

EDITORIAL

We do seem to be close to getting back to 'fairly normal' with regard to the corona virus pandemic and have a programme of talks for you. Zoom has been a real benefit to the Association allowing Members to participate in lectures and, as reported below, the Annual General Meeting.

There are still a few subscriptions outstanding from the year 2020 - 2021. The names are in bold on the back page.

Sadly the Duke of Edinburgh has died in his 100th year. Ambrose barber has marked this historic event below. A happier anniversary, the Hunter's 70th birthday, is celebrated. You will also see that the USMC plans to keep their AV-8Bs in service to at least 2029 and that the current Hawk airframe has been cleared to 50,000 flying hours.

Thank you to all who have sent contributions or have given talks. Do not worry; all will be published or continued as space allows.

Send Newsletter contributions to the Editor, Chris Farara at cifarara@ntlworld.com or by post to 24 Guildown Road, Guildford, Surrey, GU2 4EN. Phone 01483 825955

PROGRAMME FOR 2021

Wednesday 12 May	Rowland White - 'The 40 th Anniversary of the Falklands War'.
Wednesday 9 June	Karl Smith - 'The Evolution of Aviation; from Cayley to Concorde'.
Wednesday 14 July	Neville Lyons - 'LEO, the First Commercial Computer'

The above will all be on Zoom. Richard Cannon will keep Members informed by e-mails and provide links. If you know a Member without e-mail, please pass on Richard's message by telephone and perhaps invite them to watch on your device.

Rowland White is a well known author of a number of highly regarded aviation books including 'Harrier 809', reviewed in NL.59; Karl Smith worked in Kingston's Installations department and Neville Lyons is a member of the family that founded what became the Lyons conglomerate of restaurants, hotels and food manufacturers.

CORRECTIONS to NL.59

1. In Terry Howes's article please correct 'the other Bill Bedford' to 'Alec Bedford' on the second page, 5th line.
2. In P.1127 etc Survivors please insert 'P.1127 3 all in UK' at the beginning.
3. In the 1st para of the Great Atlantic Air race please correct David Hassard's e-mail address to dh20tg@gmail.com.

THE DUKE AND THE TIGER CLUB

Ambrose Barber relates some of the Duke of Edinburgh's aviation exploits....

When I joined the Tiger Club in the '60s the Duke and his R.A.F. equerry, John Severne, were already members. The Club, with some justification, considered itself to be the UK's premier sporting flying club. It not only promoted competitive aerobatics, air racing, long distance flying including the annual 'Dawn-to-Dusk' competition, but mounted its own Air Shows which, if you were selected for one of the teams, would subsidise the cost of some of the flying involved; essential for an impecunious Hawker employee!

Having earned his RAF 'wings' on a Harvard the Duke was thereafter supposed never to fly solo again, but it is an open secret in aeronautical circles that in October 1960, having no doubt instructed his 'minders' to look the other way, John Severne had arranged with the Tiger Club for the Duke to visit White Waltham to have an enjoyable fly in a little Turbulent single-seater. What is far less well known is that the very next time G- APNZ left the ground the engine failed and the startled pilot managed a successful forced landing. Had this happened on the previous flight I think there would have been quite a rumpus! 'PNZ redeemed the Tiger Club's reputation when the following year it won the King's Cup air race in the hands of John Severne himself. I subsequently flew it many times and always thought it a fun little aeroplane. The only time I came across the Duke was when he was guest at our Annual Dinner, a black-tie affair held on that occasion at the Naval and Military Club in Town. In his speech I remember him describing most Tiger Club pilots as 'amiable lunatics' with that amusing twinkle in his eyes!

Although the Duke never flew with the Club or solo again, he must have taken every opportunity to fly, often I imagine, in the right-hand seat on longish trips, because he amassed nearly 6000 hours, comparable to Bill Bedford's

total made in a lifetime of short ones. He told his chosen biographer emphatically that left to his own devices "I'd have gone into the Air Force without a doubt". (Ed's note: It is likely that his uncle, Admiral of the Fleet, Lord Louis Mountbatten, insisted that the Duke follow a Naval career.)

The Duke retained a supportive interest in the Club's activities and took part in judging the Dawn-to-Dusk Open competition for some years, inviting John Farley to help in assessing the results at Buckingham Palace. On the way John found himself stuck in a hopeless traffic jam but, spying a police car, explained his problem. The officers responded by turning on their blue light and making rapid progress while John tucked in behind them. He did get there just in time, but not before an angry motorist had shouted "Where the hell d'you think you're going?" to which John responded, with his typical presence of mind 'If I told you, you wouldn't believe me!

HAWKER HUNTER 70th ANNIVERSARY

On July 20th it will be seventy years since Neville Duke made the first flight of the prototype Hunter, WB188, from Boscombe Down. Painted pale 'duck-egg' green all over with outsize wing roundels this aerodynamically clean aeroplane was generally considered to be outstandingly beautiful and still looks so today as recorded by Cyril Peckham's stunning black-and-white photographs taken for the 1951 SBAC show at Farnborough. WB188 when converted to Mk3 standard and painted red took the World Absolute Speed Record flown by Neville Duke off Littlehampton at 727.6 mph on September 7th 1953; twelve days later Duke also took the 100 km Closed Circuit World Speed Record at 709.2 mph. The Hunter entered RAF service with the Central Fighter Establishment (CFE) at West Raynham, followed by No.43 Squadron at Leuchars, in 1954 and was still in front-line RAF service in 1969. Thereafter it continued to serve in numerous second line support and training roles for both the RAF until 1994 and the Royal Navy until 1999.

