



NEWSLETTER 53 - Spring 2019

Published by the Hawker Association
www.hawkerassociation.org.uk

EDITORIAL

Getting this Newsletter out has been a bit of a struggle as after over 10 years of excellent service my Dell Vostro 200 computer failed. Even our computer wizard, Richard Cannon, couldn't find the cause of the problem but he did manage to get it working well enough for word processing in 'Safe Mode', allowing me to start NL53, and then set up my replacement computer. Thank you, Richard, very much.

With this Newsletter comes the **AGM** notice and **Membership Renewal** form. Please note that the subscription is now £7 as announced at last year's AGM. This is the first increase since we launched the Association 17 years ago. Please pay while it is fresh in your mind; and if you missed last year's add a fiver for that at the same time (see back page).

The articles by Members in this edition are some of the last I had in stock (don't worry if yours hasn't featured yet, it will) so please put fingers to keyboard or pens to paper and record your memories of life at Hawker or in aviation - or any in other field or topic of yours you think will interest HA Members.

Send your **contributions** to The Editor, Chris Farara, 24 Guilddown Road, Guildford, Surrey, GU2 4EN or e-mail to cjfarara@ntlworld.com. Tel 01483 825955.

Send any **membership** correspondence to The Secretary, Barry Pegram, 12 Becket Wood, Newdigate, Surrey, RH5 5AQ or e-mail barryvpegram@aol.com. Tel 01306 631125

PROGRAMME FOR 2019

Wednesday 9 th January	Social
Wednesday 13 th February	Pioneers in Aviation (from Kites to Thunderbirds) - Chris Roberts .
Wednesday 13 th March	Fresh Interests Since Retirement - Ambrose Barber
Wednesday 10 th April	Annual General Meeting with video.
Wednesday 8 th May	Aircraft Development - Karl Wingett-Smith .
Wednesday 12 th June	Summer Barbecue.
Wednesday 10 th July	The Joint Strike Fighter Story - Mick Mansell .
Wednesday 14 th August	Social/video
September date tbd	Outing - visit to Surrey Satellite Technology Ltd, Guildford.
Wednesday 11 th September	Social/video.
Wednesday 9 th October	Hawker non-V/STOL jet Projects - Tony Buttler.

Chris Roberts is our current Chairman and was Chief Test Pilot at Dunsfold, **Ambrose Barber** is our retired first Chairman and was Divisional Commercial Director, **Karl Wingett-Smith** was in the Installations Department, **Mick Mansell** was Executive Director Design at Kingston and Director of Future Systems at Warton, and **Tony Buttler** is a well known aviation author with a special interest in British jet projects.

E-MAIL ADDRESSES

If you wish to receive e-mail notices from our Webmaster, Richard Cannon, please send him an e-mail (using the webmaster link in the website header) so he can add you to his distribution list or confirm that he already has your e-mail address.

CHRISTMAS LUNCH

Ken Batstone who so ably organised the event reports...

On Wednesday, 12th December, the 16th annual Association Christmas Lunch was held in the YMCA Hawker Centre, Richmond Road, Kingston (the usual venue). The weather was dry, mild and partly sunny. This was the fourth year running that the weather had been kind to us. Members and guests started arriving from midday for wine and socialising before the meal, which was served just after 1pm, following grace and a prayer, given by the Reverend Vernon Lidstone.

Forty eight people attended the lunch, which was three more than last year, indicating the Continuing enjoyment of this event. The menu was the same as last year, namely prawn cocktail followed by traditional roast turkey with trimmings, and gateaux or panacotta. Each course did have an alternative choice, but there was little demand for these.

After the meal, Chris Roberts, our Chairman, delivered a short speech, which contained some very amusing, original and apt jokes (don't mention Brexit!). He also talked about the late and much lamented John Farley and his Commemoration held at Brooklands.

Chris Roberts was followed by our new President who talked about his times spent at Kingston, Dunsfold, St Louis and Japan. He had a wealth of stories and anecdotes from these periods.

