



NEWSLETTER 57 - Summer 2020

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EDITORIAL

“I wish you a happy and healthy 2020” I said in the last Newsletter, never expecting that there would be a serious health threat to all of us, especially to older Members. Anyway, the committee has not heard of any Members being infected with Coronavirus, and as the national rate of infection is now diminishing we can hope that we will all be able to avoid what can be a very serious or fatal illness.

Government rules have prevented the holding of meetings and we don't expect there will be any this year but the committee will keep an eye the situation and will let you know when firm plans have been made.

If you are one of the 100 or so members who haven't yet returned the Association subscription **renewal form for 2020 - 2021** sent with the Spring Newsletter **PLEASE** write your £7 cheque and post it to Barry Pegram, 12 Becket Wood, Newdigate, Surrey, RH5 5AQ . There are still 11 subscriptions unpaid for 2019 - 2020; your names are in bold on the back page.

Enjoy this Newsletter which includes an important piece on the post-Dusfold history of G-HAWK, the story of the Richmond Road factory closure and some amusing memories of Dunsfold in the 1960s. Contributions, please, to the editor, Chris Farara at cjfarara@ntlworld.com or to 24 Guildown Road, Guildford, Surrey, GU2 4EN, please.

PROGRAMME FOR 2020

Due to the Coronavirus pandemic all events have been postponed until further notice.

CHAIRMAN'S REPORT

This time last year Brexit had become very toxic and we longed for something different to talk about. A year on and some may wish that Brexit was still the subject dominating all forms of media and so constantly in our thoughts. A classic beware-of-what-you-wish-for situation

2020 was planned to be another interesting year for the Hawker Association; a range of talks, a couple of away-days and implementation of a few initiatives that would have brought the members together more. However, with apologies to Ian Fleming, instead of shaken not stirred we have it all on ice. As the nation begins to slowly move towards a semblance of normality, this Summer issue of the newsletter illustrates that the Hawker Association may be down at present - but it is not out.

Many of our members are usually very active within the wider aviation heritage environment, in particular at the Brooklands Museum and the Boscombe Down Aviation Collection at Old Sarum. Some activity has flown on but the majority has stalled. Brooklands has benefited from our support in many ways; from routine involvement at the museum as volunteers and trust members to fund raising and project assistance. The closure in March has not only made a gap in our lives but has also left the museum in a dire financial situation having been without gate and hospitality income for so long. Brooklands is the most comprehensive 'Hawker' museum in the world so our Association needs to do everything possible to help when it re-opens, perhaps at the beginning of August.

In 2019 our members were very active getting G-HAWK and XX154 (the first Hawk to fly) into their new museum homes at Brooklands and Old Sarum. It did not stop there as much work was needed on both. For example they now have their engines fitted, the cockpits are almost complete and XX154, which is in superb condition, can be viewed with electrical power on. Most of the members of the Association worked on the Hunter, Harrier, Sea Harrier and Hawk and if they visit both museums they can all be seen, as a Sea Harrier is also at Old Sarum with a Seahawk.

The Hunter for Kingston, XL623, has been delayed but the restoration team has not had to completely stop work as some components were moved to private locations. Work, observing national restrictions, restarted on the wings and ailerons at Dunsfold in mid-May. Before lockdown plans were progressing nicely in the Borough of Kingston for the 'Tudor Drive Pocket Park', at the junction of Richmond Road, Dukes Avenue and Tudor Drive, across the road from where the 'Hawker' factory stood. This will be the new home for the Hunter and is being developed to mark the centenary of Kingston's aviation industry. The Hawker Association has joined forces with the Kingston Council and Kingston University in this enterprise. The area surrounding the Hunter will be landscaped to “increase bio-diversity and enhance the quality of the public realm across Kingston, including the re-introduction of butterflies and pollinator friendly planting schemes”.

As 2020 progresses and as we gain relief from the restrictions, normal service will be resumed; it is just a matter of time. Hang in there!

Chris Roberts, June 2020.

SCENIC HIGHLIGHTS IN THE USA & AMERICAN AIR MUSEUMS

On February 12th 2020 Bob Catterson entertained members with recollections of his travels while working in the USA at Boeing, leading wing hydraulics design at Renton and Everett on the B.757 and 737-300, and during subsequent annual visits. Bob started at HSA Kingston as a graduate trainee in 1974, working in Mechanical Systems from 1976 until moving to Boeing in 1980. He rejoined HSA in 1983 becoming Harrier II (UK) Engineering Manager and Design Authority for mechanical and electrical systems. He moved to BAe Filton in 2000 leading studies for future naval projects, retiring in 2011 as Chief Systems Engineer and Project Director in Strategic Capability Solutions. He is a Fellow of the Royal Aeronautical Society.