Seventy years on there are still fifteen Hunters carrying UK Ministry of Defence serial numbers operated from RAF Scampton by Hawker Hunter Aviation under contract to the UK MoD and other customers. Similar companies in the USA, Canada and France have another 38. The 'Existing Hunters Database' at 'Hawker Hunters Reborn' lists 158 other survivors of which 28 are reported as 'airworthy'.

Altogether 1,972 Hunters were built of which 542 were rebuilt by the company and sold to overseas customers. Counting second rebuilds and those done by Contractor's Working Parties and by RAF Maintenance Unit's the total is 695. New-build and rebuilt Hunters served with 21 air arms world-wide, many being passed on to other countries.

Project work on what would become the P.1067 started at Hawker in 1946, the design using the new Rolls-Royce AJ 65 (Avon) axial flow gas turbine. It was a swept wing aircraft with a nose intake and fin tip mounted tailplane following the RAE-promoted layout devised at Focke-Wulf by Hans Multhopp (see The Fall of Icarus by Mike Pryce in Newsletter 59) and armed with two 30 mm Aden guns. In 1948 Hawker was invited to tender the P.1067 to Specification F.3/48 by which time the tailplane had become swept. Soon the nose intake was split and moved to the wing roots to simplify the design of the front fuselage for four Aden guns and a radar rangefinder, and the tailplane was moved down the fin following wind tunnel work. Apart from the later addition of a fin-tailplane junction bullet fairing, an under-fuselage air brake, 30 mm belt link collector tanks ('Sabrinas') and saw-tooth wing leading edges this was the shape of the Hunter we know today. There were of course changes to systems, engines and armament as development problems (particularly with Avon surging during gun firing) were solved, and capabilities and performance were enhanced over the lifetime of the aircraft as the emphasis changed from interceptor to multi-purpose fighter and ground attack; not forgetting the side-by-side two seat trainer.

The Hunter is an aircraft of which all who worked for or with Hawker and Hawker Siddeley can be proud . It would be nice to be able to record the names of Hawker Association Members who were part of the original design team or were involved in the early flight development work. Please let the Editor know.

HAWK, HARRIER, HUNTER & NAVY WINGS AIRCRAFT NEWS

Last Hawks: The last of nine Mk 167 Hawks (temporary UK serials ZB131 - 139) for the Qatari Emir Air Force left Brough in component form for final assembly at Warton in December 2020 ending Brough's long involvement in the Hawk. It is likely that a joint QEAF/RAF training squadron will be formed at RAF Leeming.

Hawk Airframe Life Extended: Engineers from BAES and the Australian Defence Department have successfully completed a structural testing programme that has seen a Hawk 127 airframe achieve the equivalent of 50,000 flying hours. This is five times the current clearance and more than ten times the current flying hours of RAAF aircraft. The RAF, Saudi Arabia, Oman and Qatar operate similar standards of aircraft.

BAE Systems to Support USMC AV-8B Harrier Fleet to 2029: BAES and Vertex Aerospace have signed a nine-year agreement to increase the availability of the USMC AV-8B Harrier II fleet. The U.S. Department of the Navy has awarded Vertex Aerospace the \$123 million Contracted Maintenance, Modification, Aircrew, and Related Services (CMMARS) order to provide aircraft maintenance and Contractor Logistics Support (CLS) services. BAES is a subcontractor for the new logistics support contract. BAES and Vertex will support the training and combat operations from USN's aircraft carriers, amphibious assault ships, and forward operating bases.

Sea Harrier Cockpit Restoration: In Lincolnshire, the cockpit from crashed Sea Harrier ZD614 is being restored for

trailer mounting by Richard Scarborough

Lebanese Hunters: Lebanon is selling five Hunters which have been non-operational since 2010. Possible buyers include Hawker Hunter Aviation (UK), Airborne Tactical Advantage (USA) and Lortie Aviation (Canada) (See NL.55).

Navy Wings Sea Fury FB11 and Sea Hawk: Following the transfer of ownership of the Sea Fury FB11 from the Royal Navy to Navy Wings, the engineering team has started a study to establish the work needed to make the engine serviceable. The team is also producing a feasibility study of work required to make the Sea Hawk airworthy.

Royal Navy Historic Flight Sea Fury T20 Crash: On 28th April VX281 (G-RNHF) made a forced landing in a field close to RNAS Yeovilton following a loss of oil pressure in the Centaurus engine which stopped. The wings and engine broke away from the fuselage which rolled inverted. The two crew were able to climb out unaided and uninjured. In 2014 VX281 was landed successfully at Culdrose following a massive mechanical failure of the Centaurus; the undercarriage collapsed. The aircraft was rebuilt and a replacement Centaurus was obtained.

ANNUAL GENERAL MEETING 2021

The AGM was held by Zoom on April 14th.

The first item was **Chairman Chris Roberts's Report:** In April 2019 I was preparing to report on another successful year for the Hawker Association and our usual programme of events, unaware of how much everything was about to change. As usual the Kingston venue had supported our talks, socials, the summer BBQ and another very enjoyable Christmas lunch. There was also the annual outing, which was to Surrey Satellite Technologies in Guildford.

