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HFI Heritage Series

Captain Eric "Winkle" Brown Officer, Gentleman, Test Pilot Extraordinaire

by Martin J. Pociask

Martin J. Pociask, curator for Helicopter Foundation International, interviewed Captain Eric Brown, a former British Royal Navy officer and test pilot who is credited with having flown 487 different aircraft types — more than anyone else in history. Brown is also the British Fleet Air Arm's most decorated living pilot. He holds a number of world records, including 2,407 fixed-wing aircraft carrier landings and 212 rotary-wing aircraft carrier landings.



ALL PHOTOS COURTESY ERIC BROWN, UNLESS OTHERWISE NOTED

Eric pictured with a model of the Miles M.52 research aircraft. The Miles M.52 was to be the first piloted supersonic aircraft, but the project was unexpectedly canceled in 1946. Eric would have been the project's test pilot.



HFI: Eric, you were born near Edinburgh, Scotland. Tell us about your childhood and what inspired your lifelong career in aviation.

Brown: I was born on January 21, 1919, in the town of Leith, just outside of Edinburgh. My father had been a balloon observer in the Royal Flying Corps, the predecessor to the Royal Air Force (RAF), and transferred to pilot training in 1918. Thereafter he became an officer pilot in the RAF.

I was deeply influenced towards aviation by his presence at home and by visits to the airfield where he served near Edinburgh. He gave me my first flight in a military biplane, a Gloster Gauntlet, as a small boy. Sitting on his lap, I could reach the control column but not the rudder pedals or throttle.

HFI: In 1936, your father took you to see the Olympic Games in Berlin.

Brown: While we were there, we met Ernst Udet, a First World War fighter ace. I had only schoolboy German, and Udet's English was not fluent, but that mattered little to this completely vibrant and extroverted man, and in some way created a sort of bond between us. There was a great deal of the schoolboy in Udet's character. He was a high-spirited, outgoing character, and his flat in Berlin was a meeting place for both serious and social conversation with his Luftwaffe contemporaries.

HFI: Accompanied by Udet, you visited Halle Airfield and found yourself flying in a two-seat Bücker Bü 131 Jungmann. Udet said that you had the temperament of a fighter pilot. Tell us about that flight.

Brown: Udet was the foremost acrobatic display pilot in the world at that time, and he certainly displayed his prowess to me. He ended the flight by making the final approach to land in the inverted position until he had just enough span-wise height to roll back into normal flight before touchdown. He



seemed impressed that I had remained unperturbed, or so he thought!

HFI: In 1938, you returned to Germany and were invited by Udet to attend the 1938 Colonial Exhibition. There you saw the Focke-Wulf Fw 61 helicopter, flown by Hanna Reitsch before a small crowd *inside* the Deutschlandhalle arena in Berlin. You met and got acquainted with Reitsch.

Brown: I had actually first met Hanna at the Berlin Olympics in 1936 and

thereafter quite frequently at Udet's flat. The Fw 61 flight was arranged by Udet, who displaced the Focke-Wulf test pilot in favor of Hanna for publicity purposes. She was a brilliant glider pilot and a competent fixed- and rotary-wing pilot.

HFI: In 1937, you entered Edinburgh University to study modern languages, with an emphasis on German. While there, you joined the university's air squadron.

Brown: Yes. I joined the university squadron in September 1937 and received my first formal flying instruction, soloing at the age of 18. Then, in August of 1939, I left for Germany on a student exchange program to Salem International College, on the banks of Lake Constance.

HFI: While on the exchange program, you were spending



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Eric is shown here conducting early stabilization trials in a Sikorsky R-4B.

a weekend in Munich when a lady knocked on your hotel door and announced, "Our countries are at war!" You were arrested by the SS, who escorted you to the Swiss border. How were you treated?

Brown: I was in SS custody for three days but was treated courteously and not subjected to any rigorous interrogation. However, my luggage, money, books, etc., were appropriated, along with my MG Magnette sports car. The latter was returned to me at the Swiss border because, as an SS officer said at the time, "We have no spares for it!"

HFI: You returned to England and then joined the Royal Navy Volunteer Reserve as a Fleet Air Arm pilot. What were your duties?

Brown: I was posted to 802 Squadron and served on the first escort carrier, HMS *Audacity*, flying the Grumman

Martlet [known as the Wildcat in the United States]. I received six months training on the Martlet, terminating with actual deck landing practice on the *Audacity* in the Western Approaches off the coast of Scotland.

