



NEWSLETTER 64 - SUMMER 2022

Published by the Hawker Association  
[www.hawkerassociation.org.uk](http://www.hawkerassociation.org.uk)

#### EDITORIAL

Thank you for your contributions to the Newsletter. This issue is too full with the AGM report and reports on talks to include them. Don't worry, I value them and they will be published as space allows.

The Committee would like help in finding speakers. If you would like to tell about your time with 'Hawker' or in aeronautics/aviation, or could recommend anyone who would, please contact the Speaker Secretary at <[frankrainsborough@gmail.com](mailto:frankrainsborough@gmail.com)>. Talks would be best given at the Kingston Hawker Centre but could also be delivered remotely by Zoom. Please help if you possibly can. Thank you.

Please note the availability of the Association online video library announced below. If you missed a talk or couldn't go you can now see it at your leisure. Thank you Dave Priddy.

To save costs the Committee also would like more Members to opt to receive the Newsletter by email only. Please let the secretary, Dick Poole, know at <[secretaryhawkercommittee@gmail.com](mailto:secretaryhawkercommittee@gmail.com)>.

Send your contributions to the Editor, Chris Farara at <[cjfarara@gmail.com](mailto:cjfarara@gmail.com)> or by post to 24 Guildown Road, Guildford, Surrey, GU2 4EN. Phone 01483 825955. Note new e-mail address.

#### PROGRAMME FOR 2022 & 2023 (TBA: to be arranged, TBC: to be confirmed)

Wednesday July 13 <sup>th</sup> 2022	David Hassard- "A picture is Worth 10,000 Words"
Wednesday August 10 <sup>th</sup>	No speaker
Friday September 23 <sup>rd</sup>	Visit to Boscombe Down Aeronautical Collection (BDAC)
Wednesday October 12 <sup>th</sup>	Peter Bedford - TBA
Wednesday November 9 <sup>th</sup>	Chris Wilson - Jet Art Aviation
Wednesday December 14 <sup>th</sup>	Christmas Lunch
Wednesday January 11 <sup>th</sup> 2023	Angela Bailey - Frank Murphy Part 2 (TBC)
Wednesday February 8 <sup>th</sup>	TBA or as January 11 <sup>th</sup>
Wednesday March 8 <sup>th</sup>	Tony Buttler - Hawker flying Test-beds (TBC)

Angela Bailey is Frank Murphy's daughter and has researched his life. Chris Wilson is the Managing director of Jet Art Aviation, providers of museum standard aircraft restorations. Group Captain Peter Bedford is the son of our CTP, Bill Bedford. Tony Buttler is a leading aviation history writer. It is planned that meetings will be both live and by Zoom.

Details of the BDAC visit will be distributed later but it will be up to Members to get themselves to Old Sarum, by arranging car sharing, perhaps. Hawk XX154 function demonstrations will be the star attraction.

#### CORRECTION TO NL.63

In para 4 of 'From Graduate to Early Retirement' please change "east" to "west".

#### ASSOCIATION ONLINE VIDEO LIBRARY

Dave Priddy writes....

An online HA Video Library has been established using recordings made during our zoomed meetings. The earliest video is from November 2020 (Mike Pryce "The fall of Icarus"). These videos are not studio quality but are of value. As the library is restricted to Members only it cannot be easily publicised, but you are invited to explore the library by typing this into your browser, or for those receiving an electronic copy of the Newsletter, clicking on the link: X X X X X X X X X X X The library is updated as new recordings are made.. Please press the 'subscribe' button to be informed of new arrivals.

#### THE 18<sup>th</sup> ANNUAL GENERAL MEETING

On April 13<sup>th</sup> a total of 36 members attended this Hybrid Zoom meeting, 22 attending in person and 14 by Zoom. These conscientious Members were rewarded after the AGM by a talk given by Chris Hodson on Hawk XX154's last flight (reported below).

The Chairman's Report Chris Roberts noted that 2021 had been a bitter-sweet year for the Hawker Association.

The introduction of Zoom allowed the Association to be up and running whilst still socially distancing. Zoom

was fully established in a hybrid form, transmitting talks live from the YMCA Hawker Centre. Like the Newsletter, Zoom helps our widespread membership feel more included. However, the Committee needs backup to operate Zoom on a long term basis. At present only one person, the Reverend David Priddy, is able to bring the essential technical skills to bear so a volunteer, who will be trained, is urgently needed.

The two usual social functions were held in Kingston: the Summer Barbecue and the Christmas Lunch. Two Hawker aircraft milestones were celebrated: the 75<sup>th</sup> anniversary of the first flight of the Hunter and the 50<sup>th</sup> anniversary of the first flight of G-VTOL, the former by visiting WB188 at Tangmere, and the latter at Brooklands.

Sadly, two Committee Members passed away: Barry Pegram, our Secretary, and Martin Pennell, our Treasurer. Barry was the main driving force in launching the Association. He had always been fully engaged in running all aspects of the Association. Martin had been a Committee Member for 14 years and was an outstanding Treasurer producing reliable and detailed financial records. It is very sad when close friends die and it had been very difficult losing both of these two key members in one year.

