

THE CHANCE-VOUGHT F4U CORSAIR

The preliminary design of the F4U, the fourth Vought fighter, began in 1936, and a new Pratt and Whitney eighteen cylinder air-cooled engine with an output of nearly 2,000 horsepower was selected for the powerplant. In order to absorb the great power output, a very large propeller was required, with three blades and a diameter of 13 feet 4 inches. Using a conventional design concept, a landing gear strut about 6 feet in length would have been required and it would have been difficult to stow. The design team chose to use a wing centre-section with negative dihedral, giving an inverted gull wing. The undercarriage was designed to retract backwards and to rotate through 90 degrees so that the wheel lay flat within the wing (There is a working model of this gear at the National Aviation Museum). The centre-section span being at right angles to the fuselage side (the optimum for wing/fuselage drag) was a bonus. Another drag reducing refinement was the use of spot-welding instead of riveting to join the metal skin to the frame. A prototype was ordered by the US Navy in June 1938.

The first flight was on 29 May 1940, and evaluation was lengthy. Although the F4U passed its carrier qualification tests, its landing speed (87 miles per hour) was considered excessive, its long nose gave a poor forward view, and it tended to bounce and swing on touchdown. Production of the F4U-1 was ordered on 30 June 1941. The span and length were increased slightly and the cockpit was moved behind the wing. Initially the armament was two .50-inch calibre machine guns mounted in the nose, but, as a result of European experience, this was changed to four, and very soon, six guns in the wings. On the 689th aircraft a bubble canopy was introduced and the seat raised seven inches to improve the view.



Royal Navy Wrens and ratings servicing a Corsair II.



FG-1D, owned and operated by the Canadian Warplane Heritage.

At first the F4U was operated from land bases by the US Marines and from its small escort carriers by the Royal Navy. It was not until April 1944 that the US Navy finally approved the F4U for carrier use.

The F4U, the Bent Wing Bird, was used with great success by the Americans as an escort fighter and fighter-bomber, equipping twelve Marine and one Navy squadron. Top scoring Corsair ace was Major Gregory Boyington, a Medal of Honor winner, with 28 victories.

Corsairs were supplied to the Royal Navy Fleet Air Arm under Lend-Lease arrangements, the first batch being Mark Is (equivalent to the F4U-4) and Mark IIs (equivalent to the F4U-5). The first Corsair squadron was 1830, which formed at Quonset on 1 June 1943. Seven more squadrons formed during 1943 either at Quonset or Brunswick. They worked up in the USA before shipping to the UK in escort carriers. Nineteen FAA squadrons received Corsairs, the last being 1853 in April 1945.

The first operation in European waters for FAA Corsairs was the successful attack on the **Tirpitz** on 3 April 1944, in which aircraft of 1834 Squadron flying from HMS **Victorious** took part. Further strikes from carriers off the Norwegian coast were flown on 17 July and on 22, 24 and 25 August 1944. In the first, Corsairs of 1841 Squadron (HMS **Formidable**) provided fighter cover, and in the August strikes they were joined by those of 1842, their sister



Royal Navy Corsair I

squadron in **Formidable**. These squadrons were flying the Corsair II, which had the cockpit with improved visibility, clipped wings (of 16 inches less span to accommodate the lower hangars of British carriers) and undercarriages with long-stroke oleo legs. They also had provision for 2,000 pounds of bombs or up to 471 Imperial gallons of fuel in long-range tanks.

The Marks I and II were followed in the FAA by the Marks III and IV, a total of 2,012 of all marks being manufactured for the Royal Navy and the Royal New Zealand Air Force.

The most important operations flown by the British Corsairs were against the Japanese with the East Indies and Pacific Fleets during 1944-1945. Targets for carrier strikes included Sabang, Surabaya, the Andaman Islands, Palembang and the Sakishima Islands.

Between 17 July and 10 August 1945, Corsair IVs of 1834 and 1836 Squadrons (**Victorious**) and 1841 and 1842 Squadrons (**Formidable**) carried out a series of strikes against airfields and shipping in the Tokyo area. On one of these, on 9 August, Lieutenant R.H.Gray, Royal Canadian Navy Volunteer Reserve, won the second Victoria Cross awarded to a Fleet Air Arm pilot.

Corsair squadrons disbanded quickly after the war ended. By the end of 1945 only four remained, the last going on 13 August 1946.

The Corsair continued in production for the US Navy and Marines until 24 December 1952, by which time a grand total of 12,971 had been built. The later versions saw extensive service in Korea, and the final version was exported to France and used against the Viet Cong in Indo-China.

The **TECHNICAL DATA** below is for the Corsair IV.

Description:

Single-seat carrier-borne or shore-based fighter and fighter-bomber. All metal stressed skin construction.

Manufacturer:

Goodyear Aircraft Corporation, Akron, Ohio.

Power Plant:

Pratt & Whitney Double Wasp R-2800-8 developing 2,250 horsepower at sea level.

Dimensions:

Span, 39ft.8in. Length, 33ft.4in. Height, 15ft.1in. Wing area, 305sq.ft.

Weights:

Empty, 9,100lb. Loaded, 12,100lb.(maximum).

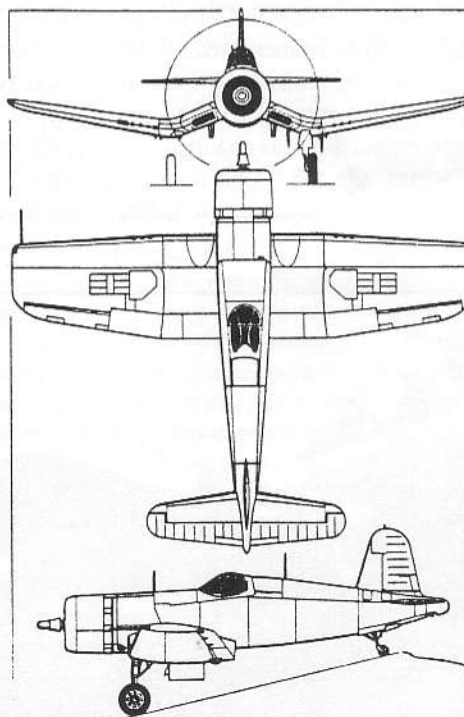
Performance:

Maximum speed, 414 miles per hour at 19,500 feet. Cruise, 261 miles per hour at 20,000 feet. Climb, 10.1 minutes to 20,000 feet. Range, 500 miles with 2,000 pounds of bombs or 1,562 miles with no bombs and maximum fuel. Service ceiling, 34,000 feet.

Armament:

Four 0.50 inch calibre machine guns in the wings and provision for two 1,000 pound bombs below the centre-section.

A flying example of the Corsair, an ex-US Navy FG-1D, is owned by the Canadian Warplane Heritage, Mount Hope, Ontario.



FURTHER READING:

1. **US Naval Fighters**,
Lloyd S. Jones; Aero Publishers, Fallbrook, CA, 1977
2. **Corsair: The F4U in WW2 and Korea**,
Barrett Tillman; Naval Institute Press, Annapolis, MA, 1979
3. **British Naval Aircraft since 1912**,
O.Thetford; Putnam, London, 1991