HFI: While serving on the *Audacity*, you were involved in confrontations with the Focke-Wulf Fw 200 Condor [known as the Kurier to the Allies] maritime patrol aircraft.

Brown: During Audacity's active service, five Kuriers were shot down by pilots of the 802. I accounted for two. The loss of the other three involved six 802 pilots, of whom one — the squadron commander — was killed in action. One pilot was also lost while attacking a U-boat on the surface.

HFI: On December 21, 1941, the *Audacity* was torpedoed and sunk. You were one of only seven survivors of the squadron. The loss of so many

servicemen resulted in the disbanding of the squadron until February 1942. How did you survive the attack?

Brown: At the time *Audacity* was sunk, there were nine active 802 pilots on board. Two drowned in the sinking, five were rescued by a passing corvette, and two of us were left to our fate. The corvette left the scene when it received warning that the U-boat was still in the area. However, another corvette came back some three hours later and picked the two of us up. We were suffering from hypothermia by then.

HFI: On March 10, 1942, you were awarded the Distinguished Service Cross for your service on *Audacity*. You were cited "for bravery and skill in action against enemy aircraft and in the protection of a convoy against heavy and sustained enemy attacks."

Your commander then recommended you be assigned test

Eric Brown: A Distinguished Career in Aviation

- 1942 Distinguished Service Cross
- 1944 Member of the Order of the British Empire
- 1945 Officer of the Order of the British Empire
- 1947 Air Force Cross
- 1948 Royal Navy's Boyd Trophy
- 1949 King's Commendation for Valuable Service in the Air
- 1949 Royal Aeronautical Society's British Silver Medal for Practical Achievement in Aeronautics
- 1970 Commander of the Order of the British Empire
- 1983 Anglo-French Breguet Trophy for Services to Rotary-Wing Aviation
- 1984 Honorary Fellow of the Society of Experimental Test Pilots
- 1985 Aerospace Award of International Order of Aviation Characters

- 1986 Bronze Medal of the International **Aviation Federation**
- 1992 Helicopter Association International's Distinguished Achievement Award
- 1992 Elected Honorary Golden Eagle by U.S. Navy
- 1993 Master Pilot of Russia
- 1995 Elected to U.S. Navy's Carrier Aviation Test Pilot Hall of Honor
- 1997 Gold Medal of the British Association of Aviation Consultants
- 2004 Honorary Fellow of the Royal Aeronautical Society
- 2006 Award of Honour of Guild of Air Pilots and Air Navigators
- 2007 Sir Arthur Clarke Award for Lifetime Achievement in Aerospace
- 2008 Honorary Doctorate of Edinburgh University

flying duties, and you were sent to the Royal Aircraft Establishment (RAE) at Farnborough and employed in the Aerodynamics Flight Department. During your first month there, you flew 13 different aircraft types, including a captured Focke-Wulf Fw 190. Can you tell us about your time at

the RAE?

Brown: After my duty on Audacity, the Admiralty directed me into a series of trials and test units for the next two years, finally appointing me chief naval test pilot at the RAE. This base was the U.K.'s main aeronautical research center, and I served there for the next six years in the Navy, Aerodynamics, High Speed, and Enemy Aircraft Flights. Aircraft types passed through Farnborough in large numbers from the USA as well as those captured from the Germans and Italians. I was selected to specialize in captured aircraft because of my degree in modern languages.

HFI: Later at Farnborough, you were involved in deck landing trials of the Sea Mosquito, at that time the heaviest aircraft to be flown from a British carrier. You landed one for the first time on HMS Indefatigable on March 25, 1944. What other aircraft did you test?

Brown: The 8th U.S. Army Air Force's first bomber raids on Germany met with fierce resistance, making fighter escort a necessity. The first escorts available were the P-38 Lightning and

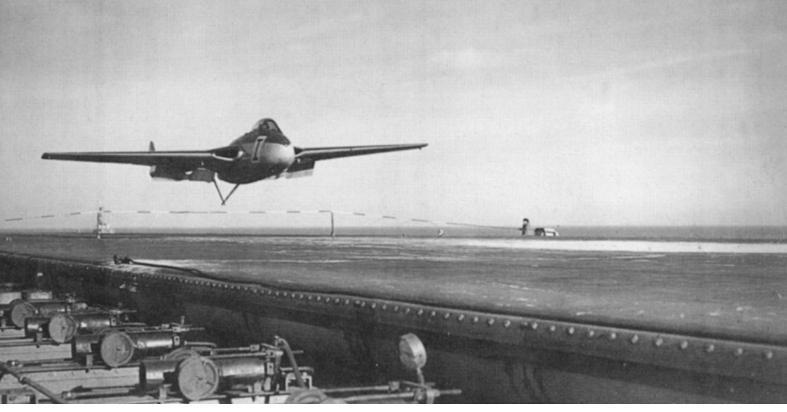


P-47 Thunderbolt — neither of which had the transonic flight capability to deal with the Messerschmitt Me 109 or Focke-Wulf Fw 190. This situation was resolved when the P-51 Mustang arrived on the scene in late 1943. The RAE was asked for help and tested all three escorts to their

