

By Hal Andrews

F7F Tigercat

This F7F-3N is on a Grumman acceptance flight at Bethpage, N.Y., before ferrying to Van Nuys, Calif., for completion with drooped radome nose, radar and second cockpit.



XF7F-1



F7F-2D

Although overshadowed by its F6F *Hellcat* predecessor and F8F *Bearcat* successor in the Grumman “cat” family, the F7F *Tigercat* was an equally distinguished fighter. Best known as Marine night fighters, *Tigercats* missed WW II but saw combat early in the Korean conflict.

Two XF7F-1s were ordered on 30 June 1941, the same days as two XF6F-1s. To meet the F6F’s priority with Grumman’s available engineering staff, the F7F design start was deferred

The Army and Navy were contracting for a common design twin-engine, high-performance fighter. The Navy sought a high-altitude carrier fighter with increased speed, range and weapons. Grumman’s competition winner was a twin-engine, tricycle landing gear design. Both the Army and Navy planned to use Wright R-2600 engines with advanced supercharging. Priorities after Pearl Harbor led the Army to cancel its contract.

XF7F-1 engineering design began in late spring 1942, with mockup inspection in September. By summer 1943, production was being negotiated and a major engine change—from Wright’s R-2600 to the Pratt and Whitney R-2800—eliminated support-



ing an engine model unique to the F7F, but resulted in a loss in high-altitude performance.

The first XF7F-1 made its initial flight in November. After changes, including increased vertical tail height and rudder chord, it went to NAS Patuxent River, Md., in December for flight test evaluation. While noting concern over directional control with one engine out during carrier launch or waveoff conditions, Flight Test’s

opinion was that “in addition to its potentialities as a night fighter, this airplane is the best medium-altitude day fighter, Army, Navy or foreign, yet evaluated.” In spite of its large size, its design provided increased speed while carrying four .50 nose guns and four 20 mm wing cannons.

The first of 500 planned F7F-1s flew in April 1944. Initial production would be night fighters with APS-6 radar in the nose and Pratt and Whitney 2,100 hp R-2800-22 engines. The third was modified to the two-place XF7F-2 with a radar operator’s cockpit behind the pilot. Deemed a more effective night fighter configuration, all airplanes after the first 34 would be F7F-2s.

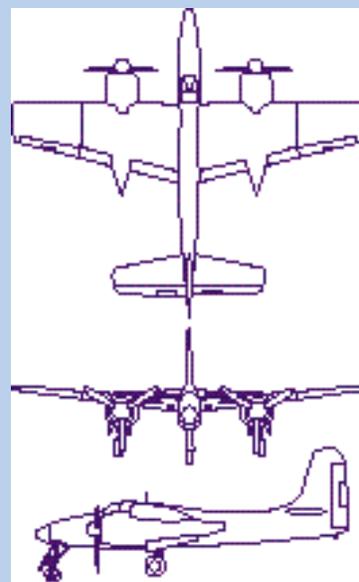
An unacceptable tailhook design and other problems found during XF7F-1 flight testing indicated needed changes, and *Tigercats* went to shore-based Marine squadrons. Supported by successful test operations of an F7F-1 on board *Shangri-La* (CV 38) in November 1944, -2 production would end at 100 with subsequent

F7F-3s having a strengthened airframe and an updated R-2800-34W engine. By this time, the -1s and -2s had been redesignated

-1Ns and -2Ns as night fighters.

Initial -3s were produced as single-seat fighters, with some having photo installations added as -3Ps, and others a more effective radar as two-place -3Ns. The Naval Aircraft Modification Unit, Johnsville, Pa., prototyped the -3P; Grumman prototyped the two-place -3N with nose guns removed and a larger “drooped nose” for the radar.

To expedite production of the different -3 models, all were built single-place with some variations to accommodate the changes for the intended



F7F-3

Span:	51'6"
Length:	45'5"
Height:	167"
Engines:	Two Pratt & Whitney R-2800-32W 2,100 hp
Weight:	Empty 16,270 lbs Gross (clean) 21,720 lbs
Max speed:	435 mph
Service ceiling:	40,700'
Max range:	Internal fuel—1,200 miles One 300-gal drop tank—1,830 miles
Crew:	One
Armament:	Four 20 mm cannons Four .50 machine guns Fuselage: up to one 2,000 lb bomb or Mk 13-3 torpedo Wings: inboard—up to two 1,000 lb bombs or other weapons outboard—eight 5" rockets

final model. The Ps and Ns were accepted at Grumman and ferried to the Navy Lockheed Service Center in Van Nuys, Calif., where they were completed for final delivery to operating units. A larger vertical fin was tested and finally incorporated in production, as well as backfitted in earlier -3 models. Like earlier models, all -3s could carry bombs or external fuel tanks on two inner wing panel store racks; the centerline rack was capable of carrying a larger bomb or tank, or a torpedo.

Marine squadrons began combat training in mid-1944 with F7F-1s. An F7F-2N equipped Marine squadron

was transported to Guam in summer 1945, flying on as Marine Night Fighter Squadron [VMF(N)] 531 to reach Okinawa just as the war ended. Similarly, a Marine photo squadron started training in March 1945, also reaching Okinawa by V-J Day.

During the rest of 1945, production continued at a lower rate toward a planned total of 400 F7Fs, and Marine *Tigercat* squadrons were cut back. Two squadrons operated in China—Marine Photographic Squadron 254 on coast photo mapping with -3Ps, and VMF(N)-533 with -3Ns replacing -2Ns.

By the end of the year, production of the last 110 was scheduled at Grumman as F7F-3Ns. In February 1946, VMF(N)-534 took its -3Ns aboard *Shangri-La* for carrier qualifications. After repeated landings, an inner wing panel of one plane failed on touchdown, bringing an end to carrier operations. In April -3N production was cut back, after which 12 -4Ns with extensive changes for carrier operating strength would be built. Also included was a new APS-19 radar in a streamlined nose, tested on a -3N as the XF7F-4N. Production -4Ns went to Night Composite Squadrons 1 and 2 for carrier operational evaluation, flying from *Essex*-class carriers after testing on board *Franklin D. Roosevelt* (CVB 42).

A new use for *Tigercats* surfaced. The -2Ns had been used for drone control, and all remaining -2Ns were redesignated -2Ds, modified with an F8F-type canopy over the rear cockpit for the drone control pilot.

Marine land-based squadrons continued to operate *Tigercats* in diminishing numbers, with VMF(N)s 513 and 542 flying night interdiction and fighter missions in the early months of the Korean conflict. As they were withdrawn from the war, *Tigercats* were gradually phased out, with the -2Ds serving into the mid-1950s.