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JULY 2016
7 Benevolent Fund Board of Trustees Cobham House
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VISITS PROGRAMME
Please see the flyers accompanying this issue of Air Pilot or contact Liveryman David Curgenven at visits@airpilots.org.
These flyers can also be downloaded from the Company’s website. Please check on Company website for visits that are to be confirmed.

GOLF CLUB EVENTS
Please check on Company website for latest information

Cover photo: The RNHF’s Sea Fury T20, as seen during the recent visit to its base of RNAS Yeovilton. Photo by the Editor.
A message from your Editor…

The winter has been one to forget for many GA pilots: my home airfield was unusable for most of a 3-4 month period. I have been lusting after a hard (and stone free) runway. And GAMA has just reported a 4% decline in Q1 GA and business aircraft shipments. It is therefore gratifying that, as I write, we are in a period of sustained high pressure, giving blue skies and near perfect flying conditions. That my aircraft is grounded is but a small fly in the ointment! But the summer flying season looks to have had a good start; so I await with interest all the articles that will flow from your pens of your summer adventures. I would be particularly keen to hear of any members' flirtations with the worlds of gliding, flexwing microlights, and gyrocopters.

In the last couple of months the same two issues continue to exercise the minds of the Company's senior members: Air Cadet flying, and changes to the UK's Air Display regime. The Master's message gives some updates to our stance. Immediate Past Editor Tom Eccles, wearing his Duxford hat (probably the same battered Tilley one), expands on Air Display changes. And I am grateful for Dai Whittingham setting some time aside from his wedding preparations (!) to explain the constantly evolving issue of RPAS/drones sharing our airspace. We also look at airspace utilisation from a different angle, courtesy of Philip Hogge. Finally Ben Griffiths reports from a recent visit to Martin Baker's HQ at Denham, which should also be the destination for a Flying Club visit later in the year. The FC has a particularly extensive programme this year, and it is not too late to join this very sociable bunch.

I hope you share my anticipation of a very interesting calendar of the Company's summer events. Paul Smiddy - Editor

CONTRIBUTORS TO THIS ISSUE

Philip Hogge FRAeS

Liveryman Philip Hogge is a retired flight manager and independent consultant who specialised in the interactions between airlines and Air Traffic Management (ATM). He learned to fly in 1959, joining BOAC in 1962 where he worked as a line pilot and navigator and as an instructor, flying on Britannias, VC10s, 707s and 747s. He was Flight Training Manager on 707s and then 747s before becoming Chief Pilot 747s and final GM Flight Operational Services in British Airways flight operations department.

When he retired from active flying in 1995 he joined IATA as their Director Operations and Infrastructure in Europe, responsible for co-ordinating the requirements of the member airlines with regard to their ATM infrastructure requirements in Europe and for working with the relevant International and European bodies on implementation plans to achieve them.

Towards the end of his time with IATA he became a founder member of the EUROCONTROL Performance Review Commission, serving on it for four years first as its vice-Chairman, and then Chairman. Later he chaired the EC’s ASAS Thematic Network workshops and was a member of the airspace user’s group which worked on the SESAR Concept of Operations for European ATM.

Air Commodore Dai Whittingham RAF (ret’d)

Dai joined the RAF in 1974, and flew Phantoms for 7 years in the Air Defence fighter role, ending as the senior instructor pilot and standards evaluator for the Phantom force. His early flying career included 3 years as a QFI providing basic flying training on the Jet Provost, during which time he was also the JP display pilot. After a period of staff duties he returned to flying as a squadron commander on the E-3D AWACS, deploying in support of NATO operations in the Balkans. He was station commander at RAF Waddington, where he continued to fly the E-3D.

Following attendance at the Royal College of Defence Studies, Dai was deployed as the Air Component Commander for all UK flying operations in Iraq and Afghanistan, prior to taking up an MOD operational management appointment. His MOD duties included policy for air safety, UK and European airspace, ATM aircraft equipment, and UAs/; he also chaired the Military Aviation Regulatory Group and was a lay member of the Surgeon General's Committee on Aircrew Medical Standards. His next UK staff tour saw him with responsibility for operational management and oversight of all RAF airborne surveillance platforms, including Predator and Sentinel, and the RAF Search and Rescue Force. Dai's last formal military appointment was as Deputy Commander for the NATO Airborne Early Warning and Control Force. Dai joined the UK Flight Safety Committee as Chief Executive in February 2012, and is an Upper Freeman of the Company.
**AMY JOHNSON REMEMBERED**

The City of Hull is commemorating the 75th anniversary of the death of one of its most famous daughters with a festival later this year. Perhaps of most interest to members is an exhibition of reproductions of twelve of Leonardo da Vinci's flying machines, which will be on display in the City's Zebedee's Yard from July 2. One of the festival's aims is to: “To encourage young women to consider engineering and the sciences as career choices through the presentation of positive role models and creative projects which explore technical, digital or mechanical ideas and applications”, which neatly brings together Amy's own aviation origins as an aircraft mechanic at Stag Lane, and the city's links with BAe (through its now shrunken facility at Brough).

**RAF BENSON NEWS**

At our affiliated unit of RAF Benson, 28 Sqn celebrated its centenary on 7 April. Its motto 'Quicquid agas age' - (which as you no doubt realise means 'Whatsoever you may do, do') is strangely enigmatic!

Much of its history has been overseas, beginning with flying as escorts to bombing raids on the Italian Front and in the Adriatic during World War I. Its crews also spent many years of WW2 flying reconnaissance sorties in Burma before moving north to Hong Kong and Sek Kong. Returning to the UK in 2001 to fly Merlin helicopters on operations in Bosnia, Iraq and Afghanistan, 28 Squadron is now once again a training unit, being the Puma and Chinook Operational Conversion Unit. The parade was in the shadow of a Puma and a Chinook, the latter having a particularly splendid special colour scheme.

One of the highlights of the evening events was the three amazing cakes made by Nicola Weston, wife of Master Aircrewman Weston, of the squadron. The replica of a Form 724 is simply stunning, and I am told it tasted as good as it looked!

**LIVERY DINNER**

The 2016 Livery Dinner was held on May 26th at Drapers Hall. A full report will appear in the next issue.

**IN BRIEF**

The Fleet Air Arm Museum at RNAS Yeovilton has opened an exhibition to commemorate the aviation component in the Battle of Jutland in 1916. It features a Short Type 184, and the story of its pilot, Frederick Rutland, who became known as 'Rutland of Jutland'! A replica of a Sopwith Baby, complete with Le Prieur rockets - which were the world's first air-to-air missiles - will also be on display.

Roger Gault left no stone unturned at the Pilot Careers Live exhibition at Heathrow on 9 April, and generated interest across the age range. See photo.

Roger Gault catches them young.

**LUNCH CLUB 26TH APRIL**

The Luncheon Club met at the RAF Club for the debut event of the season. IPM Chris Ford gave a Grace in rhyming verse - PM Dorothy Saul-Pooley seems to have set a trend. Our host, Assistant John Robinson, noted with gratitude a full house, despite the fact that speaker Freeman Vic Flintham's topic had been a secret. None of the nation's intelligence resources, including GCHQ (answer to Round 3 Question 6) had been able to elicit a clue. Those members used to a post-prandial snooze had a rude awakening. Vic had organised something 'interactive' - a quiz! As befitting a Needlemaker, this covered the more obscure corners of the aviation world. This pitted table against table. Rounds included the identification of aerial shots of castles in Britain, naming the towns or animals behind the name of an aircraft (Avro Bison anyone?). And perhaps, most obscurnly, guessing the rugby team associated with an aircraft or engine.

An unprecedented level of cogitating produced a scarcely believable winning score of 80 (out of a possible 100) - the victors secured a much coveted prize of a bottle of port. The table winning the wooden spoon, with an entirely credible score of 21, gained an almost equally coveted Observers Book of Aircraft! Much hilarity.

Some weird and wonderful (and irrelevant) press releases find their way into the Editor's email inbox. But two that caught my eye recently referred to the air service, to be operated by Comair, the BA franchisee, starting from the new airport on St. Helena, the British Overseas Territory. The island has hitherto only been connected with the rest of the world by an occasional visit by a supply vessel which plies between the island, the UK, and Cape Town.

The UK government has invested £250m in the new airport, and Comair has acquired a new 737-800 for the weekly flights.

However, there have been several problems in finalising procedural and non-procedural approaches to this airport (which is surrounded by challenging geography). But the deal
breaker was the proving flight of an empty B737 which had a go-around on the first approach due to turbulence and wind shear, and an almost as sporty time for its eventual landing. The Comair service and the airport’s official launch have been postponed for the time being. The airport might prove an interesting use of UK taxpayers’ funds!

Another press release, but one that tells half the story:
Three members of the RNR Air Branch added their experience and know-how to Commando Helicopter Force’s detachment on Ten Tors. (The Ten Tors being a tough Dartmoor hike, popular with DoE students and other youth groups).

Fielding two of their new Commando Merlin helicopters, CHF were tasked to support the event, which this year attracted over two and a half thousand teenagers, spread between 400 teams. It was also the first year for Merlins to make their mark, replacing the Sea Kings that had been used before.

Contribution from the RNR Air Branch was Lieutenant Commander Gordon Smith, part of the Mobile Air Operations Team (MAOT) on the helicopter landing site as well as Lt Cdr Scouse Leach and Colour Sergeant Pete Wooldridge in the operations room.

“I think we bring a lot of experience and continuity to the event,” said Pete Wooldridge. "There are so many moving parts to the Ten Tors Challenge; then you put two and a half thousand kids onto Dartmoor! What could possibly go wrong?"

I think the answer to that last question can be found in the video here: https://www.youtube.com/watch?v=H1Vc5VdP0s

An object lesson in the effects of rotor downwash from large military helicopters!

THE START TO THE AIR PILOT’S FLYING CLUB SEASON

Assistant Dacre Watson

The Air Pilot Flying Club season for 2016 got off to a good start with the first fly-in to Halfpenny Green on 13th April with five aircraft flying in with a total of nine people sitting down to lunch.