Bob showed excellent photographs of the many National and State Parks that he had visited, and gave some interesting facts about each one. As the talk was essentially visual this report is really a list of where Bob went in his extensive travels. To see what these amazing places look like just Google them and then go to visit them yourselves when we can travel again. A few years ago your editor did a month long tour covering many of the National Parks (NP) mentioned by Bob. They are wonderful natural areas, all with expertly organised and perfectly maintained facilities, and friendly staff and wardens. You can buy a 'season ticket' which gives reduced prices for each NP you visit.

Yosemite NP, California, is famous for the stunning monochrome photographs by Ansell Adams and the 5,769 ft El Capitan vertical rock formation, a Mecca for climbers.

Zion NP, Utah has its spectacular Canyon overlook view.

Crater Lake NP, Oregon. This near circular lake was formed by an eruption 7700 years ago, is 1943 ft deep and 6 miles across at the widest point. The water level never changes because the snow melt is balanced by evaporation.

Bryce Canyon NP, Utah has strange Hoodoos, tower-like rock formations formed by frost and rain erosion.

Grand Canyon NP, Arizona. This world-famous canyon, formed by the Colorado River, is one mile deep and up to 18 miles wide.

Yellowstone NP, Wyoming, Idaho and Montana. In this vast park is the famous Old Faithful geyser, the colourful Chromatic Pool and Lower Falls.

Death Valley NP, California and Nevada. Badwater Basin is the hottest, lowest and driest place in North America with a maximum recorded temperature of 134 deg F (57 deg C). Other notable sites are Zabriskie Point and the Devils Golf Course.

Arches NP, Utah, has numerous amazing sandstone arches caused by erosion and resistance.

Canyon de Chelly NM (National Monument), Arizona, is on Navajo Nation tribal lands and features towering sandstone cliffs.

Horseshoe Bend NRA (National Recreation Area), Page, Arizona is a horseshoe shaped depression carved out by a meander of the Colorado River.

Dead Horse Point State Park, Utah, overlooks, from 2000 ft, canyon lands and the Colorado River.

Monument Valley Navajo Nation Tribal Park, Arizona, has many huge buttes, volcano cores left standing after erosion of the surrounding sandstone, often seen in 'western' movies.

Las Vegas, Nevada, not an NP but an amazing gambling city in the desert with hotels and casinos in spectacular architectural fakes of famous buildings and structures such as the Eiffel Tower.

Camden Harbor, Maine, a picturesque seaside village.

El Mirage Lake, California. A dry lake used for off-highway vehicle recreational activities such as straight line speed racing.

Route 66 runs from Chicago to Los Angeles through small towns. Once important but now by-passed by highways it is being revived as a tourist attraction.

Sequoia NP, California has giant redwood trees up to 3000 years old, the largest trees on earth.

Taos, New Mexico, is famous for its fine adobe buildings.

Cass Scenic Railway SP, West Virginia contains an eleven mile operating heritage railroad.

Mesa Verde NP, Colorado, has Pueblo villages of some 600 cliff dwellings abandoned after 700 years of occupation.

Columbia River Gorge National Scenic Area, Oregon, has a canyon eighty miles long and up to 4000 ft deep.

After this 'grand tour' of some of the most spectacular US scenery Bob moved on to his visits to many air museums (you can Google these, too.) He organised this into a quiz asking the audience to write down the names of aircraft in his photographs. The museums covered were: the Pima Air and Space Museum, Arizona; the Planes of Fame Museum, Chino, California; the Museum of Flight Restoration Center, Seattle; the Castle Air Museum, Atwater, California; the Hill Aerospace Museum, Roy, Utah; the Historic Flight Foundation, Washington; the Flight Heritage Collection, Seattle; the Palm Springs Air Museum, California; the Evergreen Air & Space Museum, Oregon; the Museum of Flight, Seattle; the Owls Head Transport Museum, Maine; the WAAAM (Western Antique Aeroplane & Automobile Museum), Oregon.

