

THE HISTORY BEHIND THE MODELS

TOUGH LITTLE KITTY: THE GRUMMAN F8F BEARCAT

By E. L. Motley



Neil Armstrong called it his favorite aircraft. One U.S. Navy pilot likened it to a Maserati, while another compared flying it to riding a Harley-Davidson. It was arguably the best World War II fighter plane never to see air to air combat. It was the last piston engine fighter produced by Grumman's legendary "Iron Works" and the last one ordered by the Navy. The plane was the F8F Bearcat, Grumman's final prop-driven "Cat."

The Bearcat's story began in mid-1943. By that time, victories at Midway and Guadalcanal had turned the tide of the Pacific war in America's favor. But the cost in men, ships and aircraft had been horrific, and everyone knew that much brutal fighting lay ahead. Although Hellcats and Corsairs were on the way, the Navy was very concerned that a new generation of Japanese fighters might be in the works. The A6M Zero had been a nasty surprise that the Navy still worried about a reprise of. Grumman proposed "Design G-58," a nimble dogfighter that was smaller and lighter than the Hellcat and Corsair. This new lightweight interceptor would have blazing speed, an outstanding rate of climb and would be unbeatable in the under 25,000 feet air combat environment.

The Navy's Bureau of Aeronautics (BuAer) liked Grumman's proposal and signed a contract with Grumman on November 27, 1943, for the XF8F-1. The first prototype flew on August 31, 1944. Impressed, the Navy ordered 2,023 F8F-1's on October 6, 1944. The F8F-1, which Grumman dubbed the "Bearcat," would supplement and ultimately replace the Hellcat.

"Hot rod" was an understatement for what rolled out of Grumman's Bethpage plant. The Pratt & Whitney R-2800 Double Wasp radial engine weighed 3,000 pounds while the airframe behind it was 4,000 pounds empty. The new Bearcat was literally half engine. In a typical carrier deck takeoff, the Bearcat needed only a 200-foot roll. At 17,000 feet, the Bearcat hit 426 mph. Given the wings' size, the armament was four .50 caliber wing-mounted machine guns instead of the preferred six. Later Bearcats would have heavier firepower when four 20 mm cannon replaced the machine guns. Internal fuel was also limited, although a large drop tank could be carried. Armor protected the

cockpit, engine and other vitals. A bubble canopy (the first on a USN fighter) and a humpbacked fuselage gave the pilot an excellent view.

There were teething troubles. Many naturally stemmed from mating a lightweight airframe with the monstrous R-2800 engine. A dorsal fillet extension of the vertical tail (and eventually a taller rudder) solved stability problems. The big maze of piping required for the engine (and crammed in ahead of the firewall) suffered from fuel leaks and seal failures. There were also hydraulic problems. Spark plug fouling was never fully resolved and remained an issue throughout the Bearcat's service career. The extra-long main landing gear required to accommodate the R-2800's upsized propeller also had some problems. But it was wartime and there was no luxury of a lengthy development period. Production began while Grumman continued to remedy mechanical and aerodynamic problems.

The biggest hurdle was the Bearcat's "breakaway" wingtips. For extra agility and to avoid the additional weight of a fully strengthened wing, Grumman used novel wingtips that would literally break off during extra high-g maneuvers. Enough would remain of each wing to fly the Bearcat safely home. Despite several redesigns, the concept proved totally impractical. Unfortunately, there were several fatal accidents before Grumman ditched the breakaway wingtips and fitted reinforced wings.

There are several persistent myths regarding the F8F Bearcat's design and purpose. Some aviation writers have said the Bearcat was influenced by the Focke-Wulf Fw-190 or that the Bearcat was an American copy of the Fw-190. There is even an old story—totally false—that Grumman had and tested a captured Fw-190 at the Bethpage plant. The Bearcat and the Fw-190 were similar in size, layout and having very powerful radial engines. Both planes were deadly to face at 20,000 feet. However, there was no connection between the two aircraft. Grumman test pilots flew a captured Fw-190 in England in September 1943, and another one in 1944 at the Navy's Patuxent River test facility. However, the Bearcat's design was largely finalized in July 1943, well before anyone at Grumman laid hands on a Focke-Wulf.

