

# The Search for German Wartime Technological Secrets

Captain Eric “Winkle” Brown CBE, Hon FRAeS

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(Notes written by Andrew Dann)

Capt Brown was introduced by John Ollerhead who gave a comprehensive CV which is too long to include here in full. Some highlights include his 31 years service in the Royal Navy where Capt Brown was the Fleet Air Arms most decorated pilot receiving both the Distinguished Service Cross and the Air Force Cross. He served on the escort carrier HMS Audacity at the beginning of WW2 when he shot down two German patrol aircraft before being posted to the Royal Aircraft Establishment at Farnborough in 1942. Here he later went on to command the Enemy Aircraft Flight, the High Speed Flight, and the Aerodynamic Flight groups. He holds world records for flying the most number (487) of basic aircraft types, the most carrier landings in a fixed wing aircraft (2407), and the first carrier landing of a jet aircraft. Capt Brown has received numerous accolades such as the Guild of Air Pilots and Air Navigators Award of Honour for outstanding lifetime contribution to aviation in 2005, an award given jointly to Neil Armstrong. He holds qualifications as diverse as Hon Fellow of the Royal Society of Experimental Test Pilots and Master Pilot of Russia. Capt Brown was appointed CBE in 1970 and is a Past President and Hon fellow of the RAeS. He has also written 20 books, mainly on military topics.

Capt Brown gave a gripping narrative of his experiences in WW2 which he described as a “sortie into Nazi Germany – so fasten your seat belts”. His account was in a chronological sequence starting just before the war when he was 17 years old and was visiting Germany during the 1936 Berlin Olympics. Here he had his first encounter with Ernst Udet, Luftwaffe Director-General of Equipment, and Hanna Reitsch, world renowned glider and aerobatics pilot. He was taken on a hair-raising aerobatic flight by Udet of which he said: “I did not toss my cookies but it was a near thing”. Udet made a large impression on the young Brown and told him he must learn to fly and to speak German. Capt Brown did exactly this by attending Edinburgh University and studying German and French language and joining the University Air Squadron. In 1938 he got his wings and was speaking reasonable German. He went to Germany and visited Udet again who received him like a long lost brother. Together they visited the 1938 Automobile Exhibition where they witnessed the first flight by a female pilot of a helicopter, the Focke-Wulf FW 61, by Hanna Reitsch inside the Deutschlandhalle (a large hall built for indoor sports for the 1936 Olympics).

Back in Britain, Capt Brown was asked to join the Diplomatic Corps. As part of his duties he was in Munich, Germany when Britain declared war on 3<sup>rd</sup> September 1939. He was rudely awoken by two SS officers at 6 am that morning, arrested and taken to an SS jail in Munich but later released as part of a student prisoner exchange. His car, a MG, had been taken by the Nazis but strangely it was driven back with him to the Swiss border where he was released. The SS officer escorting him told him “you can take your car with you”. When Capt Brown asked “why, you’ve taken my books, my clothes, my money, why are you giving me my car?” The officer said with typical Teutonic logic “because we have no spares”.



**Figure 1 Focke-Wulf FW 61 helicopter**

In 1943 Capt Brown became a test pilot at Boscombe Down and later chief naval test pilot at Farnborough. In late 1944, early 1945 Capt Brown told how he became chief pilot and interpreter for the Farren Mission which had several priorities laid down by Churchill including finding German supersonic wind tunnels and finding and bringing back home advanced German aircraft, jet or rocket. In April 1945 he flew to Fassberg, just south of Hanover, to investigate an abandoned advanced German aircraft. This aircraft was the Messerschmitt 262 with its fuselage shaped like a shark and sweep-back wings which helped reduce compressibility effects. The biggest innovation though was the Junkers Jumo 004 jet engines which gave the aircraft a quantum jump in performance with a top speed 122 mph faster than Britain's fastest aircraft, the Spitfire 14. The engine was however terribly unreliable with a total scrap life of just 25 hours which was attributed to the lack of specialist alloys available to Germany at this time in the war. The Messerschmitt 262 was equipped with four 30 mm canons which were accurate to 650 yards. The high closing speed of the aircraft when attacking a bomber meant that the pilot had only two seconds to aim and fire before breaking off his attack to avoid colliding with the bomber. Capt Brown did however highly praise the Messerschmitt 262 as a phenomenal aircraft for its time.



**Figure 2 Messerschmitt Me 262 jet powered fighter**

On the 14<sup>th</sup> April 1945, Capt Brown was in Fassberg and was asked by Brigadier Glyn Hughes if he would help with the liberation of the Bergen-Belsen Concentration Camp by acting as an interpreter. Capt Brown spoke of the horrors of the camp which was reported to have 20,000 typhus cases.