At the end of the afternoon, many members remarked on the high quality of the meal and the size of the portions! Once again the staff of the YMCA Hawker Centre had provided us with an excellent meal and a most enjoyable afternoon. The Committee has written to the YMCA Catering Manager to express its thanks and appreciation of the efforts of the catering staff in providing such an enjoyable event, and has given a suitable gratuity.

HAWK Mk50, G-HAWK/ZA101

The Company and suppliers funded Hawk demonstrator has been kindly donated to the Brooklands Museum by BAE Systems after it was replaced in the Company training school by a Hawk Mk 53. Prior to that G-HAWK had been used by BAe and BAE Systems for several airframe and systems development and demonstration tasks. In its prime it flew from Dunsfold developing Hawk capabilities and spearheading the Hawk marketing effort with demonstrations and world-wide sales tours. It played a key part in the T-45 Goshawk campaign in the USA.

The airframe, consisting of the fuselage with fin and rudder, the wing without flaps or ailerons, and the tailplane, was delivered to Brooklands in late February. A cursory look reveals that other items missing are the engine, pitot boom, some small fuselage panels, the fillet below the rudder and a number of cockpit and seat items and components. The long dummy 100 Series nose is fitted but with a conical nose cone. The wing appears to be an early standard export type with curved 'streamwise' tips. The paint finish is in dark blue BAE Systems livery.

For many years Duncan Simpson campaigned for British Aerospace to give the aircraft to Brooklands when it was retired. He would be very happy to know that G-HAWK now has a permanent home. After restoration it would be nice to see it displayed alongside the other Kingston/Dunsfold demonstrator, Harrier Mk52, G-VTOL/ZA250.

Postscript. Some readers may wonder why these demonstrator aircraft have both civil registrations (G-...) and UK military serials (ZA...). The original civil registrations allowed the aircraft to fly unarmed ferry and demonstration flights world-wide. The military serials were allocated so that the aircraft could carry out development and other flying associated with military programmes and when carrying dummy or live armament.

HUNTER T7 XL623 HERITAGE PROJECT

Chris Roberts reports progress on the restoration XL623....

The weather was kind to us in 2018; XL 623 is stored in the open at Dunsfold so progress could have been badly affected. Although it was cold, the lack of rain or snow allowed Paul Rash and the team to prepare the first parts for transfer to the workshop at Brooklands. It is always risky not naming everyone who has helped, but we must thank Dave Cotton and Dave Collingridge for their expertise and time.

The project plan required the first components to be ready for moving by the end of 2018. The tail cone, fin, rudder and elevators were moved there in December and are now being worked on so it is great to be on target. The Brooklands workshop is not hangar size so is unable to take very large components or complete aircraft. The rear fuselage will be the first major section to go there because it has the worst corrosion and is the biggest restoration challenge. It is planned to have it at Brooklands in February.

We have had help from contacts and supporters in the form of free use of a crane and forklift to move the fuselage sections and to lift off the 12 ft. span tailplane; it does not look that big when fixed to the base of the fin! These jobs need to be handled resourcefully so that our funds are not depleted quickly on things like hire charges. Brooklands has loaned the project ground support equipment to hold the pieces and transport them to the museum.

The Hawker Association is managing the Hunter as two separate projects. The preservation of the airframe is the prime project, the aim being to *preserve XL623 for long term public display*. The secondary project is to *position the aircraft in a prominent public location (ideally in Kingston) with assured long term stewardship*. Through the efforts of the Hawker Association and the Centenary Project there is an ever increasing number of people made aware of, and proud of, the achievements of everyone who worked in the local aviation industry and of the aircraft designed and built in Kingston.

The preservation of XL623 is within our capability with involvement and support from Brooklands. The cost, only a few thousand pounds, should be primarily for materials. Contributions from Association members have now reached almost £2000 and we believe that the first aim can be achieved by the end of next year.

The second aim, to place the aircraft, is the difficult and expensive part. We cannot achieve this without support from other agencies and a lot of funding. We need a site, and if the aircraft is to be mounted back on the 'Woking pole' and installed at the site we must raise £30,000 to £50,000. Such a task needs to be managed well by a good team so we are seeking more help. This level of fund raising will need a different approach to that for the aircraft itself, and it seems that one potential source (other than finding a lucky Lotto winner) will be the Kingston business community. We need a team that will relish this challenge or the involvement, so please consider joining us. Meanwhile we still need donations for restoration of the aircraft; the most important aim.

