



FLIGHT-WATCH



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AVIATION HISTORY IN LONDON

I. INTRODUCTION

A trip to London offers any person with an interest in aviation history an opportunity to view aircraft and aviation artifacts that cannot be seen elsewhere. This article will discuss exhibits at the Hendon Royal Air Force Museum and Imperial War Museum.



II. THE HENDON ROYAL AIR FORCE MUSEUM

A. Hendon . . . The Early Days

Hendon is a Borough north of central London. Flights by aviation pioneers began at Hendon in 1910. Experiments in night flying were conducted at Hendon before the outbreak of the First World War, and Gen. Hugh Trenchard who would be in charge of the Royal Flying Corps Bomber command learned to fly at Hendon. Hendon served as a flight training and aircraft manufacturing facility with primarily a civil orientation before World War One. With the outbreak of the First World War, flight training continued with civil pilots (including women) being trained alongside military pilots.

One of the more colorful pilots flying from Hendon at E.W. Ewen School in 1911 was Frank Gooden. Gooden had taken up ballooning in 1910 and that same year became the mechanic to airship pioneer E.T. Willows. Willows and Gooden crossed the English Channel from Wormwood Scrubs to Donai, their departure being witnessed by Winston Churchill and Lloyd George. Gooden

performed 14 successive loops at Hendon in 1911, setting a British record. By May 19, 1914, Gooden had been commissioned in the Royal Flying Corps (RFC) with the rank of captain and served as a test pilot for the Royal Aircraft Factory at Farnborough making the first flights in the F.E. 2a, F.E. 2d, F.E. 4, F.E. 8, and S.E. 5. Gooden died test-flying an S.E. 5 on January 28, 1917.

B. Hendon . . . The Interwar Years

Activities at Hendon in the form of pilot training and aircraft manufacturing contributed to the war effort. With the demobilization following the Armistice, Hendon served as an RAF base. The landing field was grassland and circular in configuration. Hendon was the site of an annual air show that was conducted some time after the Armistice until 1937. Hendon Air Shows featured low level aerobatics flow by, among others, Douglas Bader who lost his legs in a flying accident at Hendon. Bader went on to destroy a number of German aircraft during the Second World War making use of artificial legs.



C. Hendon . . . Today

Two aircraft operated by the RAF at Hendon during the 1930s were the Hind and Hart, and the pub at Hendon was so named. Today, the pub, officers' mess and barracks still stand. However, the buildings are now a

public housing project, and housing has also been erected on the old flying field. Although no charts were available during my visit, it appeared the runway lengths at Hendon (three paved intersecting runways were put in place during World War II) would have been about 3,000 to 3,500 feet.

D. Aircraft on Display at Hendon

Hendon has a number of British and German aircraft on display that are not available here in the States. Among these aircraft are the following:

(1) Sopwith Tabloid (Tommy Sopwith's biplane speedster featured a rotary engine with a streamlined aluminum cowling);

(2) French Caudron pusher biplane (powered by a rotary engine behind the two man crew that sat in a central nacelle suspended between two wings by a maze of struts and wires, the fabric is translucent, merely being linen encased in dope that gives the plane a straw color);

(3) Sopwith 1 ½ Strutter (a two seat biplane that functioned as a fighter, bomber and observation plane, the 1 ½ Strutter was a portent of things to come from the fertile imagination of Tommy Sopwith);

(4) Sopwith Pup (one of the first British planes to have a synchronized machine gun to fire through the propeller, this lightweight biplane fighter with a 100 horsepower rotary engine could outturn the German Albatross fighters in service in 1916 – 1917);

(5) Bristol Scout M.I.C (a monoplane fighter ahead of its time, the Bristol Scout saw limited service because the top brass in the RFC preferred biplanes);

(6) Sopwith Triplane (with a 110 horsepower rotary engine, three wings and six ailerons, one can appreciate the Sopwith Triplane's ability to

out climb and out turn Germany's Albatross fighters serving in 1917, leading Rittm. Manfred von Richtofen to lobby for Anthony Fokker's Dr. I. Triplane;

(7) Sopwith Camel (with 130 horsepower and two .30 caliber machine guns, the Camel had the weight of the pilot, guns and engine all positioned close to the center of gravity making it extremely maneuverable, Camel pilots having more victories than pilots of any other allied fighter in the First World War);