Undoubtedly, the star of the day was Peter Greenyer flying in with his de Havilland Dragon bringing with him fellow member Roger Dunn and a guest; he also invited two potential members, Steve Monk and Jo Willis, who flew in on their shared Chipmunk. Other arrivals were Peter Turner (C-172) together with Dacre Watson and Chris Reynolds in their shared PA-22. John Davy and Diana Green-Davy kindly hosted the day which was for Diana somewhat special since Halfpenny Green was where she originally learned to fly; they flew in on their DR-400.

Thanks to our Events Secretary, Gerry Gerrard, we have a very full summer season of visits and fly-ins this year and we look forward to seeing many of our members over the season.

This year will be the 30th anniversary of the founding of the Flying Club and it is our intention to celebrate this occasion at the Summer Lunch on 14th August at White Waltham. Details will follow well before the event.

The assembled members enjoy their lunch

Peter Greenyer’s flagship - a DH Dragon - quite close to the Welsh border
Member’s of this Honourable Company would expect us to reflect hard on major developments in aviation, particularly in a case where they affect the entry point to aviation for so many of us in our own lives - the Air Cadet Organisation (ACO).

Since my last Master’s Message where I mentioned this topic, events have moved on from the lengthy so-called “operational pause” in Air Cadet gliding training, with the publication of a government statement outlining a way ahead to restore some of the capacity that was delivered by dedicated volunteers at the Volunteer Gliding Schools, (VGS), operated by the ACO for decades.

The statement itself can be found at this link:
http://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2016-03-10/HCWS605/

Notwithstanding the plan outlined in the statement, there are real doubts as to its ability to deliver the same opportunities to achieve solo standard in a glider that were there before the “pause” began. ACO Volunteer Gliding Squadrons are cut by 14, leaving just 12 in the entire country, and the glider fleet falls from 146 to 88. These are stark numbers. Achieving the plan is dependant on several factors, not all of which are within the RAF’s control.

Two things are clear - there is no mileage in a lengthy critique of how the ACO glider fleet arrived at this state. Both the Viking glider and Vigilant motor glider have been largely unserviceable for the last two years as a result of a failed maintenance contract, and in both cases they need major input to be restored to flight status. Nor is there any mileage in critiquing the plan that has been made for a resumption of ACO gliding training. In neither case would doing so alter the cold, hard facts.

Since becoming Master of this Honourable Company and seeing more of the City and Government, it is clear to me that the public spending settlement outside of ‘protected areas’ such as Schools, Health and Overseas Aid is as brutal, if not more so, than it has ever been.

The financial crash and its aftermath, requiring as it did the banks and the overall financial system to be recapitalised by Central Government and the Bank of England, has created a structural deficit that seems set not to shrink appreciably, despite a long time scale. The deficit is of course just the gap between government income and expenditure, it is not the underlying national debt itself, which is equally of Herculean proportions. In these circumstances, to argue for more money to be spent in any area is simply a waste of time.

The RAF has taken a not insubstantial sum of money and allocated it to the resumption of ACO gliding training. The factors that will enable it to do so are, in world where so much is contracted-out, subject to a Private Finance Initiative, (PFI), or dependant on commercial organisations to deliver within promised timescales - to a great extent outside the RAF’s direct control. Blaming the RAF for this is both unproductive and unfair to them.

The financial reality we face for decades to come means that we are in a new paradigm when it comes to the provision of capability and, as I will cover later, when it comes to the delivery of regulatory oversight. We cannot rely on the UK Government to deliver the level of provision that we have largely taken for granted in the past. This is not a polemical point derived from a political persuasion, rather an acknowledgment of the hard financial facts that will become more and more evident as time goes by. One can argue that things ought to be otherwise than they are, but I doubt it will change anything.

This then begs the question - what, if anything, to do about ACO gliding training? Given that there is not a capital budget to re-equip the VGS movement, and given that the defence estate shrinks appreciably year on year, there has to be another way to enable motivated young people to achieve solo status. Time will tell if such a new methodology can be achieved.

Whilst for most of us it would be self-evident why the ability to achieve solo status in a glider or powered aircraft is important to personal development in young people who have joined an Air Training organisation, it does no harm to spell it out. Recruit and indeed overall numbers to the ACO are declining - and so there has to be a realistic prospect of there being an 'Air' element to being an 'Air Cadet' for the term to carry the resonance and meaning that it has up until now.

I was invited to attend and watch the Innes Sword competition recently for teams from Cadet Units within London.

The Master’s Message

Peter Benn

The Master with other guests at the Innes Sword Competition
Wing (our affiliated unit in the ACO) at Crowborough in East Sussex. The competition pits units within the Wing against each other for the right to go forward to a national level competition amongst Air Cadet units. Tasks included the (adult) assault course, first aid, orienteering, and drill. All were minutely assessed. On camp, cadets were required to present correct military compliments at all times, and march everywhere as a squad rather than amble about in a group. I have rarely seen such a motivated, polite, enthusiastic and well turned out group of personnel, who would be a credit to a full time professional force on those criteria. Air Cadets are smart, proud of their collective identity, and motivated. What then makes an Air Cadet different from any other cadet?

I suspect it is the fact that, within their overall corporate identity, is the willingness of the cadet to undergo a structured program of training, requiring both discipline and self-awareness to complete, which has the potential to lead to flying an aircraft on his/her own at an age when he could not yet drive a car. The achievement of that capability requires all of the cadets to work as a team to enable the flying program to be completed. I saw this at 618VGS at RAF Odiham (one of the units slated for closure), where I flew and instructed on the Vigilant motor glider, and I have seen it at Kenley airfield where the team use the Viking glider. That self-discipline and self-awareness is still evident in the élan and flair that the cadets brought to the Innes Sword competition, but to keep it there will require that essential ‘Air’ element to be restored to the ACO, and soon, given that we are close to an entire generation of cadets missing out altogether on a flying training element to their cadet experience.

In conclusion on this topic, there is another aspect to the Air Cadet experience that makes it so vital to our country in this time of rapid change. The collective values of the ACO are a very powerful force in building citizenship amongst our diverse population. London is one of the most successful and diverse cities on the planet. The successful integration of all of our diverse communities relies on a sense of shared values and identity that we have always been somewhat shy of promoting in way that other nations do - I think, for example, of the United States and their response to their flag (Old Glory), and National Anthem, as but one example. At the Innes Sword competition I saw that diversity united in one common aim - to be the very best cadet unit in the Wing. It was a privilege to see such motivation and enthusiasm in young people. The UK’s cadet movement, with Air Cadets in its vanguard, is fulfilling a vital national purpose, and we must not lose sight of that.

One final plea: every Air Cadet Squadron in the country, as also within London Wing, requires a civilian oversight panel of a minimum of two people. There is a constant need for people to fulfil this role. It is not a particularly onerous one, and it would not demand too much time. Could we all please consider whether we might have time to do this, and if so let your local Air Cadet Wing Headquarters know. For those who are in the London area, please let the Honourable Company Office know at office@airpilots.org and they will pass your name onto the London Wing, our affiliated unit.

London Wing of the ACO would also like people from within the aviation community who have flown professionally in either the military or civilian life to present awards at units and, once again, if you are willing to do this simple task that would mean a great deal to the cadets, please could you let the office know, perhaps making clear which task you are able to do in the subject heading.

Our other affiliated unit from the London area, University of London Air Squadron, would like people who have had a career in professional aviation to give a short talk on a Training Night to Squadron members - could we please also consider whether any of us can undertake this task and let the office know as above, and we will pass on names and contact details. The Squadron’s Town headquarters is now based at RAF Northolt.

I mentioned above that the entire regulatory environment is also changing in the face of sustained pressure on central government funds. We have all seen the rise of self-audit within the airline world, and now we have Fatigue Risk Management Systems (FRMS), as the suggested internal solution to the pressures contained within the wider flight and duty time regs allowed by the European Aviation Safety Agency Flight Time Limitations, (EASA FTLs), which are now in use at UK airlines.

The principle of self-audit is now well known within the UK airline industry. Is it always effective? I suggested in my last Masters' Message that this may not always be the case when it comes to FRMS unless there is a well-established non-jepardy culture within the airline itself. Does your airline have such a culture? Are you concerned about fatigue in commercial airline operations? May I suggest you contact our Director of Aviation Affairs (DAA), John Turner, at DAA@airpilots.org with your views, and perhaps volunteer to work on one of the working groups set-up under the auspices of the Technical Committee, where fatigue is a major topic? Remote working and conferencing is now a part of the Company’s working methodology and so attendance in London is not mandatory to make an effective contribution.

A very useful primer to FRMS comes from the excellent work by R M Jones, available on the Company web site, under Aviation Matters, Policy and Comment, Discussion Papers. The reference is at: https://www.airpilots.org/file/872/fatigue-risk-managing-systems.pdf

It is not only within airline self-audit that change is happening. In my view, self-audit can work IF it is backed up by a comprehensive enough system of oversight by a central regulator. I suspect that the Civil Aviation Authority is looking to other areas of the aviation industry to adopt a more comprehensive system of self regulation, quite simply because the money to do otherwise is just not there anymore. This will present challenges of its own, and again the Honourable Company is leading with moves to debate this and to help to deliver a solution that meets the needs of a very changed world.

I had the privilege of attending the Flying Club’s first lunch of the new season, the Freddie Stringer Memorial Lunch at White Waltham. The club have a superb program of events organised for
Possibly suffering from intellectual exhaustion (see the Lunch Club report), Company members repaired to the Royal Aeronautical Society for the Company’s first formal lecture of the year. The audience was most definitely more esteemed and eclectic than usual: headed by Prince and Princess Michael of Kent, graced by Camilla Cobham (Sir Alan’s grand-daughter), and Dame Diana Rigg, 38 masters of other companies joined the Air Pilots for a full house. The speaker was Tracey Curtis-Taylor, better known by her self-given moniker of ‘Bird in a Biplane’. Relatively recently returned from a flight in a Stearman to Australia, and shortly to embark on a TransAmerican journey in the same craft.

