

FIGHTING COCKPITS

The pilot's view of iconic aircraft

BY BUDD DAVISSON & DONALD NIJBOER PHOTOS BY DAN PATTERSON



The combat-aircraft cockpit has some sort of magical attraction to all who fly and those who would like to fly. It is the throne room in which aerial warriors, both past and present, sat and engaged in that rare form of combat that is built around the third dimension. It was—and is—man and machine wielding their mechanical swords in life-and-death struggles that have found their way into every form of modern mythology, whether on the written page or on the silver screen. The cockpit was the incubator in which a unique form of hero was born.

What follows is a brief sampling of photographer Dan Patterson's graphic storytelling in which combat cockpits are the central characters. We lifted these out of the recent book *Fighting Cockpits*, written by longtime author Donald Nijboer and photographed by Patterson, both past *Flight Journal* contributors.

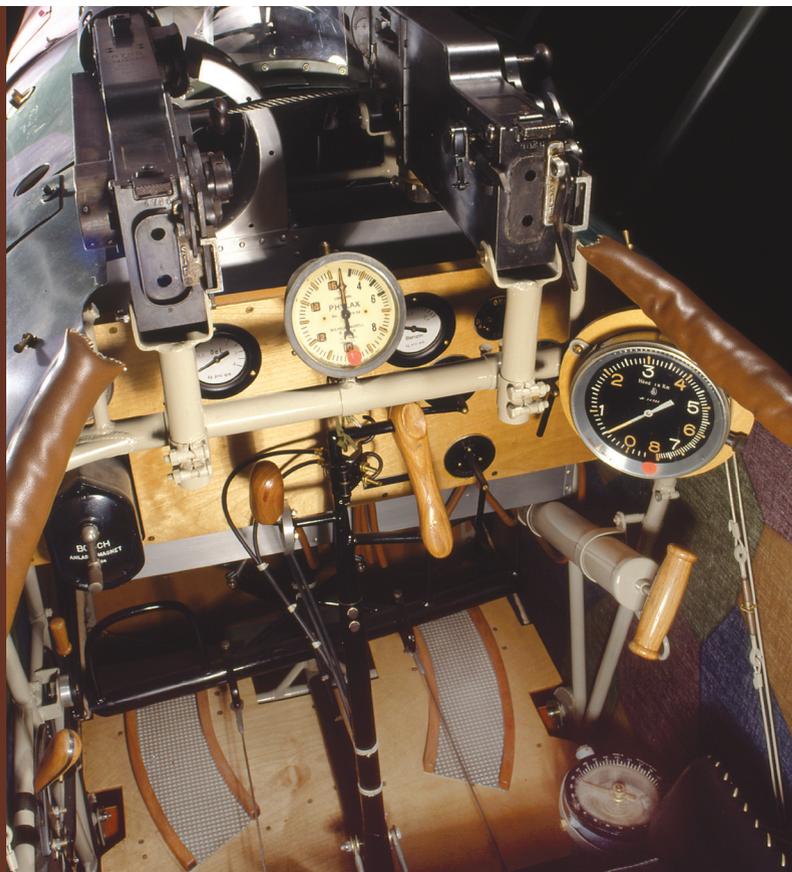
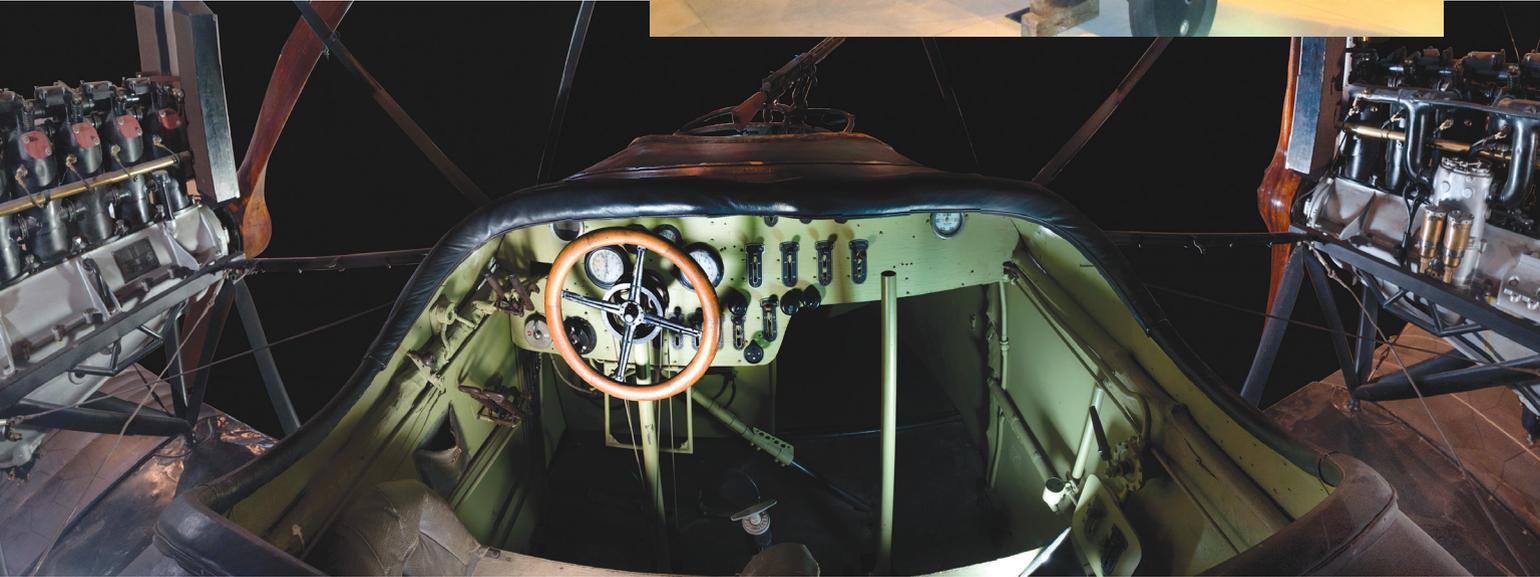
The concept we've come to know as a "cockpit" was not part of the Wright Brothers' original vision when they designed those first airplanes. In fact, it was some time after they successfully figured out how to temporarily nullify gravity that even a single instrument was onboard their machines. At some point, however, they asked themselves, "I wonder how high I am?" and the altimeter was born. Then the question