You might wonder what we will do with XL623 if we cannot return it to the top of the pole in a prime position in Kingston. Actually there are other options so we are considering installing the undercarriage during the restoration to give us flexibility in siting so fulfilling our primary aim for the project: to *preserve XL623 for long term public display*.

If you would like to donate to this important project or volunteer to help with fund raising please contact Chris Roberts by phone on 07799 641674 or by e-mail at chrisroberts@gmx.com.

AIRCRAFT NEWS

Hurricane IV KZ321, sometime G-HURY, now registered OO-HUR in Belgium, flew last November at Brasschaat after importation from Canada.

Sea Fury FB11 WG630 of the now defunct Royal Australian Navy Historic Flight has been tendered for by the Historical Aircraft Restoration Society of New South Wales.

Gnat F1 G-SLYR (SLaYeR from the Sabre Slayer nick name), Indian Air Force IE296 has been restored to flying condition at North Weald.

Hawk Mk 51, G-HAWK has been donated to the Brooklands Museum.

THE AIRCRAFT INDUSTRY IN SURREY IN THE GREAT WAR

On November 11th the indefatigable David Hassard, who has given more than 200 talks on Sopwith, Hawker and other local firms, addressed the Association on the importance of Kingston's aircraft industry to the war effort. David tackled the story chronologically talking to excellent slides. Such a talk is difficult to report as it is so visual and packed with improvised verbal detail. What follows can give but a poor impression of the actual event.

In 1906-07 the Brooklands motor racing circuit was built near Weybridge. Inside the banked concrete oval was a large, flat and level expanse of grass which was soon used as an aerodrome by the aviation fraternity. Tommy Sopwith taught himself to fly there in 1910. Many manufacturers and flying schools set up their 'sheds' at Brooklands, including Sopwith in 1912. He would teach you to fly for £75 (£7,500 today). His engineer, Fred Sigrist, created the Sopwith Hybrid as an improved trainer which was sold to the Admiralty causing the Sopwith Aviation Co, a family owned business, to be accredited.

With Vickers, Bristol and other companies there Brooklands became crowded so Sopwith rented the Kingston roller skating rink with its level and flat open space (no pillars), ideal for building aircraft. A supply of skilled boatbuilding woodworkers was available locally and there were plenty of women workers with fabric cutting and stitching skills. Aircraft were taken by road to fly from Brooklands. The first product of the Kingston factory was the flying boat/amphibian Bat Boat which set many records in the hands of Australian Harry Hawker, who had joined Sopwith and Sigrist as a mechanic but was taught to fly by Sopwith and became the Company's test and demonstration pilot and co-designer.

In 1913 aircraft production was under way with sales to both the Navy and the Army of float and landplanes. The small, 80 hp, two seat Sopwith Tabloid, brainchild of Hawker and tested at Farnborough, demonstrated a maximum level speed of 92 mph, the fastest ever recorded. It was soon ordered for the Army's Royal Flying Corps (RFC). In December 1913 the Sopwith Aviation Company Ltd was formed and started its expansion in Canbury Park Road, Kingston.

The speaker went through every Sopwith, and other manufacturer's, types on a year-by-year basis, illustrating each with excellent photographs, and highlighting particular design features and achievements. The Tabloid proved to be a very important type which set the pattern for all subsequent fighting scouts. It was developed into the Baby and led to the Pup, Triplane, Camel, Snipe and Dragon.

In April 1914 a Tabloid floatplane won the international Schneider Trophy race at Monaco and set the world speed record. During 1914 production increased; 12 Sopwith Folders, 24 Spinning Jennies and 18 torpedo droppers were sold to the Royal Naval Air Service (RNAS).

In 1915 130 Sopwith Schneider floatplanes, derived from the Monaco Tabloid, were ordered and 30 Sopwith pusher landplanes were subcontracted to Robey & Co. Other manufacturers operating in Surrey included Bleriot and DFW at Brooklands from 1914. In 1915 Martin and Handasyde/Martinsyde at Woking and Brooklands, Whitehead Aircraft at Richmond and Vickers of Crayford, Kent who had bought the Itala car works at Brooklands, were all active in Surrey.

