



THE HAWKER ASSOCIATION

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EDITORIAL

This Newsletter contains several excellent articles by Members telling of their time with Hawkers. Thanks to all those contributors - and let them be a good example. We all have memories which others would love to read; so just settle down and write about them. It doesn't have to be polished, just legible. It's the Editor's job to make the piece read right.

It's time to be thinking about our **Christmas Lunch**. Prices are not yet fixed but should be similar to last year. Just phone Ken Batstone on 01932 229938 for full details and to book. Alternatively see him at the next meeting.

Subscriptions for 2011-12 are still awaited from 36 of you; your names are in bold in the Membership list on the last page. Please send your £5 cheques to Barry Pegram, 12 Becket Wood, Newdigate, Surrey, RH5 5AQ.

For those of you who missed **Graham Tomlinson's** talk to the Association on test flying the JSF, he will be giving it again to the RAeS Weybridge Branch at the Brooklands Museum on 9th November at 6.30 pm. Visitors are welcome.

David Hassard has been researching the history of the Richmond Road factory and has discovered much unpublished material. He is giving a talk to the Friends of Kingston Museum in the Museum Art Gallery on 22nd November at 7.00 pm. - tea and coffee from 6.30 pm; admission is free but donations are welcomed.

I am embarrassed to say that a Member sent me an article entitled "March 1943: a Very Brief Resume". Unfortunately it is not signed and I have lost the covering letter. Dear author, please let me know again who you are!

In spite of the above please continue to send your Newsletter contributions to the Editor, Chris Farara, 24 Guildown Road, Guildford, Surrey, GU2 4EN. Tel 01483 825955, e-mail cjfarara@ntlworld.com

PROGRAMME FOR 2011

Thursday 22nd September

Wednesday 12th October

Wednesday 9th November

Wednesday 14th December

Visit to the **Airfix** Visitor Centre, Margate

Poacher Turned Gamekeeper - **Alan Millican**

Traumas of Ferry Flying - **Andy Jones**

Christmas Lunch

PROGRAMME FOR 2012

Wednesday 11th January

Wednesday 8th February

Wednesday 14th March

Quiz with **Les Palmer**

Aviation in the 21st Century - **Prof Ian Poll**

My Life After Aviation in Boat Building - **Tim Gedge**

Alan Millican was, of course, our last General Manager at Kingston, and **Andy Jones** was Chief Test Pilot at Dunsfold. **Ian Poll** is the Professor of Aerospace Engineering at Cranfield University and Technical and Business Director of Cranfield Aerospace. For **Christmas Lunch** bookings phone Ken Batstone on 01932 229938. Retired RN Commander **Tim Gedge** (CO of 801 and 809 Sea Harrier squadrons) is the Director of the Boat Building Academy of Lyme Regis.

Unless stated otherwise, meetings are at the Hawker Centre, Kingston - the old Sports & Social Club - and start at 2.00 pm. Lunch and drinks are available beforehand, tea afterwards, and there is a large, free car park.

KINGSTON AVIATION CENTENARY PROJECT

Recently there has been rapid progress: the Hawker Association has agreed to sponsor the project, an application for Heritage Lottery Fund support is being prepared, a professional Chartered Accountant has volunteered to manage the finances and the Surrey Comet has published a whole page report on the plans.

Joint Project Leaders David Hassard and Bill Downey are ready for some more help. If you could volunteer even a few half days in Kingston to help prepare project plans or start scanning and recording some of the employee information and photographs which are surfacing they would like to hear from you. Contacts details are: David Hassard 020 8546 2715, hassards@talktalk.net or Bill Downey 020 8949 5498, billdowney@sky.com

The naming of people in long-service photographs at the August Hawker Association meeting proved to be a popular activity. If you have long-service award programmes (or the newspaper reports listing names) and a photograph or two to match, please do bring them along to future meetings where they can be scanned for the project's "Hawker People" archive.

HARRIER NEWS

Harrier GR3, XV799, has been replaced as RAF Wittering's gate guardian by GR9, ZD469. XV799 is to be refurbished, possibly for exhibition at a planned heritage centre on the base.

HUNTER NEWS

The 60th anniversary of the first flight of the WB188 was marked at Kemble's Cotswold Air Show by a formation of eight Hunters: six Team Viper aircraft, a T8 from the Dutch Hawker Hunter Foundation and Jonathan Whaley's multicoloured Miss Demeanour.

The August edition of Aeroplane had a fascinating article about the Sultan of Oman's Air Force Hunter operations in the war for the control of southern Oman.

SEA FURY NEWS

A former Iraqi Air Force 'Baghdad Fury' has been imported from Australia to Belgium where it is being restored to flying condition by the Flying Aces Services and Training (FAST) organisation at Antwerp.

HAWKER BIPLANE NEWS

At Duxford's Flying Legends Air Show in July there were four, yes, four, gorgeous Hawker biplanes in the air together: Demon Display's Demon, The Fighter Collection's Nimrod I, the Historic Aircraft Collection's Nimrod II, and the Shuttleworth Collection's Hind. It was nearly five but the HAC's Fury I, although assembled at Duxford, was not yet ready to fly but it should be at the September Duxford show.

HAWKER HUNTER AVIATION

Mat Potulski, founder and managing director of Hawker Hunter Aviation (HHA), spoke to the Association on 11th May about his business. After university Mat followed a career of management consultancy and City banking following which he moved into the ownership, management and operation of former military aircraft, founding the HHA in 2000.