The quiz was very enjoyable and caused a certain amount of good natured arguing. Winners were given a nice chocolate bar treat by Bob (I certainly enjoyed mine - Ed)

THE FINAL CHAPTER

On March 11th Mike Frain talked to Members about the rapid development of the British Aerospace Richmond Road factory from 1986 until its demolition in 1992. Mike served an engineering apprenticeship with Lever Brothers Ltd (Unilever) covering all aspects of factory maintenance and achieved his engineering and managerial qualifications studying in Cheshire and Essex. He was appointed Company Planned Maintenance Engineer with Unilever (Holpack Ltd) based in Suffolk. This site was acquired by Metal Box Ltd and closed in 1972 so Mike applied successfully for the position of Deputy Works Engineer with Hawker Siddeley Aviation, Kingston and Dunsfold, and was appointed Works Engineer on the retirement of Alf Sheppard

Mike was asked in 1986 to take on the role of Industry Year Co-ordinator for the unit, reporting to the Chairman of British Aerospace, Sir Austin Pearce, who was heavily committed to the project. Some 500 schools were supplied with information packs and given visits to the Kingston and Dunsfold manufacturing and assembly facilities. This initiative was also supported by a number of local businesses and organisations including the British Institute of Management, Kingston Branch, of which Mike was appointed Chairman.

In 1986 another important challenge arose with the closure of the Weybridge site. The Impact on the Kingston-Dunsfold unit was enormous with the sudden need to create considerable new or extended facilities on both sites in addition to those already planned. The magnitude of the tasks being placed on Works Engineering was so great that two multi-page 'newspapers' were produced to illustrate the work being planned on both sites. These were distributed to all employees and surrounding residents to make them aware of, and gain their support for, the high level of work to be expected by day and night.

A £10 million budget (£30m in today's money) was authorised for the work which included a new business centre, a new 5000 meals-per-day restaurant and catering block, a new state-of-the-art metal treatments facility, major conversion of the front office block including an extension to the Design Office, reorganisation of the riverside office building and admin. building, and a new car park. Incredibly, with this major and expensive programme well under way the British Aerospace management changed its mind and announced that the Kingston site was to be closed and all work moved to other sites. The technical staff would be rehoused in a new BAe Aerospace Park at Farnborough, or at Dunsfold or move to Warton, and manufacturing would move to BAe sites in the north. Final assembly work and flight testing would continue at Dunsfold

A number of projects could not be stopped, either for commercial or contractual reasons, including the business centre. The building of the new restaurant and the metal treatments plant was underway and the front office block was completed

The disconnection, decommissioning and dismantling of the Kingston site and its complex facilities was a major challenge made even more so as many of the Works Engineering team knew it would culminate in loss of employment. A two day public auction sale of plant, manufacturing equipment, office furnishings and anything else saleable that had not been moved to other BAe sites, took place in July 1992. After closure certificates had been issued by all departments Mike signed the papers for site closure and hand-over to Arlington Business Park Services at 9.35 am on the 24th December 1992, thus enabling demolition to begin

The site was redeveloped by Trafalgar Developments with three builders involved: Bryant, Laing, Barratt and Affordable Housing; 360 homes were built.

The vote of thanks for this interesting talk neatly summarising the closure of the Kingston site was given by Colin Wilson, our President.

G-HAWK AT WARTON

Mick Mansell tells the post-Dunsfold story

Hawker Siddeley Hawk Mk50 G-HAWK (ZA101) arrived at the Brooklands Museum in Weybridge, Surrey on 23rd January 2019. This demonstrator aircraft has been donated by BAE Systems and was delivered by road from Samlesbury, Lancashire.

The Hawk was conceived and designed as the Hawker Siddeley HS.1182 at Kingston-on-Thames (Hawkers) in the late 1960s and early 1970s. Although G-HAWK was the eighth Hawk built, it was the fifth aircraft in the flight test programme and also the first (and only) Hawk Mk 50. Registered with the CAA as G-HAWK but also allocated the military serial number ZA101, it was first flown by chief test pilot Duncan Simpson from Dunsfold Aerodrome, Surrey, on 17th May 1976 and put to use as Hawker Siddeley's privately funded Hawk demonstrator and development aircraft. The equipment fitted in G-HAWK was either loaned free of charge or provided free of charge by the suppliers to support the Hawk sales effort.