Overall the Association is well and had bounced back from 'The Great Inconvenience'. Activities had been widened and procedures updated to provide Members with electronic facilities for their involvement, for receiving Newsletters and paying subscriptions.

However, all these tasks brought more work and a need for additional skills. Most Committee Members have been involved for many years and as a group put in a lot of time and effort. Also this year Committee member Wilf Firth, a founder member, had retired. Chris thanked him for his long service and wise counsel over the years.

In the past five years only five Association members had stepped forward to join the Committee. They were gratefully welcomed but now more help is needed. In the short term a new Treasurer is urgently needed.

It is also time to think outside the box. Members who have some computer capabilities can assist from afar by helping with our increased use of digital facilities and the internet. It is not necessary to get to Kingston; the very nature of the help needed can be provided at a distance: electronic distribution of newsletters, routine communications and record keeping can all be done by embracing the 'WFH' revolution, working from home.

We can meet by Zoom, talk on the telephone and e-mail each other. Members must not feel excluded by distance and are asked to come forward to help keep the Association running.

Secretary's Report Dick Poole noted that in sorting out Barry Pegram's HA affairs it was discovered just how much he was involved in almost every aspect of the Association and was taking on too much of the administration. As a result the post of Membership Secretary had been created, now filled by Diana Dean, leaving just the general administration to the Secretary. A new Treasurer is also required. Covid in general and Martin's period of ill health in particular prevented the 'audit' of our recent accounts but a financial statement followed in the Treasurer's report presented by the Chairman.

Our liaison with Brooklands had continued with the support of G-VTOL and G-HAWK by a team of Brooklands volunteers most of whom are also Hawker Association members. Hunter XL623 is now being renovated in Spartan conditions at Dunsfold. When completed it is intended to site it near the Richmond Road Factory. Other activities had been covered by the chairman.

Treasurer's Report and Presentation of the Accounts The Chairman had prepared and presented a Final Income and Expenditure Statement as follows:

Bank Balance as at 1<sup>st</sup> January 2021 - £2,759.82. Estimated Income for the year - £2,310.00. Opening balance plus estimated 2021 income - £5,069.82. Estimated expenditure 2021 - £2,464.20. Estimated end of year balance - £2,605.62. Estimated deficit for the year - £ 154.20. Bank Balance as at 31<sup>st</sup> December 2021 - £2,545.65. Indicated deficit for the year due to unavailable data - £ 214.17.

The chairman explained that he prepared this statement using all available data and that most can be supported by bank statements, cheque book references and invoices etc. Some inputs were estimates based on past information but are nevertheless considered to be close enough to provide a fair Final Income and Expenditure Statement for the period. Normally the accounts show an end of year credit but this year there were two extraordinary items of expenditure: some equipment to improve the Zoom performance and the three banner displays to promote the Kingston aircraft story by G-VTOL in the Flight Shed at Brooklands. The accounts show an unaccountable short fall of £59.97 which will not be further investigated.

Membership Secretary's Report Diana Dean reported that the Association has 316 members including 44 ladies. Thirteen members are from overseas: Spain, South Africa, Germany, Australia, USA, France, Ireland and Switzerland. Sadly the following members passed away since the last AGM: Roy Braybrook, Juliette Hassard, Brian Monk, Barry Pegram, Rosemary Pegram, Martin Pennell, Geoffrey Wilshire, Jack Mills and Peter Alexander. We welcomed 10 new members: Dave Berryman, Richard Hemsley, Kenneth Miles, Andy Silk, Peter Sutton, Mark Vellacott, Mark Walsingham, Cullum Watkins, Fiona Watkins and Joshua Watkins. Finally, the Membership Secretary reminded the meeting that the 2022/2023 annual subscriptions are now due.

Election of Chairman The Chairman, Chris Roberts, was elected in April 2017 and the Association Constitution requires him to retire after the two year term, but is eligible for re-election. In 2021 he was re-elected for a 4<sup>th</sup> year. Since no new nominations were received in 2020 or 2021 and none were received by 1<sup>st</sup> April 2022 he has agreed to continue for another term of 2 years but will take a break from day to day involvement for a few months. Colin

Wilson, President, will stand in and temporarily assume the Chairman's voting rights on the Committee.

Election of Committee At the last AGM the whole committee was re-elected for a period of one year after a year of uncertainty caused by Covid 19 restrictions. It was now necessary to vote in the whole committee for the usual period of two years, with the exception of the President, Colin Wilson, whose 5 year term continues until 2023. A request for nominations for new committee members resulted in Kieron Kirk, who has been active with Chris Farara in the 'Hawker' Archive at Brooklands, volunteering. The Committee now comprises: Ambrose Barber (Vice President), Ken Batstone (liaison with YMCA), Richard Cannon (Webmaster and Communications), Diana Dean (Membership Secretary), Chris Farara (Newsletter Editor), David Hassard (Kingston Aviation Centenary Project), Dick Poole (Secretary), David Priddy (Zoom Project Leader), Frank Rainsborough (Speaker Secretary), Paul Rash (Hunter XL623 Team Leader).

