

# FLIGHTWATCH

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## THE FLYING HERITAGE COLLECTION

### I.

#### Paul Allen's Gift Preserving Aviation History

The Flying Heritage Collection is Paul Allen's gift to the world and is an extraordinary collection of rare aircraft. My visit to the facility was a chance to renew any friendship with Bill Papa, a docent at the museum. This article will focus on some of the rare and unique aircraft on display at the facility.

### II.

#### The Rare Aircraft on Display

##### A. The P-40C Tomahawk

The P-40C on display appears in the colors of the American Volunteer Group ("AVG") or Flying Tigers. It was built for the U.S. Army Air Corps but was shipped to Great Britain as part of the Lend Lease program. The aircraft was delivered to the Soviet Union. There are bullet holes in the rear of the fuselage confirming it saw combat.

As one stands beside the Tomahawk, it is an imposing aircraft evidencing a rugged construction. A Spitfire Mark V was parked nearby. While the Spitfire is an elegant work of art, the P-40's brutish appearance gives every indication it was designed for war. A major adversary of the P-40 was the Nakajima Type 1 Army Fighter, Model Number Ki-43 Hyabusa, which by comparison, is far less massive in appearance than the Tomahawk.

##### B. The B-25J Mitchell

The B-25J Mitchell on display is the most complete and authentic version of that aircraft in existence. It looks like it just rolled off the assembly line and is adorned in the markings of the 490<sup>th</sup> Bomber Squadron known as the "Bridge Busters." The original aircraft to bear these markings was shot down over China with all aboard lost. Perhaps in tribute to a friend, Mr. Allen had the markings of the "Bridge Busters" displayed on the aircraft because Stephen Spielberg's father flew with that unit. The aircraft that originally bore these markings flew 115 combat missions before it was lost.

The Mitchell on display was delivered to the U.S. Army Air Force in 1944 but was then transferred to the Royal Canadian Air Force, and it served with the RCAF for ten years. It was subsequently operated by a mining company and then served as a fire fighting aircraft before being obtained by the FHC in 1997.

##### C. The Ki-43 Oscar

Having seen many photographs and illustrations of the Nakajima Ki-43 (Allied code name "Oscar"), it was interesting to note the impression the aircraft makes when you first approach it. First, in comparison to the airframe, the engine appears massive. It appears the Japanese designers' ambition was to mate the lightest airframe to the most powerful engine available to achieve the desired performance. Second, when compared to its adversary, the sleek (and massive) P-40, the Oscar looks a bit crude. It has a basic telescopic gun sight and dainty "butterfly" (maneuvering) flaps on the trailing edges of each wing with a pushrod to activate them. They appear to be an afterthought.

Powered by a Nakajima Ha-25 engine of 950 horsepower, the Oscar had a top speed of 308 m.p.h. and was about fifty miles per hour slower than the more powerful and streamlined P-40. If you put the Oscar and P-40 side by side, look at the aircraft and their relative performance figures, the merits of Claire Chennault's hit and run tactics employed by the Flying Tigers are driven home.

The Oscar on display at FHC was discovered in Ra-baul and suffered damage following a hard landing. Meticulously restored in authentic markings, it was interesting to note the metallic green primer that is visible in the wheel wells. With a wingspan of 37' 6 1/2" and length of 28' 11 3/4", a light airframe, maneuvering flaps and a massive engine, it is clear the Oscar was designed to be a close quarter dogfighter that could out maneuver Allied fighters at slow airspeeds. If an Allied pilot had ambitions of survival, he had to keep his speed up, to hit and run, in order to neutralize the effect of the Oscar's superior maneuverability at slow speeds.

#### **D. The Focke Wulf FW-190A-5 and Ta-152 a Study in Evolution**

One of the special benefits in visiting the FHC is the fact both a FW-190A-5 and a Ta-152 are on display. The latter is an extensively modified and redesigned derivative of the former. Both aircraft were designed by Kurt Tank.

The FW-190A was a nasty surprise for RAF Spitfire pilots in 1941. While not as maneuverable as the current mark of the Spitfire at that time, the FW-190A was faster. Supermarine engineers had to devise modifications to the Spitfire airframe to address the challenge in performance presented by the FW-190A.

Designed as an interceptor, some marks (like the FW-190A-5 on display) operated as attack aircraft armed with bombs. Apparently, some pilots preferred the Bf-109 Messerschmitt series of fighters due to the superior high altitude performance of their Daimler Benz DB-601 liquid cooled engines. Because the Junkers Jumo liquid cooled engine offered the potential of better high altitude performance and more horsepower than the BMW radial engine that powered the FW-190 series of fighters, Kurt Tank employed the Junkers Jumo in a redesign of FW-190 known as the Ta-152.

While the Ta-152 is clearly a different aircraft from the FW-190, the common elements in the two aircraft are unmistakable. The Junkers Jumo installation has the effect of lengthening the nose. Consequently, there is a plug inserted in the aft of the fuselage just before the horizontal stabilizer and vertical fin. The downward slope and the contour of the fuselage abruptly ends at the plug suggesting the makeshift nature of this modification.