Sigrist's 1 ½ Strutter with its synchronised forward firing machine gun emerged in early 1915 followed by the Pup in 1916. 58 fighter and 178 bomber Strutters were ordered from Sopwith. Contractors would build 1100 and 4200 would be built in France. 97 Pups were ordered from Sopwith with 250 from contractors.

The high performance Sopwith Triplane, based on the Pup fuselage, flew in 1916; Sopwith built 103, Contractors 49. That year Whitehead built 100 Pups. The Sopwith Camel flew in 1917 and was ordered for the RFC and the RNAS. 553 were built by Sopwith and ten Contractors built 5194. By the end of 1917 the Canbury Park factory covered 5 ½ acres and was soon building the four gun Dolphin of which 1000 had been ordered from Sopwith with 750 from Contractors.

Because of the high attrition rate with an aircraft average life of 8 weeks, the Government needed 3500 new aircraft every month to support the 200 squadrons required for air superiority. To satisfy this the Government instituted the National Aircraft Factory (NAF) scheme; four were to have been built. NAF 2 was built at Ham and leased by Sopwith to build 700 Snipes, 800 Salamanders and 330 Dragons. In September 1918 Sopwith was building 40 aircraft a week. Whitehead, Bleriot, Martinsyde, Vickers and Glendower at Kew were also mass producing military aircraft under contract. In 1918-19 6000 aircraft were built in Surrey.

The armistice was signed on November 11th 1918 leading to the cancellation of orders and a consequent 60% cut in the workforce. During WW I 18100 aircraft had been built to Sopwith designs.

After the war Sopwith struggled to keep going with some prototype aircraft and motorcycle manufacture but had to close down when the Government submitted a bill for excess profit tax. The Sopwith Aviation Co Ltd was liquidated and a new era started in 1920 when, Sopwith, Sigrist and Hawker started again with the HG Hawker Engineering Co which grew into Hawker Aircraft and the industrial giant, Hawker Siddeley.

David Hassard produces a weekly article, 'The Kingston Aviation Story - 100 Years Ago This Week', which you can find on-line at www.kingstonaviation.org. David started this important task in May 2013 and is now approaching his 300th issue. Deeply researched and precisely illustrated the articles chronicle, week-by-week, the progress of TOM Sopwith, his companies, his colleagues, his aircraft and their achievements. All back issues are available.

EXPERIMENTAL FLIGHT TESTING IN THE 1950s

Ambrose Barber was reminded by Karl Wingett-Smith's recent pieces in the Newsletter of a test flight he did with Hugh Merewether to investigate a change to the two-seat Hunter's cabin conditioning system....

In those pre-computer-prediction days it was called experimental testing with good reason as, after initial slide-rule calculations, much of our work was optimised by honest trial and error. Sometimes one had to see the funny side of it.

The larger cockpit of the two-seater made greater demands on the cabin pressure, temperature distribution and demisting. The plan was to improve the system's performance by the addition of extractor louvres mounted externally behind the cockpit canopy and a test flight was devised to measure this. After a prolonged 'cold soak' at altitude we came plummeting down in a max. rate descent to 1,000 feet. Hugh then hammered across the Sussex landscape at 585 knots while my job, despite the vibration, was to jot down regular readings of cockpit temperatures at head, hands and feet level. On landing back after all this we opened the hood only to find that sometime during our flight the much vaunted louvres had been sucked off without trace!

This article is an extract from Ambrose's chapter in 'Tail Ends of the Fifties', an anthology of aviation memories compiled and edited by Peter G Campbell, published by Cirrus Associates in 1999.

THE START OF SERIOUS INSTRUMENTATION

Roy Whitehead recalls flight test instrumentation of the 1950s.....

Automatic observer panels (AOPs) were the obvious answer to augment the pilot's kneepad jottings. These were the forerunners of the proverbial many and varied 'black boxes' leading to today's flight and crash recorders which became bright orange boxes to make them more easily identifiable in the event of a mishap. Hawker's first foray into the task of collecting data was achieved on a very limited scale, mainly because space was at a premium in our small fighter aircraft. Some usable space was found by the simple expedient of removing one of the two VHF transmitter/receivers that were fitted for communication between the aircraft, the ground and other aircraft.

