

Waiting in the wings

This final section illustrates a selection of aircraft which were under development during

World War Two, but which, for various reasons explained here, did not achieve quantity production or reach the RAF for active service during the war.

Boulton Paul P.92/2

Two 130hp D.H. Gipsy Major II engines

BOULTON PAUL WAS building the Defiant prototype in 1936 with its turret containing four 0.303 machine-guns when Specification F.18/36 was issued for a twin-engine three-seat fighter with a four-cannon turret to deal with the all-metal bombers being built.

The Air Ministry subsequently amended the requirement to Specification F.11/37 and invited tenders which stipulated an excellent view, a speed of 370mph at 35,000ft, ability to maintain height on one engine and a

design which would permit quick build at dispersed sites. Boulton Paul tendered against Armstrong Whitworth, Bristol, Hawker, Short and Supermarine, winning an order for three prototypes, two with Rolls-Royce Vulture engines and one with Napier Sabres.

Work began on the first two in mid-1937, but to

examine dynamics a half-scale wooden flying model (the P.92/2) with 130hp engines was built by Heston Aircraft,

but in May 1940 the P.92 was cancelled. Nevertheless, Boulton Paul decided to complete the

WING SPAN: 33ft 1in
LENGTH: 27ft 6in
HEIGHT: 7ft 7in
LOADED WEIGHT: 2,778 lb
MAX SPEED: 152 mph

P.92/2, V3142, which flew at Heston in Spring 1941 but after testing the aircraft was broken up.

Hawker Tornado

One 1,760hp Rolls-Royce Vulture II engine

DEVELOPED ALONGSIDE THE Typhoon, the Tornado was Vulture-powered but had a similar airframe to the Typhoon, and the prototype, P5219, flew on October 6, 1939, a second, P5224,

following in December 1940. An order for 200, to be built by Avro, was placed and the first, R7936, flew in August 1941, later being used as a test-bed for various propellers.

Continuing problems with the Vulture and Rolls-Royce's heavy involvement with Merlin production led to the cancellation of the Avro contract but one more Tornado, HG641, was assembled by Hawker at Langley with a Bristol Centaurus radial engine and flew on October 23, 1941. Although no orders followed it proved to be a useful introduction for the engine later used in the Tempest II.

WING SPAN 41ft 11in LENGTH 32ft 10in HEIGHT 14ft 8in LOADED WEIGHT 10,668 lb MAX SPEED 398 mph