He runs this 'lean' company with just three other full-time staff: a chief engineer, a deputy chief engineer and an operations director, the latter being Simon Hargreaves (remembered by some of us as a Dunsfold and X35B test pilot). A consulting financial director completes the management team. All other staff are contracted and consist of twelve engineers and five pilots, all of whom are very experienced ex RAF or RN officers and NCOs.

The aircraft fleet consists of 17 fast jets: 12 Hunter Mk58 single seaters, two Mk8 and one Mk7 two seaters, a Buccaneer S2B and a Sukhoi SU22 M-4. Five Hunters are kept ready for use at all times but the Buccaneer and Sukhoi are kept non-flying but at short term readiness pending suitable contracts. The Hunters are based at RAF Scampton and RNAS Yeovilton. Being ex Swiss Air Force the Mk58 aircraft have been beautifully maintained with low utilisation so have remaining lives of some 20 years. HHA has access to enough spares to support 100 Hunters for 10 years!

Mat explained the business model of HHA. Governments are hard-up and need to balance defence costs with budgetary constraint, and, in the UK, following the defence review cuts, there is a severe shortage of aircraft for support tasks - no Harriers, no ADV Tornados, GR4 Tornados and Hawks severely reduced, with Hawk T1s to be retired in 2015. There are just not enough fast jets in NATO to meet the training support requirements. Outsourcing is one answer, successfully pioneered in the USA, and HHA can provide fast jets to augment current MoD training and support assets at a fraction of the cost of using Service resources. For example the HHA price for Hunters, which can meet most foreseeable training demands, is some £4,000 per flight hour compared with £10,000 for a Hawk and £70,000 for a Typhoon.

HHA provides aircraft, aircrew, maintenance, training and regulatory approvals for a variety of tasks which can be grouped under the acronym ASJTR; Aerial Support to Joint Training Readiness. HHA does not train aircrew to fly but undertakes many of the support functions previously performed by NATO air forces themselves including threat simulation (acting as an aerial enemy to support army, navy and air force training), R&D support to government and contractor military trials, systems calibration and evaluation for equipment such as new radars, and support services generally. In more detail HHA provides agile targets both air-air and ground-air, photo chase, test pilot training, radar profiling, airborne electronic warfare threats, simulations and jamming, as well as fighter controller, forward air controller and air traffic controller training. Uniquely, HHA aircraft operate on the military register which allows seamless integration with NATO units, and HHA is the only European fast jet contractor that is audited, regulated and approved by both the MoD and the CAA. Contractors and government organisations for whom HHA have provided services include Cobham, MBDA, Embraer, Britten Norman, the RN and the ETPS. HHA has no direct UK competitor.

Why choose the 50 year old Hunter? Well, its performance is more than adequate at 600 kn IAS and .95 IMN, 7g, and 45,000 ft, with a 1,200 nm range, and 1hr 15min on task at 150 nm. HHA's well maintained ex-Swiss Mk58s have low hours, low fatigue index and generous spares support, and are very reliable and easily fixed. Also they have 6 pylons and are equipped with radar altimeters permitting very low altitude operation, chaff and flare dispensers and radar warning receivers, all useful in the training roles. HHA has installed their HITS (Hunter integrated threats system) and DRFM (digital radio frequency memory) jammer, a travelling wave tube based I-band threat simulator and emulator with cockpit selectable frequency, PRI/PRF (pulse repetition interval/frequency) and scan pattern. The aircraft can also be equipped to carry RAIDS (rangeless airborne instrumentation debriefing system) RTMS pods (real time management system) which, on cockpit screens, displays the location of other aircraft so equipped. What is not to like about this?!

After a lengthy question and answer session, indicating the interest aroused by the talk, Chris Farara gave the vote of thanks to Mat for his detailed and thorough presentation which explained that HHA is successfully operating Kingston's classic in vital roles for the defence of the UK and her allies.

MINIATURE GAS TURBINES

James Hill, Chairman of the Gas Turbine Builders Association (GTBA), spoke to the Hawker association on 13th July. James's main career was international commodity trading in heavy fuels but now is commercial property management. However, he has a long standing interest in aviation and mechanical engineering and his enthusiasm for model helicopters led him to model gas turbines. Excelling in metal work and technical drawing at school he developed these skills in model engineering and gas turbine design.

Model gas turbine development was started in the UK by Gerry Jackman with a group of five engineers in the 1970s. A working self-sustaining engine was running in 1975 and giving useful thrust in 1982. The world's first gas turbine powered model aircraft, the twin boom "Barjay", flew from Abingdon, Oxfordshire, in 1983 on 9 lb of thrust from a 4 lb engine, 4 ins in diameter and 14 ins long, running on propane at 85,000 rpm. The GTBA was formed from the Gas Turbine Builders Contact Group in 1995 and within two years had 1000 members. Designs were improved due to the centralised information in the GTBA being available to all members. A modern gas turbine gives 14 lb of thrust from a 2 lb engine, still 4 ins in diameter but only 6 ins long, running on kerosene at 120,000 rpm. A number of members went on to start their own model gas turbine and component manufacturing businesses.