Her journeys have benefited enormously from substantial (and appropriate) sponsorship - in her case from the foresight of John Dodd, chief executive of Artemis, the fund management firm. Her inspiration, through most of her aviation career, has been Amy Johnson. The Master in his introduction pointed out that Amy had been introduced to her main sponsor, Lord Wakefield (chairman of Castrol), through Sir Sefton Brancker - a seminal figure in the early years of the Company.

Tracey only arrived at aviation after a peripatetic series of jobs, eventually being inspired by warbird flying whilst in New Zealand. A trip to the Cape was her first major international flight in the Stearman, but the inspiration of Amy meant that she had to aim for an Australian trip at some stage. The choice of her 1942 Stearman itself created some distance from Amy’s feat - a lot more substantial, and a lot more thirsty (40-50lph). Her journeys have been very much 21st century ones, embracing the GoPro era with copious cameras and photographers, and a chase aircraft bringing luggage and avgas, and also assisting in navigation, and very proactive PR. Moreover, for most flights on the 2015/6 expedition to Australia she was accompanied by the aircraft’s owner, Ewald Gritsch, a 20,000 hour instructor. The trip was used as a platform to promote women in aviation and also education in STEM subjects. So there were frequent stops to spread the word - two weeks at the Dubai Airshow, for example. By the time she had reached India, she was a victim of her own PR success - the media had gone ‘beserk’, and in consequence she was mobbed by 2,000 schoolgirls in Karachi. The low point was possibly Indonesia where her chase aircraft was detained for a month for flying through a restricted area. After her return to the UK later this year from her transcontinental US flight, a film will be released. (STOP PRESS: Tracey and Ewald crashed after take-off on one of their first flights on the Trans US trip. The Stearman is now being rebuilt.)

Cancer Research is on the web at: http://www.cancerresearchuk.org

The People's Mosquito is at: http://www.peoplesmosquito.org.uk/

Thank You.
Whatever you think of “drones”, even if your only concern is a preference for calling them Unmanned Air Systems or Remotely Piloted Air Systems, there is no denying that they are here to stay. There is also no denying that drone numbers have increased rapidly in the last few years and we are now seeing very clear evidence of this in the inexorable rise of manned aircraft versus drone Airprox incidents. And technology is of course evolving rapidly; it will come as no surprise to know that the major manufacturers are working hard at a means of engineering one of the pilots out of the commercial air transport flight deck. Once that technology matures, the risks are better understood and the travelling public have had time to get used to the idea, we can expect to see heavy aircraft being remotely piloted – after all, the military have been operating fighters as heavy as the Sea Vixen as droned targets for many years, albeit in segregated airspace.

Most of the technology developments have been aimed at meeting military requirements for surveillance or high-threat environments. This ‘dull, dirty or dangerous’ work has been going on since the earliest days of powered flight. But the public now has unprecedented access to the equipment and the ever-widening range of applications made possible by advances in sensor technology. Who would have thought 20 years ago that farmers would be using drones to count livestock or check crops, or that estate agents would be using them for creating marketing material?

Military employment has of course moved on to more sophisticated weapon delivery than the early demonstrations of the concept such as the V1 flying bomb. The performance of military drones has also improved in all areas. For example, Global Hawk (RQ-4) weighs in at just under 15,000 kg, it has a 131ft wing span, a top speed of 340 kts, a range of 12,000 nm and it will stay airborne for over 30 hours. Oh, and it likes being near its service ceiling of 60,000 ft. Whilst Global Hawk is a large aircraft, Predator and Reaper are also substantial, and even the British Army’s WATCHKEEPER surveillance system is not far off a Cessna 150 in size and weight. But such platforms, which are regulated and responsibly operated by the militaries of many nations, are not at the top of the public consciousness. Instead, it is the humble quad-copter that dominates the news.

So, on the one hand you have technology and numbers expanding in a drone equivalent of Moore’s Law, and on the other you have rapidly expanding numbers of people with access to that technology but for whom there is no real training requirement because the technology takes care of all that. The downside of this second half of the equation is the unthinking or unaware use of systems where the user places others at risk because of their lack of knowledge or, worse, flagrant disregard of the existing regulation.

The Drone Dilemma

Upper Freeman Air Commodore Dai Whittingham (RAF ret’d)

Chief Executive UK Flight Safety Committee

Gazette

Approved by the Court 12 May 2016

Admissions
As Upper Freeman
Gurcharan Singh BHODAY
Captain Catherine Suzanne BURTON
Captain Jeffrey Alan GADBOYS (NA)
Captain Jason Christopher HOLT
Captain Jacob Ludwig Myles KOLLEGER (OS)
Captain Timothy MILLER
Matthew PHILLIPS (AUS)
William Melton THORNTON (NA)
Julie Marie WESTHORP

As Freeman
Leslie Richard DEADMAN
Ian Rowland MARTIN-TAYLOR
Robert VIANELLO

As Associate
Steven Dominique CHEUNG
Dr Anthony SCHIEMER (AUS)

Acknowledged by the Court
12 May 2016

Regrade
To Livery
Graham John POWELL
William Michael Henry DEAN
Robert Mark Roy SEAMAN

Reinstatement
To Upper Freeman
David Geoffrey WILSON (AUS)

Deceased
Michael PENNY
Edward (Ed) STRONGMAN
Malcolm Hedley WHEATON (AUS)

Resignations
Samuel BOOTH
Stuart BROWN
John CAMPBELL
Luke DALE
Richard DUNEVEIN-GORDON

Michael HUMPHREYS
Michael NEILSON
John SAULL
Mark Searle
Christopher SQUIRES
Russell WILLIAMS

Forfeit All Benefits
Nigel BEST
Alexander BUTTERS
Glen CORCORAN
Graham HOPKINS
Bobby KENNEDY (OS)
Alan MOSS
Alexander OSHOMAH (OS)
Andrew REOHORN
Connor RICHARDSON
Felix SADDLER
James SHEPARD
David SHEPPARD
Marcus WARD

The Drone Dilemma

Upper Freeman Air Commodore Dai Whittingham (RAF ret’d)

Chief Executive UK Flight Safety Committee

Whatever you think of “drones”, even if your only concern is a preference for calling them Unmanned Air Systems or Remotely Piloted Air Systems, there is no denying that they are here to stay. There is also no denying that drone numbers have increased rapidly in the last few years and we are now seeing very clear evidence of this in the inexorable rise of manned aircraft versus drone Airprox incidents. And technology is of course evolving rapidly; it will come as no surprise to know that the major manufacturers are working hard at a means of engineering one of the pilots out of the commercial air transport flight deck. Once that technology matures, the risks are better understood and the travelling public have had time to get used to the idea, we can expect to see heavy aircraft being remotely piloted – after all, the military have been operating fighters as heavy as the Sea Vixen as droned targets for many years, albeit in segregated airspace.

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THE LAW

Articles 166 and 167 of the 2009 Air Navigation Order govern the use of 'small unmanned aircraft', which are defined as weighing less than 20 kg. The first principle in Article 166 is that:

“The person in charge of a small unmanned aircraft may only fly the aircraft if reasonably satisfied that the flight can safely be made.”

The second is that the person in charge “must maintain direct, unaided visual contact with the aircraft sufficient to monitor its flightpath...” and there are further restrictions for platforms heavier than 7 kg which prevent you flying in Class A, C, D or E airspace, or within an ATZ, without the permission of the relevant ATC unit. These heavier platforms are also limited to 400 ft unless in controlled airspace and in accordance with the requirements of that airspace.

So far, so good, unless you consider that the operator of a sub-7kg drone (most of the 'leisure' drones weigh 1-2 kg) can make his own decision on what is safe, as he only has to be 'reasonably satisfied' of this. Nor does he have to worry too much about launching his drone into Class A or Class D airspace so long as he maintains unaided visual contact with it and believes he can avoid other aircraft. This may explain the recent incident at Gatwick when someone thought it was OK to put his drone at 100 ft over the threshold of the active runway; sadly, the operator and his drone left the area before he could be apprehended.

Things change slightly when you put a camera onto your small drone as it becomes a surveillance aircraft, for which Article 167 applies. You have the same requirements deriving from Article 166, but now you may not fly over or within 150 m of any congested area or an organised open-air assembly of more than 1,000 persons, or within 50 m of any person, vessel, vehicle or structure not under your control.

There are exceptions to both Articles obtainable by permission from the CAA, which normally pertain to aerial work. However, General Exemption E4909 permits operations up to 1000 ft provided the operator is “accompanied by a competent observer who maintains direct, unaided visual contact”. General Exemption E4185 now allows the use of 'first person view', where the operator uses the view from the onboard camera to fly the drone, though an observer is still required.

THE RISKS

The first and most obvious risk for manned aviation is that of collision with a drone, a risk that seems to be increasing. There were 6 Airprox reports concerning drones during 2014, compared with 2 for the previous year; during 2015, there were 30 incidents. For commercial air transport operations, where loss of life in an accident is likely to be largest, there were 32 Airprox in all categories last year but only 6 were Category A: “Risk of Collision: aircraft proximity in which serious risk of collision has existed.” Of these 6 serious incidents, all involved drones. Numbers for the first months of this year are already higher than the corresponding period of 2015.

If drone operators were all complying with the provisions of ANO Articles 166 and 167, you would expect the number of incidents to be comparatively low as all would be flying at 1000 ft agl or below; the highest recorded UK encounter to date has been at FL130, and there have been multiple reports of encounters in the 1500-5000 ft band. The problem is sufficiently frequent that UK Airprox Board has had to develop a new categorisation system for risk analysis. There is also no reporting system that can take account of breaches of the minimum separation distances for people, public assemblies, vehicles or structures, so we can only guess at the frequency and associated risk.