It should be noted that Hawker Siddeley Aviation, Kingston was the only UK company to have built and operated three private military jet aircraft demonstrators, one for each major type: Harrier, Hawk and Hunter. G-HAWK's role was similar to that of its Dunsfold stable mate, the two-seat Harrier Mk52 G-VTOL/ZA250, already being used to promote Harrier export sales to potential customers. The third Hawker demonstrator was the two-seat Hunter G-APUX.

Besides appearing regularly at Farnborough and other major air shows, G-HAWK made extensive overseas sales tours including three to the USA (leading to the US Navy's significant order for the T-45 Goshawk), and several times to Europe, the Middle East, the Far East and Australia.

This aircraft played a key development role in the Hawk becoming the world's most successful military jet trainer with over 1,000 aircraft delivered to 18 countries and more than four million hours flown. At Dunsfold it was the main development aircraft used to clear a wide variety of weapons and external stores for export Hawks with the original TMk1/Mk50 series standard wing and the improved MK60 series standard, and at Warton, for those aircraft which had been upgraded with the wing tip mounted AIM-9L Sidewinder 7 station wing. It was also used in exploring the T-45's low speed handling and spinning characteristics and by the R&D (research and development) department at Warton as both a ground test and flight test vehicle for development of survivability technologies

The activities that G-HAWK carried out at Warton commenced soon after its arrival. There it was always referred to as ZA101 after a decision was made to delete it from the civil register.

ZA101, flown by Graham Tomlinson, and ZH200 (the second single-seat development Hawk) flown by Phil Dye, arrived on 14th November 1988 at Warton directly from the Summer 1988 Far East Tour. During this tour to Australia the aircraft visited some exotic places including Brunei, Singapore, Malaysia, Thailand, Indonesia and the Philippines.

At Warton, the aircraft continued its flight development activities and went straight into a flight test programme for stability and control checks with 5 x BL755 and inboard tanks with and without AIM 9L Sidewinder configurations in support of Hawk 100/200 series contracts. All the heavy weight clearances for the Mk50 and Mk60 series aircraft had been done at Dunsfold but further flight tests were carried out to resolve issues raised by some customers including requirements for higher store release speeds and different dive angles. Hence some of the clearances were revisited and expanded.

The aircraft then went into the first of a series of spinning and stalling trials in for various export aircraft customers, which continued the initial spinning and stalling trials in the long nose Mk 100 shape at Dunsfold.

These trials were interspersed with further wing development work for the T-45 programme. Initial flights assessed the effects on approach speeds of various combinations of wing fence and vortex generator arrays eventually reaching the CL max of around 2.0 previously achieved at Dunsfold, but handling characteristics were marginal. Whilst achieving very low stall speeds, these marginal post stall characteristics led to the introduction of the T-45 slats anyway following US Navy trials at the Naval Air Test Centre, Patuxent River, Maryland.

Typically, during the trials, there would be a change of wing dressing followed by stall testing and then, for the more successful dressings, some spinning. As part of these investigations, a US test pilot from McDonnell Douglas, BAe's partner in the T-45 programme, flew the aircraft to compare standard Hawk characteristics to those of the T-45 which back in the US was exhibiting adverse yaw in the approach configuration. He was amazed at the difference and really loved flying the Hawk. He went home convinced that whatever was going wrong was not intrinsic to the Hawk but was a feature of the T-45 itself.

During this period of testing the opportunity was taken to revert the aircraft to its demonstrator role in support of export Hawk marketing activities when it performed a block of 24 flights for the Swiss Air Force 75th Anniversary at Payerne and the Baghdad Arms Exhibition. In this period the aircraft was also used for flight assessment by the Brazilian and Korean Air Forces.

Following these trials and demonstrations, in July 89 the aircraft was laid up to fit the seven-station wing with wing tip AIM-9L Sidewinders and a new fin with a revised RWR (radar warning receiver) housing. The shake-down flight in this new configuration took place on 27th April 1990.

The aircraft then embarked on a series of extensive flight test clearance programmes, air shows and flight demonstrations in support of a lucrative and expanding export market for the latest series of Hawk variants, primarily the 100 series. It completed all of the handling trials for all of the configurations and weapons specified by the customers and all of the flutter clearance work. Handling trials included stalling and spinning with symmetric and asymmetric wing tip Sidewinder and Sidewinder firings at up to 6g and 40,000 feet altitude. No problems were experienced during any of these firing trials which confirmed that the revisions to the wing tips for the missiles had not adversely affected the hung weapon capability. At the end of the handling trials the aircraft successfully carried out a take off from Warton with 5x1000 lb bombs and two tip mounted Sidewinders. Again, no problems were encountered.

