

P-61 Lady in the Night

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PLANES WORTH MODELING

The Northrop Grumman P-61 “Black Widow”

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This story starts out on a personal note. In the mid 1950,s I worked in a service station in L.A. and one of my regular customers had been a P-61 pilot in WWII. He flew in Europe and, knowing of my interest in aviation, he told me several tales of his experiences.

He told me that at the time he was stationed in Europe the Allies pretty much had air superiority so most flights were routine patrols. So much so that on some flights they would mount beer kegs on the bomb racks under the wings and fly them to altitude to cool them to be consumed with gusto when they landed.

Another way of passing the flight time away was to challenge, or be challenged, by USAF P-47,s that they happened to meet to an impromptu mock dog-fight. Now the P61 weighed in at over 25,000 lbs. and had a 66 foot wingspan so you might think it wasn't quite a fair fight. You'd be wrong.

My customer claimed the P-61 would easily out turn almost any other fighter. More about that later.

The P-61 was a little slower than the P-47 or P-51, but not much and if the opponent gained an advantage, the P-61 simply pointed the nose down and dived away, out accelerating the opponent. Let's look at this incredible aircraft a little closer.

Early in WWII the Allies recognized the need for a night fighter. The Germans had the Heinkel He219 and Dornier Do 335 carrying an early form of radar to locate and attack our aircraft. The British were using Bristol Beaufighters and Mosquitos in early attempts to fight in the night skies over England with modest success. Everyone recognized that to carry the heavy radar sets of the day as well as some armament a multi-engined craft would be needed. At the time the U.S. had no designated night fighter.

The Allies wanted a night fighter so 'Jack' Northrop responded with a night fighter/interceptor using two 2000 HP P&W R2800 engines on a twin boom design with a 66 foot wingspan. The early P-61 would top out at about 366 MPH and land at 80 MPH. Max gross weight was designed to be approximately 38,000 lbs. It was armed with four 50. Cal. Mach. Guns and two 20mm cannons. It was to fly with a crew of three, a pilot, radar operator, and a gunner.

The original design had the 50 cal. Guns mounted in a turret on the top of the fuselage. It was operated electrically by the gunner who sat in a remote location. The only trouble was that when the turret was turned or elevated to track a target, it created massive turbulence at the horizontal stabilizer. The answer was to remove the turret, then later, to install the guns facing forward in a fixed position with the standard turret cover.

Tests were so positive that 1200 P-61s were ordered by the U.S. government in January of 1941, and the first aircraft flew in May 1942. Because the war ended the actual number of P-61's built was 247 including all variants. Beginning with the P-61-A improvements and changes developed the P-61-B (most built), the -C, -D, -E, -F, -G, -H, and the F-15. A few were given Navy I.D. and the Marines operated a few.

The operational life of the Black Widow ended in 1950.

Climb performance of the first P-61's was not as good as expected and the British declined to put them into service, preferring their own Mosquitos, so the first Air Groups were sent to the Pacific theatre and the first P-61 kill occurred over Saipan when the U.S. pilot shot down a Japanese 'Betty' light bomber and a 'Zero' accompanying the bomber.

The Black Widows were eventually deployed to Europe and the first P-61 kill there was in May 1944 when a German V-1 'Buzz Bomb' was destroyed.

Early P-61's were painted flat-black but it was found that they appeared as a 'black hole' in the anti-aircraft searchlight beams. A switch to gloss black made them much harder to see. Many aircraft were left flat black in the Pacific theatre .

The early P-61 aerodynamic control system was unique, using large flaps and no ailerons. Roll control was done using extendable 'spoilers' on the top surface of the wings near the tips. Large four-panel flaps gave excellent landing control. When the left wing 'spoiler' rose it killed some of the wings lift and the higher lift from the right wing caused a left roll. The opposite caused a right roll.

On P-61-B models a very small conventional aileron was added to the wing tip to add roll power and control. On the P-61-C version the 'spoilers' were replaced with 'fighter brakes' which were hydraulically operated perforated panels on both the upper and lower surface of the wing to create drag similar to the more common 'dive brakes' used on dive bombers. These

panels were controlled in flight by the toe brakes on the rudder pedals so the pilot could deploy left, right, or both panels at will.

During one early test flight the Widow was put into a dive and the 'fighter brakes' deployed. At high speed the brakes created so much drag that the wing spars failed, the plane came apart in mid-air, and the crew barely escaped being killed. The big advantage was that the aircraft could be slowed quickly to avoid overshooting slower targets and the turning radius was decreased radically so this 15ton 'fighter' was very maneuverable.

The -C version changed the engines to 2800 HP turbo-charged versions and this increased both top speed (to 430 MPH) and maximum altitude to 41,000 Ft above sea level (ASL). Some 54 -C model aircraft were produced.

The final variants, the -E, -F, -G, -H, and the F-15 were intended as long-range fighter escorts or day fighter prototypes. Two of the -C versions were modified to create the -E by removing the stepped birdcage cockpit, eliminating one crewman, and arranging the crew in tandem under a 'bubble' type canopy. These were expected to be able to escort bombers all the way to Japan, or Moscow, and back.

The first flight tests of a pilot ejection seat were carried out in a modified P-61.

Normal operations called for the Widows to take off in the evening and proceed to a patrol position where ground based radar would vector the fighter to the area where enemy planes were discovered. The Widow would then use on-board radar to locate the possible enemy aircraft, slip in behind them for I.D. and then a few blasts from 20mm and/or 50 cal. Would destroy the enemy without them ever knowing the Widow was in the area. Few planes escaped.

In the Pacific theatre the P-61's generally had a different role. Low level nighttime bombing, rocket, and strafing attacks were the order of the day. In one bizarre attack on a convoy the P-61 returned to base and a human skull was found imbedded in one boom ventral surface leading edge. On unfortunate victim had been standing in the bed of a truck, even while under attack !

After the war a few Widows were assigned to collect data by deliberately flying into thunderstorms. They carried scientific instrumentation rather than armament. A few others were converted to high speed, low-level camera planes.

Today only four P-61,s are known to exist. One P-61A is located on display in Beijing, China. There was a U. S. unit located in China at the end on the war and as they were preparing to leave Communist troops came onto the field and ordered the troops to get out immediately, leaving the aircraft behind.

One P-61C is located at the Wright Patterson air base in Dayton Ohio. Named "Moonlight Serenade" it was passed over to the museum in 1958It is non-flying condition.

One P-61C IS reportedly in storage at the Smithsonian storage facility at Silver Hill, Maryland awaiting restoration at some time in the future.

The last one is a P-61B and is located at the Mid-Atlantic Air Museum in Reading Pennsylvania after being dismantled and shipped back to the U. S. from its crash site in New Guinea. It is currently under restoration to flying status and will be flown under the registration as N550NF. A number of recent photos of this restoration are available at the museum web site. www.MAAM.org/P61.html

Plans for a 114 inch span 1/7 scale model are available from Nick Zirolì Plans at www.ziroliplans.com . This model is a sport scale version that is known to be a good flying design.

If you are not ready to make the commitment to a large-scale model, an 80 inch span ARF is available from Global Hobby through a variety of dealers. One is Chief Aircraft at www.chiefaircraft.com .

References:

1. Airpower magazine, November 1976, Vol. 6, No.6. Auth: Gerry R. Rape & Ronald C Harrison
2. P61 Black Widow In Action, a Squadron/Signal Publication #106.
Auth: Larry Davis & Dave Menard
3. Google P-61 – many references and sources there

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