Voices are already being raised in some quarters suggesting that the perceived risk of catastrophe resulting from a drone collision is being overstated, the principle argument being that the probability of collision is low given the relative numbers involved. The scale of expected damage has also been questioned in a recent study in the USA, but both objections are based on bird-strike data. The problem with this approach is that birds are of a finite size and construction, and will attempt to avoid other flying bodies, whereas drones vary significantly in Max AUW and construction, and have a relatively fixed flight path. For the smaller drones that are most likely to be encountered, construction will inevitably include a motor, lithium battery and a camera that present a solid mass, and a providing a further injection of energy when said battery is damaged. Whilst engines are of course certified to withstand a known bird-strike risk, none has yet been constructed to withstand drone ingestion, nor are they likely to be. Early tests with life-expired engines have produced outcomes that are best described as “not pretty”, and there will be understandable resistance from engine manufacturers to developing and certifying engines capable of dealing with such a recently-emerged risk, especially as that risk is capable of being mitigated by other means. There are also valid questions about protection for windshields, leading edges and control surfaces.

Consideration of risk normally extends to commercial air transport operations as this is where loss of life could be most significant, but the risk of catastrophe in
the form of any fatal accident is most acute with helicopters. Main rotor and tail rotor blades are particularly vulnerable to the effects of a collision with a solid object such as a drone; there are also more extensive areas of transparencies. Of crucial importance, even drones operated in full compliance with the law will be occupying the same piece of airspace as that frequented by helicopters - we are already seeing the presence of news-gathering drones and those operated by 'rubber-neckers' affecting the use of police and air ambulance helicopters at ground incidents. And if the drone arrives on scene before the helicopter, which one is presenting the risk?

EQUVALENCE

There is a debate running in many nations (and in EASA) about proper integration of drones into controlled airspace, much of which centres on "equivalence", whereby the airworthiness of an unmanned aircraft has the same risk assurance as for manned aircraft. Whether this is a valid argument depends on how you weigh the balance between the risk to occupants (which is zero for a drone) and the risk to third parties. The probability/severity equation drives consideration of, say, engine reliability and structural integrity, against the operating location and hence the third-party risk. The USAF has for some years been operating Reaper and Predator through controlled airspace around Las Vegas to gain access to the Nellis ranges, but the flights are all routed around urban areas so the probability is that only desert will be damaged in the event of an accident.

The other question about equivalence is most regulators' insistence on drones having a 'sense and avoid' system that is as good as 'see and avoid' before they can be allowed to operate routinely in unsegregated airspace. Whilst modern fighters are all designed to have all-round visibility from their cockpits, the same is not true for airliners. Moreover, most drones are capable of out-maneuvering airliners, at least over short distances. See and avoid is the barrier of last resort for mid-air conflict, yet the bulk of the community most at risk from drones (in terms of potential loss of life) rely heavily on TCAS for separation, even when operating into Class G destinations. Lookout does not feature as heavily as flight path management in the priorities of the pilot of a heavy aircraft. It is unrealistic to expect all drones to have a true 'sense and avoid' capability, though it is not an unreasonable aspiration for the larger platforms. As for segregated airspace, the sub-20 kg drones can already operate in controlled airspace provided the operator is reasonably satisfied the flight can be conducted safely. So where is the additional risk for a platform that is transponding and communicating with ATC?

THE IDIOTS

Even the most comprehensive set of regulations becomes ineffective if operators are either ignorant or simply disregard them. Although the CAA has published a 'Drone Code' in an attempt to bring the law to public attention, the incidence of higher-altitude encounters and online video evidence suggests the regulations are frequently not adhered to. Whilst action has been taken with major retailers to have suitable information provided at point of sale, internet purchases are much harder to tackle. Other than the occasional prosecution for the most flagrant breaches of the law (such as operating over football matches or at music festivals) there has been little to discourage drone owners from operating freely because, in contrast with manned flight, lack of basic knowledge and skills is not self-limiting. Of greatest concern are those individuals (often described as 'idiots') who are aware of the regulations but choose to disregard them, often without any understanding of the risk they pose to others. An interesting emerging view is that some of the higher-altitude encounters have been caused by 'idiots' who are well-aware of the risks but whose desire to prove the capabilities of their home-built drone provides an over-riding motivation, hence an association with online publicity in the form of video. Perhaps so, though there is also oral evidence from an individual who was operating at 4000 ft in the Mayfield hold for photographic purposes last year and who had no idea that regulations even existed. The answer to all 'out-of-bounds' drone activity may lie in technology and built-in constraints such as geo-fencing, but there will always be those who simply see these as additional challenges to be overcome.

Concerns have also been expressed about the security threat from drones, especially their use as a means of terrorist attack. Such concerns are routinely tracked by the Department for Transport's threat analysis team and some avenues for defence are being considered. Both the inadvertent, idiot threat and the deliberate, malevolent threat have led to calls for all UK drones to be registered, regardless of size. Setting aside the issue of proportionality, the genie is already out of the bottle given the potential numbers involved; any registration system will inevitably come at a cost and will be complex to develop, maintain and police. Any system will have to require existing drone owners to register, even though the authorities have no real means of knowing who has a drone and who doesn't - perhaps the default position will be for users to be asked to prove when challenged that their drone has been suitably registered. The one group of users who can be guaranteed to register are those who have gained CAA permits for aerial work; paradoxically, this group is also the one most likely to comply with the regulation and therefore poses the least risk! What form registration should take is open to debate but, whatever method is chosen, size considerations mean that any markings will not be visible other than at extreme close-quarters, which further complicates the policing task.

CONCLUSION

Drones are here to stay. Their numbers and uses are proliferating rapidly and most can be operated with almost no knowledge or training. Without action to limit irregular drone use, airspace users can expect more frequent encounters at low and medium altitudes, and a serious collision between a drone and a manned platform seems to be a only matter of time. Proper research into the effects of such collisions would help underpin the regulatory requirements and their enforcement, and the work should be used in any campaign to increase public awareness of the risks posed by the irresponsible use of drones.
Behind the scenes at Martin-Baker
The British engineering group quietly saving lives

Freeman Ben Griffiths

Martin-Baker is one of Britain's most important aerospace companies and yet outside industry or military aviation circles few people seem to have heard of the business, much less can tell you what it sells.

Mention ejection seats, however, and most laymen will be able to identify what the equipment does. It is one of the few pieces of engineering that absolutely has to work first time, every time, in order to be classed as a success.

An ejection seat could sit unused for 40 years before a pilot has cause to pull the black and yellow striped handle and eject himself from a stricken aircraft. A visit to the company's website includes an exhaustive section written by ejectees who only survived thanks to Martin-Baker's products, more than 85,000 of which have been delivered to 92 air forces around the world.

To date, 7,491 lives have been saved, according to an electronic tally in the group's reception. When the 7,500th person ejects Martin-Baker plans to hold a special commemorative event, which could bring the latest member of the exclusive club face-to-face with Jo Lancaster, the very first person to use one of the company's seats in anger in May 1949 and now in his 90s.

Strolling down the leafy suburban lane that leads to Martin-Baker's HQ in Denham it feels almost like stepping back in time. A business that has remained in family control since it was founded, the current management team clearly doesn't believe in wasting money building modern facilities.

There is no need. The old factory is perfectly good and was obviously built to last using quality materials. Many of the original units remain in use to this day, an oak paneled entrance hall dominated by a wooden propeller is a reminder of the company's heritage. Martin-Baker's main site may be functional but it has now played witness to almost 70 years of design, development and manufacture of aircraft escape systems.

Besides Denham, Martin-Baker has various sites around the world, including its testing facility at Chalgrove where the seats are put through their paces and the company bases a pair of vintage Meteor jets used as test aircraft.

It boasts 650 employees spread across the UK, France, Italy and the United States. Currently controversy surrounds the firm's new seat for the F-35 Joint Strike Fighter, which according to some reports means lighter weight pilots are at risk of injury if they are forced to eject at low speeds. Martin-Baker has not commented on this issue.

Besides the F-35, the world's largest defence project, the company is involved in several high profile military programmes. Martin-Baker is likely to see its seats fitted to the next generation of US Air Force training jets, known for now as the TX until an airframe is selected to replace the venerable T-38 Talon. The company is also understood to be linked to both bidders for the new US Long-Range Strike Bomber, which will eventually replace the aging B-52 and B-1 aircraft in service.

Closer to home Martin-Baker seats are used in Eurofighter's Typhoon combat jet as well as in a host of other platforms from the Saab Gripen, Dassault Rafale and BAE Systems Hawk training aircraft. US Navy and Marine Corps F/A-18 Hornets and Super Hornets also use Martin-Baker seats. The US has been an important market ever since NASA first opted to retrofit its aircraft with MB equipment. In fact it is the US forces which boast among the highest number of successful ejections, thanks to the prolific use of Martin-Baker seats in Navy, Air Force and Marines Corp F-4 Phantom II aircraft during the Vietnam War.

Such success has helped Martin-Baker carve itself a 53% market share of the world's ejection seat business; its nearest competitor is America's UTC Aerospace with a 16% share.

Having started out as an aircraft manufacturer, the Martin Aircraft Company, the group switched its focus forever when test pilot Captain Baker was killed flying one of its aircraft. His death prompted a name change for the business and a new purpose in life for founder Sir James Martin. His sons James and John, now in their 70s, today jointly run the company and their sons, too, are involved in the day-to-day running of the business. One is head of engineering, the other head of business development. It is the latter, Andrew Martin, who showed me around the factory late last year.

'It remains all about saving lives,' Andrew Martin said. 'We constantly have stories coming back from people whose life stories continued when they may not have survived. That's a real driver for all of the company and inspiration for our people that in many cases do quite repetitive tasks on the shop floor.' Andrew elaborated on the company's history. The first live ejectee during testing (in 1949) was a volunteer from the shopfloor, a fitter called Benny Lynch, a man who should surely be better known. Because the fledgling ejection systems were then much slower, Lynch had to remain fully conscious having been fired out of the aircraft and had to separate himself from the bulky seat and pull the ripcord on his own parachute. Today, of course, all this is done by an automated system. Once the crewman pulls the ejection handle, the entire process takes less than one second.