Thermodynamically a model gas turbine is the same as a full size engine but because air doesn't scale it's not possible simply to scale down the components. Also, the operating envelope and requirements are different. Compared to a full size engine the model runs at slow speeds at low altitude for short durations with high thrust being the aim and with fuel efficiency a low priority. Design choices are as for full scale (centrifugal or axial compressors with radial inflow or axial turbines) but usually models have had centrifugal compressors and axial turbines (like Whittle), but now radial inflow turbines are favoured for reasons of robustness. All-axial engines would have lower frontal areas but would be complex. However, hybrid (axial plus centrifugal) compressors are finding favour by giving increased compression ratios without too much complexity.

James gave some typical figures for a model engine. Compressor: inlet air speed 300 m/sec, diffuser air speed 70 m/sec, compression ratio 2.5:1, temp rise 150 deg C. Combustion: vaporising system at 2,000 deg C. Turbine: entry temp 730 deg C. Jet pipe: air speed 450 m/sec at 580 deg C. Air flow through engine 6 cu ft per second.

The high operating rpm make bearing integrity and rotor balance critical. Bearings were normal steel ball and race type but now hybrid bearings with ceramic balls and steel races are used at up to 160,000 rpm! Dynamic balance is achieved by balancing in stages (shaft, shaft plus compressor, shaft plus turbine, complete) using piezo quartz sensors, strobes and test weights in a computerised rig.

Model gas turbines, both turbojet and turbo shaft, are used to power fixed and rotary winged aircraft, boats, trains and road vehicles. Furthermore, development continues with a turbopan already running.

James had brought along examples of beautifully made exquisite examples of miniature engineering: components, rotors and complete engines, for Members to handle and examine and, even better, set up his engine running test stand outside. Fortunately the weather was good. The engine was instrumented with all the basic pressure, temperature and rpm parameters being displayed as traces on a lap-top screen. The engine was started by spinning it up to its 35,000 rpm idle speed with an electric motor where pre-heated propane was used to start ignition after which kerosene was fed in for continuous running during which EGT and RPM were carefully monitored. Those of us who had participated in aero engine ground runs were in familiar territory.

THE HUNTER MAIN WING SPAR ROOT

Ralph Hooper follows up Roy Braybrook's piece in NL.30, "Iconic Humour"...

Assuming that Roy's memory is not at fault then Bob Copland had got things back to front.

In Stan (Digger) Fairey's section circa 1948-50, during the original design of the P.1067 fuselage, work was progressing from the front towards the back. Initially you can only work with confidence on the front end. The centre and rear are dependent on aerodynamic loading on wings and tail surfaces and these are almost certainly still somewhat uncertain, whereas at the front you just bung 7 ½ g on everything and you'll be OK.

There were just eight people charged with the whole fuselage: Digger Fairey, Jack Simmonds, Teddy Compton, Jack Mills, Peter Jefferson, Bertie Tyrrell, Eric Pacey, and yours truly. Jack Mills was mainly doing engine installation, Bertie Tyrrell concentrated on flying control systems, and Eric Pacey was gradually working up a detailed large scale side view as various bits of equipment settled into position. That left five of us to do the structural work. Digger doled out the frames, longerons, stringers etc as he saw fit. Besides keeping an eye on the rest of us he occasionally contributed a drawing himself. You could always tell a Fairey drawing - it might have the occasional burnt hole in it, but it would certainly have semi-circular swaths where spilt pipe ash had been swept aside!

So, time passing, we worked our way back to the main wing spar frame and I felt flattered that this was allocated to me (up to then the most significant frame I had done was the nose undercarriage frame). Digger himself undertook the structure to attach the fuselage frame to the wing main spar, it being assumed that the wing breakdown joint would be at the wing end rib. Now, Digger had been a civil structural engineer working for the Gas Light and Coke Company before finding himself in the aircraft industry, and his solution now was entirely sound and simple. It consisted of two large triangular machined steel forgings, one upside-down relative to the other so that they were pinned together at their apex, with the other two corners of each attached respectively to the fuselage and the wing, thus clearing the intake duct which at this point protruded through the fuselage skinning. They became known as the 'butterfly' fittings but unlike that insect they were not light. Five large pins completed the structure. The butterfly fittings survived the attentions of the Stress Office and any inputs from Harold Tuffen and Frank Cross, or from the works Experimental Department.

Now Digger's section (at Canbury Park Road) was in the corner of the Experimental Drawing Office (EDO) opposite Mr Camm's office; and there was a door. So we saw a lot of the Chief Designer. He accepted the butterfly fittings at first but when the weights people came up with their estimate he became critical. Numerous meetings took place around Digger's board with Chaplin, Rochefort, Weetman et al being involved. This went on for a week or more. Meanwhile the butterfly drawings were issued and forgings ordered. I never saw Mr Camm (or the later Sir Sydney) solve a problem, but he knew what he did not like, and he would not give up. He continued to grumble. Eventually, to restore peace, and to my great astonishment, I was directed to seek a lighter alternative. Now, this could have been very embarrassing; I was being asked to 'show up' my section leader. But Digger was a superboss and he never showed any resentment. My respect for him increased accordingly.

Meanwhile the butterfly fittings were being manufactured and 'faute de mieux' they were built into the first two P.1067s, WB188 and WB195. (I believe 188 still survives - perhaps someone would like to check its wing attachments? Ed. WB188 is in the Tangmere museum so please report to the Newsletter if you go there).