During this flight test period up to 8th April 1991, the trials had been conducted with the Adour Mk 861A engine. Then in support of the Mk103 and Mk203 aircraft for Oman, the Adour Mk871 engine was installed and the clearance trials for flutter, handling and spinning were carried out with handling and release clearances for CRV7 rocket pods and SAMP 400 kg bombs.

Interspersed with clearance trials were more air shows and overseas trips. In September 1990 the aircraft flew a block of 40 flights at the Farnborough air shows with displays and demonstrations for representatives from Indonesia, Venezuela, Chile, Malaysia and UK VIP's.

In February/March 1992 the aircraft, flown by Paul Hopkins, embarked on a Far East tour covering three major events. It was ferried to Singapore for the ASEAN/Singapore air show and a Singaporean evaluation. Paul Hopkins carried out the demonstrations and Phil Dye flew the Singaporean Senior Air Force Officers. The aircraft was then ferried to the Malaysian air force base at Simpang, Kuala Lumpur to give the Malaysian Chief of the Air Staff a flight in advance of their purchase of the Mk 108. The next major stop was Delhi for the Indian Air Force and Navy evaluation. This included a demonstration of the Adour 871 engine performance achieved on ZA101 by Rolls-Royce adjusting the 861 engine installed in the aircraft. Shortly after the return home the Hawk was selected by the Indian Air Force.

From the time the aircraft was fitted with the new wing in April 1990 to the time it had completed the flight development programmes and overseas tours in support of the 60 and 100 series Hawks in January 1995, it had flown some 400 hours, most of this flying being completed by Paul Hopkins and Phil Dye.

Having successfully fulfilled its flight development roles for Hawk exports, in mid 1995, ZA101 became surplus to requirements and was transferred to the Advanced Technology Department at Warton and operated out of 31 Hangar on the south side of the airfield. Here it was used by the R&D group as both a ground test and flight test trials aircraft on research activities in survivability and camouflage technologies. These were classified programmes which were jointly funded by the UK MoD and by BAE. Between June 1995 and September 1995, the aircraft initially underwent ground based radar signature measurements on the Warton stealth test range followed by modifications to the aircraft to install the electronics equipment and associated instrumentation for the infra-red (IR) flight trials. The first shake down flight was on 18th September 1998 in preparation for the trials.

There were two major programmes in work at this time. The first was an infra-red camouflage system which sensed the background IR radiation behind the aircraft and operated IR radiators mounted around the fuselage and wing to hide the aircraft's IR signature. Some 12 or so flights were achieved in the September 1998 to June 1999 time period, most of which were in the winter with clear skies to give favourable conditions for the measurements. ZA101 flew behind the BAE Systems owned Jetstream which conducted the in-flight IR measurements. The ground based trials were carried out on ZA01 to assess the effectiveness of various radar absorbent materials for radar signature reduction. The results of these two R&D programmes were made available for application to the Advanced Studies Department new aircraft programmes.

The modifications to ZA101 were removed at the end of the trial and the aircraft returned to flight test in July 1999, the aircraft finally retiring from flying duties on completion of its last recorded flight on 9th February 2001. The final flight of ZA101 from Warton was made by Archie Neill on 3rd February 2005

From here the aircraft was transferred to the Apprentice Training School at Warton and then to the new BAE Systems Academy for Skills and Knowledge which opened at Samlesbury in late 2016.

It became surplus to requirements again in October 2018 and was offered to the Brooklands Museum having been replaced in the Academy by a standard Indonesian Mk53. ZA101, with a surplus Mk53 wing, arrived at the Brooklands Museum in Weybridge on 23rd January 2020.

During its flying career G-HAWK/ZA101 accrued a total of 2407 flights and 2217 flying hours. Of these, 1903 flights and 1752 flight hours were when the aircraft was based at Dunsfold and 504 flights and 465 hours when it was based at Warton. When at Warton it was flown by 19 different test pilots, by an even greater number when at Dunsfold and by an unknown number of customer pilots from many countries all over the world. This important aircraft was also flown by a NASA astronaut, Pete Conrad, Commander Apollo 12, who was one of the twelve that walked on the moon.

G-HAWK/ZA101's work helped to make the Hawker Siddeley Kingston/British Aerospace Hawk currently the most widely used and successful military jet trainer in the world.