'Design here is about constant evolution and not revolution,' Martin explains. 'It is all about the speed at which you can put someone under a parachute.' For this reason the ejection seats seen being constructed during my visit and destined for BAE Systems' Hawk jets for Saudi Arabia don't look drastically different from their predecessors displayed in the company's small on-site museum.
The final assembly line at Denham has an atmosphere of calm efficiency as skilled workers piece together seats by hand. In one section the very latest design for the F-35 is coming together. It features airbags built into the headrest which are designed to inflate to protect the pilot's head during an ejection. The company has been working hard to ensure its seats can be used by every size of person ranging from giant American footballers of 6' 6" in the US military, to the much smaller female pilots in the Middle East. Martin-Baker rarely does media interviews and tours of its factory and test site are reserved largely for ejectees. A Tie Club exists for those who have survived an ejection and a special timepiece made by British watch company Bremont is available as a momento. The window blind behind Martin's desk is covered in photographs of ejectees along with their stories. These are all aviators whose lives would have ended abruptly had Martin-Baker's products not worked as advertised.

The business has won 11 Queen's Awards to Industry for export, technology and environment but quietly goes about its business without fanfare. Amid shrinking defence budgets in the West, Martin-Baker is currently evaluating what Martin calls 'other safety-related' opportunities to which it can apply its brand and leverage its international presence. One example is a new form of compact generator to deliver oxygen on the battlefield instead of the pressurised tanks that became a target for Taliban snipers in Afghanistan, who would shoot at the tanks to try and make them explode. The company is said to be just months away from bringing this new technology to the market.

Other growth areas are countries like India, South Korea and Saudi Arabia, with growing defence budgets. Martin-Baker is also keen - like every aerospace and defence business today - to grow its maintenance, repair and overhaul work, currently its biggest growth area. Military forces are increasingly contracting out even the ownership of their assets to private companies - in the UK the Ascent consortium will eventually own the entire RAF fleet of training aircraft, for example - which means government work looking after them is up for grabs too.

With so many Martin-Baker seats in service around the world, maintenance work on them will provide a healthy revenue stream for the company at least to see the next generation of Martin family members into retirement. 'We are very bullish that our market share will continue to increase,' Martin says. 'There have been no handouts and we have no company debt at all. We have self-financed all our research and development and that gives us very strong revenues.' Given its market dominance and involvement in the majority of the leading military combat aircraft programmes in the West it seems certain Martin-Baker will continue to prosper.
Researchers have found that the use of technology in the classroom can improve student engagement.

By the Editor

Forever Vigilant

Naval 8 / 208 Sqn RAF
a centenary of service 1916-2016
GRAHAM PITCHFORK

Grub Street, April 2016

There is a rash of unit centenaries coming up because of the explosive growth of Britain's air power in WW1. But only a small rash, you understand, as the diminished state of our air power means that many squadrons have never made it to their centenary. However 'Naval 8', as in RNAS, has survived, just, in its 1918 incarnation as 208 Sqn RAF. Some idea of the cultural problems that this transition caused can be gleaned from the illustrations in this handsome book, which showed the (ex-matelot) CO of 208 keen to retain Naval garb even in its new incarnation!

Graham Pitchfork, a well-known writer on military aviation, covers the subject with plenty of emotional attachment, since he was CO of 208 in the 80s. He concludes the illustrious record of the unit in WW1 by reproducing the almost eulogistic summary of CG Grey, the then editor of The Aeroplane, and a journalist not noted for effusive praise!

The squadron soon developed a skill in tactical reconnaissance and ended up practising this, in both peace and war, in the Middle East. It acquired the esoteric name of The Flying Shuftis (as in having a quick shufii). By the outbreak of WW2 it was still in sandy places, and acquitted itself very well in the Western Desert despite the twin handicaps of being equipped with obsolescent aircraft (the Hurricane Mk1), and the frequent blue-on-blue AA from the British Army. The squadron was showered with DFCs. Late in the war it endured an arduous campaign through Italy. No peace for this crowd as they were soon in Palestine, defending themselves against Israelis in Spitfires.

Somehow this squadron has had the knack of being at the epicentre of Middle Eastern unrest through at least three decades! The descriptions of the squadron’s move into the Jet Age, equipped with Meteors, contain plenty of evidence of how dangerous this airframe was to pilot health. Its later equipment, the Hunter and then Buccaneer, enabled 208 to remain at the forefront of tactical reconnaissance. Latterly the squadron has been central to fast jet training utilising the Hawk at Valley. It was and is clearly a very distinguished squadron, and Pitchfork writes with his customary authority. Some quibbles though. His primary source material would appear to be the squadron’s Operations Record Books. These are official tomes, usually penned in fairly stiff language, and inclined to be quietly upbeat rather than describe any low points in morale or performance. So the book feels a little one dimensional. Added to this is Pitchfork’s own writing style, which seems overly influenced by his very successful RAF career. He loves the use of the verb ‘commence’, for example: it is a bugbear of mine, as I was always told to use Anglo-Saxon words in preference to those derived from the Latin. Sound advice. More broadly I do not think the author has used all available sources. The book would have been much less dry if he had added colour from the biographies of squadron members. Gus Dudgeon, whilst not on 208, would have injected much excitement to the narrative from Habbinaya in 1941, for example. And certainly Rod Dean’s recent autobiography, Fifty Years of Flying Fun, includes much colour from his days on Hunters with 208.

Average

A Training Diary
TREVOR EDWARDS

Edd Industries, 2015

Staid. Very staid. The first pages cover Trevor’s initial flying training at RAF Swinderby. And nothing much happens of note. There is not even the ‘shock of capture’ which young officer cadets experience when they start initial officer training. For Trevor is already an officer, indeed he is a Toesless Rock. One should explain: young Edwards, when clearly not in full possession of his faculties, decided he wanted to be an officer in the RAF Regiment, and so he became a Rock Ape. The RAF treated these baby rocks so badly that Trevor lost his toes on an endurance exercise in Scotland. It was then he decided he really wanted to be a pilot. A Hallelujah moment, really. To my surprise, he passed the medicals, sans toes.

The young pilots (of which Trevor is the eldest on the course), do their best to break the Chipmunks, and as countless RAF pilots before or since, fail. Once he finds his pace, Trevor’s writing style has the dry, ironic self-deprecation found in many of the best military flying autobiographies. He shares with us his extraordinary sartorial tastes (particularly on Thursday nights in the Mess). Plus fours, any one?! This puts into context the sadness that he is without a girlfriend for much of the book….

Much of these early chapters is familiar (but nonetheless entertaining for that): the arrogance of youth, extreme ingestion of alcohol, late-night kebabs, amnesia, etc. Rites of passage then as a trainee RAF pilot. Interest rises with the shift to learning on JPs at Linton, and the ability to self-harm, so to speak, rises in step. The ethos of work hard/play hard is laid bare – readers are left in no doubt that the RAF training system exerts constant pressure. Succeed or be chopped. Edwards lifts the lid on what happens at dining-in nights – which should not come as a total surprise to those with imagination (like taking the lid off a pressure cooker still in operation, mixed with testosterone).

In his own view it is near miraculous that he graduates from the JP to the Hawk at Valley. Here there are so many cancelled sorties due to appalling weather on that Godforsaken Welsh island, that it makes one wonder why the RAF hierarchy has decided to put all its fast jet training eggs in this dubious basket. At this stage one also wonders why Trevor has taken so long to produce this book. It is such ancient history that one of the QFs at Valley is a certain Flt Lt Stu Atha, now a 2 star! (And Trevor himself is a BA captain, having left the RAF at his 12 year point).

He escapes Anglesey for the Jaguar fleet, and eloquently expresses the further pressure at the OCU. Like most pilots he is protective of the reputation of his steed (tradition had it that the Jag only became airborne due to the curvature of the Earth). Yet he describes sufficient episodes that underline that this was an airframe that could bite: single engine operations, carrying a full bomb load, or testing the limits of its flight envelope could all require the Martin Baker option. Indeed the book chronicles his attendance at wakes for several colleagues (although not just on Jags). Whilst not as deadly as the Meteor era for example, Edwards underlines that military flight training still carries mortal hazards. The book concludes with Edwards being passed as combat ready (he went on to become an A2 QFI on Jags).

The book lacks illustrations (it is self-published), but is very entertaining in places. Average, he is not.
From the desk of the Director Aviation Affairs

Liveryman John Turner

INTRODUCTION
The DAA is becoming increasingly disillusioned with living in 'interesting times'! Dealing with regulatory change is always difficult; over the last two months, when the focus of DAA recent activity has rarely moved far or for long from the consequences of the UK air display regulation review that followed the Shoreham accident last August, it has been intensely frustrating.

In contrast, April's Cobham Lecture was a welcome breath of fresh air. Tracey Curtis-Taylor's account of her Stearman biplane journey from UK to Australia and her earlier flight in the same aircraft from Cape Town, South Africa to Goodwood, UK, together with insights into some of the early aviation pioneers, including (of course) Amy Johnson was both entertaining and educational. Her uplifting enthusiasm, not only for aviation but also for her involvement supporting women's causes as part of her travels, was evident throughout. Just the motivation needed to continue the regulation battle.

LASERS
The UK Laser Working Group met in London on 28 April. There are encouraging signs of growing political support to address the issue of higher powered lasers and the threats they represent to aircraft, other forms of transport and children. Following significant work to highlight the real, as opposed to the reported, number of occasions that lasers have been directed deliberately at aircraft in flight, several government departments are now primed and ready to work together towards an effective outcome; more importantly, they are being directed to do so. This again highlights the importance of pilots continuing to report all occurrences when they occur. It is human nature (and easy) to assume that, if nothing appears to be done about an issue you have reported on frequently, there is little point in continuing to report, especially at the end of a tiring working day. Please try to avoid that temptation; your reports may seem ineffective in the short term but are the only way we can instigate change, even if that takes a longer

than we would like.