(8) S.E.5A (designed by personnel at the Royal Aircraft Factory in Farnborough Common, the S.E.5A had its roots in a series of rotary powered experimental fighters that eventually evolved into a rugged biplane fighter powered by various stationary "V" configuration, liquid-cooled engines, the SE5A having a top speed at sea level of 134 mph);

(9) Fokker D. VII (Anthony Fokker's superb fighter was so advanced that it was specifically mentioned in the Allies' terms of surrender to Germany);

(10) Hanriot HD.1;

(11) Vickers Vimy Bomber;

(12) Royal Aircraft Factory B.E.2b;

(13) de Havilland DH 9A;

(14) Avro 504K (employed as a trainer by the RFC during and after the First World War);

(15) Clarke TWK Glider;

(16) Avro Rota;

(17) Bristol Bulldog MK IIA;

(18) Gloster Gladiator 1;

(19) Hawker Hart II;



- (20) Supermarine Seagull V;
- (21) Supermarine Southampton I;
- (22) Westland Wallace;
- (23) Spitfire MK.I (along with the Hurricane, this Spitfire model was the mainstay of the RAF during the Battle of Britain);
- (24) Hurricane MK.I (served alongside the Spitfire during the Battle of Britain);

(25) Messerschmitt Bf-109E (the Luftwaffe's front line fighter during the Battle of Britain);

(26) Heinkel He-111 (along with the Do-17 and Ju-88, this bomber carried the assaults of Nazi Germany to Britain during the fall of 1940);



(27) Junkers Ju-88 R-1 (perhaps the most versatile aircraft in the Luftwaffe in the second World War, the Ju-88 served as a bomber, dive bomber and night fighter);

(28) Junkers Ju-87G-2 (this devastating tool of the Blitzkrieg was withdrawn after a short duration of operations in the Battle of Britain but remained an effective weapon in the theaters of operation where air superiority had been secured by the Luftwaffe);

(29) Messerschmitt Bf 110 (Germany's twin engine fighter during the Battle of Britain that would later serve as a bomber destroyer and night fighter over Germany);

(30) Spitfire MK VB (an improved Spitfire with a more powerful Rolls Royce Merlin engine and a 20 mm cannon in each wing supplemented with .30 caliber machine guns);

(31) Messerschmitt Bf-109G (the version of this fighter that defended the Third Reich

against allied air attacks in 1943 – 1945);

(32) Focke-Wulf FW-190F8/U-1 (the aircraft on display is a two seat trainer version of the FW-190, but a single seat fighter version is on loan from Hendon to the Imperial War Museum);

(33) Heinkel He-162-A2 (the Salamander jet fighter could reach speeds in excess of 500 mph but was difficult to fly and became operational too late in WWII to alter the course of the war);

(34) Avro Lancaster I Bomber (powered by four Rolls Royce Merlin engines, the Lancaster carried the RAF's night bombing campaign to Germany);

(35) Vickers Wellington Bomber (employing a geodesic structure similar to the lattice work that had been used in constructing rigid airships, the twin engine Wellington was a mainstay of the night bombing offensive of the RAF until more powerful aircraft like the Lancaster came into service);

(36) Hawker Tempest II (designed to replace the Hurricane, this aircraft was effective in a ground attack role and was employed to intercept V-1 buzz bombs due to its high speed at low altitudes);

(37) Supermarine Spitfire F-22;

(38) North American B-25 Mitchell;

(39) North American P-51D Mustang;

(40) North American Harvard II B;

(41) Boeing B-17G, Flying Fortress;

(42) Boulton Paul Defiant 1;

(43) Bristol Beaufighter TF.X;

(44) Bristol Beaufort VIII;

(45) Bristol Blenheim IV;

- (46) de Havilland Mosquito B.35;
- (47) de Havilland Tiger Moth II;
- (48) Fairley Battle I;
- (49) Fiat CR.42;
- (50) Fieseler Fi 103(V1);
- (51) Handley Page Halifax B.11/1;
- (52) Handley Page Hampden TB.1;
- (53) Lockheed Hudson IIIA;
- (54) Short Sunderland V;
- (55) Sikorsky R-4B Hoverfly 1;
- (56) Supermarine Stranraer;
- (57) Westland Lysander III;
- (58) Avro Vulcan B MK.2;
- (59) Jet Provost T-5A;
- (60) British Aerospace Corporation (BAC) Lightning F.6;
- (61) BAE Harrier GR.3;
- (62) Canadair Sabre F.4 (North American's F-86 built abroad under license);
- (63) CASA 1.131E Jungman;
- (64) de Havilland Chipmunk T.10;
- (65) EH Industries EH 101;
- (66) English Electric Canberra PR.3;
- (67) Gloster Meteor F.8;
- (68) Hawker Hunter FGA.9;
- (69) McDonnell Douglas Phantom FGR.2 (America's F-4 Phantom built by McDonnell Douglas);

