

## Guess How Many Airplanes Eric Brown Has Flown

The Guinness World Record holder has 487 different aircraft types on his life list

*Rebecca Maksel*

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*Eric Brown at the Berkshire Aviation Museum. (Homepage photo: His 1969 Royal Navy Portrait) (Courtesy Simon Blacker)*

**The former chief test pilot at the Royal Aircraft Establishment, Farnborough, England, holds the world's record for most types of aircraft flown—a whopping 487—and the record for most carrier landings: 2,407. Captain Eric Brown spoke with Air & Space associate editor Rebecca Maksel on January 26, 2009.**

**Air & Space:** The number of different aircraft that you've flown is simply astonishing. In your book you write "The speed with which I had to switch from one type of machine to another...forced me to invent a special system of memorizing the layouts of various cockpits, engine settings, and other vital data." Can you tell us a little about the system you used?

**Brown:** It rather evolved from the fact that I flew a large number of German aircraft at the end of the war, because they had a standardized system. All the instruments in the cockpit had color codes around the perimeter of the gauge—for example, red for emergency, brown for oil, blue for oxygen. Once you had this standardized system, it made life very simple for you to identify any instrument. So, bearing this in mind, I tended to daub with pencil around the gauges of non-German aircraft these same color codes. And this helped enormously.

Now, another thing the [Germans] had was for setting rpm, revolutions per minute. You didn't have to bother about watching an rpm gauge like we do. The gauges had the same

configuration as a clock, and provided you set the hands of the clock to 12 o'clock, they had been preset for the particular engine you were dealing with. You didn't have to remember 2,400 rpm for this engine, 3,200 rpm for that other engine. It was simply: Go to 12 o'clock. So that helped enormously also. We didn't have that system, but I would pencil right on the gauge the rpm that were required. So you didn't have to memorize it. You put it on before you flew the aircraft.

Now you can do a tremendous amount if you just devote about 10 minutes to a quarter of an hour before you fly an aircraft to preparation. This is the vital thing if you go into flying a new type of aircraft...particularly knowing the emergencies. There is an attitude amongst pilots that emergencies are a rare occurrence. Well, hopefully that is true. But that's not to say the emergency won't happen on your first flight. And unless you're prepared for that, you're going to fiddle around. Now, I always carried with me a knee pad on which were written only the emergencies. The rest were dealt with by the color-coding etcetera in the cockpit. But I had the emergencies. And they were written so that if an emergency occurred, I didn't have to scratch around thinking, "Oh, what do you do here?" I had it exactly in front of me.

**Air & Space:** Did you ever have to eject from an aircraft?

**Brown:** No, I've bailed out, but never ejected.

**Air & Space:** Can you tell us about the time you bailed out?

**Brown:** Yes. In the summer of 1944, from June to September, roughly, [there was] a German weapon called the V-1. This was a flying bomb, but pilotless, and it came over, normally, at 1,000 or 2,000 feet. And launched from catapult pads in Germany. Once it got started, the engine, which was a type of pulse jet engine, kept the aircraft at a steady 400 miles an hour. So this was a problem. We had to combat a pilotless aircraft, carrying a bomb at 400 miles per hour, at low level. We didn't have a single fighter aircraft in Britain at this time—either American or British—that could do 400 miles an hour at low level. It could do it at high level, but not at low level. So the panic was on. And the only way we decided that this could be done would be to turn from 100-octane fuel to...150 octane...fuel. And with this...fuel you could boost the engine above its permitted regulated maximum. But only for three minutes. And after that, it had to be checked thoroughly on the ground before the next flight. But that three minutes, provided you had a height advantage, you could dive and use full power and catch the V-1.

Now the other difficult thing was, you couldn't shoot this bomb down normally, because if you did, the bomb would explode and probably take you with it. So what we devised was that we would fly alongside it in formation and get our wing under the wing of the V-1. You wouldn't touch the wing, you would [place your wing] just underneath, maybe about six inches

to a foot, and form a pressure pad between the two wings. And then you gently lifted your wing—not violently, but gently—up and you would roll the V-1. And when it went over about 15 degrees you would topple the gyros that were conducting its flight, and it would immediately lose control and dive into the ground. Now you had to be careful, of course, not to do this over a built up area, because the bomb was going to explode when it hit the ground.

Well, I was doing this with a very nice fighter, the Hawker Tempest. And as I said, you were only allowed to do this for three minutes at a time. But we were under so much pressure that we were told to do four runs—all three minutes—one after the other, with a little gap in between of five minutes. I was on my fourth run when the engine seized completely and caught fire, and I had to get out. There was no problem getting out of the aircraft, but it had a rather funny ending. Instead of landing nicely on terra firma, I landed in a duck pond. And a rather slimy duck pond. When I gathered my parachute and waded, as the Navy would say, to the nearest shore, I couldn't get out because there was a very irate bull in the field beside the duck pond. It kept me there for a good half hour until the emergency services arrived. They found the farmer, and he came down and led this bull away very gently. And do you know, I think that bull was having me on. Not only me, but all the emergency services which were standing by, frightened to come over by the edge and help me out!