It is tempting to ask if you've ever been too tired to submit a fatigue report ……

DISPLAY FLYING
In early March, the Honourable Company and the British Air Display Association (BADA) released a joint statement criticising Andrew Haines, the Chief Executive of the UK Civil Aviation Authority (CAA), over the CAA's handling of air show regulation and charges; in response, we received his unreserved apology. Conflict between regulator and regulated is always regrettable so both the Honourable Company and BADA then embarked on re-building bridges!

From that unpleasantness, we had a positive outcome when CAA called experienced members of the air display community to Kingsway and Gatwick on 22, 23 March to discuss and 'reality check' their review proposals. These meetings appeared to be really effective. They seemed to address the lack of previous consultation, as well as overturning some misguided ideas such as imposing fixed aerobatic sequences on pilots displaying a variety of aircraft types. The attendees left reassured that CAA would now listen and understand, rather than rely on its own team with little, if any, experience of the air display environment. This was reinforced by the promise of full participation by the air display community experts in a post-implementation review at the end of the 2016 display season.

Subsequently, the UK CAA published its report into their Review of Air Display Regulation. Notwithstanding the media furore, the report was of no real interest because it did not actually change what display pilots and organisers are required to do. Those changes were published shortly after the report in an update to Civil Aviation Publication 403 - Flying Displays and Special Events: A Guide to Safety and Administrative Arrangements (CAP403). Suffice to say the changes varied from what the report had suggested and undid much of the work of 22, 23 March with new changes that had not been discussed in either the review or the March meetings. Many who had devoted one or two days over March 22,23 felt they had wasted their time.

As we should expect following a tragedy of the scale of Shoreham, the air display community is under pressure from the media and the regulator and the new CAP403 lacks the clarity that is needed to ensure everyone follows a path that is safe for all. CAP403 contradicts itself and in some cases mandates standards excessively higher than those applied in other areas of aviation. For example, a 560 kg autogyro is required to take off and land at least 150m from spectators at an air show yet a 6,500kg AW139 helicopter can operate at London (Battersea) Heliport only 76m from a hotel. DAA has already queried this with CAA General Aviation Unit (GAU) - asking whether CAP403 or the Heliport rules are wrong - and awaits a response. The next stage will be to identify each contradiction within CAP403 and seek first clarification from CAA GAU and second an urgent amendment.

Good rules are concise, unequivocal and self-evidently logical or easy to explain. Lack of clarity leaves the rules open to individual interpretation and creates arguments when people make different interpretations. An air show, whether in the planning or the performance, is not the place or the time for such arguments. Furthermore, basic human factors training examples are full of illogical or poorly understood rules being ignored, which cannot be an option at UK air displays in 2016. The new CAP403 will do little to help display pilots and display organisers to keep focus on safe operation above everything else; if anything, it will distract and potentially confuse. Therefore, the Air Pilots will continue to press for improvements to CAP403 throughout 2016.
Air Display Management Post Shoreham

Liveryman Tom Eeles (Duxford Flying Control Committee)

Photos courtesy of the Editor

Following the accident at Shoreham the Civil Aviation Authority (CAA) has revised CAP 403, Flying Displays and Special Events: A Guide to Safety and Administrative Arrangements. This revised document, issued on 13 April, after the meetings described by the DAA in his article, is likely to be the one which will be used until the final report on the Shoreham accident is issued by the Aircraft Accident Investigation Branch (AAIB).

A first reaction to this revised document is that despite the numerous changes, it is workable and does not appear to be as restrictive as might have been anticipated. However, there is a lot of extra pre-event work for Flying Display Directors (FDD) to do, some of which is a real challenge both in the amount of preparation and in the resulting accountability. This may possibly put off willing volunteers who have been FDDs in the past. This latest issue embraces a number of topics which have been long awaited requirements, such as independence and better oversight of the Display Authorisation Evaluator (DAE) and Display Authorisation (DA) processes, a mechanism whereby some agreed process of reporting back to the CAA is introduced and a recognition of the problem of people outside the recognized spectator area, now known as 'secondary spectators'. There are some well-known air display sites where the problem of secondary spectators could prove to be a major issue. CAP 403 now states that 'The Event Organiser and the FDD will, in particular, need to consider and make arrangements for areas and buildings outside the event where members of the public may congregate, busy roads and railway lines, which are put at increased risk by the fact the display is happening.' CAP 403 introduces a 'Stop Call' formal reporting mechanism and there is concern that this could have the effect of FDDs and Flying Control Committee (FCC) members having second thoughts before calling 'Stop'. To quote again specifically from CAP403:- 'Where a stop call is called because an FDD (or FCC member) has reason to doubt the fitness or competence of a pilot (i.e. a safety concern relating to the pilot's performance) that pilot will be subject to a provisional suspension of their display authorization pending an investigation by the CAA of the circumstances leading to the stop being called. A provisional suspension notice will be issued by the CAA once it has received the report from the FDD. Pending issue of the provisional suspension notice by the CAA, the pilot should not exercise the privileges of their display authorization until an investigation is complete.'

Other general topics which have been included are as follows:-

• Display aerobatic areas and a clearer delineation of ground areas not to be overflown are to be defined.
• There now specific height and manoeuvre limitations on ex military jet aircraft, with 500 ft being the minimum height and only loops and barrel rolls permitted.
• Lateral separation distances now largely reflect the MoD and Military Aircraft Authority (MAA) requirements, namely, 230 metres for all aircraft. 450 metres for aircraft above 300KIAS with a velocity vector towards the crowd, 150 metres for aircraft below 1200kg MTOW and max IAS 150kts, rotary aircraft taking off or landing and VSTOL aircraft not in wing-borne flight.
• The DAE/DA approval process has been reviewed and is now more independent and rigorous.
• Behavioural and Attitudinal fitness assessment of DAs and FDDs is to be introduced.
• Medical requirements of display pilots are to be more standardized.
• Event Organisers are to be more formally responsible for the conduct of the event.
• There is to be closer CAA/Safety Regulation Group (SRG) day to day monitoring of events.
• More extensive and formal planning is required, including Enhanced Risk Assessments, prior to the CAA granting Permission for a display.
• Active management regarding concentrated groups of people outside the event is to be included in risk assessments.
• Details of equipment and material, such as ejection seats, that might be hazardous to 'first responders' need to be available to the emergency services.
• Post event feedback is introduced.

The above list is by no means comprehensive and only close perusal of the 137 pages of CAP 403 will reveal all the detail of the changes. The document can be easily accessed on the CAA website. The issue of air display charges is separate to CAP 403. The CAA originally intended to initiate a new charging regime for 2016 which would have seen significant increases in charges relating to air display organization, some by as much as 500%, being imposed at late notice. This led to some displays
being cancelled as organizers had already established their prices on the basis of the old charges; the CAA has now decided to introduce a new charging regime over a longer period of three years.

To conclude, many changes have been introduced by the CAA to the organization of air displays following the accident at Shoreham in 2015. The 2016 air display season can now go ahead, incorporating these changes, which will doubtless cause some problems. Scrutiny of events by the media is probably inevitable. There is unlikely to be further change until the AAIB final report on the Shoreham accident is published.

Duke of Edinburgh Award Programme

Assistant Dacre Watson

Three times a year, members of the Air Pilots Livery Schools Link (LSL) team are invited by the Duke of Edinburgh Award scheme to attend the presentation of a cheque for £1200 to a London school in order to kick-start a Duke of Edinburgh Award programme within that school. Every year since 2000 the money has been raised by the Livery Companies Golf Day (for the Ray Jeffs Cup), in which 25 or more teams from some 20 Livery Companies compete.

The brainchild of Liveryman John Mason, the Ray Jeffs Golf match has been played every year since its inauguration fifteen years ago (this year’s match is on 24th July) raising up to £4000 on each occasion; this money is then donated to the Duke of Edinburgh Award where Mrs Hayley Hyman, Operations Officer, is responsible for selecting three schools annually whose financial resources are too limited to otherwise become involved in the D of E programme.

During the last 15 years over 40 schools in London have benefited from the funds raised in this way, with only two schools falling by the wayside; a remarkable achievement.

The latest school to be selected for the award was St Gabriel’s College, a small inclusive Church of England School which serves an urban population in Lambeth with social deprivation roughly twice the national average. The presentation of the cheque was made on 15th April by Assistant Dacre Watson and Associate Zoe Gell. The next school to be selected is the Warren School in Barking & Dagenham, one of the most deprived areas in the country – nearly half the students receive free school meals, and 25% have special educational needs. The diversity in the area is such that 65% are from an ethnic minority and 40% speak are not native English speakers.

Zoe Gell will perform this presentation on 27th May, and this will then mean that every single school in the London Borough of Barking & Dagenham will be involved in the D of E programme, an extraordinary achievement, for which the Honourable Company of Air Pilots can be proud of their contribution.

Assistant Dacre Watson explains the scheme.....

...and presents the cheque
In 1995, after retiring from flying with British Airways, I joined IATA as its European Director of Operations and Infrastructure. For five years, I ran the IATA office of about ten people in Brussels, representing the needs of our member airlines to ICAO, EUROCONTROL, NATO, the European Commission and the various European Air Navigation Service Providers (ANSPs). It was an interesting and challenging job, during which, amongst many other things, we helped to devise strategies for a more unified system of Air Traffic Management (ATM) across Europe that ultimately led to the current SESAR programme.

It was while still with IATA that I visited NLR, the Netherlands Aerospace Centre in Amsterdam, and was introduced to Free Flight. I immediately became a convert! This was an idea initiated in the USA but much developed by NLR. However, in those days, if you uttered the words “Free Flight” outside the small group of aficionados, you were likely to receive a number of interesting reactions. These could range from blank stares via violent reactions to sad headshaking. On one occasion, somebody actually asked me… “But you still have to pay airport taxes…?”