Speaker Secretary's Report During the year he had arranged the following meeting talks: Harrier 809 by Rowland White (author of the book by the same name), Evolution of Aviation – Cayley to Concorde by Karl Smith, Leo The World's First Business Computer by Neville Lyons, Harry Hawker – Pioneer Aviator by David Hassard, Hawker Hurricane – Dispelling Historical Myths by Stephen Philpott, F-35 Flight Testing by Lt Cdr Robin Trewinnard-Boyle, Frank Murphy – Fighter Pilot to Test Pilot by his daughter Angela Bailey.

Zoom Manager's Report David Priddy reported that a number of technical issues had been resolved but that there are occasional difficulties with the Hybrid operation. There had been eight Hybrid presentations and the last AGM was also by Zoom. There was one meeting without Zoom due to the non-availability of a trained back-up when David had to self-isolate. The committee has recognised the need to appoint a deputy. At the moment the Association has purchased some equipment but will need to purchase more to replace currently borrowed major elements.

## HUNTER XL623 PROJECT REPORT

Chris Roberts reports....

A milestone was reached at the end of July; reassembly of the Hunter began. The rear and centre fuselage portions were mated and bolted together. Of course, throughout the programme various components have been removed, refurbished and refitted but this first stage of the fuselage reassembly is a major milestone for the programme. Most of the internal fuselage preservation, protection and painting has been done to prepare the Hunter for long term display in the open in Kingston.

The airframe is not all XL623 now as some badly corroded assemblies have been replaced by those from XL602, the Hunter TMk8M that was used at Dunsfold to develop the Sea Harrier avionic systems. Whilst XL623 was the final TMk7 and was always operated by the RAF, XL602 was a Navy aeroplane operated by HSA for many years.

Dunsfold, having been the main final assembly site for Hunters by Hawker Aircraft Ltd and Hawker Siddeley Aviation, makes it appropriate that the work is being done there. However, the team has the difficulty of needing to work in the open rather than inside a hangar making any activity weather dependent. All work on XL623 has been stopped at Brooklands so we are very grateful for the continued availability of Dunsfold. Even so it has been touch-and-go because the now-cancelled housing development came close to ending our activity there too. A film company caused extra work when everything had to be moved or hidden from the cameras. Parts that could not be easily moved were painted green so although this was not the first time the Hunter was painted in some form of camouflage colour scheme, the film company certainly did not do the work to the same standard as the RAF.

The next stages is to refit the fin and tailplane. The front fuselage is not ready to be bolted back onto the centre fuselage as some final cleaning and painting of the two bulkheads and adjacent areas is needed. The Hunter is looking so much better now than when it was taken down in Woking, despite still being in various shades of primer and paint-stripped metal. The huge amount of work that has been carried out is apparent, although typical of such projects, the results of most of the hard work cannot be seen.

The project has come a long way since a very dirty and corroded airframe was moved to Dunsfold. The Association Committee and Members continue to be very grateful to the team working on the Hunter as they steadily progress the project. The completed painted airframe will be an eye-catching memorial of the Hawker factory in Ham, Kingston, and of all who worked there.

## KINGSTON AVIATION CENTENARY PROJECT

David Hassard reports recent events....

Short talks attended by some 50 people were given at a small exhibition put on for a Platinum Jubilee Street Party close to the original factory site in Canbury Park Road. An exhibition of over 80 photographs of the Richmond Road factory in a tent at Ham Fair on the Common attracted considerable attention all day from local residents and ex-employees. The tent was flanked by an Air Cadet Squadron's Hawker Hunter cockpit and a Trojan car built in the factory in 1924. The Project is to organise a small P1127/Kestrel/Harrier exhibition in the Kingston Guildhall in September as part of this year's Kingston Heritage Open Days programme which focuses on "astounding invention and innovation" in the borough. The Project's considerable accumulation of exhibition material - display panels, photographs, paintings, models etc - has been catalogued and placed on long-term loan in the Brooklands Museum 'Hawker' archive and will continue to be available to the Project.

## F-35B FLIGHT TESTING AND SHIP TRIALS

On 9 February at the YMCA Hawker centre Robin Trewinnard-Boyle spoke to Members present and on Zoom mainly about the UK F-35B flight tests and sea trials. Chairman Chris Roberts introduced the speaker saying that he commenced his Royal Navy Air Engineering career on fixed wing and rotary wing aircraft, had staff tours ashore and on aircraft carriers, and started on the Sea Harrier FA2 before moving onto the Harrier GR7 and T10. In 2011, following the scrapping of HMS Ark Royal, he was selected the Military Maintenance Officer of the F-35 Integrated Test Force. Knowledge gained there was used in the Carrier Strike Capability Development Team in its preparation for the UK F-35B Sea Trials and Ship-Air Integration work. Robin left the RN in 2018 and now works for Nova Systems International, involved in flight test and evaluation on Typhoon. Robin is also a serving Reservist for the Lightning II Delivery Team. In his career in the RN and Flight Test Robin was following in the footsteps of his Grandfather, Geoffrey Trewinnard, who, following his demob from the RN in 1945, joined Hawker as a Flight Test Engineer. Geoffrey worked on the Sea Fury, Sea Hawk and Hunter.