So, I drew an outline of the main spar, including its extension through the intake fairing, with the outline of the intake duct and fuselage side. So that's the space available. Great, now fill it! Well, anyone who has seen a Hunter wing free of the fuselage will be familiar with the result; it is rather prominent. I did my own stressing and weight estimates and it sailed through various approvals unchanged. I can't now remember the percentage weight saving achieved; perhaps as much 25 or even 30%. It had reduced the number of lugs and pins from five to two and the shear-carrying material was now light alloy instead of steel. Its simplicity was slightly spoiled by Bill Allan ('Mister Fuel Systems') coming along and saying that he needed to carry a fuel pipe through the thick web, so I made an impractical suggestion as to where he should put his fuel pipe! However, it was apparently impossible to get a pipe from the front tanks to the engine in any other way so it had to be accepted. It meant that, even before the Hunter had wing tanks, you had to break down the fuel system in order to remove the wings.

Not quite the end of the story. The 'bent boom' forgings were supplied by Firth Vickers. At Kingston these were clamped onto machining fixtures and reduced to final form. Fine - except that on being released from the fixtures there was a 'sudden twang' and the booms assumed a graceful curvature! There was much coming and going between the two companies before new heat treatment and machining sequences solved the problem.

Finally - the flanges of the original design tapered smoothly onto the fuselage side lugs. When it came to productionising the Experimental drawings the Production Drawing Office (PDO) was approached by the Works who sought an easement of the machining process whereby a small step, with a radiused root, was introduced at the lug. This was accepted and the Hunters poured forth in this form. You've guessed? Eventually the Hunter fatigue test airframe went bang, with failure at the small step on the lower lug. (I believe Richard Cannon has preserved this lug!) So, all the World's Hunters had to be inspected, some cracks were found, some wings were scrapped, some were recovered by grinding out the step. It is pleasing to record that Peter Jefferson, then risen to Production Director, accepted that they had been responsible for the problem (even though it was approved by ever-helpful Design!)

So, there we are, we had achieved the weight reduction that the Chief Designer sought, although it may have been more expensive than the butterfly fittings. But then, who had heard of cost in 1949?

From Digger's section as I joined it, Jack Mills and I survive. So, hello Jack! - hope you are OK! Ralph.

PS Since writing the above I have looked out all the photos I can find of WB188 in the hope of confirming its wing root structure. No luck. It remains possible that at some stage in its career it may have been refitted with the later design of wing root.

BEHIND THE SCENES WITH DAVE FOWLER

Dave Fowler remembers what went on when P.1127 XP831 became the world's first jet V/STOL aircraft to operate from an aircraft carrier...

Many years ago now, in the winter of 1963, I was privileged to see the first deck landing of a V/STOL aircraft. One Sunday we travelled by train on the old Southern Railway route via Okehampton to the now-closed Plymouth Friary station, and went aboard the 'Ark Royal'. We sailed out of the harbour on Monday morning but the February weather was too bad for the trial to take place all that week. We sailed up and down the English Channel with Buccaneers and helicopters carrying out their exercises, and there was some excitement when we were called to the aid of a Norwegian ship whose deck cargo of wood had shifted. However, our help wasn't required because an Australian destroyer got there first.

On the Saturday morning we took on 4,500 tons of fuel oil from a tanker sailing alongside in the fog and then anchored in Weymouth Bay for the weekend. Some people went ashore by boat for an evening's entertainment but I was glad I'd stayed on board because they couldn't get back that evening and had to sleep in a church hall. When they did arrive back at Ark Royal on the Sunday morning a sailor failed to catch one of the ropes which then wound itself round the propeller, so the small boat was crashing against the ship in the rough seas. The officers weren't too pleased about civilians watching their difficulties but they eventually did get things under control again.

The weather had improved on the Monday morning and they decided to sail...but they couldn't get the anchor up and we sat there all day. Then the same thing happened again on the Tuesday. We did manage to sail on the Wednesday and the trial was arranged for Thursday morning. Everything went off successfully and they started to ferry the civilians back to the shore by helicopter but the ship was then ordered to sail to Gibraltar for catapult repairs, so by the time my turn came we were out of range. During the night, however, orders were changed again and I disembarked in Portsmouth Harbour on the Friday afternoon.

My mess bill for the thirteen days of the one day trial, horse's necks included, was just over twelve pounds!

MACHINED WING SKIN PIONEERING

Bryan Austin remembers the introduction of a new production technique at Richmond Road...

As a young machine tool setter in the machine shop in the early 1960s I was told one day that a new NC (numerically controlled) machine known as the Cramic was being delivered specifically to machine the new solid wing skins for the P.1127. I was to assist in the bedding in, alignment and machining of the vacuum chucks and thereafter the machining of the first sets of solid wing skins. Having been used to setting conventional lathes and milling machines for many years this NC technology was completely new to me. However, I was not too concerned as I was sure some training would be in the pipeline somewhere; not so!

Eventually the Cramic arrived and, along with two large vacuum pumps, was placed in the specifically prepared foundations. The various alignment checks were carried out by Cramic personnel and I was shown by them the manual controls of the machine and cut some test pieces to verify the alignment. The vacuum chucks arrived and were bolted to the machine table. I then machined in the faces of the chucks a grid of slots 3/16 ins wide by .060 ins deep. At the intersection of each slot a hole was drilled to accept a grub screw. The vacuum pumps were then connected to the chucks and the machine was ready to go. When the raw material arrived it was DTD 5020 in solution-treated condition, in slab form some 15 ft long, 5 ft wide, 3 ins thick and roughly triangular in shape. My first thoughts were "However much does this cost and if I scrap it how will I survive?"