Hawker Association Members continue to support Brooklands museum extensively and one of our main achievements was finalising the acquisition of and reassembly of G-HAWK; now on chocks next to G-VTOL. Brooklands has a great historical significance for Hawker and it is both a pleasure and privilege for our Members to be involved in preservation and cultural heritage activities at what is the world's most significant and extensive display of Hawker aircraft.

A review of a number of inputs from Members has been carried out, some changes have been made to the way we operate and the Hawker Association remains fully compliant with the constitution. One debate was whether to keep Membership numbers buoyant by attracting more non ex-company employees, and widening our activity subjects accordingly. However, we are not the U3a or the RAeS so we will continue to follow our heritage in all the ways we have been doing since the formation of the Association.

Unfortunately our programme for last year was cancelled completely when the Covid pandemic extinguished our precious interactions with families, friends and colleagues. The social Tsunami rolled over us and kept us distanced. The Newsletter, considered to be a mainstay of the Hawker Association, was not affected and was more welcome given the circumstances. In November we started a monthly Zoom programme thanks to David Priddy and the Ashford Common Baptist Church. This not only bump-started a monthly meeting but has brought more members into contact with old colleagues and friends than had been the case at the Kingston YMCA in the past.

Zoom is a two-edged sword but we will be looking at continuing with this medium as a means of improving the Association's experience as we move forward out of lockdown. The debate will be to what degree Zoom should be embraced when all aspects of social distancing have ended, and what 'getting back to normal' means for the HA.

The Secretary's report was given by assistant secretary Dick Poole. He reported that the Association now has 323 members of which 207 are fairly local to Kingston, 100 are distant and 16 are overseas. Sadly, since the last AGM in 2019 27 Members have died. However, there has been an upward trend in attendances at meetings and events which continued with the introduction of Zoom meetings during the Coronavirus pandemic restrictions, the Test Pilots' Forum in February attracting over 50 Members.

Our treasurer, Martin Pennell, reported a healthy end of 2020 balance of £2759.82, slightly up on the previous year. The accounts were approved by the meeting.

The existing committee members, and chairman Chris Roberts, were re-elected and Dick Poole who had previously been co-opted was elected a full committee member. The Committee is now Ken Batstone (social events), Richard Cannon (webmaster), Chris Farara (newsletter and archive), Wilf Firth, David Hassard (Kingston Aviation Heritage Project), Barry Pegram (secretary), Martin Pennell (treasurer), Dick Poole, Frank Rainsborough (meetings and visits) and Paul Rash (Hunter XL623 restoration).

After the AGM our president, Colin Wilson, gave an illustrated talk on his life as an aviation artist. A report will appear in a later issue of the Newsletter.

TEST PILOT TALES

On February 10th, through the good offices of the Rev David Priddy and his Ashford Common Baptist Church, a Zoom session was set up for three Dunsfold test pilots to tell Members about their flying careers. There were 49 'attendees'.

Our Chairman, **Chris Roberts** started the show. In 1963 at the age of 18 Chris joined the RAF and became a teenage jet pilot (went down well with the girls!) learning to fly Jet Provosts, completing his training at RAF Valley. He

had always had a desire to fly Vulcans but this exposure to the Gnat fast jet changed his mind. His first posting, in 1966, was to the Hunter OCU from which he went to 20 Sqn in Tengah, Singapore and then RAF Valley. When he was due to move on there were few good jet fighter opportunities so he volunteered to go to the Central Flying School to become a Qualified Flying Instructor (QFI), realising that being a QFI was a requirement for joining the Red Arrows which in due course he did after a year at RAF Valley on Hunters. Following the Reds and after a Hunter reconversion and helicopter training Chris moved to the Harrier Operational Conversion Unit (OCU) at Wittering where he stayed on for three years as a QFI and QWI (weapons). Next it was to the Empire Test Pilots' School to qualify for his future profession, starting it with 'A' Squadron (fast jets) at Boscombe Down, the Aircraft & Armament Experimental Establishment (A&AEE). This brought him into contact with John Farley who offered Chris a position in the Dunsfold test pilot team; he moved there in late 1979...and the rest is history. Chris enjoyed 30 years of fast jet flying, accumulating 5000 hours, with only three months out of the cockpit. Ready for a rest he achieved his wish to fly big jets by joining the airline industry and flying for ten years - a story for another day. (*but see Newsletters 19 and 51.Ed*)

Next to speak was **Heinz Frick** who was born in St Gallen, Switzerland, in 1940. He had a rather unhappy childhood because his parents quarrelled and eventually divorced. An early interest in aircraft helped him through this period. However he was brought up (and introduced to alp climbing and beer!) by his grandmother, a very nice lady, until at the age of 12 he was invited by his remarried mother to join her in London. His grandmother gave him the money to go to a travel agent to buy a train ticket to Zurich and an air ticket to Heathrow where he caught the bus to the West Brompton Terminal to be met by his mother. He learnt English, went to school and was soon nick-named 'Beans'.