- (70) Mig 15 bis/lim-02;
- (71) Panavia Tornado PO.2;
- (72) Slingsby TX.1 Grasshopper;
- (73) Supermarine Spitfire 24;
- (74) Vickers Valiant B(k)1;
- (75) Westland Belvedere HC.1;
- (76) Westland Wessex HCC.4.

E. INTERESTING PEOPLE AT HENDON

As I left the subway station at Colindale, I noticed an older gentleman making his way toward the bus stop where I would take the bus to Hendon. This gentleman was Neville Beale who served as a navigator on British bombers during World War Two. Mr. Beale related that he was traveling to Hendon to be interviewed by a student. We rode the bus together and he pointed out the old pub (the Hind and Hart), the officer's mess, and the buildings that once housed personnel who worked at Hendon. He also told me that his crew flew weather reconnaissance missions relating (1) the wind direction, (2) wind velocity, and (3) outside air temperatures at various altitudes. This data was used for flight planning purposes by allied aircraft that would be flown on combat missions each day the data was collected. He also explained his aircraft was equipped with a wind drift meter that allowed him to measure the direction and velocity of the winds at various altitudes.

While walking about the museum, I spoke with another gentleman who showed me his caterpillar badge. He explained that he had served aboard a Lancaster as a radio operator/gunner. His crew bailed out of their stricken plane over the Channel. Having made it near the coast of England, he was rescued by friendly forces.

THE REMAINS OF A HANDLEY PAGE HALIFAX

An interesting display at Hendon is the remains of a Handley Page Halifax four engine bomber that attacked the German battleship Turpitz that was in the coastal waters of Norway. The Wellington was hit by anti-aircraft fire and forced down off the coast of Norway. Discovered many years later in a fairly intact condition, it was raised to surface and transported to Hendon for display.

THE BATTLE OF BRITAIN MOVIE

An entire building at Hendon is devoted to the Battle of Britain. In this building you will find a Spitfire MK.I and Hurricane MK.I in their revetments. Across from the defenders are a Bf-109E Messerschmitt, a Bf-110G Messerschmitt, a Heinkel He-111H, a Junkers Ju-88, a Junkers Ju-87 Stuka and an Italia Fiat CR.42 biplane fighter. Several times daily there is a Battle of Britain film presentation shown in the Museum and these aircraft are employed in the presentation. A motion picture screen is employed, but your attention is directed from the screen to various aircraft and back to the screen as the story is told. The presentation is very effective as the aircraft became stars in the presentation.

In conjunction with the participants in the Battle of Britain (the aircraft previously discussed) there are displays listing the names of the RAF pilots who served in the Battle of Britain, and top RAF aces of that conflict are featured in individual displays with their photographs, medals, uniforms and/or artifacts.

THE FIRST WORLD WAR DISPLAY

The second floor of the main building houses a display of Sopwith 1 ½ Strutter that served as a multi-role aircraft, i.e., observation, bomber and fighter before the advent of planes designed specifically as fighters like Tommy Sopwith's Pup Triplane and Camel. The second floor also depicts battle scenes with miniature aircraft, pictorial and text presentations discussing the exploits of decorated airmen of the

First and Second World Wars. Interestingly, a portrait of Rittmeister Manfred von Richtofen is included in this display, a testament to the RAF's admiration for Germany's highest scoring ace in the First World War.