was "How fast am I going?" Then systems questions involving rpms, temperatures, fluid volumes, etc., quickly fertilized the instrument industry. This gave birth to the need for a place to mount those gauges and the pilot's instrument panel was born. The concept of an actual cockpit was part of the search for ways to mount the instrument panel and streamline the fuselage at the same time.

From the earliest and crudest cockpits, where instruments were strewn about with little organization, to the mighty bombers like the B-52, which were orgies of instrumental organization, the cockpit has continued to evolve. The following pages attempt to show that evolution, organized according to airplane type (e.g., fighter, bomber, etc.).

AEG G.IV

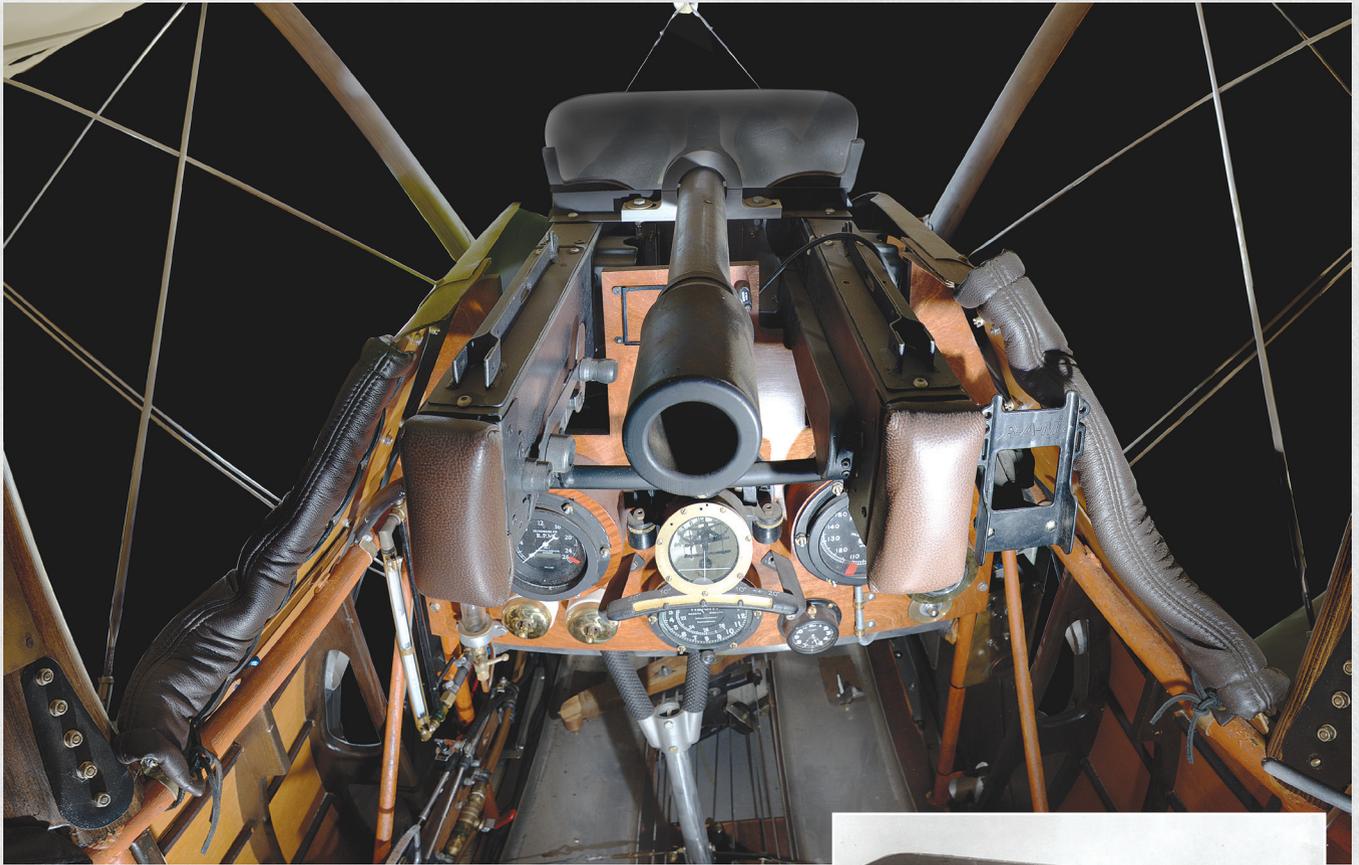
Toward the end of 1916, the German High Command introduced the AEG G.IV bomber (*Allgemeine Elektrizitäts-Gesellschaft Grossflugzeug*). While a slight improvement on the G.III, it possessed neither the range nor lifting power to be an effective bomber. Crew accommodation was sufficient for a crew of four, but most sorties were flown with three (pilot, commander, gunner). The Commander was provided with a foldaway seat positioned to the right of the pilot for takeoff and landing. This prevented him from being killed or injured during the inevitable nose-over accident.



Fokker D.VII

Andrew King, aircraft restorer and pilot

For a World War I airplane, the Fokker D.VII is really kind of modern. It's well engineered with steel-tube fuselage construction, cantilever wings, and an innovative cockpit. It's one of the more comfortable World War I cockpits, being fairly deep and wide, which minimizes your exposure. It was well equipped and comfortable. British cockpits gave you more information but were cramped by comparison. The Fokker D.VII was a truly advanced design, making it one of the most deadly fighters to see service during the First World War.



Sopwith Camel
"Dodge" Bailey, chief pilot of The Shuttleworth Collection

By placing the pilot under the center section of the top wing, the field of view is more restricted than on other biplanes. The upper wing shuts out a lot of sky—hence, the need to leave open areas in the center section to give the pilots some upward view. Being a tail-dragger, the forward view is restricted when on the ground.





SPAD VII

René Fonck, the Allies leading ace, had high praise for the SPAD, "it completely changed the face of aerial warfare." The SPAD VII was not an easy aircraft to fly. At low speed, its thin airfoil cross-section often resulted in unforgiving stalls. It was, however, an outstanding diver, capable of speeds of nearly 250mph followed by a steep climb. Dive and zoom tactics were soon developed, giving SPAD pilots the ability to dive on their opponents, fire off a burst, and zoom-climb back out of harm's way.