After 'O' levels Heinz wanted to join the RAF but he was too young so went to a technical college to study mechanical engineering. As soon as possible he applied to join the RAF and was accepted. His officer training was at South Cerney and he learnt to fly Jet Provosts at Syerston. An unfortunate affliction was air sickness but Heinz persevered with the help of an understanding instructor, going solo at Wymeswold. At Swinderby Heinz completed his training on Vampire TMk1s and was no longer airsick. Heinz wanted to go to a fighter squadron but the RAF was wanting V-Force pilots so Heinz started a cartoon campaign, drawing himself in a Hunter on every possible Chinacraft board on the station. With the support of his Wing Commander Flying he was posted to Chivenor to fly Hunters. Although only 21 Heinz was given permission to marry before he was posted to 20 Squadron at Tengah in Singapore but his wife, Rosita, had to wait for an indulgence passage. The Chinese had invaded north Thailand and one evening Heinz was surprised to be told that he was going to Borneo as number 2 in a four Hunter formation, leaving at 4 am; in the dark. After a formation take-off, keeping station with tiny Hunter navigation lights in pitch black conditions, with streaming eyes, the group landed at Kuching. Here border patrols were flown between North Borneo and Indonesia but with poor maps so Heinz, being the squadron artist, got the job of sketching the area to make maps for the pilots. In Labuan the squadron attacked a police station in Brunei which had been occupied by the Indonesians who withdrew in the face of the 30 mm canon. Heinz hurt his back when he ejected and spent some time in Changi hospital before returning to the UK and Coltishall, the Lightning OCU then, after a post hospital refresher, to 74 Sqn at Leuchars, still under 25 years old. Next was 5 Sqn at Binbrook then the ETPS and 'A' Squadron A&AEE where he was Harrier Project Pilot after some helicopter flying. Heinz also flew one of the first UK F-4 Phantoms and, in France, the Jaguar.

His Commission running out, Heinz was asked by Roll-Royce to work at Filton with Harry Pollitt on engine development trials including the RB.199 under a Vulcan, the RB.211 in a VC.10 and the Scout helicopter in which Heinz did 100 hours. R-R decided to do all their engine testing at the manufacturers' airfields so in 1979 he spoke to John Farley who invited him to join the Dunsfold test pilots where he did a lot of Hawk flying with Andy Jones, ski jump trials with Mike Snelling and many overseas delivery flights.

In 1990 aged 50 Heinz retired from BAe and fast jets and joined Air Europe flying the Fokker 100. Sadly, after a short time the airline went bust making 450 pilots redundant. Now 51 and with low airline hours he found it difficult to get a flying job but did get to fly an HS 125 executive jet for a middle eastern business man for 3 ½ years until this was ended after a take-off incident from Cairo where there was a loud bang and oil pressure reducing to zero. Undercarriage down with a full fuel load and no jettison facility, Heinz decided to turn back and go straight in for a forced landing, which was successful. However, his regional licence was withdrawn for landing overweight! (The left outer tyre had exploded and damaged the flap causing a hydraulic leak. Parts of the tyre entered the intake causing the engine to surge. The vibration caused the oil pressure transducer to fall out because Hatfield had failed to wire lock it.)

So, Heinz decided to fly part-time for an air ambulance company at Goodwood, called Seegers, who used a King Air 200 with a doctor and nurse on board to collect patients from all over Europe. After that he started gliding from Parham and bought a share in a two-seater. But the Coronavirus pandemic has put a stop to flying - for now. (*See also Newsletter 38 Ed*)

Bernie Scott was born in 1951 in Gosport where his father was a founder member of the Air Training Corps (ATC). The family lived between Gosport and Lee-on-Solent so schoolboy Bernie had plenty of opportunities to see lots of aircraft and become enthralled. He joined the ATC, had his first flight in a Dominie (the RAF Dragon Rapide) then learned to fly in a Chipmunk going solo from Tangmere, aged 16.

He joined the RAF in January 1971 and did his officer training at Henlow whom he represented in target shooting at Bisley. Thence to Church Fenton for more Chipmunk experience and to Lynton on Ouse to fly Mk3 and 5 Jet Provosts. For fast jet training Bernie was sent to fly Gnats at Valley then to 45/58 Sqn at Wittering. Due to delays he

had to return to Valley for a Hunter short course until he was posted to fly 79 Sqn Hunters for training at Chivenor. There were 18 Hunters so there was always something to fly. Also there was the entire Hunter stock of 68mm SNEB rockets and 30 mm Aden gun high explosive and ball ammunition for use on several nearby ranges. Firing four Adens produces high deceleration, lots of cordite fumes in the cockpit and causes numerous contact breakers to pop which must be reset downwind. Next, to the Harrier OCU at Wittering where Chris Roberts was a confidence builder, then a posting to No 1 Sqn with periods at Decimomannu, Norway and Belize where Bernie had to eject due to a fan blade failure. Back in the UK he became involved in air testing Harriers where he got useful advice from John Farley and Bill Bedford. Whilst in Belize Bernie had put in an application to join the Red Arrows and much to his surprise he was accepted and flew two years on the Gnat and the first year with the Hawk.

Bernie was then given an exchange posting flying the F-16 with No.323 Sqn of the Dutch Air Force for which he learnt Dutch and used it all the time. Because of his experience with fly-by-wire (FBY) he was invited to join the ETPS specifically to attend the French test pilot school and fly the Mirage 2000, a FBY aircraft, to gain knowledge for the UK. So, now he had to learn French. The TP course was very hard, the French students being educated to graduate level. Nevertheless by dint of hard work Bernie passed all the exams.

Back in the UK Bernie joined 'A' Squadron at the A&AEE where over four years he flew many types including the Harrier GR3 and GR5, Tornado F2 and IDS, Tucano, Grobb, Tristar, Hunter, Jet Provost, and Buccaneer. Bernie had flown Harriers at Dunsfold so when he left the RAF it was logical to accept Heinz's offer of a test pilot position with BAe. The Harrier was rapidly maturing so Bernie was involved with the GR5, GR7 Night Attack and smart weapons programmes. Then he was seconded to Warton with the prospect of flying the Eurofighter but this never happened for hierarchical reasons; so it was the Hawk developments for Bernie. Back at Dunsfold on the Harrier programme problems with his back and neck came to the fore and he was no longer allowed to fly on ejector seats. This led him to retire from BAe and join Air Tours flying the airbus A320 and 330.