RARE AIRCRAFT IN THE INVENTORY OF THE RAF

Hendon is but one of several RAF museums. The aircraft listed in this article are only a portion of the vintage aircraft in the RAF's



inventory. A few of the other aircraft housed at other RAF facilities or on loan to other museums are: (1) a Bleriot XI; (2) a Sopwith Dolphin; (3) a B-24L Liberator; (4) a PBY-6A Catalina; (5) a Fairley Swordfish IV; (6) a Focke Wulf FW-190A on loan to the Imperial War Museum; (7) a Kawasaki Ki-100-1b; (8) a Lockheed Ventura II, (9) an Me 163B; (10) an Me 262A; (11) an Me 410A-1/U-2; (12) a Miles Migister 1; (13) a Mitsubishi Ki-46 Dinah; (14) a P-47D Thunderbolt; (15) Spitfire XIVE; (16) Spitfire LFXVIE; (17) Spitfire LFXVI; (18) Spitfire XIX; (19) Spitfire F-21; (20) Yokosuka Ohka II (manned flying bomb with rocket power); (21) Armstrong Whitworth Argosy C Mk.1; (22) Armstrong Whitworth Meteor NF14; (23) Auster C.4 Antarctic; (24) Avro 707A; (25) Avro 707C; (26) Avro Anson C.19; (27) Avro Lincoln B.2; (28) Avro Shackleton AEW.2; (29) Avro York C MK.1; (30) BAC 1-11 series 510; (31) BAC Jet Provost T.3; (32) BAC TSR-2; (33) Boeing 707; (34) Boulton Paul Sea Balliol T. Mk. 21; (35) Bristol 173; (36) Bristol 188; (37) Bristol Britannia 310; (38) Bristol Sycamore HR.12 and HR. 14; (39) CASA 352L [Junkers Ju-52/3]; (40) Chargin Midas EP; (41) de Havilland Comet 1XB; (42) de Havilland Devon C.2/2; (43) de Havil-

land Vampire models F-3, FB.5, and FB.6; (44) de Havilland Venom FB.4/50; (45) Eton Primary TX.1; (46) Fairley Delta 2; (47) Fairley Jet Gyrodyne; (48) FMA Pucara; (49) Folland Gnat F.1; (50) Gloster Javelin FAW.1; (51) Handley Page Hastings T.5; (52) Handley Page Hastings T.5; (53) Handley Page Victor K Mk.2; (54) Handley Page Jetstream 300; (55) Hawker Hunter model numbers F.1, F.3 and T.7A; (56) Hawker P.1052; (57) Hawker P.1127; (58) Hawker Siddeley Andover E.3A; (59) Hawker Siddeley Buccaneer S.2B; (60) Hawker Siddeley Kestrel FGA.1; (61) Hawker Siddeley Trident 1C; (62) Hunting H.126; (63) Hunting-Percival Pembroke C.1; (64) Lockheed SP-24 Neptune; (65) Percival Provost T.1; (66) Republic F-84F; (67) Saro Skeeter AOP.12; (68) Saro SR.53; (69) Scottish Aviation Pioneer CC.1 and Twin Pioneer CC.2; (70) Sepecat Jaguar GR.1/ACT; (71) Short Belfast C.1; (72) Short SB.5; (73) Skyhook Microlight; (74) Slingsby TX.1 Grasshopper; (75) Slingsby Prefect TX.1; (76) Slingsby Sedburgh TX.1; (77) Supermarine Spitfire 24; (78) Supermarine Swift FR.5; (79) Supermarine Type 510/517; (80) Vickers Valetta C.3; (81) Vickers Varsity T1; (82) Vickers Viscount 701; (83) Vickers Viscount 701; (84) Westland Dragonfly HR.1 and HR.3; (85) Westwind HAR.10; and (86) Westland Wessex HCC.4.



III.

THE IMPERIAL WAR MUSEUM

The Imperial War Museum in Central London has displays on ground, sea and land operations of World Wars One and Two as well as the Korean War. Several aircraft on display are on loan from the RAF including a Folke Wulf FW-190A; a Heinkel He-163; and a BE2c. Also on display are a P-51D Mustang, part of an A6M4 Zero, the cockpit and forward fuselage of an Avro Lancaster, a Sopwith Camel and a V-1 buzz bomb.

The Imperial War Museum features recorded interviews of First World War pilots who explain the combat tactics applied during that conflict. Also, depictions of model aircraft over

the battlefield complement the photographs and text displays relating to flight operations in the First and Second World Wars.

IV.

CONCLUSION

There is much to learn and experience about civil and military aviation's history in London. The museums discussed in this article are only two of many aviation museums to be found in England. These museums are



worth a visit if your travels should take you to London.

****Correction:** In the previous addition of Flight Watch, we reported that the Judge in Administrator v. Whittington, was Judge Mullins. In fact, the Judge was Judge Pope of the

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