A box to fit in place of the VHF set was made and at one end inside this box a panel was fitted which contained only four or five instruments. Nestling between these and fixed to the panel was a small clockwork Pathe 'H' 9.5mm cine camera. The camera looked through the panel away from the instruments towards a mirror at the far end of the box. The mirror enabled the camera to be focused on the instruments. Lighting was provided in the form of a number of small 12-volt bulbs mounted round the instruments. A sheet metal screen was positioned an inch or so away from the panel with cut-outs to ensure that the camera could see the faces of the instruments but not the bulbs. The camera was started and stopped electrically by the pilot for either single shot or cine.

One of the instruments on the panel of the AOP was a clock. This would be synchronised with another in the cockpit so that the times noted by the pilot and those recorded on film could be correlated.

After flight the developed film would be read by a Flight Development engineer using a light box and magnifying lens and the instrument readings noted. The readings would be corrected using the instrument calibrations and then correlated with the pilot's comments from his debriefing and kneepad notes. This was a time consuming task.

As time went on the AOPs became bigger and better and were not always confined to 'black boxes'. Because of the greater number of instruments it would have been unnecessarily complicated to use a masking screen with so many holes. We therefore made our own individual Bakelite bulb holders, complete with removable aluminium covers, to use on our AOPs, doing away with the screen.

The AOP in the Sea Hawk prototypes was a large panel containing twenty or more instruments. As this aircraft had a bifurcated jet pipe the panel was placed across the comparatively roomy inside of the rear fuselage aft of the ventral access panel. With no box or mirror necessary in this application a much larger camera was positioned forward of the access hole looking aft. To work on this installation it was necessary to duck under the aircraft and stand up through the access hole. This was fine if the aircraft was jacked up off its wheels.

Editor's note. I joined Flight Development in 1961. Hunters and P.1127s were still using AOPs although the paper trace recorder was the primary recording system. In another article Roy will tell us about these.

NEW PERSPECTIVES ON CANBURY PARK ROAD

Ian Ferguson remembers his Grandad, Henry Bowden, at 'Hawkers'....

My Grandad spent his war at Canbury Park Road. He was proud of his 'Hawkers' time but by no means did he enjoy it. Judging by his elder brothers, he'd rather have fought. Uncle Ken (actually of course Great Uncle) had a noticeable jaw disfigurement, having been shot out of the rear turret of a Wellington and spent time in a PoW camp. But for Grandad, the money had run out, and rather than completing his education he'd come south to seek his fortune, managing to marry the Boss's daughter at a South West London car dealership. The 1930s habit of "running in" cars at high power in closed garages had ruined his lungs, and he couldn't have run a step, so when war came he worked nights as a lathe-setter at Canbury Park Road. It seems his accent was distinguished not by his Lancastrian origins but the evidence of education or class, as his nickname was "Lord Haw Haw." However much of a foreign country* the past may be, that must have stung.

He didn't fit in. According to my Grandma "They were rough sorts in the factory. They wouldn't bother to go out to wee, they'd go straight into the coolant trays under the machines – can you imagine ? Not the best people." Perhaps some were, as she believed, the dodgers and cowards. Perhaps Grandad was, as my Mum believes, although he never admitted it, a volunteer for bomb disposal. It would have been in character with his mechanical aptitude, unflappable nature and sense of duty.

On the other hand, sitting one day by the river for his break, that accent attracted attention and made him a lifelong friend of a senior figure amongst Hawker's management. Their children played and grew up together. John Fozard became a family friend and helped wallpaper a room. I'm told the workmanship was exquisite; and that Fozard's water-drinking capacity was prodigious.