BAe then invited him to non-flying work at Farnborough on Harrier GR9 developments. He accepted and luckily an opportunity arose (when a test pilot moved to Marshall's) to fly on the Nimrod MRA4 (Maritime Reconnaissance & Attack) programme. There had been many problems with the aircraft but Bernie's view was that at the time of cancellation the aircraft was ready for operational use immediately. This was a devastating blow to the Nimrod team that had solved the problems, so after flying BAe's communications BAe 146 out of Warton to Saudi Arabia, Munich and so on, Bernie retired; only to return two years later until he got fed up with driving down the M6 on Fridays. Now he flies a Skyranger micro light which just about completes the weight and speed range. (*See also Newsletter 39. Ed*)

Question time.

Chris explained some of the frustrations of airline flying where the Operations staff (or even the cabin crew) can make decisions overriding what would have been the Captain's choice in earlier times. For instance, which airport to return to after an aborted flight; the Captain had to consult Operations who always conformed exactly to the rules. On one occasion Chris's A330 at Cancun was 100 kg over its 230 tonne max take-off weight. Many would have said "sod it" and go but that was unacceptable in case an unrelated incident occurred. The 330 was loaded with three tons of perishable mangoes and the approved choice was to unload either the mangoes (a profitable cargo) or some passenger baggage (unpopular with the pax). However Chris had the idea of draining off 120 kg of domestic water, which he had done, and set off back to Gatwick (without running out of water) only to be reprimanded for using an unapproved procedure! This kind of attitude eventually drove him to leave the airline.

Heinz told a story of a Hawk live weapon aiming demonstration in Kuwait with a Kuwaiti officer in the front seat. Heinz established the dive towards the target when suddenly the Kuwaiti pulled up at 6g saying diving like that was too dangerous; let him demonstrate how to do it. So he flew an attack generally in the direction of the target, fired the SNEB rockets...and hit it! The Kuwaitis bought the Hawk.

Chris explained that only about 20% of test pilot flying at Dunsfold was experimental, the majority being production aircraft flight testing, overseas deliveries, customer training and sales support and demonstrations.

Bernie spoke about flying the F-16 in 1980. The Dutch aircraft weighed 22,500 lb with full fuel, loaded canon and a pair Sidewinders; maximum reheat thrust was 25,000 lb which conferred astonishing acceleration and climb performance. The pilot's view was "phenomenal" and it had an outstanding radar giving the pilot the intercept geometry. Bernie saw 846 knots at low level over the sea when he pulled up, climbing to 60,000 ft to intercept a dart target being towed by an F-104 where the radar locked on and the canon destroyed the target. As a dog fighter it was "second to none" with amazing turning performance but had good handling qualities like a Hunter. However it had a 'hard' 9g limit which could be troubling at low altitude in ground attack - it was better to slow down and use the 22 deg AOA limit.

There were further answers to questions but there is not enough space to continue. The vote of thanks was given by Chris Roberts and the meeting was closed by Meetings Secretary Frank Rainsborough.

THE ROYAL AERO CLUB

On March 10th Dick Poole gave a Zoom talk to Members on the Royal Aero Club (not to be confused with the Royal Aeronautical Society) of which he is a trustee. He was introduced by Chris Roberts who told us that Dick started in the industry as a graduate apprentice with Vickers in 1960 where he worked on aircraft from Vanguard to Concorde.

Moving to HSA Kingston's Flight Development Department at Dunsfold, he covered, in 18 years, Harrier, Sea Harrier and Hawk development becoming Chief flight Test Engineer in 1984. A highlight was being the principal flight test engineer on the ski jump development trials. His next appointment was Assistant Chief Designer AV-8B at Kingston in 1987 whence in 1992 he moved to Warton as Chief Engineer Light Combat Aircraft and New Jet Trainer. Finally for BAE he worked with McDonnell-Douglas and Lockheed Martin on ASTOVL leading to the F-35 programme.

The Royal Aero Club was formed in 1901, said Dick, following discussions between balloonists the Hon CS Rolls, Frank Hedges-Butler, his daughter, Vera and Stanley Spencer, all members of the Royal Automobile Club (RAC), following a balloon flight from the Crystal Palace. In 1910 it became the Royal Aero Club (RAeC). The primary objectives of the club were to encourage and develop the study of aeronautics, to organise sporting contests, to grant certificates of competence and to promote meetings between those interested in aviation in all its forms. In the early 1900s the French were pursuing powered flight and established the Federation Aeronautique Internationale (FAI) in 1905. This became the international governing body for sporting aviation with the RAeC as one of the founder members, representing the United Kingdom, running competitions and issuing aviators' certificates on behalf of the FAI in various classes: aeronauts (balloons) from 1905, aviators (aeroplanes) from 1910, airships from 1911, gliders from 1930 and helicopters from 1947. The first aviators' certificate was issued to JTC Moore-Brabazon on March 8th 1910. The RAeC does not have these documents but has a record of all the information about the holder. Up until 1952, when they were replaced by Ministry of Aviation Private Pilots' Licences, more than 28,000 certificates were issued. To achieve such a certificate required two distance flights of at least 5 km each and one altitude flight at 50 m or above with all landings with the engine stopped at or before touchdown and the aircraft at rest within 50 m of a point previously nominated by the candidate. These requirements were regularly adjusted as aircraft capabilities changed.