Robin's role in the F-35 service clearance programme as the Senior Military Engineering Officer was the focal point for coordination with Lockheed-Martin and the five services in the programme; USMC, USN, USAF, RN and RAF. There were five F-35Bs and four F-35Cs involved.

There are three versions of the F-35 (a 5<sup>th</sup> generation fighter): the conventional take-off and landing (CTOL) F-35A, the short take-off and vertical landing (STOVL) F-35B and the catapult and arrested landing (CV) F-35C. The F-35B, developed in conjunction with BAE Systems, was for the USMC and the RN/RAF for operation on two of the Queen Elizabeth (QE) class carriers. However, in the 2011-2012 period, with the carriers in build and the aircraft programme well under way, the UK Government changed its mind under RN pressure, and thought that the F-35C would be preferable because of its slightly greater range than the STOVL B model. A very expensive study ensued. It was realised that the QEs, designed for STOVL, had no catapults or arrestor gear, although there was space, and the ships were gas turbine powered so there was no steam on tap for the catapults making the only option electromagnetic power - which did not exist full scale at the time; development would be very costly and the ships would be delayed by some years. So, back to square one, the F-35B!

The F-35 missions are suppression of air defences flying in the clean, stealthy configuration, by day or night; fly deeply into heavily defended areas; locate, identify and destroy relocatable or moving targets; all while possibly outnumbered by 4<sup>th</sup> generation fighters which can't see the stealthy F-35 but which the F-35 can see.

Trials took place at four sites: Naval Air Station, Patuxent River (Pax River), Maryland; Marine Corps Air Station (MCAS), Beaufort, South Carolina; Eglin Air Force Base (AFB), Florida; and Edwards AFB, California. The Joint Project Office (JPO) was at Arlington, Virginia and the manufacturer was Lockheed-Martin at Fort Worth, Texas, with its mile long production line. (Editor's note. The UK is a Tier 1 partner, the main contributions being: BAES builds all the F-35 rear fuselages, and Rolls-Royce supplies the jet lift systems including the fan for the B model)

The US/UK F-35 Integrated Test Force (ITF) had five F-35Bs and four F-35Cs including the first UK aircraft, serial number ZM135 (like the first English Electric Lightning F1 accepted by the RAF, XM135). All were instrumented. Two of the F-35Bs were devoted to mission system testing and three to flight system testing. The ITF was manned by 600 contractors' personnel and 324 government personnel.

The ITF trials included flight and ground safety, flight envelope expansion, software development testing, aerodynamic properties (handling and stability and control) in conventional and STOVL flight, survival equipment, especially the helmet with its visor display which, by means of airframe mounted external cameras, gives the pilot all-round vision including seeing through the cockpit floor. The mission system includes the radar and other sensors, information from which is displayed on a large screen taking up most of the panel space in front of the pilot who can see all the relevant information at once instead of looking at a number of smaller dedicated screens found in 'legacy' aircraft. All this information can be shared with other F-35s and all suitably equipped command and control bodies involved in the battle.

Facilities unique to Pax River were concerned with carrier suitability, STOVL, the Ski Jump, the hover pit and low observables/radar cross section (stealth) testing. Unique to Edwards were its long runways, flat desert surroundings, weapon ranges, an artificially wet runway, multi aircraft mission system testing and engine-stopped testing facilities. Its remote location also ensured security - Russian electronic information gathering 'trawlers' were not around to gather electronic intelligence. Eglin AFB provided training facilities for ground and air crew and had a comprehensive climatic hangar for hot, cold and wet ground testing and running.

Weapons integration testing was in two phases: internal carriage for stealthy operation (day one of the war) and external carriage for non-stealthy operations once the enemy surface to air weapon systems are disabled. The internally carried stores cleared were: the Joint Direct Attack Munition (JDAM), an all weather, precision guided bomb; the Paveway laser guided bomb; and the AIM-120 Advanced Medium Range Air-to-Air Missile (AMRAAM). Sidewinder AIM-9X air-to-air missiles were carried on the wing outboard pylons. A range of US and UK weapons was cleared for use on the six under wing pylons. A US 25 mm gun pod was cleared for under fuselage centre line carriage (not for UK use at present).

The night vision system was tested for correct operation with the helmet mounted display. Any effects of the

adjacent aircraft on engine surge sensitivity were explored in formation flying. Correct engine functioning was tested at high angles of attack as was aircraft handling with the engine stopped. Probe and drogue air-to-air refuelling from the C-130, and Tristar was carried out.