The first operation was to get the slab onto the machine table. Overhead tackle had been set up and I manoeuvred the slab into position, packed it underneath with off-cut aluminium sheet where necessary, and pinch clamped it to the table in a stress free state. It was now ready to be faced flat. With one flat face the slab could be turned over and sucked down onto the vacuum chucks ready for routing the egg-box pattern spars and ribs. All grub screws under the slab were removed and a sealant was manually placed around the perimeter of the slab to retain the vacuum. Datum holes were drilled in the waste material at each end of the slab and from these holes each tape and cutter combination began its prescribed cutter path. Finished skin thicknesses varied between 0.2" at the inboard wing root end to .080" at the outboard tip. I machined the first five sets of solid skins. Most of the tapes ran for more than one hour and some had to be run several times at different depth settings. A night shift and additional setter were introduced after the first few sets of skins to cope with production schedules.

The purpose of going to solid wing skins was to reduce the number of through-skin fixings associated with fabricated skins as these were resulting in unacceptable integral tank fuel leakage, especially after heavy landings. From slabs weighing up to 2,000 lbs the finished skins, in some cases, weighed as little as 140lbs - that's a lot of swarf. On completion of the machining process the skins were placed on purpose-built trolleys with formers so they could be clamped down to the wing profile and heat treated up to full specification - two birds with one stone.

I think this is a good example of production techniques solving a design problem, albeit in an expensive way. I have great respect for the work of the process engineers involved, John Duncan and Mickey Vaughan, since I don't believe any tapes had to be altered for cutter speed or feed problems, the whole process being so well worked out.

A FOZARD HOWLER FROM FOWLER

Dave Fowler recalls an unusual occurrence...

John Fozard was well known for doing quick calculations during meetings to prove the point he was making at the time. At one meeting, on the naval version of the P.1154, he 'proved' to the astonishment of everybody there that just two aircraft tethered to the deck of 'Ark Royal' with their engines running would be sufficient to keep the ship travelling at maximum speed!

When the meeting was over I recovered the said sheet of paper and checked John's calculation only to find that the answer was not twenty *divided* by ten, as he had claimed, but was actually twenty *multiplied* by ten - just imagine the sight of two hundred aircraft powering the carrier along!

A LIFETIME IN SALES AND MARKETING - WITH A FEW SUCCESSES ALONG THE WAY

Mike Mendoza remembers his sales and marketing career with HSA and British Aerospace...

Having qualified as an engineer in 1974, I was fortunate to join the Hawker Siddeley Kingston, Harrier and Hawk sales team as their sales engineer, age 21. I was soon promoted to senior sales engineer - but unfortunately I was still the only one. It was a celebration year: the maiden flight of the Hawk, which had been selected following an international competition, as the RAF's new jet trainer with an order for 176 aircraft, the last of the refurbished Hunters coming off the line, and Harriers in full production for the RAF and the US Marine Corps (USMC).

This was the end of the era when personalities (many eccentric), not process, ruled. I was fortunate to work for Bill Bedford, then Sales Manager and formerly, of course, a distinguished Hawker Chief Test Pilot. One of my first tasks was to search for Bill when he was summoned to an urgent meeting by the Group Marketing Director, Alec Watson. Bill was on a keep-fit regime and frequently could be found swimming in the Thames (not the cleanest of rivers). When Bill failed to turn up for the meeting I was told to look for him in the river just in case... I eventually found him asleep in the directors' bath, totally relaxed and contemplating the next sales campaign.

Apart from looking after Bill, my principle roles included liaison with our design office, commercial departments, the Hawk and Harrier test pilots at Dunsfold, the RAF and USMC and writing sales brochures. It was here that I got the bug for sales and marketing. From a humble start, loading 35mm slides and 16mm cine film in support of the Hawk and Harrier sales team, I was soon rewarded with my own region, Sales Executive Africa, although I'm sure this was just a survival test.

It was 1976, airports and hotels were basic and those who have travelled know that you sometimes have to use your initiative just to get through foreign customs and immigration, and to retrieve baggage and passport which have found their way through a series of individuals all expecting a handling fee. I was arrested, for the first and, I hope, the last time, when taking a photograph of some passing, colourful local girls in Ghana. I soon realised that this was a ploy to help raise funds for the 'police charity'. Not known for my generosity, my 'get out of jail free' card was a Hawk pen and a pair of cufflinks. 'Give-aways' were better quality then, although I'm not sure if it would be OECD/FCPA compliant today.

Like many others, my luggage has earned more airmiles than I have. I was first parted from my belongings when on a 40-minute flight from Ghana to the French speaking Cote d'Ivoire. Unfortunately I was travelling in jeans and T-shirt and within two hours of arrival I was to have a meeting with the Minister of Defence. I found a dubious clothes shop and, with a mixture of schoolboy French and sign language, purchased an ill-fitting pair of trousers and badly matching shirt and tie. I'm not sure if it was my unusual dress sense that lost the Hawk contract to the Alpha Jet, or the fact that the French President, Giscard d'Estaing, had met the Minister the day before!

The Hawk TMk1 entered service with the RAF in 1976 and was to replace the Red Arrows Gnat a few years later. The Red Arrows was to become one of the greatest sales promoters for the aircraft and I am proud to consider both past and current team members friends.