> limiting Mach numbers and wrote descriptions for pilots to recognize the limitations of their aircraft.

I also worked on the Miles M.52 supersonic research aircraft. RAE's High Speed Flight consisted of four specialist test pilots who carried out dangerous flight testing in the transonic region on all Allied and captured enemy aircraft of high performance. The Miles M.52 was a special case intended to be the first piloted supersonic aircraft, and the concept was well advanced towards the maiden flight in 1946 when it was canceled without any prior warning. I was selected as the project pilot, so it was a bitter disappointment for me not to get to fly it.

HFI: On May 2, 1944, you were appointed Member of the Most Excellent Order of the British Empire (MBE) "for outstanding enterprise



Brown is shown landing a de Havilland Sea Vampire on HMS Warrior during trials of the flexible deck system. The system's shortcomings would provide the catalyst for the angled deck concept.

and skill in piloting aircraft during hazardous aircraft trials." That was quite an honor.

Brown: Yes, it was. I was extremely proud to receive such recognition at an early stage in my test-flying career.

HFI: During the latter days of the war,

Winston Churchill, whom you met, was desperate to counter the damage caused by the V-1 flying bombs also known as Doodlebugs — that rained terror over England. One of those bombs hit home personally. Can you tell us about that?

Brown: In the early summer of 1944, my wife, Lynn, and I were living in the military town of Aldershot. One morning a flying bomb landed in our garden and seriously injured our cleaning lady, and Lynn was slightly injured when the house literally collapsed. I was absent on fighter protection duty at RAE flying a Spitfire Mk IX when this occurred.

HFI: You have also been heavily involved with helicopters. In February 1945, you learned that RAE's Aerodynamics Flight had been allocated three Sikorsky R-4B Hoverfly helicopters [known in Britain as the Gadfly]. You had never seen one of these machines. After just a short flight as a passenger at



Record-breaking aviator Hanna Reitsch with World War I ace Ernst Udet. Eric met them both frequently before the war and would be called upon to interrogate Reitsch at war's end.

Farnborough, you were directed to collect two new R-4Bs from Liverpool.

Brown: As I arrived at Liverpool, the machines were being assembled by American mechanics. I inquired about receiving instructions on how to fly them. The master sergeant in charge handed me a manual, and said,

> "Here's your instructor!" Squadron Leader Anthony F. Martindale and I examined the booklet, and after several practice attempts we were able to hover and control the craft. The flight from Liverpool to Farnborough was made in the loosest possible formation, at least one mile apart, and we landed at the adjacent airfield to the RAE as we considered Farnborough was too densely packed with aircraft for us to risk landing there.

HFI: As the war was coming to a close, you were made commanding officer of Enemy Flight, largely due to your German language skills. Your task was to secure

German aircraft technology so that it would not fall into Soviet hands. An airfield in Denmark where the Germans had retreated to was still an active Luftwaffe base when you arrived. Can you tell us how that went?

Brown: In the final stages of the war in Germany, I was seeking out airfields where advanced jet aircraft were likely to be found and was advised by Army intelligence to visit Grove Airfield in Denmark. I flew in there with a small team of scientists, expecting it to be occupied by the British 2nd Army, but the latter had been delayed, so I was faced with bluffing that its arrival was imminent. The senior German Luftwaffe officer accepted the inevitable and surrendered — just to me!

HFI: You were asked by Brigadier Hugh Llewellyn Glyn Hughes, a medical officer with the British 2nd Army, to help interrogate [Josef Kramer,] the former Bergen-Belsen concentration camp commandant and his assistant. You also were asked to



At war's end, Eric interrogated one of the leading figures in rocket technology, Wernher von Braun (seen with arm in cast, shortly after surrendering to American forces in 1945). Von Braun led development of the Saturn V booster rocket used to land the first men on the moon.

interrogate your old acquaintance, Hanna Reitsch. Can you tell us about that?