My childhood enthusiasm for all forms of aviation could rarely connect to Grandad's experience; his horror at the wastefulness of war stays with me. Even a small boy's limited sensitivity glimpsed deeper emotions as we stood at Tangmere by a heap of tangled wreckage labelled as having once been a Hawker aircraft. "My God, Mitt," he said, pointing out a complex undercarriage root fitting. "I must have seen ten thousand of those." "Boy !" he'd question me. "How many thousands of man-hours go into making an aircraft, and how long did they last ? Ninety minutes was all most of them flew." I haven't checked his figures, but at the Heritage Centre in Warton a year or two back I saw production logs for a northern factory for a period late in the war. Astonishing outputs. Only once did I ever see anything like a spark in his eyes about that time, "Once we got on to Typhoon and the Tempest, with the big cannon – well, they were something. They were called the tank busters." "We won, though, didn't we Grandpa ?" "We did, but we never did do what we set out to do." "Why... what was that ?" "To free Poland."

His experience gave me some emotional connection as one of the last cohort ("The Blundergrads", 1990) through Richmond Road's training programme and Kingston Polytechnic/University Aero Engineering's rebrand and move. My study assignments were delivered to the top of Canbury Park's magnificent wooden staircase, up which, family legend was, that Grandad had one day puffed his way to sort out some problem or iniquity that was hindering productivity. Class/education/accent notwithstanding, he was the sort of man who would quietly have got his point across - to Sir Sydney or to Beaverbrook himself had that been required - and apparently the shop floor felt, whatever they called him, that he was the man to deliver the message. I wish I knew what the substance of the matter had been.

His pleasure at my career direction was filtered through a wickedly dry sense of humour, "Nothing to it now with these modern aircraft, jets are so powerful that they just squirt themselves along"; a knowing irony, considering the subtleties of Harrier V/TOL flight of which he was quite well aware. "Nothing's changed, then, it's still done exactly the same way" was his wistful comment at a centre fuselage seen in-jig at a Dunsfold family day of the mid '90s

Time spent with the Kingston Aviation Centenary Project archives has given me new perspectives. It turns out that Canbury Park's lavatories were distant, ghastly and that shop-floor timekeeping strongly discouraged visits: and that at one period, an extraordinary mix of people had been ordered into the factory by Beaverbrook to increase production. The real gem, however has been to learn what hid behind that modest phrase "lathe setter." Grandpa's mechanical ingenuity, evident to anyone who knew him, had been occupied bridging the eternal gap between design and manufacture. His task was to take design drawings and come up with the tools, fixtures and process sheets to enable an unskilled operator to produce parts in volume. How many headaches had that undercarriage fitting given him ? Apparently also, Grandpa would then "own" that design, the tools and fixtures, in some sort of piece-work competition with colleagues. The past really is a foreign country ! My thanks to the Centenary Project for the new and brighter perspectives on stories from a tough time.

**First line of L.P. Hartley's 1953 "The Go-Between" – "The past is a foreign country; they do things differently there."*

A HATFIELD APPRENTICESHIP

Member John Chitty looks back the '60s...

I started my career in aviation as a De Havilland Aircraft Company Ltd apprentice in May 1960 at Hatfield , looking back it was the best schooling I could have had but those were not quite my thoughts at the time. On the 22 July 1963 I was informed that I was now employed by a firm called Hawker Siddeley Aviation! Can't win them all.

Reviewing my indentures I see that my pay was : Year 1 £3.5.10 per week ; Year 2 £3.18.11 per week; Year 3 £5.9.02 per week; Year 4 £6.9.0 per week ; Year 5 £7.12.10 per week. And upon reaching my 21st birthday I would receive £9.0.1 per week as a skilled man. This apprentice pay could, in theory, be increased by earning bonus on the "piecework" scheme but nearly all the lucrative jobs were kept for the skilled men.

I shall just cover the first 18 months of my apprenticeship which was spent at the De Havilland Apprentice Training School, Astwick Manor. This was located on the far side of Hatfield airfield and consisted of an old Manor House that accommodated some of the apprentices and the canteen, and a hangar which contained the workshops and technical drawing training office.