This article was written by Mick Mansell in collaboration with Dave Ward, Phil Dye, Chris Farara and Chris Roberts. Without their help I could not have completed it. Many thanks for all your expert inputs. MM, 4th April 2020.

HARRIER PCB TEST RIG

A unique Harrier test rig, saved from scrapping by The Helicopter Museum at Weston-super-Mare eight years ago, is going on-loan to the Hucknall Flight Test Museum (HUFTM) under the jurisdiction of the Rolls-Royce Heritage Trust. The rig was built in the early 1980s to test a Rolls-Royce (R-R) Pegasus turbofan engine modified with plenum chamber burning (PCB) to represent the BS 100 engine for the supersonic Hawker P1154 project. The work, largely carried out at Dunsfold, required two Harrier airframes: the wing of T2 XW264 married to the fuselage of GR.1 XV798, with a steel cage centre section and attachments to enable the aircraft to be suspended at various angles in a gantry at the MoD Proof and Experimental Establishment at Shoeburyness, Essex. Its designation was APCB 2.

Testing in the gantry began in 1983 and continued through 1986 but the P1154 was cancelled by Labour's Dennis Healey and although PCB research continued for application to newer VSTOL projects, the rig was abandoned. In 1994 it was salvaged by volunteers and placed in storage with the Bristol Aero Collection but the closure of their Kemble base in 2012 saw the rig threatened with scrapping. However, the Helicopter Museum stepped in and it was transported to Weston-super-Mare for continued storage, pending plans to build a new hangar and construct a gantry to properly display the unique exhibit

Unfortunately funding had to be suspended due to other priorities but last year saw volunteers at the HUFTM offer to take on the restoration project and, importantly, place the 'aircraft' under cover. An agreement was subsequently reached to transfer the rig, initially on a three-year loan, and it was transported on 30th January 2020 to its new home at the R-R Hucknall site in Nottinghamshire,

AIRCRAFT NEWS

Hurricane Mk IIB, BE505, previously owned by Peter Teichman, has been converted to a two-seater by Hawker Restorations. A second cockpit has been built behind the original with a sliding hood of similar appearance. This is a new design not related to the Hawker original. The aircraft will be operated from the Biggin Hill Heritage Hangar with passengers - so now you can fly in a Hurricane!

Hawk TMk1 XX342, now at St Athan and formerly of the Empire Test Pilots School, has been registered by L-39 Aviation Ltd, Blackburn, as G-HAWC.

Restoration of **Tempest II MW376** in Kelowna, British Columbia, has reached an advanced stage with the undercarriage installed. In Polk City, Florida **Tempest V, EJ693**, and **Tempest II, LA607** are progressing as long term restoration projects for Kermit Weeks.

There are many Hawker types advertised for sale. Art Nalls's **Sea Harrier FA2** (XZ439) and **Harrier T8** (ZD993), and a non-airworthy **GR3** spares source which is painted as an AV-8A, are all for sale in the USA. In France **Sea Fury FB11** (F-AZXJ RAN WH589) and **Iraqi ISS Fury** (F-AZXL), both with Pratt & Whitney R3350 engines, are for sale as is ex Alpine fighter Collection (NZ) **Hurricane IIB** (F-AZXR). Jet Art Aviation have the **VAAC Harrier T2** (XW175) and the ETPS **ASTRA** (Advanced Stability Training & Research Aircraft) **Hawk** (XX341) for sale as museum pieces. **Hunter FGA11** (XF301) is for sale in the USA (non-airworthy). **Hurricane Mk XII** ('V6748' VH-JFW) is for sale in Australia and a share in **Hurricane MkI** (V7479 G-HRLI) is for sale in the UK. **Gnat TMk1** (XR984 N316RF) is for sale in the USA as is **Sea Fury T20** (N59SF) as a restoration project.

HAWKS WITH AIR USA

Air USA, based in Quincy, Illinois, provides military training services to government defence agencies and defence contractors, including aircraft, pilots, ordnance and support equipment as well as electronic threat simulation, air combat adversary and ground attack training. The large, high performance aircraft fleet of 67 foreign-built aircraft includes twelve ex-Korean Air Force Mk 76 Hawks of which ten are currently operational. The company also operates Alpha Jets, L-59 Super Albatrosses and Mig 29s, and is negotiating the purchase of up to 46 Royal Australian Air Force F/A-18A/B Hornets.