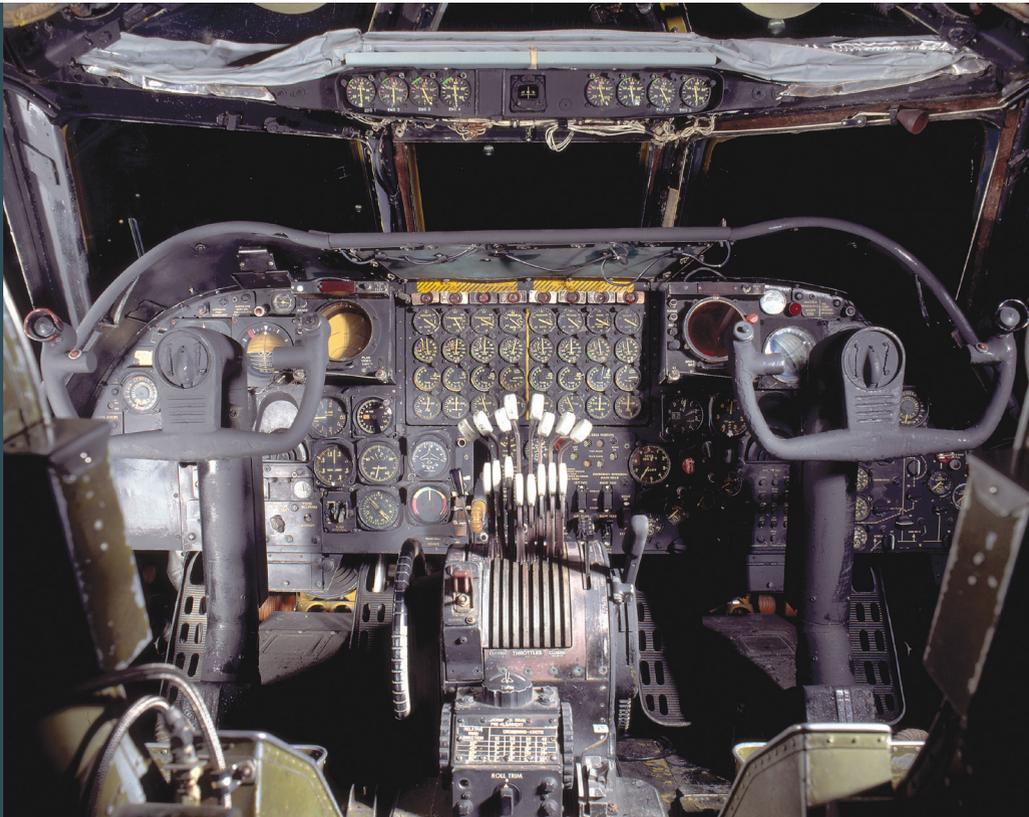




Boeing B-29 Superfortress

David Oliver, Flight Operations Officer, B-29/B-24 Squadron Commemorative Air Force

This is a great cockpit! The truth is when it comes to a flying airplane—instrumentation aside—the basic ergonomics make all the difference. That means that the yoke in front of you is at the right height with a good feel; a seat that allows some adjustment; and rudder pedals that are ergonomic for your feet. In the Liberator, they're too far apart and travel too far, so a short guy can't get reach them. The B-29 doesn't have any of that. It's well balanced with the correct throw for different body sizes. It also has a nice big old fat trim wheel sitting on the left side by your knee.