The time was divided into three months each of basic fitting, basic machining, sheet metal work, advanced fitting and advanced machining, plus six weeks of woodwork and six weeks of technical drawing. There were eight or ten apprentices on each section with an Instructor. Typical content for basic fitting was making squares in squares, stars in stars, making a couple of spanners and scraping a steel plate flat. Basic machining was learning to operate a centre lathe, vertical and horizontal milling machines, surface grinders and power saws. Sheet metalwork involved making a propeller's spinner, a tundish (funnel) and a Castrol style oil can. Woodwork involved making an oak toolbox with dovetail joints, including the two internal drawers, all with a French Polish finish. If the dovetails were not up to standard they were sawn off by the instructor - this could be done twice (in the factory when a fresh apprentice arrived his woodworking skills were measured) The drawing office brought you up to Higher National Certificate standard in the six weeks or you did it again; after that it was goodbye!

Here are some Training School memories. The caretaker had to go into hospital during winter and volunteers were asked to keep the boiler running, nobody was interested other than myself and my mate Mick. After a couple of days the others realised they had missed the opportunity to sit in the boiler room with a brew of tea and some toast. I worked on the Puffin Manpowered aircraft. An instructor, working on a "homer", removed the guard from a guillotine to facilitate the metal strip he was about to cut and yes you've guessed it, cut the top of his thumb off. We all lined up to see it in the scrap box!

SOPWITH IN OCTOBER 1918

Below is an extract from David Hassard's 'The Kingston Aviation Story' published weekly at www.kingstonaviation.org. The statistics are astonishing.

There were no new orders in **October** for 'Camels' or 'Dolphins' leaving their total orders at 6,642 and 2,154. There have been additional orders for 300 'Dragons' on Sopwith and 880 'Snipes' on five contractors and now on **1st November** orders are placed on ten contractors for another 950 'Snipes', 600 'Salamanders' and 500 'Dragons'. This underlines the commitment to these Sopwith types as the RAF's future air-cooled engined fighters along with the Dragonfly-engined Nieuport Nighthawk which has now been selected for production in preference to the Sopwith 'Snark' and 'Snapper' prototypes which are still awaiting engines. The 'Snipe' family's 6,722 order total on Sopwith and 20 contractors now just exceeds the total 'Camel' orders and comprises 4,486 'Snipes', 1,406 'Salamanders' and 830 'Dragons'. Those contractors include established aircraft companies: Air Navigation, Boulton & Paul, British Caudron, Graham White & Nieuport plus National Aircraft Factories at Croydon and Liverpool, established 'Camel' suppliers March Jones & Cribb, Portholme and Ruston Proctor as well as new Sopwith contractors Barclay Curle, Coventry Ordnance Works, Garrett, Glendower, Gloucestershire Aircraft, Harris, Kingsbury Aviation, Napier, Palladium Autocars, Ransome, and Wolseley Motors.

In just over two years since August 1916 the number of companies building aircraft in Britain has swollen from 48 to 122 and the number of employees from 22,000 to 112,000 including dilutees of which 34,000 are women and 8,000 boys. There are also now a surprising 323 companies making aircraft engines, 46 making propellers, 321 making other "aero-parts" and 707 supplying materials. In total these 1,529 companies are employing 347,000 people.

Compared with the first report of "RAF Aircraft on Charge" dated 31st May 1918, the **30th October** report lists an extra 819 'F1 Camels' now 2,548 despite the attrition and 129 '2F1 Ships Camels'. There are 363 more 'Dolphins' now 1,055 plus 264 'Snipes', 37 'Salamanders' and 69 'Cuckoos'. 128 'Strutters' are listed including 57 'Ships Strutters' mostly built from imported French built machines, 'Pups' are down 56 at 881, 'Baby' floatplanes are down 64 to 76 whilst the last 11 Triplanes have been deleted. By engine type the 2,548 'F1 Camels' are 15% Bentley BR1, 53% Clerget plus 32% Le Rhône or Gnome Monosoupape, twice the May 1918 proportion of these. All 129 '2F1 Ships Camels' are Bentley BR1 powered. The total of 5,188 Sopwith machines is 23% of the RAF's 22,171 aircraft on charge and easily outnumbers any other commercial design team, the next largest being Airco with 3,967 De Havilland types.

Sopwith aircraft account for 30% of the 3,522 aircraft on the front line with the British Expeditionary Force (BEF) in France and 69% of their single-seat fighters, the rest being SE5s. Sopwith aircraft account for 25% of the 1,281 aircraft with the Royal Navy including all 265 of their wheeled "Ships Aeroplanes".