Joking apart, I no longer use this term: it is neither free in terms of cost, nor is it an operational free-for-all. I prefer to say 'delegated spacing', 'delegated separation' or 'self-separation' (and then only under tightly controlled conditions).

After I retired from IATA, while working as a freelance consultant, for five years I chaired the European Commission’s ASAS Thematic Network (ASAS-TN) workshops which brought together researchers and ATM specialists from many countries around the world with a view to exchanging ideas and coordinating research. Through these workshops, we encouraged international standardisation, simulations and trials of equipment and operational procedures. And it was during those five years that I had the chance to fly again NLR’s simulations, this time with three times the 2005 level of traffic density, in the busy airspace of the Maastricht Centre, including a descent, approach and landing at Amsterdam, doing my own self-separation with no difficulty at all. It wasn’t only me - NLR conducted trials with a number of volunteer line pilots and concluded that, not only was it a practical proposition, but the workload involved was entirely acceptable.

So what is ASAS? The acronym stands for Airborne Separation Assistance System, the substance of which I will describe later. In its purest form, this means an ATM paradigm where, in most circumstances, separation is provided from the cockpit with controllers on the ground retaining a mainly strategic role. The original discussions, and to a certain extent the debate, focused on where the line should be drawn: to what extent should the responsibility for separation be transferred to the pilot, where is the limit of safe and cost effective transfer so that it produces real benefits? It quickly became apparent that, in its purest form, ASAS self-separation was probably realistic only at very high altitudes with low density traffic, or in remote areas. However, variations on the theme were possible and some of these held real promise and, since the term free flight itself was found to be too offensive for some, it was replaced by terms such as Airborne Traffic Situational Awareness (ATSAW) and Airborne Separation Assistance System (ASAS).

Whatever you call it, the question of transferring some or all separation responsibility to the cockpit is a complicated one, as is the work currently under way to assess the possibilities and chart out the most promising directions. It is important to note that it is entirely consistent with the SESAR concept of Trajectory Based Operations (TBO). In this highly organised en-route TBO environment, where tactical interventions are few, self-separation is a natural choice. Furthermore, with advances
in remotely piloted and autonomous aircraft, the technology is quickly maturing in a direction that will make free flight even more attractive than it was when first proposed more than a decade ago.

For those who are unaware of this work, I will describe the building blocks of the system and the basic groups of ASAS applications as defined during the ASAS-TN work. The diagram below shows the interconnections between the FMS/navigation functions of the aircraft, ADS-B-Out, ADS-B-In and the airborne data display on a CDTI (Cockpit Display of Traffic Information). Clearly, for such systems to be used in normal operations, the aircraft equipment must be certified, the crews correctly trained, the rules properly defined, ATCOs and their systems equally well trained and certified, and clearly defined pilot/ATCO procedures established. ADS-B-Out information is already being used by ANSPs in Australia, Canada, parts of Europe and the USA to fill in the gaps of radar coverage, e.g. over Hudson Bay in Northern Canada and in central Australia, where it is either impossible or too expensive to install radar. The data is displayed alongside conventional radar data at controller work positions and this permits reduced separation in non-radar airspace.

For ASAS, the same data also needs to be received by other aircraft using ADS-B-In and displayed on a CDTI which looks like the image above.

**There are four sets of ASAS applications.**

1. The first set covers situational awareness:-
   - **ATSA-AIRB** (Airborne surveillance); this is the most basic application in which traffic information is displayed on the navigation display. It is for information only.
   - **ATSA-VSA** (Enhanced Visual Separation on Approach); this application is similar to the above and used to achieve visual acquisition of preceding traffic and maintain visual separation on the approach.
   - **ATSA-SURF** (Enhanced traffic situational awareness on the airport Surface); the traffic is displayed on a moving map of the airport surface to supplement out-the-window observations and see-and-be-seen procedures on the airport surface.
   - **ATSA-ITP** (In-Trail Procedure in non-radar oceanic airspace) permits 'climb-through' manoeuvres to climb past 'blocking' aircraft to a more economical level when in oceanic airspace.

   These are all fairly simple applications, and many aircraft are being supplied with ATSA-AIRB already fitted. Trials carried out by SWISS and other airlines have shown that ATSA-AIRB (Airbus call it ATSAW-AIRB) can help pilots to decide whether it is worth asking ATC for a climb to a higher level when on the N Atlantic Track system.

2. The next set is rather more complicated. These applications are all spacing applications:-
   - **ASPA-S&M** (Sequencing and Merging); where the ATCO instructs the pilot to identify and then maintain a given time or distance spacing behind a designated preceding aircraft in the arrival traffic stream. The pilot uses the CDTI and an indicator showing the spacing required to maintain his position in the stream, thus relieving a certain amount of the ATCO's workload and improving the landing rate.
   - **ASPA-C&P** (Crossing and Passing); again, the ATCO instructs the pilot to use his CDTI and an indicator showing the spacing required to maintain his position in the stream, thus relieving a certain amount of the ATCO's workload and improving the landing rate.

   ASPA-C&P has proved to be a lot more complicated than originally thought.
However, ASPA-S&M (called Merging and Spacing in the USA) has been trialled successfully by UPS at Louisville, Kentucky. They used equipment supplied by ACSS, an L-3 Communication and Thales company. This company has also certified equipment for ATSA-SURF which they call SAMM (Surface Area Movement Manager). Both applications are fitted in Class II EFBS.

These trials in the USA and extensive simulations by EUROCONTROL show promising benefits in terms of runway throughput, fuel savings and noise reduction. BUT it does require a sufficiently large population of aircraft to be fitted before these benefits can be realised - and an ANSP who is willing to use it.

3. The third set of applications is intended for delegated separation:
- ASEPLC&P (Lateral Crossing and Passing)
- ASEPVCP (Vertical Crossing and Passing)
- ASEP-ITP (In-trail procedure)
- ASEP-ITF (In-trail Follow)
- ASEPS&M (Sequencing and Merging)
- ASEP-ITM (In-trail Merge)

In all of these the ATCO delegates responsibility for separation between designated aircraft to the pilots and is then free to concentrate on other tasks. These applications require higher standards of integrity than the previous two sets, and also a lot more work on the procedures before they are ready to be trialled.

4. The last set of applications covers full self-separation. They are:
- SSEP-FFAS (Self separation in segregated airspace free flight airspace)
- SSEP-MAS (Self separation in managed airspace)
- SSEP-FTT (Self separation in an organised track system)

The SESAR Concept of Operations envisages the use of all these applications, as and when they become operationally and economically viable. Clearly, much more work still needs to be done in both Europe and the USA. The EC, EUROCONTROL, individual ANSPs, the FAA, aircraft and equipment manufacturers and standardisation bodies have all undertaken a considerable amount of the initial work - simulations, trials and certification. In February 2012, an Airbus A330-300 of SWISS International Airlines using fully certified ATSAW avionics as part of the EUROCONTROL CASCADE Programme (which involves 25 Airbus and Boeing aircraft belonging to British Airways, Delta Air Lines, SWISS, US Airways and Virgin Atlantic) carried out a successful trial on the North Atlantic of ATSAW-ITP (although under radar control). This programme is also working towards the use of ADS-B and Wide Area Multilateration in European continental airspace.

Both SESAR and NextGen still envisage, in the longer term, the use of some or all of the ASAS applications outlined above. What is needed is a step-by-step approach towards implementation of these applications where and when they can provide benefits. There is no need for a ‘big bang’ transition. The end goal is a major paradigm change in ATM using 4D trajectory management, airspace user ownership of trajectories, and the tactical freedom derived from delegated separation and self-separation.

It is a long time since I was involved in these activities, and, perhaps when we worked on it, ASAS was a little ahead of its time. However, I am convinced ultimately all the technical and operational issues are solvable - the current developments on ‘sense and avoid’ technologies for UAVs will certainly help. To those who say it cannot be done, all I would say is this - Take a look at the simulations in NLR’s laboratories in Amsterdam using self-separation in the Maastricht airspace with three times the current traffic.

One day, I am sure, it will become the norm.
Another long-anticipated trip organised by the indefatigable David Curgenven. Many members had planned to fly in on Monday, the preceding day, but only your editor was foolish enough to do so (more anon). Most of us assembled in the appropriately named Split Torque Bar in the Mess (correction, “Wardroom”) at RNAS Yeovilton, aka HMS Heron. We had already been allocated our cabins, and used the heads. Given the paucity of naval aviators in our brethren, this was already two steps into the unknown. The ST bar was the more informal of the two, the other being named after the ultimate naval pilot, ‘Winkle’ Brown. The building was new since my last Company visit many moons ago. A jolly evening was had by all with much informal intelligence gathering.

On the Tuesday morning at 0915 after some stragglers had arrived, we were escorted to the Station HQ within the control tower for a very punchy and entertaining talk by Lt Cdr ‘Hattie’ Jacques, OC Flying. The Station Commander (Commodore Jon Pentreath) had been side-tracked by a last-minute visit by the Navy’s Finance Director. He who pulls the purse strings calls the shots….

Hattie led us through the complexities of Naval aviation. RNAS Culdrose seems simple - it only operates Naval aircraft - the Sea King and the Merlin, together with some Hawks as I was to find out later. By contrast, Yeovilton is the very picture of modern jointery - with at times apparently as much order and logic as a Mondrian painting. Having been the home of the Sea Harrier (SHAR), its 7500 ft. runway is destined to be the home of Naval F35s. But in the meantime it is home to Merlins Mk 3 & 4, and Wildcats Mk 1 & 2, together with five Tutors from the Naval Grading Flight. A favourite land-away for Culdrose Hawks particularly, ‘strangely’, on Friday afternoons, means that the circuit usually has a mix of highly incompatible airframes, and the controllers need to be on their toes. The base will take over training in the Tutor from December this year, for a limited period.