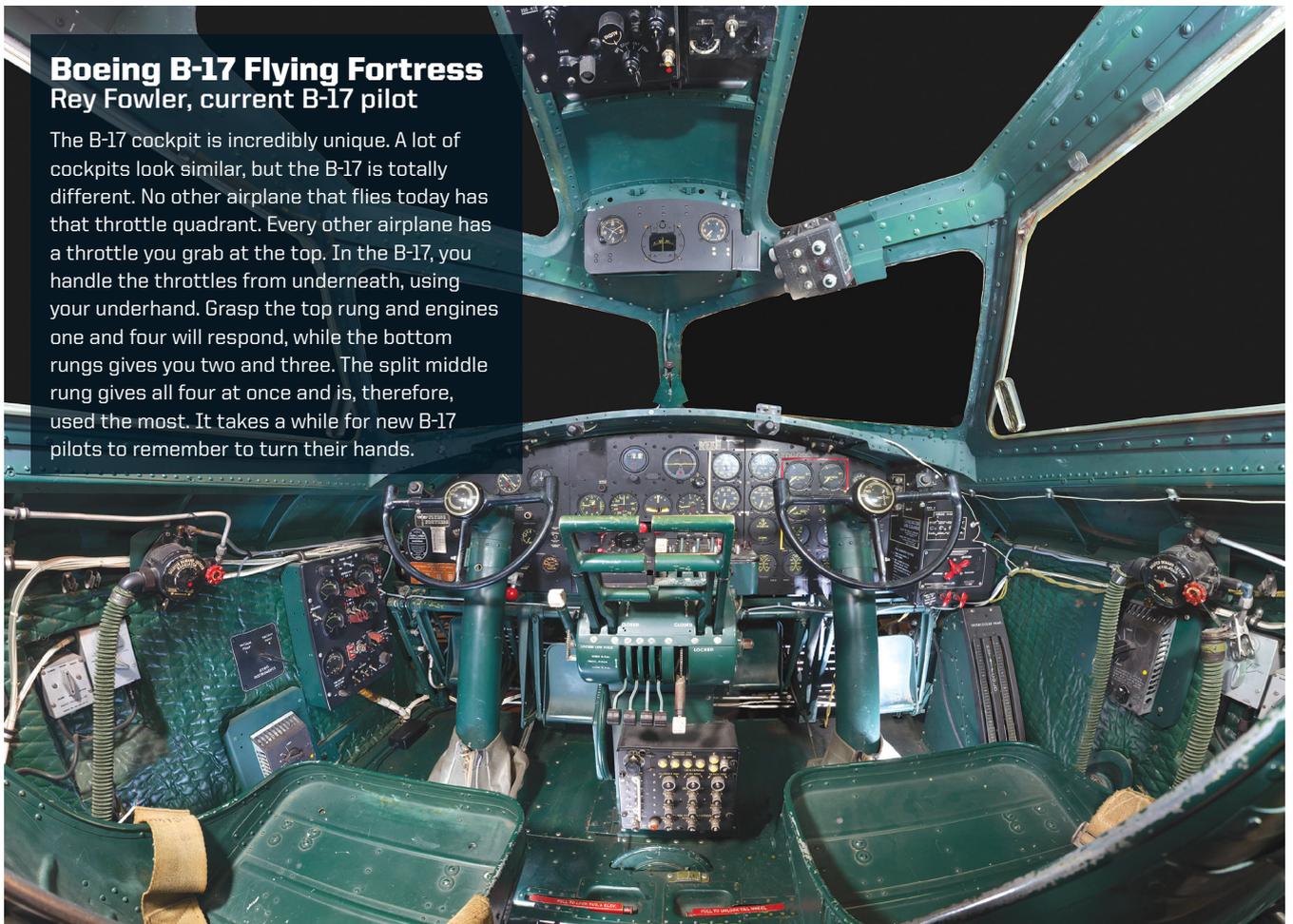
Boeing B-52 Stratofortress

Col. William "Bill" J. Moran Jr., USAF, Retired

The instruments were easy to read. The biggest problem I had was getting my hand around the eight throttles. I don't have the biggest hand in the world, so I would lay my palm sideways to get all eight throttles moving together. Once you had the throttles up to where you wanted them, you would adjust using the fourth and fifth engines. During air-to-air refueling, the four and five engines were all you needed.

Boeing B-17 Flying Fortress Rey Fowler, current B-17 pilot

The B-17 cockpit is incredibly unique. A lot of cockpits look similar, but the B-17 is totally different. No other airplane that flies today has that throttle quadrant. Every other airplane has a throttle you grab at the top. In the B-17, you handle the throttles from underneath, using your underhand. Grasp the top rung and engines one and four will respond, while the bottom rungs gives you two and three. The split middle rung gives you two and three. The split middle rung gives all four at once and is, therefore, used the most. It takes a while for new B-17 pilots to remember to turn their hands.



Republic P-47 Thunderbolt

Capt. Eric Brown, Royal Navy,
Retired

I first flew the P-47 in 1944. My impression of the cockpit was, if you got tired of flying, you could go for a walk around the stick. I'm small in stature: 5 feet 7. For a single-seat fighter, it was gigantic. I always wondered why they needed so much airplane to make an effective fighter. I've seen other airplanes more streamlined with just as much horsepower. The view from the cockpit, however, was