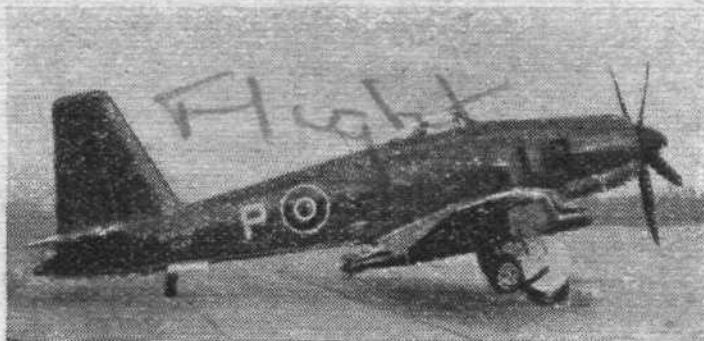




Some degree of comparison is afforded by this collection of views showing British and American single-seat Naval strike aircraft. Reading diagonally from the Blackburn Firebrand (above), they are the Blackburn S.28/43, Westland Wyvern, Douglas Skyraider and Martin Mauler.



## A Ferocious Breed . . . .

power and exceptional tractability) may yet be perpetuated in Naval air arms for anti-submarine duties, but the war proved quite conclusively, that if it were to survive in face of modern fighter opposition and A.A. defences, the Naval torpedo-bomber must have a greatly improved all-round performance, particularly in respect of speed, and present a smaller target.

Improvements in navigational aids enabled the crew to be reduced to the pilot alone, and the Royal Navy, in its search for a suitable machine, hit happily upon the Blackburn Firebrand, originally conceived as a Naval fighter, and offering excellent possibilities of development. The type had been designed round the liquid-cooled Napier Sabre engine, but available Sabres were required for R.A.F. Typhoons, and conversion for the Bristol Centaurus radial was put in hand. The built-in armament of four 20-mm guns was retained, and provision made for alternative loads of a torpedo, bombs, or the newly developed rocket projectiles. Adaptation was by no means easy, especially as rigid deck-landing requirements were to be met, but the Firebrand torpedo-fighter (as the type was officially re-classified) evolved through various sub-types to the Mark 5a in service to-day.

### War Load

Space does not allow discussion of other than those "functional" features which characterize the Firebrand as an example of a Naval strike aircraft. Alternative external "stores," to use British official terminology, are a torpedo, a 2,000-lb bomb load, or sixteen R.P.s with 60-lb heads. The "tin fish" is attached to a Blackburn torpedo or bomb carrier beneath the fuselage, and allows the fitting of the "Mat. 4" tail device to ensure directional stability in the air after release. The carrier is so designed that, when the undercarriage is retracted, the tail of the torpedo is lowered so that, in flight, the missile is parallel to the fuselage. Without this feature the height of the undercarriage would have been considerably greater.

Dive brakes, which limit the Firebrand's speed to approximately 350 m.p.h., are fitted on upper and lower surfaces of the mainplane. That these should increase the drag of the machine some 2-2½ times, without appreciably affecting its trim, is indicative of the thoroughness of wind-tunnel work at Brough.

By modern standards the Firebrand is not outstandingly fast, though without torpedo it achieves some 350 m.p.h.; but it is very manoeuvrable, notwithstanding its laden

weight of over 16,000 lb, and has desirable deck-landing qualities.

Though certain Firebrand features are reproduced in later prototype, built to Specification S.28/43, and unofficially dubbed "Firecrest," this machine, having been designed "from scratch," is far superior in performance and operational efficiency. Without external loads, the top speed is as high as 370 m.p.h. at 18,000ft, and the normal combat radius, with torpedo, 400 miles. The cockpit is situated so high in relation to the Centaurus 5 engine that the pilot has a 15-degree angle of vision over the nose—a factor equally important in dive bombing

and deck landing. As on the Firebrand, dive brakes are fitted well forward of the upper and lower surfaces of each wing, though it will later be seen that American designers do not favour this disposition. The torpedo is slung beneath the fuselage and outboard provision made for drop-tanks, two 500-lb bombs, rocket projectiles of various weight or a pair of heavy gun



No production order is likely, and the S.28/43 is not considered as a development aircraft. Should the New Year bring forth a later type from the Blackburn works this may well resemble a mock-up, part of which appears in a photograph on show at this year's S.B.A.C. display and which was characterized by a nose of unusual formation, such as might contain a coupled pair of turbopropellers. A power plant of this sort would appear to be especially well suited to a Naval strike aircraft, in that very economical single-engined cruising can be reconciled with high performance at full power.

To a later specification (N.11/44) than the Blackburn S.28/43, Westland Aircraft, Ltd. submitted designs which were realized in the Wyvern T.F.1, a 22,000-lb, 455-m.p.h. machine of 44ft span, having a 3,500 h.p. Rolls-Royce Eagle flat-H engine and capable of handling a 20-in torpedo, a 2,000-lb bomb, or eight 60-lb R.P.s. Careful attention to cockpit location and fuselage shape has allowed an exceptionally good view over the nose—superior, the makers claim, to that from any other single-engine aircraft in existence. A built-in armament of four 20-mm guns is specified. At the Farnborough display last year there was widespread speculation as to the possibility of fitting the Wyvern with the Armstrong Siddeley Pythium turboprop, delivering 3,670 shaft horsepower and over 1,100 lb static jet thrust, or the Rolls-Royce Clyde somewhat lower output. These units would certainly appear to be well matched to the Wyvern.

Though this brief survey is primarily concerned with specialized single-seat Naval strike aircraft, it is appropriate to mention the formidable offensive loads which are readily carried by the Hawker Sea Fury and late marks of the Supermarine Seafire Naval fighter/bombers. The Seafire takes three bombs of up to 500 lb apiece, and the Sea Fury is capable of delivering twelve 60-lb R.P.s, the