**Air & Space:** At Farnborough you flew many different type of aircraft. Do any in particular stand out?

Brown: My flying was [in] a mishmash of piston engines, high-performance piston engines, the early jets, and the early helicopters. So you had quite a variation. It was unusual—not only was I the chief naval test pilot there and the head of high-speed flight, I was also the chief helicopter pilot. So I did dart around quite a lot. This was an era in which there were some very wonderful airplanes. If you ask me which ones stand out in my mind, well, of course the most beautiful airplane about this time was a twin-engine one called the de Havilland Hornet, which was a scaled-down model of the Mosquito, but with far more power. So it was a tremendous airplane. And you could do almost anything with it on one engine, far [more] with two. That was my favorite piston-engine airplane.

Of course, we had wonderful American airplanes, we had your Mustang, and we had the early helicopters, of the kind Igor Sikorsky flew in the very early days. In fact, Mr. Sikorsky came over and did a flight with me. He was a most amusing man. Before we made the flight, he had been told by a very pompous civil servant that he thought Mr. Sikorsky should remove his hat, because he was always seen to fly in America with his hat on. And this civil servant said, "Mr. Sikorsky, there's always a grave danger that your hat will fly into the rotors." And Igor said, "Young man, I know everything about rotor flow, and don't worry about that," and he pulled his hat firmly down. So when he came to fly with me, I had the rotors running, waiting for him, and instead of walking straight towards me in the cockpit, he walked in a "W"

zigzag way. When he got in, I said to him, "Mr. Sikorsky, why did you walk in that peculiar pattern?" And he said, "Son, there's a guy out there who has just told me I knew nothing about rotor flow, and now he'll think I'm a genius." He was a delightful old man, he really was.

Of course, we were testing all the German aircraft, and there were some wonderful German airplanes at that time, like the Messerschmitt 262, which was a quantum jump in performance. The top fighter in the Allied camp at that time was the Spitfire Mark 14. I'm talking purely about performance. It had a top speed of 446 miles an hour. The Me 262, when I tested it at Farnborough, had a top speed of 568 miles an hour. In those circumstances you can control any type of combat. If you are in an airplane like this, you don't dogfight, you just come in, make a slashing run, firing with your very heavy cannon, and get out. And that is what they did. Of course it doesn't work too well against fighters, but it works magnificently against bombers, which is what they were intended to shoot down.

**Air & Space:** You write in your book, *Wings On My Sleeve*, that you took the Panther, Banshee 3 and Skyknight through their flight handling and performance tests. I'd like to hear your opinion of the early jets.

**Brown:** The early jets had a fundamental problem. There were two ways you could go [with engine development]. You could either have the principle of centrifugal flow or axial flow. A centrifugal flow was the more simple and more reliable method. And that is the method that Frank Whittle chose to go in Britain—purely, as he said, for simplicity and reliability. The Germans went with axial flow, which is a more complex engine, but has many advantages. Nowadays it's the only kind of jet engine that is used, so they were on the right route. But here was the big difference: By going centrifugal, Frank Whittle had engines [that had to be overhauled after] 100 hours of flight. With the German axial flow, [it was] 25 hours. So you can see the advantages. The advantages disappeared once we were able to get the metals to withstand the tremendous heat stresses. And this was the crux of the whole problem. The other thing about early jets, they were very slow in acceleration and deceleration. And that had to be improved. But that was rapidly improved. The heat stress problem took a longer time.

**Air & Space:** You were sent to Liverpool to collect a new Sikorsky R-4B helicopter. You hadn't seen a helicopter at that time.

**Brown:** That's correct. I had seen pictures of Mr. Sikorsky sitting with his hat on in the VS-300, I think it was. And when I realized that I hadn't got an instructor, I realized that it was up to me to read the handbook. I thought, well, Mr. Sikorsky did it, and he's older than I am, why can't I do it? What I hadn't realized, of course, was that when Mr. Sikorsky did it first, he was in a tethered aircraft. And here was I in a free aircraft. And believe you me, I used every inch

of that airfield, because the major problem one has in starting to fly helicopters is learning to hover. You don't realize, if you've been used to flying airplanes, that the controlled movements you make must be minimized quite radically in flying a helicopter. You need very tiny, controlled movements.

There were two of us sent up to collect these [R-4B helicopters], and we were reading the handbook the night before we were going to venture into the air. And the other fellow was looking rather gloomy as he looked at this. And he suddenly turned to me and said, "Do you know, this is like reading your own obituary." I tell you, it felt a bit that way the next day, too.

**Air & Space:** After reading that story in your book, I was amazed to learn that you went on to work in civil helicopter operations.

**Brown:** Some very strange quirks of fate occur in life. As long as you can survive, there's always something new waiting around the corner.