beautiful. The cockpit layout was OK—a bit untidy but generally acceptable. The great thing about flying a fighter is the bonding you feel with it. Bond with your aircraft and you can fight anything. You can bond in the Spitfire, but I never got that feeling in the P-47 or F4U Corsair. They were just too big.





Focke-Wulf FW 190

Capt. Eric Brown, Royal Navy, Retired

The FW cockpit was narrow, but I was pleasantly surprised to find the forward view better than the Bf 109, Mustang, or Spitfire. The controls were easy to handle and the general cockpit layout was good, but the layout of the flight instruments was not as good as in the Bf 109. The really interesting thing in the FW 190 was the ingenious *Kommandgerat* or "brain box." This relieved the pilot of having to control the airscrew, pitch, mixture, boost, and rpm when moving the throttle forward or back. This cut the pilot's workload considerably and was a great asset, especially in combat.



North American P-51 Mustang Report on Mustang Mk III by RAF's Aeroplane and Armament Experimental Establishment and Air Fighting Development Unit

The Mustang III is very similar to fly and land as the Mustang I. It is therefore delightfully easy to handle. The pilot's cockpit is similar to the Mustang I. It has been "cleaned up" considerably. The cockpit, and in particular the instruments, are of American design and consequently seem oddly placed to a British pilot. The control column is well placed and of the stick variety. It is pivoted in both directions at its base. No "misting up" was encountered during the trials, including flying at and diving from heights up to 35,000 feet. ✈