During the late 1970s I was involved in securing the first Hawk exports to Kenya and Finland where I experienced the Finnish passion for vodka and saunas, frequently together. I was also lucky to survive being encouraged by the Finnish Air Force to dive through a hole cut into a frozen lake in Lapland. Whilst it does little for the manhood, it is the fastest cure I know for a hangover.

We also achieved the first sale of the 60 Series Hawk to the recently independent Zimbabwe, previously Southern Rhodesia. In Zimbabwe, in 1980, I held the department record for the longest sustained period overseas; it was only four months and was soon exceeded by John Parker in Venezuela. 1982 was a tragic year. Within days of the first four Hawks arriving in Zimbabwe, saboteurs broke into the Thornhill Airbase (now Gweru) and planted timed explosives in the aircraft air intakes. One aircraft was destroyed but the remaining aircraft were able to be repaired and rebuilt. As a result of a hasty investigation seven Air Force officers were arrested and imprisoned for a year where they suffered severe ill treatment. I knew all the accused and had a close relationship with the three senior officers whom I visited in the Gweru prison, an emotional experience Chris Roberts and I will never forget. Their trial made international headline news and when they were acquitted they left Zimbabwe with their families to start new lives in the UK and the USA. In the same year there was an attempted coup in Kenya and the Air Force Chief, Peter Kariuki, was imprisoned as an alleged leader. I knew Peter well and had visited him only days before with the prospect of selling more Hawk aircraft.

Hawk sales had started to flourish. The sales team was constantly on the road and we had established regional focus to capitalise on experience, both good and bad. During this period we signed the Hawk contract with Venezuela but just days from receiving the deposit there was a minor conflict in the South Atlantic - 'The Falklands' - and the contract was never made effective. Two years earlier I had visited Argentina with John Parker to sell Sea Harriers to the Argentine Navy.

Despite the lean times, with strong regional focus the Kingston-Dunsfold team was successful and became the model for the early British Aerospace Central Marketing Organisation. My own region grew to include Europe and specific support to our US Navy campaign. I was even allowed to fly the aircraft and proudly boast 11.5 flight hours. We undertook a number of sales evaluation and demonstration tours to Europe, Africa, the Middle East, Far East and the USA, some with great success.

The US Navy, still the largest Hawk operator, selected Hawk in competition with US aircraft designs, the Franco-German Alpha Jet (or 'half a jet' as I named it), and the Italian MB 326. During the evaluation we positioned our company demonstrator (G-HAWK) in the USA twice, on each occasion for 6 weeks. The first was a nation-wide tour of US Naval and Air Force stations, but for the second we based ourselves at Andrews Air Force Base near Washington DC. My role on both tours was deputy tour manager and treasurer, in other words paying the bills and solving problems for the team of twenty-plus. There was no AMEX in those days, just travellers cheques, unfortunately mostly in small denominations. We flew an average of five sorties a day, sometimes on seven days a week. The aircraft proved so reliable that our US Navy liaison Captain was convinced that we had a second aircraft concealed on base. A number of Middle East countries also selected Hawk, including Bahrain which took another 23 years to get to contract.

As European Sales Manager in the mid '80s, with Mike Turner as General Manager, the Swiss Hawk contract was achieved, an experience which covered all aspects of sales and marketing including 100% offset with 132 Swiss companies. This was also the first and only (six week) flying evaluation alongside the Alpha Jet. We not only won the competition but also beat the French at boules!

It was now the late 1980s, the British defence industry was being consolidated, British Aerospace had been nationalised - and then denationalised - and our product portfolio was expanding. Under the direction of Mike Turner a BAe centralised marketing organisation (the DMO, defence marketing organisation) was established for focus and efficiency in the marketplace, to create the environment and opportunity for good business and to reduce customer confusion. However, the most difficult challenge was gaining the respect of the BAe business units who had, in their view, forfeited part of their accountability. I had responsibility for Europe and later South East Asia, China and Japan. There was a range of new products and services to understand and more significantly some new acronyms, same letters but a totally different meaning to those I knew. During this period we were fortunate to secure some further sales including vehicles, ammunition, missiles and aircraft to Singapore, Malaysia and Thailand.

From 1996 to 1999 I was Vice President based in Malaysia when, but for the Asian economic crisis, we would probably have finalised the Avro Regional Jet Joint Venture with the Malaysian Government. From 1999 to 2001 I was Regional Managing Director living in Sydney at the time of the Olympic Games and the Millennium Sydney can party! Australia had recently broken with their tradition of purchasing American and had procured ASRAAM, and Hawk had just entered service with the RAAF. Both postings were fascinating experiences and highlighted the idiosyncrasies and differences between visiting and living overseas. What is Malay-Bahasa for toilet paper?

On returning from Australia I was asked to take on the Hawk marketing role to help reenergise the programme and market the latest variant of the product. In 2003, the UK MoD selected the Hawk 128 as the replacement for the TMk1, probably the finest possible accolade for the product. In addition to my Hawk role I became Regional Managing Director for India and Latin America and spent most of my energy on a frigate sale to Chile which was concluded in 2005, and working with Peter Ginger on Hawk for India. After a lengthy campaign, India signed in 2004 for an initial 66 aircraft followed by another 57. I had worked for Peter in the mid 1980s and in his last overseas role for the company Peter now worked for me. I suppose the moral is, you never know who you will work for, so be careful who you provoke on the way up!