Brown: I interrogated Reitsch in Salzburg Castle when she was still in a highly emotional state following her father's suicide. I was particularly keen to learn of her experience of flying the rocket-powered Me 163 Komet, but

she was not very technically knowledgeable, and I suspect had never flown the machine under power.

HFI: You also interviewed a number of other notable Germans, including Wernher von Braun, rocket scientist, aerospace engineer, space architect, and one of the leading figures in the development of rocket technology in Nazi Germany; Hermann Göring, politician, leading member of the Nazi Party, and World War I ace fighter pilot; Wilhelm Emil Messerschmitt, aircraft designer, manufacturer and "Blue Max" recipient; and SS Chief of Police Heinrich Himmler. Can you recall the content of those conversations?

Brown: I was not allowed to ask any political questions because of the impending Nuremberg trials, so I had to confine myself to aviation matters. Regarding Himmler, I was only allowed minimum interrogation, primarily to prove his identity. I questioned von Braun about his



Commanding officers of the Royal Navy's Fleet Air Arm, photographed in 1955. Brown is shown at center.

rocket experiments with Heinkel aircraft. I asked Göring about the Battle of Britain. With Messerschmitt, I was charged with ascertaining his structural design policy for the Me 109 and 262, his involvement in the design of the Me 163, and his relations with Udet.

HFI: Following this, you journeyed to Buckingham Palace for the fourth time, at age 28, to be appointed Officer of the Most Excellent Order of the British Empire (OBE). A surprised King George VI remarked in amazement at your frequent appearances. Can you recall his words to you?

Brown: Investitures are not occasions for lengthy conversation, so His Majesty just smiled graciously and said, "Oh, you again!"

HFI: After World War II, you test-flew 53 German aircraft, including the Messerschmitt Me 262, Arado Ar 234, and Heinkel He 162 turbojet planes. You also unofficially piloted the Me 163 rocket plane — the only Allied pilot to do so.

Brown: The Me 163, more than any other aircraft of its time, mesmerized the world of post–Second World War aviation. The Royal Aircraft Establishment (RAE) at Farnborough was frantically briefed to discover as much about this airplane and its rocket motor as possible, and it had been our intention to fly it as soon as we had learned enough about it.

I underwent the training program the Germans had set up for Me 163 pilots. However, just as I had completed the training, the British military authorities in Germany banned any use of concentrated hydrogen peroxide, so our only alternative was to complete our task covertly. [The Me 163 was fueled by a dangerous combination of hydrogen peroxide and other toxic chemicals



The Royal Aircraft Establishment (RAE) was the U.K.'s main aeronautical research center during World War II. While serving at the RAE, Eric flew a number of captured enemy aircraft, including the Focke-Wulf Fw 190 shown above.

that ignited on contact.] I was fully aware of the risks involved in making a powered flight in the 163, but not only had I completed the training, I had also interrogated the designer of the rocket engine, so I had done my best to attenuate the risks.

After my powered flight on June 10, 1945, we transported 24 Me 163B aircraft back to the U.K. and continued flying them, towed by a Spitfire IX, for about a year.

HFI: You participated in trials of the experimental rubber-deck landing system on aircraft carriers. Can you describe what those trials entailed?

Brown: The flexible deck system was aimed at eliminating landing gear. The

deck consisted of layers of longitudinal pneumatic tubes inflated at low pressures and overlaid by a rubber carpet tensioned laterally.

After I made a series of successful landings at Farnborough, the installation was transferred to the aircraft carrier HMS *Warrior*, and more than 200 successful landings were made at sea.

Although the system proved to be practicable, it was deemed a logistic headache and so was abandoned, although not before discussion on its operating shortcomings provided the catalyst for the brilliant concept of the angled deck, which revolutionized naval aviation.

HFI: In 1948, you were awarded

the Boyd Trophy for your work in trials of the rubber-deck landing system. Then, on March 30, 1949, you were granted a permanent Royal Navy commission as a lieutenant, backdated to your original wartime promotion to the rank. What made you decide to reenter naval service?

Brown: As chief test pilot, I was engaged in so many highly classified projects that I was not



The Messerschmitt Me 163 was capable of performance unrivaled at the time: "Like being in charge of a runaway train," says Brown.

permitted by the navy to leave the service at the end of the war so, in order to retain me they gave me a permanent commission as a lieutenant.

