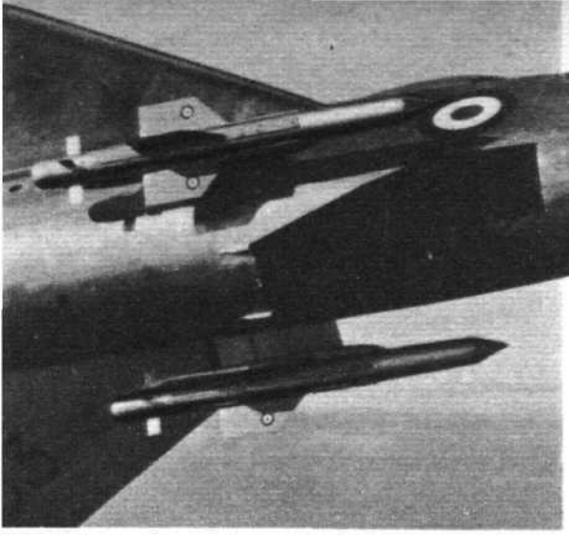
British Missiles 1958



D.H. Propellers Firestreaks on an English Electric P.1B.

PERHAPS for the first time, it is now possible for the general public to obtain a fair overall view of Britain's effort in the field of guided weapons. The picture that emerges is one in which absolute predominance has been placed upon acquiring a diverse range—with, it would appear, a degree of duplication—of weapons whose sole function is the destruction of manned aeroplanes. Now some thought is also being given to missiles designed for other purposes, and contracts have been let for a long-range ballistic missile and for an air-to-surface weapon for Bomber Command. In addition, the Army has the American Corporal tactical nuclear missile and Vickers-Armstrongs have developed a battlefield anti-tank device as a private venture.

Owing to our late start, the first generation of British surface-to-air weapons are in general more advanced than the U.S. Army's Nike Ajax, and correspond more closely to their contemporaries Talos and Nike Hercules. Both the R.A.F. Bloodhound and the Army Thunderbird have semi-active homing radar; that is to say, the missile homes on to radiation sent out by a powerful ground station and reflected from the target aeroplane. The Seaslug ship-to-air weapon of the Royal Navy is certainly associated with powerful ship-borne radar but its actual method of guidance has not yet been divulged. As regards their warheads, it has been announced that "the first examples" of Thunderbird and Bloodhound (and, one assumes, Seaslug also) will have H.E. charges, but that future versions will carry nuclear warheads, like those currently in use by Nike Hercules and Talos. Presumably the design and manufacture of these nuclear devices will be done completely inside the United Kingdom.

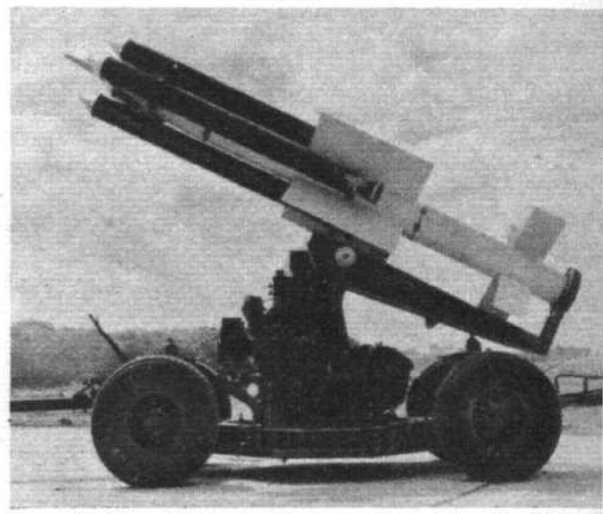
Our standard air-to-air weapon, Firestreak, is too small to carry any nuclear device yet publicly known, but is nevertheless an exceptionally potent weapon. Its guidance is of the infra-red homing variety, in contrast to the beam-riding radar guidance of the Fireflash, now in operational use by the R.A.F. as a training weapon. No advanced developments of Firestreak have been announced, nor is there yet any suggestion of a missile to replace it, although if it follows the pattern set by American air-to-air weapons it will branch out in several forms. The U.S. Air Force Falcon, for example, has appeared with both infra-red and radar guidance, and each Falcon-armed intercepter carries a mixture of both types which are fired in pairs to provide the greatest killing power under all conditions. It is also pertinent to note that no weapon comparable with the nuclear Genie air-to-air rocket has yet been announced in Europe.

Firestreak is to be the primary armament of the P.1B Lightning, Javelin and Sea Vixen, each of which is an all-weather aircraft. Either two or four rounds may be carried, and the parent aircraft houses equipment for supplying electrical power, heating and cooling services to maintain the missile in a condition ready for instant firing. The latter equipment can be housed in a streamlined package outside the aircraft, and certain machines—notably the Avon-Sabre—have been modified to operate with the Firestreak by this means.

R.A.F. Bomber Command's air-to-surface weapon is at present still very much subject to security restrictions, and the only information available at the time of writing is that it is being developed under the management of A. V. Roe's Weapon Research Division at Woodford, Cheshire, and that it will become standard equipment in Vulcan and Victor squadrons. A photograph (p. 345) released in April indicates a vehicle of the expected size (about 38ft long) and reveals a canard foreplane similar to that of the U.S.A.F. Hound Dog. Clearly the Avro missile—which has acquired the curious British designation of "stand-off bomb"—must have a design range greater than the reach of good defensive radars, and corresponding American weapons are provided with tankage for ranges upwards of 350 miles. Propulsion will obviously have to be suitable for supersonic flight at altitudes of well over 70,000ft, and—in spite of the surprising choice of a turbojet for the American Hound Dog—it would appear that ramjets, rockets or a combination of both will be fitted. One can surmise that the Avro missile will have a self-contained navigation system, probably embodying inertial elements.

One field in which no effort appears yet to have been made is that of tactical bom-

Launch of a Short SXA.5 surface-to-air research vehicle. Note the shallow angle.



Above, an Armstrong Whitworth Seaslug ship-to-air missile on a wheeled transporter; below, loading a Bristol Bloodhound ground-to-air weapon into a Blackburn Beverley.