The distribution of Sopwith machines is still wide ranging: BEF Western Front & Independent Bomber Force (1,110), Grand Fleet & Northern Patrols (305), Home Defence (216), other UK Squadrons (744), UK Training Units (287), Italy (76), Mediterranean (154), Egypt (58), Salonica & Mesopotamia (22) plus 100 at Technical Development Establishments, 39 at "Sundry Units", 413 at Aircraft Acceptance Parks, 221 waiting shipment/in transit and 181 in repair depots. Another 1,406 are in store comprising 34 'Strutters', 348 'Pups', 371 'Camels', 1 'Salamander' and 652 'Dolphins'. Whilst the 'Camels' in store are less than one month's output, the large number of 'Dolphins' reflects the success in ramping up aircraft production but less success with the production of suitable engines and training enough new personnel to support the planned rapid increase in RAF squadrons.

BOOK REVIEWS

Hawker Hunter, Key Publishing

The latest in Key Publishing's 'Combat Machines' series is 'Hawker Hunter' by the ever reliable Tony Buttler. This 84 page soft cover book gives succinct summaries of Hunter design and development, British operators, technical details of the single- and two-seat variants, trials and experimental aircraft, export sales, aerobatic teams and combat use including the Indonesian experiences of 20 Squadron pilot, Roy Gamblin. The final section is principally for modellers and lists many available kits, conversion packs and decal sheets. The book is profusely illustrated with period black-and-white photographs as well as later colour pictures, many of which are published for the first time. There are 35 colour side elevations, and a 'walk-round' photo section. Of historical interest are tables of RAF and RN Hunter units, a complete UK new-build production list and a list of refurbished export aircraft. The book is completed by a page of single-seater data and a centre spread of Mike Badrocke's FG9A cutaway drawing. This book is widely available and is excellent value at just £7.99 - don't miss it.

The Aviation Historian, Issue 26

Another bumper Issue from Member Nick Stroud. There are no specifically 'Hawker' articles but plenty of interest, nevertheless. Pieces that caught your editor's eye include the story of colourful Wg Commander James Adams who was posted to California in 1938 to evaluate the suitability of US aircraft for the RAF, Tony Buttler's (again!) account of some of the more obscure Ouragon and Mystere based Dassault experimental prototypes, and more on the US Navy's Seaplane Striking Force concept of the early 1950s and the projects and aircraft devised by Convair and Martin to meet the requirement. Transport aircraft enthusiasts will enjoy the story of the industrial and political battle between Avro's 748 and the Handley Page Herald.

MEMBERSHIP NEWS

Sadly we record the deaths of Dave Edwards, Bill Phillips and Reg Carden. We send our condolences to their families and friends.

We welcome new Member Peter Sinclair proposed by Ambrose Barber.

MEMBERSHIP LIST - February 2019

Subscriptions for 2019 - 2020 (£7) are due. Please use the enclosed form.

Several Members have not yet paid their 2018 - 2019 subscriptions (£5). Their names are 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.

A: Allan Abbott, Ken Alexander, Peter Alexander, John Allen, Leslie Allen, Peter Amos, Terry Anstey, Steve Apted, John Arthur, Alan Auld. **B:** Brenda Bainbridge, Lyn Baker, Colin Balchin, Ambrose Barber, **Derek Barden**, Peter Barker, Graham Bass, Donald Bateman, Richard Bateman, Ken Batstone, Dennis Baxter, Colin Bedford, Peter Bedford, Anne Beer, Brian Bickers, John Blackmore, Andy Bloomfield, Melvyn Bluck, Keith Bolland, Paul Boon, Betty Bore, Pat Bott, Steve Bott, Bob Bounden, Mike Bowery, Alan Boyd, Roy Braybrook, Bill Brice, Dominic Brice, Laurie Bridges, Arthur Brocklehurst, Peter Brown, Christopher Budgen, Reg Burrell, Robin Burton, Clive Bushrod, Tony Buttler, Dave Byford. **C:** Richard Cannon, Chris Carter, Tom Casey, Bob Catterson, Colin Chandler, Keith Chard, 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, 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