SUPER HORNET SKI-JUMP TRIALS

Boeing plans to carry out ski-jump takeoff tests at NAS Patuxent River with the F/A-18 E/F Super Hornet during the first quarter of 2020 to demonstrate that this catapult-launched aircraft could operate from the Indian Navy's carrier, the ski-jump equipped INS Vikramaditya. INS Vikrant, the second carrier of that name, not yet in service, also has a ski-jump. Boeing are competing against the Dassault Rafale for a 57 aircraft order. The F-18 demonstrated successful experimental ski-jump take-offs many years ago at Pax River.

DUNSFOLD AERODROME IN THE MID SIXTIES - AN EVERYDAY STORY OF COUNTRYFOLK

Fireman Roy Evans remembers events on Dunsfold Aerodrome....

Life on the Fire Section could be boring at times, especially at weekends, but we never knew when, where or from what quarter a crisis might suddenly occur. One Sunday afternoon Geoff was on duty with three firemen of his shift. This was the quiet day of the week; during the morning they had checked the external extinguishers on the airfield and the hydrant system, and one man had also carried out fire/security patrols through the factory every few hours. All was peaceful, the only sound the singing of a nightingale in nearby woodland. Suddenly a visitor arrived with a companion, out for a stroll. 'Old man Thomas', a rumbustious Welsh character, lived on a smallholding half a mile from the Fire Station in a corner of the airfield; he was the boss of the Agricultural Department. Thomas was an occasional visitor but his companion caused some consternation. Thomas had brought his bull along on a short leash attached to a ring in his nose. This was indeed something different.

Thomas explained that he intended to enter the bull in the Surrey Agricultural Show in the summer and he'd brought him along for exercise and to familiarise him with different surroundings and especially "to get him used to people." The crew approached the animal warily and he appeared to be docile but they'd heard tales of how bulls could easily be spooked. Cherry, who had been inside the station reading a magazine whilst manning the phones, ambled out to see what was going on. He walked up the animal and patted him on the head between the eyes. Unfortunately Cherry was still holding the magazine and the bull took violent exception, jerked his head up to ward off the offending object and snorted violently. The sudden movement almost pulled Thomas over so he immediately released the leash and the firemen scattered star-burst fashion. The bull, which was heavier than their combined weights, his rolling eyes wide showing the whites, lunged sideways then, uttering a low moan rising to a bellow, selected a target and suddenly charged. There was a resounding crash, the animal shuddered as did his victim which remained strangely unaffected. The bull began to inspect more closely and sniff his prey but the seven foot concrete fence post remained sturdy with only some chips revealing the steel reinforcing rods!

Cherry, still clutching his copy of 'Country Life' said, "He's a bit frisky, isn't he?" The firemen immediately burst into hysterical laughter as Thomas quickly gathered up his now subdued charge and started for home. "People", he shouted, "You're nothing but a bunch of effing imbeciles!" The firemen thought that was a bit rich; what fool takes a bull for a walk amongst the general public without taking extra precautions? The pair slowly wended their way home, the animal no doubt looking forward to the tranquillity of his field, the birds, bees and buttercups, Thomas looking forward to a double Scotch to soothe his nerves. The incident proved that the security fence, erected in 1960 round the Experimental Hangar which contained the secret P.1127s, was least bull-proof!

In the early 60s the Station was visited quite regularly by a member of the Security Police, a rather loud,

enthusiastic, over-the-top character who, it seemed, came to spread gossip, or was it to be nosey; or was there another reason? His visits, of sometimes over an hour, became quite annoying and we found him a bit overbearing so we resorted to a series of practical jokes involving his patrol motorbike going walk-about. Each time he didn't realise it was gone until he was about to leave. However, George persisted and soon became quite adept at finding his bike and we were running out of ideas when somebody had a new one. This time he searched everywhere several times and was becoming very vocal when he realised that a group of fitters was watching his antics from the Experimental Hangar. They were laughing and pointing upwards; the bike was hanging thirty five feet above him from our hose drying mast!