Early heavier-than-air flying activity in SE England was concentrated at Brooklands, Farnborough, Hendon and the Isle of Sheppey, the RAeC using mostly the latter, initially at Shellbeach, Leysdown, then, due to frequent water-logging, at Eastchurch. At Shellbeach JTC Moore-Brabazon made the first flight by an Englishman in England (but in a French Voisin) on April 30th 1909. On November 20th 1909 the Hon CS Rolls opened Eastchurch by landing his Short-Wright there. The Short Brothers also built their own designs and Wright licensed aircraft at Sheppey.

Dick showed an historic photograph taken when Wilbur and Orville Wright visited Mussel Manor at Shellbeach, the RAeC clubhouse, to meet the Short brothers, Oswald, Horace and Eustace. Present was the wealthy Francis McClean who owned the Manor and had bought the land at Eastchurch for the RAeC. He also provided aircraft and instructors to train the first four Navy officer pilots and then did the same for six Army officers at Larkhill. Also at the meeting were Charles Rolls, Brabazon, Frank Hedges-Butler and Warwick Wright, the English aircraft maker. Clearly the RAeC was a 'gentleman's' club.

There were several groups in the RAeC which grew to become independent Member organisations: the British Aerobatic Association (BAEA), the British Gliding Association (BGA), the British Balloon & Airship Club (BBAC), the British Parachute Association (BPA), the British Precision Pilots Association (BPPA), the British Microlight Aircraft Association (BMAA), the Royal Aero Club Records, Racing & Rally Association (RRRA), the Helicopter Club of Great Britain (HCGB), the Light Aircraft Association (LAA) formerly the Popular Flying Association, the British Hang Gliding & Para Gliding Association (BHPA), the British Model Flying Association (BMFA) formerly the Society of Model Aircraft Engineers (SMAE), and the Formula Air Racing Association for small, fast aeroplanes. The RRRA organises competitions including the King's Cup air race, and the LAA has an inspectorate and supervises the airworthiness of light and homebuilt aeroplanes and lighter aircraft that no longer have a design authority, for example Austers and Tiger Moths. The BMFA is by far the largest with 35,000 members compared with 8,000 active glider pilots. Overall governance of the RAeC is by the Council with representatives from all the above bodies

There are also Associate Members of the RAeC: the Royal Aero Club Trust, the British Kite Flying Association, the British Women Pilots Association, Flying Scholarships for the Disabled, the Historic Aircraft association, the Human Powered Aircraft Group, the Royal Air Force Museum and the Tiger Club.

The principal purposes of the Royal Aero Club are to promote and encourage the practice and development of aviation sport and recreation, to promote and to further the interests of those engaged in aeronautical activities, to ensure the proper representation of all branches of sporting aviation in Britain at the International level through the membership of the FIA and undertake the responsibilities of a National Aero Club under FIA Statutes and Sporting Code. Also to represent sporting aviation to the British Government and other bodies in the interests of its members and to award medals and other distinctions at National level for achievements and services in sporting aviation and to make recommendations to the FIA for awards at International level and to other bodies to promote recognition of such achievements and services. It also encourages collaboration between members, coordinates matters and arbitrates disputes.

Examples of world renowned RAeC activities are the running of three Schneider Trophy races, the King's Cup races from 1922 to 1947 and the Aerial Derbies in the '20s and '30s. It organised the England to Australia MacRobertson air race in 1934, certified Alex Henshaw's UK to Cape Town and return Mew Gull records in 1938 and observed for the FIA the world speed records set by the Meteor in 1945, and the Hunter and Swift in 1953.

Turning to the RAeC Trust, of which Dick is a Trustee, the objectives are cataloguing and conserving the collection of unique historical documents, paintings, trophies and artefacts held by the RAeC, and promoting the

development of young people by helping them to participate in air sports and aviation activities, assisted by a Flying for Youth bursary and scholarship scheme. The RAeC had a London club building at 119 Piccadilly until the mid '60s when the lease expired so there is no longer a permanent home for the collection so now some items are on display or in storage at the RAF Museum, Hendon, some on long-term loan to appropriate bodies and a 1910 TW Kingslake Clarke biplane 'hang glider' is being overhauled by the Glider heritage Collection at Lasham. Dick showed slides of many examples of the historic photographs, artefacts and documents in the collection. Details can be found at www.royalaeroclubcollection.org.

After a questions and answers session hosted by Chris Roberts, Meetings Secretary Frank Rainsborough gave the vote of thanks for Dick's most interesting talk.

MY PROMOTION TO TEMPORARY CO-PILOT

Dick Poole had a memorable flight in Hawk XX158....

One Friday in March 1985 I accompanied Heinz Frick on a Production Flight Test Schedule (PFTS) flight in XX158. This was the 4th development Hawk, for which I had briefed stalling, spinning and performance trials many times during the development programme. I also flew in the aircraft as a flight test observer on a number of the trials, but not spinning, although Jim Hawkins had demonstrated some of the spin modes to me. By now the aircraft had been de-instrumented and converted to the War Role (carriage of Sidewinder) as a TMk1A and was to be delivered to the RAF.