The initial sea trials, DT-1, were carried out on USS Wasp in October 2011. This trial was crucial because at this time the UK was heading for the F-35C so the future of the USMC committed to the type depended on the trial's success. Areas covered were deck handling and manoeuvring, tie down, systems performance during carrier approach and landing, vertical landings (VL) in varying wind conditions, nominal and excess speed short take-offs (STO), deck edge clearance during STO, effects of airflow round the ship on STO and VL, deck markings and lighting, development of procedures, operating limits and techniques and STOL-mode helmet display symbology. The trial was extremely successful assuring the future of the USMC - and also in due course the effectiveness of the RAF/RN when the B version was confirmed as the UK choice.

DT-2 sea trials were in August 2013, again on USS Wasp. Here the operating envelope was expanded, external stores were flown, initial night STOs and VLs were carried out, operations with increased deck motion, and wet deck operations were carried out, landing aids were tested, updated mission system software was tested and a production standard aircraft (BF-5) was checked out. Vertical take-offs, although not a requirement, were successfully demonstrated.

DT-3 sea trials were on USS America, in December 2015. Here the aircraft operating envelope was developed, refined and expanded, data was collected for updated mission system software, launch and recovery was flown with increased deck motion and with heavy external and asymmetric loads, the improved Gen 3 helmet was tested, embarked maintenance and logistics were exercised including an engine change, as was the approach and landing instrument system.

Other trials covered: further US under fuselage gun pod firing, expeditionary testing using austere sites, the integration and release of UK weapons - ASRAAM outboard underwing instead of Sidewinder and Paveway 4 laser guided bombs on the middle and inboard underwing - airfield ski-jump launches, and air-air refuelling with the RAF, Airbus A-330 derived, Voyager tanker.

The above testing allowed the F-35B to be tested on the HMS Queen Elizabeth in the First of Class Flight Trials (FOCFT) in the Autumn of 2018. This 65,000 ton, 25 plus knots CVF type vessel with a crew of 1450 is 280 metres long (vs. the 194 m of the Invincible class) with a total capacity of 40 F-35Bs. The FOCFTs were to generate a carrier strike capability with an Initial Operational Clearance (IOC) in December 2020.

FOCFT DT-1 and 2 achieved 200 Ski Jump STOs, 187 VLs, and 15 short rolling vertical landings (SRVLs). The latter consists of an axial, nozzle deflected/fan-on, approach to the carrier at a speed necessary to generate enough wing lift to enable landing back on the carrier with unexpended (expensive) weapons in hot weather conditions where a jet borne VL is not possible. SRVL and Ski-Jump modelling had previously been carried out on a BAES Warton flight simulator incorporating a landing signal officer (LSO) training facility. In addition 54 dummy weapons were released. Also, the cross wind effects of the unique twin island architecture were explored during STOVL. Such was the success of DT-1 and 2 that the planned DT-3 was cancelled and the joint Operational Trial (OT) went ahead with RAF Squadrons 17 and 617 and USMC Squadron VMA 211 participating.

Running short of time Robin stopped here and was rewarded with many questions from the well informed audience, several of whom had been intimately involved in Harrier and Sea Harrier ship trials and Ski Jump development trials. The vote of thanks for this comprehensive and informative talk was given by Frank Rainsborough. Please visit the HA online video library for a recording of this talk.

## FRANK MURPHY - FROM FIGHTER PILOT TO TEST PILOT

On Wednesday March 9<sup>th</sup> Angela Bailey gave a copiously illustrated talk on the life of her father, famous Hawker test pilot and executive, Frank Murphy. There was so much information in Angela's talk that it really is impossible to do it full justice in a space-constrained Newsletter report, but only to give a taste of its scope. To get a better understanding please visit the HA online video library.

As a child Angela grew up at Dunsfold Aerodrome and was great friends with Bill Bedford's son, Peter, and John Gale's daughter Diana, now our Association membership secretary, both present at the talk. Angela is a "forensic" researcher and set out to produce a photo-biography of Frank for his grandchildren. Fortunately her mother, Gloria "kept everything" so that made a good starting point for photos, letters, cuttings and souvenirs. The internet, specialist archives including newspapers, magazines, organisations, museums, armed forces records, log books and so on were important sources and gave clues for further searching. The talk drew on all the information Angela had in her book and was illustrated with the visual artefacts she had collected.

Frank was born in Lancashire in 1917 but moved to New Zealand when his parents emigrated in 1922 and at 18 months he contracted polio from which he recovered, and throughout his childhood spent some time under traction. He had already started working in the NZ Civil Service before volunteering for the Royal New Zealand Air Force (RNZAF) when war was declared. Frank trained on Harvards, Miles Master IIs and Spitfires. In England he initially flew Hurricanes at Wittering, then from August 1942 Typhoons with 486 Squadron at Tangmere. This squadron's main purpose was in defending the south coast and they also provided bomber escorts, carried out ship strikes and spotted

downed airmen for rescue,

For all of his service career Frank was with 486 Squadron RNZAF which Roland Beamont described as "an exuberant band of New Zealanders with a brilliant record on Typhoons and a rather casual approach to King's Regulations and Air Council Instructions - and to 'Pommy Bastard' Wing Leaders." During the war 486 flew 11,619 sorties, destroyed 81 aircraft with 5 probables and 22 damaged, accounted for 233 flying bombs and sank 16 ships, as well as destroying a large number of surface targets.