Human bodies piled as high as 3 m were bulldozed in giant pits, huts built to house 60 people contained as many as 250 people, the majority of whom lay dying on 3 tiers of bunks with 7 people per bunk. Capt Brown recalled the appalling stench as perhaps his most vivid memory. He was asked to interrogate the male and female camp commandants, Joseph Kramer and Irma Grese. Capt Brown described Grese as the most awful person he had ever meet citing rumours that she made lamp shades using prisoner's skins. During her interrogation she refused to answer any questions and at the end of the session she jumped up and made a Nazi salute. Approximately 250 guards at the camp were given field court marshals and condemned to death by hanging. Albert Pierrepoint was the hangman who Capt Brown reports had a curious ritual of limiting himself to 9 hangings a day. Capt Brown made sure that Pierrepoint tied Grese's hands behind her back during the hanging to ensure that she could not give a Nazi salute.

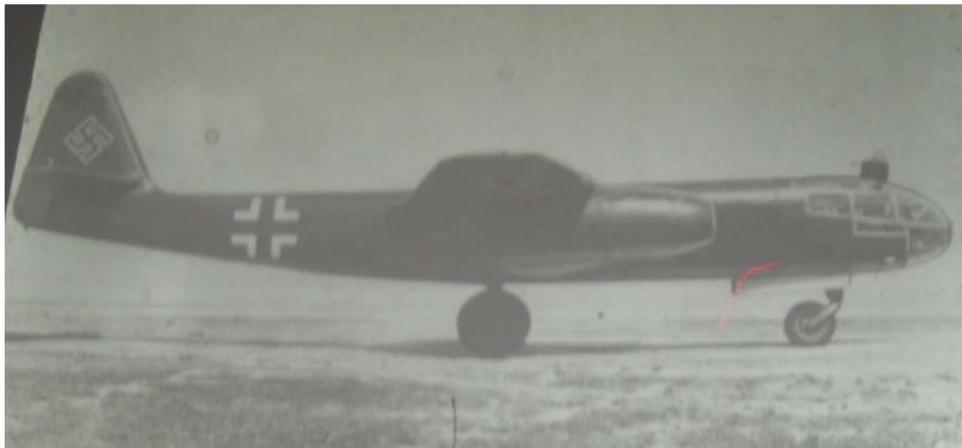
The 4<sup>th</sup> May 1945 saw Capt Brown ordered to an airfield in Schleswig-Holstein to investigate an unusual aircraft. This was the Messerschmitt 163 liquid fuelled rocket aircraft. He described this aircraft as an incredible aircraft of total desperation. It was a liquid fuelled, rocket powered aircraft with 23 degrees sweep-back wings and elevons on the wing tips which served as elevators and ailerons combined. Unlike previous rockets, the engine in this aircraft had some control with idle, cruise and full power settings. It had a solid skate undercarriage for landing and a bogie for take-off only. Shortly after take-off the bogie was jettisoned but if this was done too early it would bounce back up and hit the aircraft, often with disastrous effect. Hanna Reitsch suffered one such incident with the crash resulting in 9 skull fractures and her nose being wiped off her face. Once successfully off the ground the 163 could climb at 420 mph at an angle of 45 degree resulting in a climb rate of 16,000 ft/min. It was used to attack bombers by climbing to 30,000 feet and diving on them while firing from its two 30 mm cannons. The Germans believed about 6 such attacks could be carried out before the aircraft needed to return for fuel but Capt Brown could only execute 2-3 simulations of this manoeuvre before he needed to return. It suffered from compressibility problems at high altitude so that if the pilot did not pull back in time it would go into what was termed a 'graveyard dive' from which there was no return. The landing was a dead-stick landing that had to be performed with absolutely no fuel onboard. If any fuel was left in the tanks the impact of landing would cause an explosion usually destroying the aircraft and killing the pilot. The Germans suffered 42 such mishaps making it a very dangerous aircraft to fly. It had a poor operational record with 16 allied aircraft shot down to the loss of 10 of its own.



**Figure 3 Messerschmitt Me 163 rocket powered fighter**

Capt Brown was later to meet Dr Walter who invented the rocket engine of the Messerschmitt 163. In a graphic demonstration of just a drop each of the hydrazine hydrate fuel and hydrogen peroxide oxidiser combination by Dr Walter, the resulting explosion almost knocked Capt Brown over. It was after this demonstration that Capt Brown flew the 163 and he was therefore very conscious of the effects of the two fuel tanks on either side of the pilot's seat!