After leaving the RAE, I did a tour of duty as senior pilot in 802 Squadron flying the Sea Fury, before leaving for the U.S. Naval Air Test Center at Patuxent River, Maryland. On return to the U.K., I served on the destroyer HMS *Rocket* to get my watchkeeping certificate. Thereafter I was given command of 804 Squadron of Sea Hawks.

Next I was appointed Commander (Air) at Naval Air Station Brawdy in Wales, and then I was appointed as head of the British Naval Air Mission to Germany. I returned to the U.K. in 1961 to become deputy director of Naval Air Warfare, before going back to Germany as naval attaché, and finally back to the U.K. to command our largest naval air station at Lossiemouth in Scotland.

HFI: Did you fly helicopters during this period?

Brown: I flew helicopters consistently throughout my entire flying career. I was Britain's first rotary-wing experimental test pilot and did much pioneering work on the vortex ring state. In the Royal Navy, I did two stints as a search-and-rescue pilot, operating from land and aircraft-carrier bases. From 1960–61, I was responsible for developing both conventional and nuclear armament for helicopters.

After finally leaving the Navy, I became very involved with civil helicopter operations as chief executive of the British Helicopter Advisory Board. All totaled, I flew 36 types of helicopter during my career.

HFI: On July 13, 1961, you had a private meeting with Russian pilot and cosmonaut Yuri Gagarin in your office at the Admiralty. What did the two of you discuss?

Brown: Through an official Russian interpreter, we discussed



When they met, Yuri Gagarin (shown above on a Soviet-era stamp) told Brown he would "sooner be a test pilot than an astronaut," says Brown.

the space flight in its main aspects, particularly about the return to Earth. He was pretty guarded about this but gave me a hint that it must have been by parachute bailout from the capsule in the final stage. During our meeting, Gagarin continually moved around,

examining my collection of aircraft models, and was emphatic that he would sooner be a test pilot than an astronaut and hoped he would soon be returning to test-flying.

HFI: On July 7, 1969, you were appointed a naval aide-de-camp to Queen Elizabeth II, and in 1970 you were awarded the honor Commander of the Most Excellent Order of the British Empire (CBE). On January 27, 1970, you relinquished your aide-de-camp status and retired from the Royal Navy. After such a storied history, what made you call it a day?

Brown: In the Royal Navy, your retirement is dictated by whether you are promoted after a stipulated length of service; it is not of your own choice.





Two of the American aircraft that Brown tested at the U.S. Naval Air Test Center at Patuxent River, Maryland: the Grumman F9F Panther (top) and the McDonnell F2H-3 Banshee. Brown later used the Panther to demonstrate to the U.S. Navy the experimental British steam catapult onboard HMS *Perseus*.



Forced landing of a Westland Whirlwind HAS.7 anti-submarine helicopter south of Banff, Scotland — three weeks before Brown left the Royal Navy.

HFI: During the Cold War, you spent three months as a test pilot for the Focke-Wulf company. You served as a replacement for the company's previous test pilot who was being detained because he had relatives in what was then East Germany. What do you recall about that experience?

Brown: I had long regarded Kurt Waldemar Tank as Germany's finest aircraft designer, and I had flown six different types of his wartime machines. With my post-war stint at the Focke-Wulf headquarters in Bremen, I had access to his files — a treasure trove.

HFI: You also had an association with Neil Armstrong.

Brown: On June 24, 1971, I was briefed to conduct microwave aircraft-digital-guidance equipment trials at RAE Bedford in a Westland Wessex 2 helicopter. One day, I finished my flight just as a Handley Page HP115 landed. A Land Rover came to pick up me and the other pilot. The other pilot, an American, introduced himself as Neil Armstrong and said he knew me from his U.S. Navy days. A late lunch in the nearly deserted officers' mess provided a wonderful opportunity for conversation. We talked about our just-completed flights, our respective navy days, and the

rocket-propelled Me 163B and North American X-15.

I noted that the name Armstrong was common in the Scottish Borders, my home territory. Neil said his forebears stemmed from the little town of Langholm. I told him mine originally came from Melrose, also a small border town some 30 miles away. He turned to me and said, "Test pilots, naval aviators, rocket pilots,



Brown is the only non-American to have been inducted into the U.S. Navy's Carrier Aviation Test Pilots Hall of Honor. He is shown here accepting the honor aboard USS *Yorktown* in 1995.

Border Reivers; for sure we're kindred spirits." He thanked me for not quizzing him about the lunar landing and added, "None of us came back the same person."