We cleared a few PFTS items and then returned to Dunsfold. On the downwind leg for runway 25 with undercarriage and flaps deployed Heinz did a brake test and found that one of the main wheel brake foot motors, operated by pressing the rudder pedals, was inoperative. This was a serious problem as the brakes were the only means to steer and stop the aircraft on landing once the nose wheel was on the ground. Heinz abandoned the approach and informed air traffic and the duty pilot, Jim Hawkins.

Question to Heinz, "Who have you got in the back?" Answer, "Dick Poole" Reply, "He should be able to stop you on the ground". Wow, promotion indeed! Heinz wanted to use the lowest practical approach speed so, as we still had a significant amount of fuel on board, we went to the south coast to burn the fuel level down to 'bingo' state (fuel low level warning lights on) and then returned to Dunsfold. Heinz's plan was to use maximum aerodynamic braking by holding the nose up once the main wheels touched down. When he could no longer keep the nose up I was to steer the aircraft to a halt with differential braking. With some "left" & "right" direction I brought the aircraft to a stop close to the runway centreline.

When we had reached Dunsfold after the PFTS tests there were three export Hawks parked on the flight line at the western end of the runway. When we returned these aircraft had disappeared and the airfield ambulance and fire engine were parked on the perimeter track at the threshold of runway 25 - little confidence in my ability to keep the aircraft on the runway, I felt. The following day Heinz, the excellent cartoonist, presented me with a cardboard Medal - 'The Order of the Hairy Foot'.

BOOK REVIEWS

Harrier Boys Volume Two - New Technology, New Threats, New Tactics. 1990 - 2010, by Bob Marston.

On updating my Newsletter index I discovered that I had not reviewed Bob Marston's second book of Harrier exploits. Suffice it to say that if you enjoyed the first book then you will certainly enjoy this new one. Amongst the contributors are several HA Members including Heinz Frick, Jock Heron, Bernie Scott, and Mark Zanker. The period covered embraces the RAF Harrier I and the RN Sea Harrier FA2, and follows the Harrier II from the introduction of the GR5 to the untimely withdrawal of the GR9; the end of the Harrier story in the UK. Well illustrated, the book is published by Grub Street at £20 (£14.43 Amazon).

British Special Projects - Flying Wings, Deltas and Tailless Designs, by Bill Rose

The author has found a new hook to hang a 'secret projects' genre book on and it works very well. The book starts with the early flying wings of John Dunne and Roland Hill and finishes with the BAE Systems Tempest proposal. Between these are covered jet bomber projects; post war fighters; more extreme proposals such as the Handley Page boundary layer control projects, Barnes Wallis's variable sweep Swallows and nuclear powered bombers including a Hawker Siddeley Nuclear Power proposal with an airframe similar to some Kingston rocket powered interceptor projects; V/STOL projects; and spacecraft. This makes for fascinating reading with numerous clear general arrangement drawings and photographs of designs that made it into hardware. Each chapter finishes with a table of data for the subjects covered. There is much to interest the Hawker enthusiast too, it being a surprise to realise how many Kingston projects fitted the book's sub-title. Published by Fonthill at £35 (£22.25 Amazon) this is a quality item with 288 pages.

The aviation Historian Issue 35.

Your editor was particularly enthralled by the complicated political history of the HS146, Norwegian Air Force Republic RF-84F reconnaissance flying, the effects of shock waves on propeller blades and aircraft performance, and another French aviation novelty - an Edwardian flying saucer. There is, of course, much, much more.

MEMBERSHIP NEWS

Sadly we record the death of Ted Henbury and send our condolences to his family and friends. Colin Balchin has asked us to mention that his wife, who was Pauline Parsons and worked in AID at Dunsfold up to 1963, died at the age of 86 on the 12th March this year. Among the membership there may be people who remember her, particularly as she often visited Kingston.

We welcome new members Chris Darwin, Gunter Fresacher, Anne Glasscock, Pat Norris and Gary Orgovanyi.

MEMBERSHIP LIST - May 2021

Subscriptions for 2020 - 2021 (£7) are overdue from those in bold below. Please send cheques payable to The Hawker Association to Barry Pegram, 12 Becket Wood, Newdigate, Surrey, RH5 5AQ. If you are **leaving** please let him know by post or by telephone on 01306 631125. Thank you. If you have paid by BACS and this information has not yet reached Barry's records; apologies.