Success comes from teamwork but is dependent on champions to stimulate and lead the team effort. Marketing provides the creative opportunity for champions and leaders and the privilege to work with many special and talented people, to meet with governments and armed forces and to mix with royalty and world leaders. The key is what we make of the opportunity, the pride and passion we exhibit and the respect and recognition we earn from our colleagues along the way. Every campaign has its frustrations, long periods of apparent inactivity, setbacks and sustained pressure on personal life and family. Marketing is integral to all business sectors and must not operate as an isolated function. But above all I commend to you the virtue of patience and a healthy sense of humour. If you can't take a joke, you shouldn't have joined!

PS Mike is compiling a collection of humorous stories and anecdotes from our many years of experience and would be grateful if you could send him any interesting yarns of which he is sure you have many. Any amusing incidents with customers, air travel, hotels, colleagues, misunderstandings, evaluations, demonstrations etc would be appreciated. His intention is to produce a book for all to enjoy and to reminisce over... but to avoid libel claims. Send them to Mike at mike@meminternational.com

A FOWLER FABLE

Dave Fowler recalls a short moral tale from Kingston...

One Monday I was walking back to the Stress Office from the car park after lunch when I met a married colleague from the Project Office and I asked him if he'd enjoyed his holiday in Norway. He said they'd had a wonderful time and got back yesterday; and had I been there too? I said I had and got back a week ago. His face then turned the colour of a beetroot and he muttered something about the fact that he hadn't told anybody where they were going, and anyway it was his girlfriend's car, and how did I know where they'd been?

I said I didn't know but just guessed from seeing the colour of the mud on his car as he drove in. The roads in the Western Fjords are not paved but are regularly graded in the summer because they're frozen solid throughout the winter. The local filling stations typically have two water pumps and two brooms connected to hoses so that you can wash the dust off your car every time you fill it up with fuel.

He looked astonished that he'd been found out; so remember chaps, keep your car clean if you don't want your wife to know where you've been taking the girlfriend!

BOOK REVIEW - BAe P.1216 SUPERSONIC ASTOVL AIRCRAFT

This slim but dense volume (ISBN 978-0-9561951-1-1) by professional historian Dr Michael Pryce, well known as a Member and speaker to the Association, and published by Blue Envoy Press in the new Project Tech Profiles series, is a tour de force of technical-historical-political research. It is also beautifully presented and profusely illustrated with black and white and colour illustrations as well as many fascinating original g.a. drawings, most never published before. The account of the internal and external politics explains the lack of BAe funding, the long timescale and reasons for the many versions. Appendices list the main variants, show the models tested, look at other Kingston twin boom projects and summarise the main events. This is the fascinating story of, as the author says, "the last significant attempt at creating an indigenous fighter aircraft by the UK." Here is a 'what might have been' project of which 'Hawkers' can be proud. No 'Hawker' enthusiast should be without a copy. Mike acknowledges the help given by many members of the Kingston design team and dedicates the book to Garry Lockley's memory. Buy it from <http://www.harrier.org.uk/P1216.htm> for just £9.95.

MEMBERSHIP NEWS

Sadly we record the deaths of Selwyn Smith, Eric Goose, Eric Hayward, and Orde Scott. Our condolences go to their relatives and friends, but we welcome new Members Ted Forster, David Lee, John Tratt and Joanna Terrell.

MEMBERSHIP LIST AUGUST 2011

Names in bold have not paid their subscription for 2011-2012 (see Editorial)