Westland Welkin

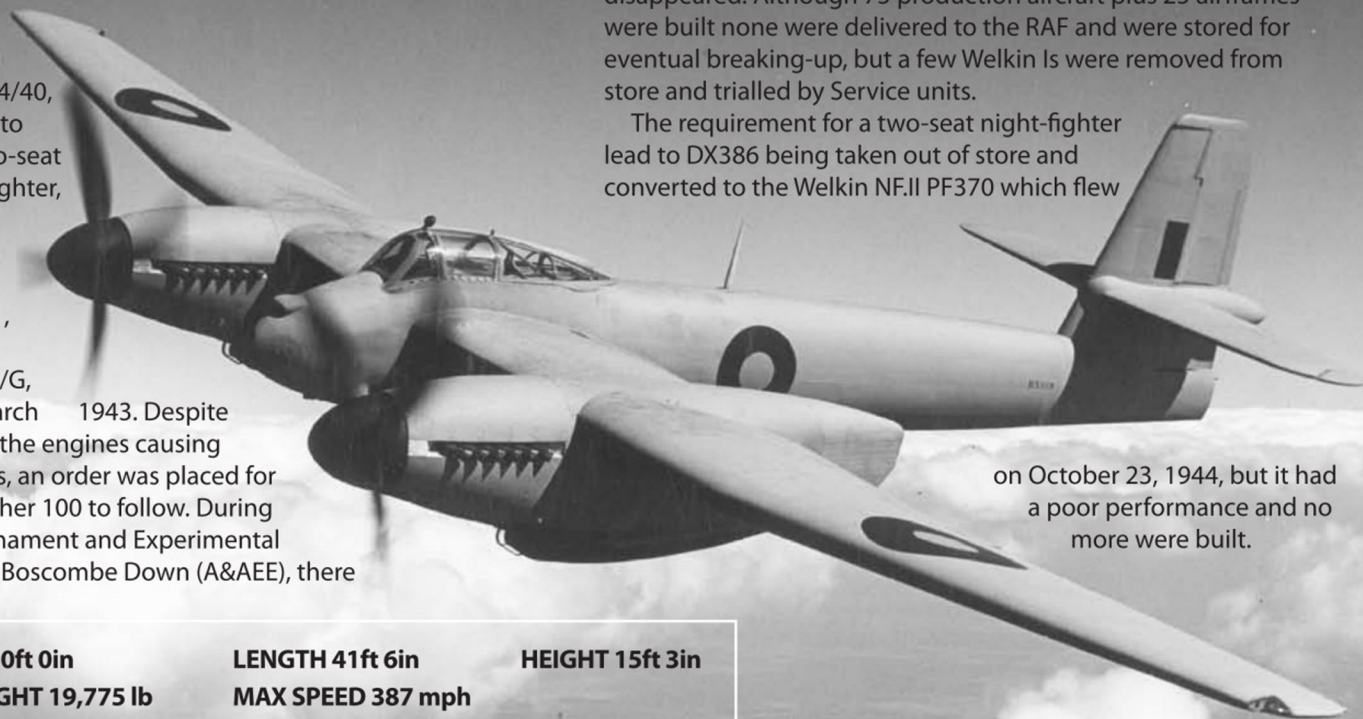
Two 1,530hp Rolls-Royce Merlin 61 engines

ORIGINALLY DESIGNED TO Specification F.4/40, later amended to F.7/41, for a two-seat high-altitude fighter, the Welkin prototype DG558/G flew on November 1, 1942, with the second, DG562/G, following in March 1943. Despite problems with the engines causing forced-landings, an order was placed for 100, with a further 100 to follow. During tests at the Armament and Experimental Establishment, Boscombe Down (A&AEE), there

were a number of accidents including engine problems and propeller failures, but with the expected German high-altitude bomber threat failing to materialise the need for the Welkin disappeared. Although 75 production aircraft plus 25 airframes were built none were delivered to the RAF and were stored for eventual breaking-up, but a few Welkin Is were removed from store and trialled by Service units.

The requirement for a two-seat night-fighter led to DX386 being taken out of store and converted to the Welkin NF.II PF370 which flew

on October 23, 1944, but it had a poor performance and no more were built.



WING SPAN 70ft 0in

LENGTH 41ft 6in

HEIGHT 15ft 3in

LOADED WEIGHT 19,775 lb

MAX SPEED 387 mph

Gloster F.9/37

Two 1,000hp Bristol Taurus engines

FAILING TO ATTRACT much attention in spite of its performance, Gloster's twin-engine fighter to Specification F.9/37 drew on an earlier Folland design which had been dropped when the Defiant was ordered. The new aircraft was a single-seater of metal stressed-skin construction with fabric-covered control surfaces

and the prototype, L7999 with Taurus engines, flew on April 3, 1939 with two 20mm cannon in the nose, although six had been specified.

Favourable comments had been made at the A&AEE where it had reached 360mph, the highest speed reached by a British military aircraft, but following an accident it was re-engined with 900hp Taurus engines, reducing its speed by 28mph. The second prototype, L8002, flew on February 22, 1940 with two 885hp Rolls-Royce Peregrine engines (as used in the Whirlwind), but production orders were placed for the Beaufighter.