It has also been claimed that the Bearcat was built especially for use on the USN's escort carriers and **Independence** class light carriers. This myth makes more sense,



but it wasn't the case. A fast and agile "Zero Killer" was the design's priority. Nonetheless, the smaller and lighter Bearcats were a good fit for these ships. A number of the escort carriers were converted from merchant ships, and the nine **Independence** class flattops were originally **Cleveland** class light cruiser hulls. Some of the escort carriers had difficulty operating Hellcats and Corsairs while others were limited to carrying increasingly obsolete Wildcats.

A final myth is that the Bearcat was developed to shoot down kamikazes. Granted, the F8F would have been ideally suited for this role, especially if the planned invasion of Japan had taken place. As with the Focke-Wulf story, the facts and timeline do not match up. Kamikaze attacks did not become a daily risk to Allied warships until the closing months of 1944. By that time, the Bearcat was past being designed and was well into flight testing.

Although Hellcats and Corsairs were decimating Japanese aircraft by early 1945, Bearcat production proceeded. The first Bearcat squadron (VF-19) was formed on May 21, 1945 and began training with the new fighter. Upon being declared ready for duty, VF-19 set sail aboard the light carrier USS *Langley* on August 2, 1945. News of Japan's surrender arrived while the carrier was at sea. With the war finally over and won, the Navy reduced Grumman's order to 770 aircraft. An additional 1,876 Bearcats to be built by General Motors were cancelled.

Too late to see action against the Japanese, the Bearcat became the Navy's most numerous fighter during the immediate postwar years. Engine and armament modifications and upgrades (20 mm cannon instead of .50 cal) kept the Bearcats potent. Bearcats could operate from any carrier (24 squadrons flew F8F's) and fighter jocks loved the plane. Some flew with the Marines. From 1946-1949, the Navy's Blue Angels flew F8F's. But the tough little cat's days were already numbered.

The Bearcat's slow demise began in 1946 when the Navy staged a mock dogfight between a P-80 Shooting Star and a Bearcat. It was no contest. Even with all the limitations the earliest jet fighters had, the P-80 flew rings around the Bearcat. The Shooting Star was faster, never gave the Bearcat a clear shot and could engage and disengage at will. Everyone then knew that the Navy's latest and hottest fighter would be just a stopgap until jets were ready for carrier use. Grumman delivered the last Bearcat in May, 1949. The production run totaled 1,263 aircraft spread over three major versions.

As the Bearcat's assembly line shut down, Grumman ramped up another one to build F-9F Panther jets. McDonnell's F-2H Banshee was also in production. Both jets steadily replaced Bearcats aboard carriers. Starting in 1949, Bearcats were increasingly handed down to Naval Reserve squadrons.

When war broke out in Korea, the Navy quickly decided not to commit Bearcats to the fight. Jets were obviously better suited to the fighter role, while "mud moving" Corsairs and Skyraiders were ideal for ground support. All-weather versions of the Bearcat's twin-engine Grumman cousin, the F7F Tigercat, flew night fighter and recon missions. Back stateside, the Navy retired the last frontline Bearcats in 1952. Reserve Bearcats were gone a year later.

The F8F would eventually see combat, but not in American markings or in its intended role. In 1946, France re-imposed colonial rule over Indochina. The Communist Viet-Minh were the most powerful of the pro-independence groups opposing the French and launched a guerilla war. Along with other military equipment, the U.S. provided the French with ex-USN F8F-1's and F8F-1B's which began arriving in Indochina in 1951.



These Bearcats were used as fighter-bombers and gave the French excellent service. Although not “bomb trucks” like Skyraiders or late-model Corsairs, the Bearcats could tote up to 1,600 pounds of bombs, rockets, or napalm. They flew countless ground support missions and were very active in the defense of Dien Bien Phu. After the French withdrawal in 1954, they turned over some of these Bearcats to the South Vietnamese Air Force. The South Vietnamese flew these until American replacement with T-28's and Skyraiders. The U.S. also supplied Thailand with Bearcats which lasted well into the 1960's.

Not surprisingly, some Bearcats ended up having civilian lives. Grumman built two civil Bearcats (“Gulfhawks”) for the Gulf Oil Company to use for promotional purposes. A number of retired and refurbished F8F's enjoyed success as racing planes and on the air show circuit.