A: Mike Adams, Beryl Alexander, Ken Alexander, Peter Alexander, John Allen, Peter Amos, Terry Anstey, Alma Apted, Steve Apted, John Arthur, Alan Auld, Bryan Austin, **B:** Brenda Bainbridge, Dick Baker, Arthur Balchin, Colin Balchin, Ambrose Barber, Derek Barden, Peter Barker, Frank Barrett, Geoff Barratt, Graham Bass, Ken Batstone, Dennis Baxter, Colin Bedford, Peter Bedford, Anne Beer, David Betteridge, Brian Bickers, **George Black, Guy Black,** John Blackmore, Keith Bollands, Paul Boon, Betty Bore, Pat Bott, Steve Bott, Bob Bounden, Mike Bowery, Alan Boyd, Sally Bracher, Roy Braybrook, Clive Brewer, Laurie Bridges, Doug Britton, Arthur Brocklehurst, Eric Brown, Peter Brown, Ron Bryan, **Christopher Budgen,** Maurice Budgen, Roy Budgen, Reg Burrell, Robin Burton, Dave Byford. **C:** Richard Cannon, Chris Carter, Tom Casey, **Bob Catterson,** Colin Chandler, Keith Chapman, Keith Chard, Gerry Clapp, JF Clarke, John Cockerill, Hank Cole, Percy Collino, Brian Coombes, Paul Cope, Patricia Cosgrove, Ron Cosgrove, **Nick Cox,** Mike Craddock, Shirley Craig, Richard Cripps, Tony Cripps, Russ Culley, Richard Curtis. **D:** Clive Dalley, Andy Dalton, John Danse, Afandi Darlington, John Davie, Jo Davies, Ken Davies, Trevor Davies, Michael Davis, Diana Dean, Ralph Denning, Norman Devell, **Mike Diprose,** Mike Dodd, Colin Dodds, Peter Dodworth, Lambert Dopping-Heppenstal, George Dow, Bill Downey, Brian Drew, Peter Drye, **Dick Duffell, Jean Duffell,** Gwen Duke, Chris Dunhill, Mike Dyke. **E:** John Eacott, John Eckstein, Andy Edwards, **Dave Edwards,** Barry Elliot, Tony Elliott, Eric Ellis, Celia Evans, Norman Evans, Roy Evans. **F:** Russ Fairchild, Ian Falconer, **Mike Fantham,** Chris Farara, John Farley, John Farrow, Max Fendt, Donna Ferguson, Stan Field, Geoff Fieldus, **Mike Finlay,** Wilf Firth, **Anne Fletcher,** Richard Fletcher, Colin Flint, Ted Forster, Dave Fowler, Mike Frair, Steve Franklin, Harry Fraser-Mitchell, Geoff French, Mike French, Heinz Frick. **G:** Roy Gaff, Mike Gane, John Gardner, Patricia Gardonio, Peter Gates, Sandie Gear, Tim Gedge, Mark Gerrard, Tony Gibbs, John Gilbert, John Glasscock, Pat Goodheart, John Gough, Andy Green, Barry Grimsey, Ray Grout. **H:** Violet Hall, Douglas Hallway, **Liz Hargreaves, Simon Hargreaves,** Bryan Harman, Guy Harris, Theima Harris, Brian Harvie, David Hassard, **David Hastie,** Sandy Hay, Norman Hayler, Bob Head, Sheila Hemsley, Brian Hennegan, Jock Heron, Keith Hertenberg, Frederick Hewitt, Merlin Hibbs, Richard Hickey, Peter Hickman, Vince Higbee, Reg Hippolite, Keith Hobbs, Chris Hodson, Gordon Hodson, Derek Holden, Ralph Hooper, **Linda Hopkins, Paul Hopkins,** Mike Hoskins, **Gerry Howard,** Dawn Howes, Terry Howes, Simon Howison, Gavin Hukin. **I:** Pete I'Anson, Len Illston, Maive Impey, **David Ince,** Brian Indge. **J:** Keith Jackman, Simon Jackson, John Janes, Gordon Jefferson, **Harry Johnson,** John Johnson, Andy Jones, Brian Jones, Ian Jordan, Robin Jowit, Alf Justin. **K:** Barry Kensett, Dennis Ketcher, Bill King, Dave King, Charles Kirk. **L:** Barry Laight, Mike Laker, Charles Lamb, Richard Lane, George Latham, Paul Latham, Pam Lawrence, **Andrew Lawson, Stanley Lawson,** David Lee, **Geoff Lee,** Mark Lewis, Vernon Lidstone, Gary Lillistone, Andrew Lloyd, Dawn Lloyd, David Lockspeiser, Basil Lockwood-Goose, Norman Long, Terry Long, David Lovell, Lynda Lucas. **M:** Albert Magee, Al Mahoon, Mick Mansell, John Marsh, Ann Martin/DisSpain/Turk, Brian Maton, Don McGovern, June McKeon, Mike Mendoza, Alan Merriman, Jim Middleton, Buffy Milford, Robert Millar, Alan Millican, Jack Mills, George Mitchell, John Mitton, Brian Monk, Pat Moon, Pauline Moore, Nicholas Morland, Geoff Mudle, Pete Munday, Carole Murphy, Gloria Murphy, Martin Murray. **N:** Mike Newell, **Anthea Newman,** Jennifer Nicholas, Chris Nicholson, **O:** Roger O'Brien-Hill, John O'Sullivan, Chris Oliver, Adrian Orchard, Robin Owen. **P:** Les Palmer, Glynne Parker, John I Parker, John L Parker, John Partridge, Bernard Patrick, **John Pearce,** Barry Pegram, Martin Pennell, Bill Phillips, Ted Pincombe, Dick Poole, Dave Priddy, Mike Pryce. **Q:** John Quinn. **R:** Clive Radley, Frank Rainsborough, **Colin Raisey,** Paul Rash, **Diane Raymond,** Vanessa Rayner, **David Rees,** Peggy Remington, Francis Rhodes, Geoff Richards, Bill Richardson, Kelvin Richardson, Chris Roberts, Graham Roe, Peter Ryans. **S:** **Ian Sandell, Tim Sargant,** Bernie Scott, Alex Seaman, Ray Searle, Maurice Shakespeare, Mike Sharland, Arthur Sharpe, Douglas Shorey, Duncan Simpson, Derek Sims, Gerry Sims, Charles Smith, Harold Smith, John Smith, Karl Smith, Pete Smith, Roy Sparrow, **Don Spiers, Peter Spragg,** June Stephens, John Strange, Carroll Stroud, Christine Strudwick, Tony Strudwick, Bill Swinchatt. **T:** David Taylor, Stuart Taylor, Brian Tei, Joanna Terrell, Reginald Thompson, Geoff Tomlinson, Graham Tomlinson, John Tratt, Rod Tribick, Peter Trow, Bert Turner, **Michael Turvey.** **U:** John Underhill. **V:** **Roland Van Haften.** **W:** Terry Walker, John Wallace, David Ward, Harry Webb, Patrick Webb, Rob Welsh, Bryan West, Judith Westrop, Jan White, **Mick White,** Roy Whitehead, Peter Whitney, David Whittam, Annette Williams, Don Williams, John S Williams, Ron Williams, Sally Williams, Colin Wilson, George Wilson, Hilda Wilson, Paul Wilson, Dick Wise, Helen Woan, Kuo Wong, George Woods.