WING SPAN 50ft 0in

LENGTH 37ft 0in

HEIGHT 11ft 7in

LOADED WEIGHT 11,615 lb

MAX SPEED 360 mph

Supermarine Spitiful

One 2,350hp Rolls-Royce Griffon 69 engine

IN AN EFFORT to increase speeds at which an aircraft could be flown, a series of high-speed aerofoil sections were needed, and Supermarine in collaboration with the National Physical Laboratory designed a new laminar flow wing for an aircraft designed to Specification F.1/43 which emerged as the Spitiful, and 21 were ordered. The prototype, NN660, was a Spitfire XIV fitted with a laminar flow wing and flew on June 30, 1944, but was lost two weeks later, while the second, NN664, flew on June 30, 1944 but exhibited handling and stability problems. Delays in incorporating modifications to production aircraft and the approach of jets led to production being cut to 17, and the first production Spitiful was RB515, flown in April 1945. The single Mk XVI, RB518, achieved a speed of 494mph, but no Spitifuls entered RAF service although 16 of a naval version, the Seafang, were

built and undertook trials but by then the Navy was committed to its first jet, the Supermarine Attacker which, ironically, used a version of the Spitiful and Seafang's laminar flow wing!



WING SPAN 35ft 0in
LENGTH 32ft 11in **HEIGHT 13ft 5in**
LOADED WEIGHT 9,950 lb
MAX SPEED 483 mph

Vickers 432

Two 1,565hp Rolls-Royce Merlin 61 engines

INTENDED TO MEET Specification F.7/41 for a high-altitude fighter, the Vickers 432's design was helped by the company's experience with the high-altitude Wellington V which incorporated a pressure

cabin. The 432 was to have six 20mm Hispano cannon mounted in a large ventral fairing, but these were not fitted in the only prototype, DZ217, which flew at Farnborough on December 24, 1942. Handling problems and failure of satisfactory engine operation above 23,000ft resulted in cancellation of the programme at the end of 1943, by which time threats of German high-altitude bombing had gone.



WING SPAN 56ft 10in
LOADED WEIGHT 20,168 lb

LENGTH 40ft 7in
MAX SPEED 435 mph

HEIGHT 13ft 9in

Martin Baker M.B.5

One 2,340hp Rolls-Royce Griffon 85 engine

THE MARTIN-BAKER company had flown its M.B.3 fighter built to Specification F.18/39 in 1942 but had lost it in a take-off crash in September that year. Undeterred, the company built a much improved version, the M.B.5, to the same specification but with a much larger engine driving contra-rotating propellers (originally

de Havilland, later Rotol). The first flight of the only M.B.5, R2496, was at Harwell on May 23, 1944 and it was soon obvious that it was an outstanding design with excellent performance and ease of accessibility to the cockpit with its sliding one-piece canopy.

Plans in 1945 to attack the world's speed record with the engine de-rated to 2,480hp recorded a speed of 484mph on a course near Gloucester. Unfortunately this came to nothing, for the day of the jet had arrived and so no production orders were received.



WING SPAN 35ft 0in	LENGTH 37ft 9in
HEIGHT 15ft 0in	LOADED WEIGHT 11,500 lb
MAX SPEED 460 mph	

Miles M.20/2

One 1,260hp Rolls-Royce Merlin XX engine

WITH PRODUCTION OF the Hurricane and Spitfire going ahead in 1938, there were fears that rates could not be stepped up in time to fully equip the RAF if a European war materialised. The Miles company, builders of a range of light aircraft and the RAF's first monoplane trainer, the Master 1, submitted the design of a

wooden fighter with a fixed, spatted undercarriage, originally to be powered by a Rolls-Royce Peregrine engine, but as these were in demand for the Whirlwind it was re-designed to be Merlin-powered as the M.20/2 whose thick wings carried eight 0.303 Browning machine-guns and had space for a further four.

The clear view cockpit canopy provided the best view of any fighter and the prototype, AX834, flew on September 15, 1940, only 65 days after design had begun. A speed of 333 mph was slightly better than the Hurricane but no orders were placed for this or a proposed naval version.

WING SPAN 34ft 7in	LENGTH 30ft 8in	HEIGHT 12ft 6in
LOADED WEIGHT 8,000 lb	MAX SPEED 333 mph	