In 1984, I was elected an honorary fellow of the American-based Society of Experimental Test Pilots, and thereafter Armstrong and I were invited to lecture at some of their functions. As the years went by, these

events became fewer and we were reduced to Christmas card exchanges until October 2006 when we were once again reunited at the London Guildhall to receive Awards of Honour from the Guild of Air Pilots and Air Navigators [now the Honourable Company of Air Pilots].

In 2008, we both received honorary doctorates from Edinburgh University. Our last meeting was in March 2010, when we shared a private evening meal together with Jim Lovell of Apollo 13 fame; Eugene Cernan, last man on the moon; Bob Gilliland, who was Lockheed Martin's principal test pilot on the SR-71 Blackbird aircraft; and Andy Green, the supersonic-car driver. That was my last occasion to see this very great man and dear friend.

HFI: You finally stopped flying at age 70. In 1992, you were elected Honorary Golden Eagle by the

U.S. Navy; in 1993, you were awarded Master Pilot of Russia; and in 1995, you were elected to the U.S. Navy's Carrier Aviation Test Pilots Hall of Honor—the only non-American to have received this accolade.

You continued to give lectures and were a regular attendee of the British Rocketry Oral History Programme. In 2007, you were recipient of that organization's Lifetime Achievement Award. What other aviation-related organizations have you been involved with?

Brown: My main organization is the Royal Aeronautical Society, of which I am a past president and honorary fellow, and I lecture extensively on its

behalf. I am also an honorary fellow of the Society of Experimental Test Pilots and lecture worldwide under their aegis. In the U.K., I am president or vice president of some 20 regional aviation groups, mainly in an honorary capacity.

HFI: Overall, you have flown British, American, German, Italian, and Japanese aircraft, and have flown more types of aircraft than anyone in history, including helicopters, fighters, gliders, bombers, amphibious and flying boats, and airliners. You were also the British Fleet Air Arm's most decorated pilot, and you hold two world records for aircraft carrier landings: 2,407 fixed-wing and 212 rotary-wing. Those are some amazing numbers.

Brown: I have indeed been very fortunate to have been involved in some aviation "firsts," e.g., the world's first landing of a jet aircraft aboard an aircraft carrier. While I was aware that I was creating history at the time, there is something ephemeral about records. They have to last a while before they impact on you and cause you to reflect on how they were achieved and the



Brown and his friend, American astronaut Neil Armstrong, received honorary doctorates from the University of Edinburgh in 2008.

question of whether they will ever be broken.

HFI: You logged approximately 4,000 helicopter flight hours, 7,000 jet flight hours, and 7,000 prop flight hours. That is a lot of time spent in the air! What were the more special moments that stand out for you?

Brown: The times I spent flying enemy aircraft.

HFI: You have authored several books, including descriptions of the flight characteristics of various aircraft that you flew, and an autobiography, *Wings on My Sleeve*. You have also authored dozens of articles in aviation magazines and journals. Can you tell us about your current hobbies and interests?

Brown: From the age of 12, my main passions have been aviation and foreign languages. I married a beautiful and talented girl, Lynn, from Northern Ireland. Lynn was a professional singer and also a gifted linguist. We were married for 56 wonderful years and had one son, who became a vice president of the Bank

of Boston in the United States but is now retired in England. He flies gliders as a hobby.

HFI: How did you get the nickname "Winkle"?

Brown: This traditional name in the Fleet Air Arm was previously held by Lieutenant Commander Eugene Kingsmill Esmonde, who was killed leading a Swordfish attack in the famous Channel Dash in February 1942, for which he was posthumously awarded Britain's highest award for valor, the Victoria Cross. After his death, the name somehow passed on to me, probably because Esmonde and I were of the same stature.

HFI: You are a founding member of the Twirly Birds. Can you also describe your affiliation

with HAI?

Brown: At first our relationship was competitive. HAI sought to establish a foothold in Europe, which the British Helicopter Advisory Board [now the British Helicopter Association] countered by setting up the European Helicopter Association. However, very quickly a sensible, cooperative working relationship was established that still exists today. I have attended many HAI HELI-EXPO® conventions, and likewise, HAI ensures American representation at Europe's Helitech shows.

HFI: Do you have any words of advice for today's young men and women who will become tomorrow's pilots and maintenance professionals?

Brown: Many opportunities occur in life. Never fail to recognize them and fulfill them. **?**

Martin J. Pociask is vice president and curator of Helicopter Foundation International.





Helicopter Foundation International

1920 Ballenger Avenue, Alexandria, VA 22314-2898 703-683-4646 | marty.pociask@rotor.org www.helicopterfoundation.org