With some pride Hattie described it as “the most complex military training environment in the UK”. As elsewhere in the Services, given salary levels, retention can be a problem, particularly for engineers and controllers (NATS at Swanwick not being a million miles away). Flying pay becoming a political football is also not going down well…

The Lynx Mk. 8 is due to bow out in Spring 2017. In its place the Army has 35 Wildcats, the Navy & Marines 28. The number of Merlins is destined to rise from 8 to 22 ultimately.

Yeovilton is a maelstrom of British military uniforms. When 652 and 661 Sqs (1 Reg AAC) have completed their move from Gutersloh, there will be around 900 soldiers on the station. Other squadrons are within the Lynx/Wildcat Maritime Force, or the Commando Helicopter Force. Reporting lines no doubt made sense to Hattie, but left his audience in some befuddlement. Suffice to say that in all this cocktail of uniforms, those of the light blue persuasion are in
The Mission Planning System produces brain fade

The Wildcat in its lair

The IPM rediscovering his inner hooligan

Herding cats is an exhausting task

The minority. They are therefore at the bottom of the food (or beer) chain, as the traditional motto above the bar makes clear - “Fly Navy, Go Royal, Dig Army, Eat Crab”. There are also quite a few foreign nationals from other NATO forces, the home of RNR Aviation, some secret squirrel units - Yeovilton really is a fascinating military complex, amounting to c. 4000 personnel in all. A £200m building programme is underway - very visible from the Wardroom - largely to accommodate the influx of soldiers. The main runway is due to be upgraded in 2021. All this follows the traditional military pattern of investing in stations with poor weather records (think Valley!). Hattie mentioned 12 days fogged in per annum, and I think I experienced two of them!

Hattie was very welcoming, and encouraged further visits to the station for the Company. He promised that future attractions would include a new, improved Dunker, complete with a wave simulator and temperatures as low as 4deg C. His enthusiasm was not reciprocated by the audience…. The overweening influence on Naval Aviation of the commissioning of the Queen Elizabeth carrier next year (and its sister ship) was obvious. Hattie concluded by priming us with some key questions to ask our host units during the day. It is probably best to draw a veil over those, but I am glad Hattie is fighting on our side!

We ascended the control tower to visit both the radar room, the radar controllers’ training suite, and the Visual Control room at the top. With the poor weather there was little aviation activity, indeed little at all to distract the controllers from chatting to us, until one mentioned a 999 call, and that it had come from the Tower. Consternation! A RN ambulance careered over the runway and across the grass to halt at the foot of the tower. Paramedics descended to attend to - one of our number who had fainted at the thought of climbing the three stories. He was carted off to hospital with our sympathy.

Whilst waiting in the vestibule of one of the AAC squadrons, we had further evidence, this time four-legged, that this was no RAF station. Amongst our throng trotted a young black lab, gaily wagging its tail, followed a few paces behind by its master, an Army major. When was the last time you saw a dog in a RAF squadron HQ?!

We were then transported to 847 NAS,
an operator of the Wildcat. 847 is an affiliated unit of the Company, and I had spent the previous afternoon with its members. So a fuller profile of its activities will feature in the next issue. Its recent history starts with Wessex 5s in the Support Heli role on Op Corporate (the Falklands Campaign). It became a 3 Commando Brigade squadron in 1968 and operated the Sioux, Gazelle and Scout in all the usual trouble spots of the ensuing 20 years. It reformed in 1995, participated in Telic, and then Herrick rotations with the Lynx Mk 9a. It re-equipped with the Wildcat BRH version in mid 2014 and has been working up to combat readiness ever since. Its essentially ISTAR missions are threefold. 1. Find: ship-based, usually paired with Apache(s). 2. Strike: in the normal sense of directing Joint Fires operations. And 3. Support – some command and control, and some movement of personnel and materiel.

There will be more on this in the next issue.

Members were taken out to the hangar to get up close and personal with ‘lit up’ airframes, and stands with staff explaining the engineering and mission planning activities. There was much interest in the advanced glass cockpits of the Wildcat. Again, more anon.

After lunch in the Wardroom (we were getting into Matelot-speak), we arrived at the Royal Navy’s Historical Flight, which is run as a trust without material military funding. Our welcome was from the Trust’s CEO, Commodore Jock Alexander (ex-Station Commander at Yeovilton, and former boss of our current Master). Our host was the CO, Lt Cdr Chris Gotke, already known to many when he attended the 2015 T&A Banquet to receive a (well deserved) Master’s Commendation for his handling of an engine failure in the RNHF Sea Fury in 2014. If ever there was a case of round peg/round hole, it was he (slim build though he be). A fount of knowledge on historical aircraft and overflowing with enthusiasm for his job. I took third party opinion, and he is indeed a top bloke.

First we were shown the other Sea Fury, a T20, and the wonders of its 54 litre Centaurus, developing 2500 hp. He talked us through the engine failure and his actions (involving a 45 degree dive at one point). The fact that he was sitting on an “oldish” parachute strangely made him somewhat hesitant to leave the aircraft – the account was absolutely absorbing. Avoiding all schools and puppy farms he successfully made it back to Culdrose, and had the glide lasted another second he would have executed a perfect wheels-down landing with no damage. As it was, airframe damage was minimal – “one nick on the front of the cowling”, together with the inevitable flaps, gear and prop. The main rectification work has centered on the engine, and investigation into the underlying conrod failure.

Chris also gave us a fascinating insight into the art of displaying warbirds, and comparisons between the Sea Fury, now recognised as the ultimate evolution of a piston-engined fighter, and the Seafire (we were ‘feet-wet’ after all!). One characteristic of the Sea Fury that surprises novices to the type is how quiet it is at today’s cruise settings of only 1500 rpm (at +9 boost this gives a respectable 240 kts). Displays are limited to 4g. Despite an eye-watering fuel consumption of 60 gph, the RNHF Sea Fury can still fly from Yeovilton to Blackpool, do a display, carry out several enroute fly-pasts, and return to Yeovilton on one tank. Unlike Sea/Spitfires it has benign engine cooling characteristics when on the ground or deck. With some pride he outlined the type’s lustrous record in the Korean War, succeeding in several kills against more numerous and jet-powered Migs.

We went on to the Flight’s two Swordfish - or more properly ‘Blackfish’ since they came from Blackburn Aircraft’s plant at Sherburn in Elmet (as did the majority of Swordfish airframes). They were both undergoing fairly deep pre-season maintenance. This venerable design had an amazingly long service life: 1934 – 1945, and of course is revered in the Navy for its part in the Taranto raid, the names of all participants being listed proudly above the reception in the Wardroom. A peek into the cockpits of these two old warriors gave us new admiration for the generation that went to war in it in all climates. Chris underscored that it had served in all WW2 theatres, which is run as a trust without material military funding. Our welcome was from the Trust’s CEO, Commodore Jock Alexander (ex-Station Commander at

Chris Gotke is presented with his HAA certificate by Malcolm Ward

Allegiances are not disguised…
lengths’ distance (although Bismarck was 823’ long, so my abacus makes that dropping at a range of 1100 yards). One airframe is a Mk 1, the other a Mk 2. The crucial improvement in the latter is metal wing under-surfaces allowing the use of rockets, greatly enhancing the aircraft’s anti-shipping capability. The Swordfish carried the same bombload as the Blenheim.

We were then shown the other hangar in which the Sea Vixen rested menacingly. It also contained such delights as a Mk 1 Piston Provost (in private ownership). Malcolm Ward then pulled a little surprise, presenting Chris with a certificate marking the granting of his honorary membership of the Historical Aircraft Association, signed by no less than PM Rick Peacock-Edwards. Back at the Wardroom we had tea and a wash-up. ‘Hattie’ Jacques was as warm in his farewell as in his welcome, and underlined that another visit later in the year was very possible for those who had missed this ‘cut’. Indeed Company members were welcome at Yeovilton anytime, with the certain exception of July 2 when the station will be holding its annual Air Day. And so the Company departed after a very absorbing day.

One person remained – your Editor. With the cloud on the deck at Yeovilton, embedded CBs enroute, and Wattisham (near my destination) closed, the odds did not look right. I re-booked into the Wardroom. At dinner I met a bunch of enthusiastic young men who had just started on the Tutor grading course, but were frustrated by the weather thus far. All Marines, they had a fascinating variety of backgrounds, including one from the infamous culling of RAF pilot trainees.

With no Air Pilots to lure me into bad ways at the bar, an early night ahead of an early start seemed sensible. The best laid plans of mice and men, they say. At 0400 the fire alarms sounded and a variety of shapes emerged from the shadows into the car park. 20 minutes later we returned to our beds but not to our slumber!

After the obligatory military cooked breakfast I was waiting at the Wardroom entrance for my escort (to the Tower – I knew I had done something wrong, but had no idea it was that serious), when the fire alarm went again. Having already seen the RN ambulance and fire services in operation, I had no desire to meet the Military Police. This time the fire alarm produced the added bonus of seeing, in broad daylight, the RN fire engine crew negotiate the tiny roundabout and lawn in front of the entrance. Now we know where those tyre marks came from. Yet another false alarm, or toast becoming a little too black…

At the tower I told the charming Naval Met Man only to give me the good news, but he must have misheard me. His information did however make it sensible to adopt a Southerly route back to my Suffolk base. I hoped that a welcome tea by the very kind ops staff in the tower would allow the heavens to dry up a touch, but I walked to the aircraft in pouring rain. The Tutors were nowhere to be seen. After start and taxi I was told I had to hold for the recovery of 4 Culdrose Hawks. A pairs landing followed by two singletons all produced plumes of spray from a very wet runway. The return was one of those trips that was sufficiently challenging to give that sense of achievement when terra firma is again reached with no drama. And so ended a very illuminating couple of days. We owe a great debt of gratitude to the station in general, and to ‘Hattie’ Jacques, and to Lt Cdr Graeme Spence (OC 847) and staff, in particular.