THE F8F BEARCAT IN PLASTIC

Although model kits of the F8F Bearcat have been around since the 1960's, their availability and variety in 1/48 and 1/72 scales have been limited. The first widely produced injection molded Bearcat was Hawk's 1967 release of a 1/48 F8F-2 with USN markings. Hawk followed with a 1/48 “chrome plated” South Vietnamese fighter-bomber in 1968. The first Hawk kit returned in the 1980's and 1990's under the Testors and Italeri labels. It's obviously a 1960's kit. The “cockpit” is only a simple seat and primitive instrument panel—no floor, stick, side panels or other detailing. Panel lines are raised on the wings and recessed on the fuselage. The wheel wells are shallow and incorrect in detail. A very simple radial engine is also inaccurate. Still, despite its age and limitations, the Hawk/Testors/Italeri 1/48 kit can be built into a decent model of the F8F-2 (taller rudder and cannon armed version).

In 1998, Hobbycraft released a 1/48 Bearcat that could be built as either an F8F-1 or F8F-2. Like most Hobbycraft kits, there are issues with accuracy, detailing, fit and decals. Instead of enclosing a larger (and better quality) decal sheet, Hobbycraft released the same molding in four different boxes: a late 1940's U.S. Navy fighter (VF-

151 and VF-29), a South Vietnamese fighter-bomber, an Indochina War French Air Force plane, and a Blue Angels mount.

By 2000, Academy had Hobbycraft's mold and re-released the kit with new decals for a South Vietnamese F8F-1 or a 1946 USN aircraft (VF-3). A 2004 re-release finally provided a comprehensive decal sheet for French (Indochina War) and U.S. Navy (VF-61, VF-82 and Blue Angels) aircraft. A 2016 re-issue featured decals for one of the U.S.S. **Tarawa's** Bearcats and several other USN examples. All these reissues were as Academy kits.

Hobby Boss released the best detailed and most accurate 1/48 Bearcat kit in 2011 (an F8F-1) with decals for a VF-3 machine and the Navy's "Beetle Bomb" airplane. A 2012 (F8F-1B) 1/48 kit followed with parts and decals for Bearcats in the French and Thai air forces. The most recent Hobby Boss Bearcat kit is the F8F-2 released in 2013. This kit's decals are for VF-151 and VF-61. Modelers looking for the "best" 1/48 Bearcat or planning a contest entry should buy one of these Hobby Boss kits and check online for available aftermarket products. The current (October 2020) issue of ***Fine Scale Modeler*** features an excellent article on building the 1/48 Hawk and Hobby Boss Bearcats.

Surprisingly, 1/72 builders will find few Bearcats in that scale. In 1975, Frog released a 1/72 French F8-F1B, which later re-appeared under the Novo label in the early 1980's. Both boxings are now long gone. Monogram released a 1/72 Bearcat (apparently an F8F-1) in USN markings in 1967. That kit has been re-released at various times. In the 1970's, there were also two releases of the 1/72 Bearcat and a P-51B as a combo air racing set. The last Monogram reissue was in 1991 with decals for French and Thai Bearcats. In 1996, Hasegawa released the 1/72 Monogram molding as a Blue Angels F8F-1 or the yellow "Beetle Bomb" that performed with the Blue Angels. There was also a separate Hasegawa boxing with USN decals. The Monogram 1/72 Bearcat's last appearance was in 2010 under Revell's label with Marines decals.

Over the years, there have also been 1/48 and 1/72 vacuform, resin and limited run releases (e.g. Combat Models, Great Plains Models and Sword). Again, those wanting to build a more accurate or detailed Bearcat should check online for available aftermarket products. Excellent kit reviews and builds are also readily available online at hobby websites such as Cyberscale and Modeling Madness.

The 1/32 scale builders haven't been left out, either. Trumpeter offers 1/32 scale kits of all three Bearcat versions, the F8F-1, F8F-1B and F8F-2. These kits are also wise choices for modelers seeking quality and excellent detailing. These Trumpeter kits provide a good basis for contest entries, too.



REFERENCES AND SOURCES:

U.S. Navy Carrier Fighters of World War II, Aerodata International (Squadron/Signal Publications, 1987).

Carrier Aviation Air Power Directory, David Donald and Daniel J. March (AIRtime Publishing, 2001).

American Warplanes, Bill Gunston (Crescent, 1986).

“F8F Bearcat: An Engine with a Saddle,” online article by Stephan Wilkinson, at www.historynet.com.

Vietnam: The War in the Air, Rene J. Francillon (Arch Cape Press, Aerospace Publishing Ltd, 1987).