In 1943 Frank became the first 486 Sqn pilot to be decorated receiving a DFC (Distinguished Flying Cross) in December and he was appointed Flight Commander 'A' Flight. In January 1944 he was seconded to Hawker Aircraft Ltd at Langley as a production test pilot and in April 1945 Frank married Gloria Higgs in Windsor.

In 1945 486 Sqn moved to continental Europe supporting the post-invasion advance towards Germany. After the war Frank joined Hawker as a test pilot under Hubert Broad flying alongside Phillip Lucas, Chips Carpenter, Frank Silk and Dicky Muspratt. In December 1945 Frank went to India to oversee the delivery of 180 Tempest IIs to India. Len Hearsey supervised the assembly of the aircraft and Frank oversaw flight testing and aircrew training, also demonstrating the aircraft's capabilities on visits to Indian Air Force stations. By hitching many flights Frank found his way to Ceylon where he met up with Gloria who had arrived by sea, to go on to New Zealand.

Back at Hawker Frank hit the headlines when he successfully force landed a Sea Fury on the Long Walk in Windsor Great Park. Around this time Hawker's first jet, the P.1040, was being flown by Chief Test Pilot Bill Humble from Langley but this grass airfield was not really suitable for jets so the aircraft was soon based at Farnborough. With Hawker on a high this was a time of record breaking, demonstrations, air displays and races.

After questions the vote of thanks for this absorbing talk was given by Frank Rainsborough who told us that Angela would be returning to deliver part two of her father's life.

## HAWK TMk1 XX154- THE FINAL FLIGHT

After the AGM on April 13<sup>th</sup> Chris Hodson, son of Gordon Hodson, the originator and project director of the Hawk, talked to Members at the Hawker Centre and by simultaneous Zoom to remote Members. Chris started with a brief history of the P.1182 Hawk project and of XX154, the first aircraft.

As recorded by Roy Braybrook the Hawk originated in February 1968 at informal talks between Gordon Hodson and RAF and MoD officers at "The Dive", a bar in the Tottenham Court Road, not far from the Ministry of Defence building, St Giles Court. Preliminary design started in October 1971 in the Hawker Project Office with Ron Williams's SP.117. Under the designation P.1182 dozens of configurations were studied culminating in P.1182 AJ (A for the engine, the Rolls-Royce/Turbomeca Adour and J for July, the month it was proposed). A Contract was issued in October 1971 and ratified in March 1972 for 176 aircraft. The name Hawk was chosen in August 1973. An intensive programme of wind tunnel and engine intake tests, systems rig tests, ejection seat firings, fatigue and strength tests, was carried out.

XX154 was rolled out at Dunsfold August 12<sup>th</sup> 1974, the first engine run was on the 14<sup>th</sup> and chief Test Pilot Duncan Simpson made the first flight on August 21<sup>st</sup> in the evening. On completion of flight trials, Hawk TMk1 CA Release was granted on November 14<sup>th</sup> 1976. One million RAF fleet flying hours was reached on July 5<sup>th</sup> 2006 and was marked by giving the now retired Duncan Simpson a passenger flight at RAF Valley. A total of 1028 Hawks of all Mk's has been built to date and the type has been in manufacture in the UK for 50 years.

On January 18<sup>th</sup> 1982, having flown 400 hours of flight trials, XX154 left Dunsfold for RAF Llanbedr and after a major upgrade at St Athan to as near current standard as possible, flew in support of Jindivik, Meteor and Canberra target drones for the Royal Aircraft Establishment (RAE) over the local weapon range. On October 9<sup>th</sup> 2000 XX154 left Llanbedr to fly with the Empire Test Pilots School at Boscombe Down where its last flight took place on December 19<sup>th</sup> 2018 to complete 5917 flying hours 13147 landings.

The aircraft was then put up for disposal by its owners, QinetiQ, who were unaware of its historical significance. 'Closed bid tenders' were sought for its purchase. Chris wanted to save the airframe for the nation so gave its owners a lecture on XX154's significance explaining that it was not "just another Hawk". They were supportive of Chris's bid to purchase the aircraft but the full tender process had to be followed. After much lobbying and many problems Chris's perseverance was rewarded; he became the owner of the first Hawk.

Now a permanent home had to be found. Various organisations were approached by Chris but XX154 didn't meet the charters of many. He finally agreed with the Boscombe Down Aviation Collection (BDAC) that it would be housed there, open to public view and under cover. The next problem to be solved was moving the aircraft from Boscombe Down to Old Sarum, the BDAC site. Chris persuaded the RAF to do this as an 'uncleared underslung load' beneath a Mk 6 Chinook helicopter from 27 Sqn, RAF Odiham. Special slings were made and tested, the lifting chains were padded to prevent damage to the aircraft, the aircraft centre of gravity was established, and insurance was obtained for XX154, the Chinook and public liability. The target date for the move was August 21<sup>st</sup> 2019, the 45<sup>th</sup> anniversary of XX154's first flight. The take off and landing sites were surveyed, the latter being a private airfield with public access leading to many safety considerations. The target date was met. The lift went smoothly and the Hawk aligned itself with the airflow at the 60 - 70 knot transit speed. In the hover at Old Sarum XX154 started to rotate slowly in the Chinook downwash but a second attempt resulted in a very smooth touchdown followed by successful chain disconnection. The 3

¼ ton airframe was towed off the grass to the hard standing and manhandled into the hangar. There had been plenty of news media coverage by the BBC, the Times, the Telegraph and Force's News.