Capt Brown's next mission was to investigate an aircraft reported at Grove Airfield in Denmark. The only minor problem with this mission was the presence of about 8 thousand German soldiers at the airfield due to the delay of the British forces by a SS division. Capt Brown landed with his team of boffins under the expectation that the area was secure but was met by a German lieutenant colonel. Somehow he convinced the officer that the British forces were "just behind the hedge" and he surrendered to Capt Brown who then spent the night in a house guarded by drunken, singing Danes who had come down from the local town to presumably celebrate their liberation. The next morning Capt Brown inspected one of the German aircraft at the airfield, an Arado Ar 234. This was the first jet powered bomber and was equipped with two Junkers Jumo 004 engines (the engines with a scrap life of 25 hours) giving the aircraft a top speed of 472 mph. Upon inspection it was discovered that there were no instructions, pilot data or service records. They had all been destroyed by the Germans. Fortunately for Capt Brown, the German ground crew, or the 'black men' as they were known, were willing to help by servicing the aircraft since they had not been well treated by the German pilots. The German cockpits were also well set out with colour coding. So Capt Brown taxied out to take-off and had only just throttled the engines to full power when the starboard engine blew-up. Some of the boffins believed that the engine had been sabotaged but Capt Brown thought this to be highly unlikely. His conclusion was that prior to his attempted flight the engines had been run for 24 hours and 50 minutes!



**Figure 4 Arado Ar 234 jet powered bomber**

At Grove Capt Brown also examined the Uhu Heinkel 219, German night fighter. This aircraft was the first production aircraft in the world to incorporate ejection seats. The compressed air system was tested successfully 12 times before being fitted to the aircraft. The Uhu carried two 30 mm cannons located on the top of the cockpit and inclined forward at a 60 degree angle. This orientation allowed the fighter to fly beneath enemy bombers and blast them from below. The 219 was the dread of Allied bomber command with one aircraft shooting down six Lancasters on its first sortie.



**Figure 5 Uhu Heinkel 219 night fighter**

Before the German capitulation on 9<sup>th</sup> May 1945, Capt Brown flew his Focke-Wulf 190 D9, which he rated as the second best aircraft he had flown during the war after the Spitfire 14, to an air base in Schleswig-Holstein.

After the capitulation he flew to Lubeck, Germany in search of Hanna Reitsch. Here Capt Brown heard the story of Reitsch's daring flight with German Field Marshall von Greim, who was the last commander of the Luftwaffe in WW2, to visit Hitler in his bunker. During the flight in a two-seater Fieseler Storch, von Greim was hit by ground fire and fell unconscious during which time Reitsch piloted the plane by stretching over from the rear seat before von Greim regained consciousness and landed safely. They visited Hitler who gave them each a cyanide pill and refused to let them stay in the bunker despite Reitsch's plea to stay. Capt Brown finally caught up with Reitsch after flying to Kitzbuehl in a Bell Airacobra to find her in a hospital bed feigning heart failure.

Two other unusual aircraft that Capt Brown inspected and flew were the Blohm und Voss BV 141 and the Heinkel He 162. The 141 was asymmetric with the cockpit to one side and the main fuselage and engine to the other side. Capt Brown said of the 141 "whenever I flew this I had the feeling I had forgotten something". The Heinkel 162 was a jet powered aircraft with a BMW 003 axial flow engine on top of the fuselage. It was remarkable in that from specification to first flight it took less than 9 months but still arrived too late in the war to be effective.



**Figure 6 Blohm und Voss BV 141 tactical reconnaissance aircraft**

Capt Brown was also involved in several interrogations of infamous German leaders. The first interrogation Capt Brown discussed was of Goring which was held on 17 June 1945 just outside Luxembourg. He was not allowed to ask political questions so he asked what Goring thought had

been the outcome of the Battle of Britain. Goring replied that it was a draw if one considered casualty lists of men and machines. Goring also pointed out that he had been ordered by Hitler to withdraw all fighter units for the invasion of Russia. Capt Brown said Goring had a point since what he said about withdrawing all fighter units has been found to be quite true. Capt Brown also asked about Adolf Galland, the German Luftwaffe General and flying ace, and the fallout between the two. Goring replied that he had removed Galland for insubordination because Galland argued that Goring was misusing the Me 262 as a fighter bomber instead of a pure fighter. Capt Brown believed Galland was correct. Galland was later given control of a unit of 16 Me 262's by Hitler who argued that Galland had done so much for Germany.

Capt Brown was also called to interrogate a prisoner suspected of being Himmler. He asked him two questions which he thought no one but Himmler would know the answer. The first question was why he imprisoned Werner von Braun, to which the prisoner replied because von Braun appeared to be pursuing his rocket hobby and not the war effort. The second question was why SS officers were required to be present at rocket production plants to which the reply was in order to keep 'quality control'. Capt Brown determined that the prisoner was in fact Himmler. Both Goring and Himmler later committed suicide by taking cyanide pills.

Question time revealed some other interesting facts including the first successful piloted flight of a V1 rocket was by Hanna Reitsch, and that a meeting to discuss supersonic tail-less aircraft in 1947 had identified the slim delta wing as the likely design for supersonic civil transport aircraft of the future well before Concorde was envisaged.

Mac Maccabee proposed the vote of thanks and the evening ended with tremendous applause for Capt Brown after an incredible adventure into German WW2 aircraft technology.