A: Allan Abbott, Peter Alexander, Leslie Allen, Peter Amos, Steve Apted, Alan Auld. **B:** Angela Bailey, John Baker, Lyn Baker, Colin Balchin, Edward Banstead, Ambrose Barber, Justin Barber, Derek Barden, Peter Barker, Graham Bass, Donald Bateman, Richard Bateman, Ken Batstone, Dennis Baxter, Francis Bebbington, Colin Bedford, Peter Bedford, Brian Bickers, John Blackmore, Andy Bloomfield, Melvyn Bluck, Keith Bollands, Paul Boon, Betty Bore, Pat Bott, Steve Bott, Bob Bounden, Mike Bowery, Alan Boyd, **Roy Braybrook**, Laurie Bridges, Arthur Brocklehurst, Peter Brown, Christopher Budgen, Reg Burrell, Robin Burton, Clive Bushrod, Tony Buttler, Dave Byford. **C:** Nigel Came, Richard Cannon, **Chris Carter**, **Tom Casey**, Bob Catterson, Colin Chandler, Laureen Chapman, John Chitty, Martin Churms, Gerry Clapp, JF Clarke, John Cockerill, Hank Cole, David Collingridge, Nigel Cook, Jonathan Cooper, Patricia Cosgrove, Ron Cosgrove, David Cotton, Nick Cox, Mike Craddock, Shirley Craig, Richard Cripps, **Russ Culley**, Richard Curling. **D:** Clive Dalley, Andy Dalton, John Danse, Afandi Darlington, Chris Darwin, John Davie, Jo Davies, Trevor Davies, Michael Davis, Diana Dean, **Ralph Denning**, Ian Dewar, Wilfred Dimsdale, Mike Diprose, Lambert Dopping-Heppenstal, Cliff Douthwaite, Bill Downey, Barry Dreghorn, Gwen Duke, Chris Dunhill, Graham Dunn, Gordon Dunne, Clive Dyche, Mike Dyke. **E:** Andy Edwards, **Barry Elliott**, Stephen Elliott, Tony Elliott, Celia Evans, Norman Evans, Roy Evans. **F:** Russ Fairchild, Ian Falconer, Mike Fantham, Chris Farara, Adele Farley, John Farrow, Ian Ferguson, Stan Field, Geoff Fieldus, Wilf Firth, Richard Fletcher, Moira Flint, Ted Forster, Mike Frain, Steve Franklin, Howard Freeman, Geoff French, Mike French, Gunther Fresacher, Heinz Frick, Peter Frost. **G:** Roy Gaff, David Gaitley, Daphne Gaitley, Mike Gane, John Gardner, Peter Gates, Sandie Gear, Tim Gedge, Mark Gerrard, John Gilbert, Anne Glasscock, John Gough, Andy Green. **H:** Margaret Hamilton, Howard Hancock, Valerie Hanscomb, **Liz Hargreaves**, **Simon Hargreaves**, Guy Harris, Thelma Harris, Bill Harrison, David Hassard, Juliette Hassard, David Hastie, Norman Hayler, Alan Heasman, Jock Heron, Keith Hertenberg, Kim Hewitt, Merlin Hibbs, Richard Hickey, Reg Hippolite, Keith Hobbs, Chris Hodson, **Derek Holden**, Ralph Hooper, Linda Hopkins, Lesley Hoskins, Diane Howells, Terry Howes, Simon Howison, Miles Huckle, Ed Hui, Gavin Hukin. **I:** Len Illston, Maive Impey, Brian Indge. **J:** Barry Jackson, Simon Jackson, Graham James, John Janes, Mark Jennings, John Johnson, Andy Jones, Robin Jowit, Alf Justin. **K:** Andrew Keech, Barry Kensett, Dennis Ketcher, Bill King, Dave King, Jim Kinross, Kieran Kirk. **L:** Mike Laker, Rich Lambert, Richard Lane, Paul Latham, Andrew Lawson, Stanley Lawson, David Lee, Geoff Lee, Stuart Leigh-Davies, Mark Lewis, Vernon Lidstone, **Gary Lillistone**, Andrew Lloyd, Dawn Lloyd, Tony Lo, Norman Long, Terry Long, David Lovell, Lynda Lucas. **M:** Anthony Mabelis, Al Mahoon, Mick Mansell, John Marsh, Brian Maton, John McCarthy, Don McGovern, June McKeon, John McKillion, Keith McMahon, Mike Mendoza, Alan Merriman, Jim Middleton, Robert Miller, Alan Millican, Jack Mills, **Peter Mitchell**, Brian Monk, Pat Moon, Pauline Moore, Pete Munday, Carole Murphy, Martin Murray, Helga Mutton, **N:** Tony New, Terry Newell, Anthea Newman, Jennifer Nicholas, Chris Nicholson, Pat Norris. **O:** Roger O'Brien-Hill, Chris Oliver, David Oliver, Mark Oliver, Gary Orgovanyi, John O'Sullivan, Robin Owen. **P:** Les Palmer, John Pearce, Barry Pegram, Martin Pennell, Dick Poole, Mat Potulski, Dave Priddy, Mike Pryce. **R:** Clive Radley, Frank Rainsborough, Paul Rash, Diane Raymond, Vanessa Rayner, David Rees, Brian Renwick, Geoff Richards, Robert Richardson, Chris Roberts, Alistair Robertson, Edward Rogers. **S:** Ian Sandell, Tim Sargant, Bernie Scott, Alex Seaman, Maurice Shakespeare, Mike Sharland, Douglas Shorey, Derek Sims, Gerry Sims, Peter Sinclair, Siva Sivalingham, Charles Smith, Karl Smith, Roy Sparrow, Don Spiers, Peter Spragg, Mary Stark, **Helen Steinlechner**, Chris Stephens, June Stephens, John Strange, Nick Stroud, Christine Strudwick, Tony Strudwick, Terry Summerfield, John Sweetman, Bill Swinchatt. **T:** David Taylor, **Brian Tei**, Joanna Terrell, Geoff Tomlinson, Graham Tomlinson, Richard Townsend, Rod Tribick, Kevan Tulip, Bert Turner, Michael Turvey. **W:** Terry Walker, Mark Walsingham, Dave Weatherley, Michael Weatherly, Graham Weller, Judith Westrop, Jan White, Keith White, Mick White, **Roy Whitehead**, Peter Whitney, David Whittam, Kevin Wilkins, Annette Williams, Don Williams, **John S Williams**, Sally Williams, Rosemary Wills, Geoff Wilsher, Colin Wilson, George Wilson, Stephen Windmill, Dick Wise, Kuo Wong, Richard Wood, Alan Woolley.