XX154 is registered with UK Aviation Heritage as a Benchmark Airframe of national interest, a first of type and of excellent internal and external condition. Under Chris's leadership it is maintained as a 'live' aircraft with functioning systems, fully serviceable for demonstrations, possible because of Chris's hard work in obtaining ground support equipment (GSE), pylons, hydraulic rigs and electrical power supplies. Its home at the privately owned BDAC is secure for the foreseeable future and it lives in a Grade 2 listed hangar where it delights the public and inspires young people's interest in careers in aviation and aeronautics. Visit the HA online video library to see the full talk.

Well done Mr Chris Hodson!

## A PICTURE IS WORTH TEN THOUSAND WORDS

On 13<sup>th</sup> July David Hassard entertained the Association with a talk on aviation paintings and drawings illustrated with many slides of his large collection taken from books, vintage magazines, brochures and prints. It has been a lifetime interest starting when his father worked at De Havilland's at Hatfield and David's introduction to aircraft came from the brochures and in-house magazines that were brought home. David found the paintings in these even more fascinating than the photographs, like a soft-focus Frank Wootton painting of the sleek Comet prototype. He could imagine being up there with the gentle whistle of those four Ghost engines. Through Frank Wootton's eyes he saw the sunny future and liked the look of it. Terence Cuneo's industrial studies for De Havilland probably had some influence on his choosing a career in aircraft engineering.

Despite claims that the phrase "A picture is worth 10,000 words" is of ancient Greek or Chinese origin, David could not find it on record until a speech by an early 20th century advertising executive. Whatever the origins, reading any number of words would never have left him with such enduring impressions of aircraft and aviation as those early images. He contended it would take more than 10,000 words to adequately describe a picture; to explain the shape and size of each element and how the sunlight glints off the surfaces and subtly changes colours would take thousands of words and still not instantly convey the atmosphere, the sights, even smells and sounds that a painting does.

What is probably equally true, however, is that creating a picture requires 10,000 decisions and any one of them could ruin an otherwise promising effort. If you have tried it, David said, you will know that setting out to produce a painting is a daunting and often frustrating task, not to be undertaken lightly. The subject has to be researched. An interesting composition has to be worked out. Your style must be chosen. Your medium, colour palette and technique selected and if you have sufficient hard won painterly skill, you could eventually produce a picture with some impact. However, like most things in life, if the purpose of all that effort is clear, and some inspiration and originality is thrown in, then the impact is likely to be much greater.

It is largely irrelevant whether the pictures seen this afternoon were "Art" but some undoubtedly were. Paul Klee said that "the purpose of art is not to reproduce what is visible but to make visible what most people do not see". To test this, David searched for paintings by internationally acclaimed and recognised artists. Surely most of that would be art with a capital A. He found very few. The earliest one was by post-impressionist Henri Rousseau in 1907, in his naive style, which included a Wright Flyer presumably from a newspaper photograph as the Wright Brothers did not come to France until 1908. By 1910 Andre Devambez was seeing the beauty of early flying machines, like the Antoinette, and emphasising their fragility in the face of nature. The colourful French Cubist, Robert Delauney, used stylised aircraft and the Eiffel Tower in his "orphic" cubism attempts to capture movement, rhythm and the play of light.

During the first world war, established artists were recruited to record the war. Second world war official war artists included Eric Ravilious who had also been a war artist in the first world war and was sadly one of three who died in service in WWII. As an art teacher in Eastbourne one of his pupils had been David's favourite, Frank Wootton. Other famous artists including Paul Nash, Graham Sutherland and Terence Cuneo worked in this field.

After the war it is difficult to find any aviation subjects depicted by internationally renowned artists. A more rewarding place to look for contemporary aviation paintings is on posters.

This is the world of commercial art or graphic design. It is interesting in that it picks up on artistic fashions but has its own stylistic progression blending the pictorial with the written word. Shell petroleum famously used well respected artists in its 1920s advertisements. The constraints of poster design in low-cost colour reproduction and clarity from a distance brought new forms of illustration. The airlines were major users of aviation posters and it is fascinating to see how these reflected or ignored the artistic styles of the day. Lithographic posters allowed illustrators to include their own often bizarre lettering and the lithographic device of reversing the lettering and background colour.

By 1928 a more picturesque style had developed, drawing the viewer to alluring sunny climes and emphasising the attractive destinations and the speed of air travel. American advertising was typically more straight forward than the European, being simple and striking; very modern and effective. British Imperial Airways chose the French artist Albert Brenet for beautiful 1930s depictions of their HP 42s, whilst in France they were wavering between realism and symbolism by choosing American illustrator R de Valerio. The Germans however chose Teutonic bold images of the Junkers Ju52. In contrast a Zeppelin advertisement was dramatically artistic, beautifully simple and to the point.