The final crunch came one day when the fire crews were out on flying standby. George needed to converse with them so he joined the crash tender crew, climbing aboard as he had done many times before. He seemed to enjoy winding them up by parking his bike up against the vehicle. The driver had told him previously, "It's not safe", "Mind the paintwork." or "Leave it on the grass", but George would have none of it. Again the driver warned him but the cop just carried on with the banter. A Hunter joined the circuit to land so the vehicles' engines were started as usual. Half way down the runway the aircraft suffered a tyre failure and slewed onto the grass. Both vehicles instantly lurched forwards to join the Hunter and George jumped off quickly, surprised at the sudden activity. He turned round to find the mangled wreckage of his patrol bike splattered on the road. George didn't visit the Fire Station for several months after the incident.

When we received new vehicles we designed and fitted equipment stowage 'in house' at the Fire Station, for several reasons, time being the most important. When new equipment was received we couldn't afford to wait several weeks or months for the costing, approval and inter-departmental wrangling, nor could we release a vehicle for the Maintenance Department to work on due to the constraints of flying. If either the rescue or the crash tender was deemed 'off the run' then Air Traffic Control had to be informed and all flying stopped.

We had developed a pretty good workshop with a large bench equipped with two vices and a good set of tools had been acquired both officially and unofficially or brought in from home. We had developed a team of fabricators; Tom was ace at this and could look at the equipment and storage space and come up with a solution. Brooky having panel beating skills was also handy with a soldering iron and welding torch. I soon became a good scavenger, begging, borrowing and raiding the scrap compounds for timber and metal, parachute harnesses and quick release clips.

It was whilst we were fitting out the Range Rover 6x6 that George the cop paid us another visit and watched us fitting new shelving and brackets and the painting the equipment lockers. The following day we were visited by the Maintenance Dept shop steward who pointed out in strong terms that they had carpenters and painters on their staff! It seems that following his visit George had been yacking and he was told in no uncertain terms by our boss what trouble he had caused. In the future it would have to be a case of 'what the eye doesn't see' and keeping the doors closed when doing this work. We tried and managed in most cases to be at least 75% self sufficient. However, any mechanical problems with the vehicle engines resulted in a visit to the Transport Section; electrical problems also required specialist advice. (to be continued)

BOOK REVIEWS

Sydney Camm - Hurricane and Harrier Designer

John Sweetman's excellent book, published by Air World at £25, at last fills a major gap in the published histories of British aviation, in particular, Hawker Aircraft Ltd. There have been previous books on Camm but they were more about his designs than the man. This book concentrates on the man, his family life, how he worked with his staff at Kingston, how he collaborated with senior engineers at suppliers, such as Bristol Engines and Roll-Royce, and how he used his reputation to persuade officials in the UK government ministries and armed forces to support his projects.

All of Camm's life is covered from his birth in Windsor to his death at Richmond Golf Club; from the Windsor Model Aeroplane Club, through his apprenticeship and work with Martin and Handasyde Aviation, to the HG Hawker Engineering Co, Hawker Aircraft Ltd and Hawker Siddeley Aviation. The author has clearly carried out several years of meticulous research, as the eight page bibliography testifies. He has spoken to Camm's relatives and to people who worked for him, he has read letters and papers in private collections and archives and has referred to books, published and unpublished material and to newspapers, periodicals and journals - no stone has been left unturned.

This well produced, 320 page book is essential reading for HA Members or for anyone interested in aviation history and the men who made Britain a world leader in aircraft design and innovation. As John Sweetman shows, Camm's work was crucial to the survival of Britain, and therefore of western democracy, in the second world war.

The Aviation Historian Issue 31

The spectacular cover photograph, of a Swiss F-5 launching flares over the Alps, alone is worth the price (well, nearly). Inside Keith Hayward unravels the politics of the AFVG (Anglo-French Variable Geometry) strike aircraft project, and Peter Lewis tells us all about Switzerland's Tiger force (complete with a double fold-out of stunning photographs). Your editor was also intrigued by an ingenious but ultimately unsuccessful French rotary wing aircraft which suffered a structural failure during ground running, in 1920, and by an article on the Bristol Hercules in which the complexity of the design is explained in excellent colour computer generated illustrations.

Hawker's Secret Cold War Airfield - Dunsfold, Home of the Hunter & Harrier Chris Budgen's book will be published on July 30th. With this Newsletter is a flyer offering Members a **25% discount**.

MEMBERSHIP NEWS

Sadly we report the deaths of Brenda Bainbridge (who died some time ago), Frederick Hewitt and Mick Jeffries, and send our condolences to their families and friends. We welcome new Member Kim Hewitt.

MEMBERSHIP LIST - June 2020.

Subscriptions for 2019 - 2020 (£7) are still 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.

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