While the blunt nose of the Ta-152 suggests it is a radial engine powered aircraft like the FW-190, it is not. Rather, the blunt area of the nose houses the radiator of the liquid cooled Junkers Jumo. In an effort to employ non-strategic materials, the flaps of the Ta-152 are made of wood. With the flaps lowered, the varnished wood construction of the flaps was clearly visible. Also, the propeller blades on the Ta-152 were made of wood wrapped in cloth and are so nicely curved in appearance that they look like elliptical wings. They appear to be very elegant and efficient.

#### **E. The Spitfire Mark V**

The Supermarine Spitfire Mark V on display at FHC, like the Mark V on display at the Historic Flight Museum, appears in the markings of RAF Squadron No. 312, a Czech Squadron. However, these two aircraft of the same mark differ in a number of respects:

- (1) Historic Flight's Mark V has an "E" wing, while FHC's Mark V has a "C" wing.
- (2) Historic Flight's Mark V has two radiators under the wing while FHC's has one.
- (3) FHC's Mark V has two Browning .303 machine guns together with a 20 millimeter cannon in each wing while Historic Flight's Mark V has a 20 millimeter cannon and a .50 caliber machine gun in each wing.

Viewing the Spitfire Mark V aircraft on display at FHC and then at Historic Flight demonstrates variations that could be found in the same mark of an aircraft.

#### **F. The Fiesler F1-156 Storch, F1-103 Vengeance Weapon and F1-103R Reichenberg**

The aircraft manufactured by Fiesler were on display, the Fi 156C-2 Storch, the Fi 103 Vengeance Weapon or V-1 and the Fi 103R Reichenberg. The Storch is well known among pilots as an observation aircraft with short takeoff and landing (STOL) capabilities. Stall speed in a landing configuration (VSO) is a mere 27 mph, about the same as a J-3 Cub. However, the Storch is a much larger aircraft than a Cub and features flaps and slats to reduce the stall speed and to enhance control authority over the aircraft in a slow speed flight regime.

Powered by an inverted "V" engine, with the opposing banks of engine cylinders at the bottom and the crankcase at the top, the pilot has better forward visibility over the nose than would be enjoyed if the engine cylinders were upright. Also, the inverted engine configuration lowers the center of gravity affording the pilot an aircraft that handles better than it would otherwise during takeoff and landing.

The F1-103 or V-1 is a ram jet powered unguided missile. By adjusting the setting of the odometer (powered by a propeller), on the nose, the length of time power was supplied for the flight could be adjusted. After the engine quit, the missile fell to the ground and detonated. The nose cone housed the explosives and was attached via welding. Poor welds resulted in failures of the nose cones with loss of the missiles before their missions could be accomplished.

The Fi 103R was a pilot-guided version of the Fi 103 or V-1. It was not a suicide weapon. Rather, the pilot was expected to pilot the missile toward the target and bail out at the last moment. As was the case with the Fi 103,

poor welds on the nose cones contributed to losses of these machines. Also, the aircraft had a high stall speed. After female pilot Hanna Reitsch mastered flying this aircraft and pilot losses declined.

### G. Messerschmitt Bf-109 E-3

The Messerschmitt Bf-109E-3 on display illustrates the engineering decisions made by its designer, Willy Messerschmitt. Like the Spitfire, the Messerschmitt is a small aircraft. In an effort to keep weight to a minimum (and not expend more material than necessary on the wing structure), the main landing gear legs are attached to the fuselage and pivot upward into the wing wheel wells. Spitfire designer, Sir Reginald Mitchell, employed the same design concept in the Spitfire. However, the orientation of the main landing gear legs and wheels is markedly awkward. The result was to have more Messerschmitt losses due to take-off and landing accidents than to combat losses.

The Messerschmitt on display is a combat veteran found on the beach of the French coast. The pilot of the aircraft was escorting Ju 87 Stukas on an attack against England during the Battle of Britain. Prior to that mission, the pilot had scored two victories. On his final mission in the Messerschmitt, the pilot shot down a Spitfire. Accordingly, the Messerschmitt now carries three victory markings to reflect that achievement.

### H. A Host of Other Remarkable Aircraft

In addition to the remarkable aircraft discussed above, the FHC features a Hawker Hurricane Mark XIIA, a F6F Hellcat, a P-51D Mustang, a P-47D Thunderbolt, a Polikarpov U-2/PO-2, and a JN-4 Jenny.

## III. Conclusion

The aircraft on display at the Flying Heritage Collection are extremely rare. The fact that this collection of aircraft is privately funded is all the more remarkable and is a tribute to Paul Allen. Government sponsored museums such as the Smithsonian Air and Space Museum would be proud to display such rare and unique aircraft.

If your travels take you to Seattle, Washington, a visit to the Flying Heritage Collection will be a very interesting and informative experience.



*P-40 C Tomahawk*



*Polikarpov I-16, Ki-43 Oscar*



*Fieseler Fi 103*



*Bf-109 E-3 Messerschmitt*



*Focke-Wulf FW-190-A5*



*Supermarine Spitfire Mark V*



*Hawker Hurricane Mark XIIA*



*Focke-Wulf Ta-152*



*Messerschmitt Me 163 Komet*

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