Destinations became the focus for airline advertisements. There are fewer and fewer aircraft shown as flying becomes more commonplace and airliners less distinctive.

As graphic design replaced depictions of aircraft themselves there was an emphasis on key services and the repetitive use of distinctive logos and standard house styles.

Posters for aviation events are another interesting source of illustrations. Pre-world war one French aviation posters may appear charming to us but offered dramatic novelty in their day. Between the wars poster design reflected all the trends and fads in art and illustration. For the last few decades Wilfred Hardy seems to have had the lion's share of poster design for British aviation events, almost always with head-on views.

Another source is books and magazines showing great diversity of styles and subjects. In the early days of aviation, newspapers and magazines used illustrators to make more dramatic pictures than their photographers could.

By the late twenties stylish magazines like the Illustrated London News were beginning to introduce their readers to the delights of flying London to Paris and implying some luxury. The "Wonder Book of Aircraft" used paintings on its covers and through the 1930s WE Johns, of Biggles fame, published "Popular Flying" and "Flying" magazines with multi-coloured cover paintings.

With Second World War came a lot of work for illustrators, giving magazines and newspapers newsworthy quasi-photographic depictions of what was happening. Wartime Puffin picture books served a similar purpose using the limitations of just a few colours to create interesting and memorable images.

There were plenty of illustrated children's books about aircraft in the 1950s. The 1954 Eagle comic cutaway pictures were some of the first illustrations that David really studied as a boy. Ladybird books had their own particular style and colour palette. Comics are another source of aircraft illustration and some of them were quite well done. The Commando comics from the 60s, 70s and 80s are still being reprinted.

Specialist aviation books require particularly accurate paintings like the covers of the "Aircraft of the Aces" series. In addition to these books there are those dedicated to aviation paintings, compilations of various artists and increasingly, individual painters publishing their own work.

Technical illustration is one area where it should be easy to convince this audience that the picture is worth 10,000 words. It is easy to take for granted the amount of information conveyed by clever draughtsmen and illustrators.

In the late 1920s major companies began to employ accomplished illustrators for their advertisements. By 1929, Art Deco had taken hold with airbrushed smooth bold shapes. Hawker advertisements were very safe but nicely drawn. By 1931 Hawker's confidence with the Hart showed in their adoption of bolder more dramatic advertisements. A Hawker Fury advert is one of the earliest colour printed Flight covers David has found.

Many wartime advertisements were rather banal. However, illustrators can come up with fascinating original ideas. Hawker's cartoonist created a brilliant strong image of Winston Churchill as a falconer (or hawk) releasing Hurricanes and Tempests. Late in the 1940s, when most military aircraft advertisements were for sleek jet designs. R. S. Franklin created really exciting attractive drawings of the Fury and Sea Fury for Hawker. Terence Cuneo, with his history of factory paintings as a war artist, produced a whole series of workshop drawings to advertise Airwork's activities at Dunsfold. By the late 50s and 1960s more and more advertisements were using photographs but where they are not practical, illustrators have always come to the fore, advertising guided missiles, for instance.

The golden age of aviation paintings and drawings in advertising was 30 or so years from 1925. By the late 50s the best UK aviation illustrators were mixing advertising with book illustration and individual commissions. There is a strong market to satisfy nostalgia and create in colour events only recorded in black and white photographs or situations which could never have been photographed - David calls them "enthusiast's pictures". The compositions are typically dominated by the aircraft and historical and technical accuracy is a fundamental requirement. There are many important events which did not get photographed. The first flight of the Hurricane at Brooklands in 1935 is one of those but our President, Colin Wilson, recreated the scene for us in his 1985 painting. To see more David recommended visiting the Guild of Aviation Artists annual exhibition in July.

In conclusion David rested his case that, at least in the aviation world, "pictures are worth 10,000 words". Do go to the Association video library to see the many examples of aviation art that David showed.

## BOOK REVIEWS

Issue 39 of the ever surprising Aviation Historian covers the selection of the Shorts Tucano, companion RAF trainer to the Hawk, and Prof Keith Hayward starts a three part series on politics and the Comet. Issue 40 has a treat for 'Hawker' people; a piece by the late Roy Braybrook on his time working with the German NBM3 projects, culminating in his P.1163/1170, and Chris Gibson reveals plans to use maritime strike Buccaneers in the Falklands war.

## MEMBERSHIP NEWS

Due to the AGM report there is not enough room in this Newsletter time for a full Membership List.

However, since NL.63 we sadly record the deaths of Martin Pennell, Peter Alexander, Rosemary Pegram, Jack Mills and Russ Fairchild and send their families and friends sincere condolences.

We welcome new members David Berryman, Lewis Gayland, Richard Hemsley, Ralph Sutton and Andy Silk. A full Membership List will be in the next Newsletter.