



AIR PILOT



INSIDE
THE AFFILIATED UNITS
HYPERSONIC HYPERBOLE
BACK TO BENTLEY PRIORY
ASTOUNDING ARCHIVES





THE HONOURABLE COMPANY OF AIR PILOTS incorporating Air Navigators

PATRON:

His Majesty The King

MASTER:

Capt Jonathan P Legat

CLERK:

Paul J Tacon BA FCIS

Incorporated by Royal Charter:
A Livery Company of the City of London.

PUBLISHED BY:

The Honourable Company of Air Pilots,
Air Pilots House, 52A Borough High Street,
London SE1 1XN
EMAIL: office@airpilots.org
www.airpilots.org

EDITOR:

Allan Winn BE(Mech), FRAeS EMAIL: editor@airpilots.org

DEPUTY EDITOR:

Chris Long FRAeS EMAIL: deputyeditor@airpilots.org

EDITORIAL CONTRIBUTIONS:

The **final** copy date for the August 2023 issue is **Monday 3rd July 2023**

FUNCTION PHOTOGRAPHY:

Gerald Sharp Photography
View images and order prints on-line
TELEPHONE: 020 8599 5070
EMAIL: info@sharpphoto.co.uk
WEBSITE: www.sharpphoto.co.uk

PRINTED BY:

Printovation Ltd 01494 478870

Except where specifically stated, none of the material in this issue is
to be taken as expressing the opinion of the Court of the Company.

DIARY



Applications for Visits and Events

Details and application forms for Company events
and visits are now available only online – either on
the website or via links in the electronic newsletter
and events bulletins.

JUNE 2023

1 st	Livery Dinner	Drapers' Hall
7 th	2-day Members visit	RAF Valley
7 th	Ladies visit	Whitchurch Silk Mill
12 th	APFC fly-in	Compton Abbas
22 nd	GP&F	APH
28 th	T&A Committee	APH

JULY 2023

1 st	Master's Garden Party	Popham
4 th	ACEC	APH
12 th	APFC fly-in	Sandown loW
18 th	APBF	APH
18 th	Summer Supper	HQS Wellington
19 th	Centenary Steering Grp	APH
20 th	GP&F	APH
20 th	Court	Cutlers' Hall
23 rd	APFC Open Day	White Waltham

AUGUST 2023

1 st	APFC fly-in	Popham
-----------------	-------------	--------

Cover photos: Grob Vikings of the 2 FTS Volunteer Gliding
Squadrons (Crown Copyright); Instone Air Lines ticket
(Honourable Company Archive)

Guidelines for submissions to Air Pilot

Please submit contributions as follows:

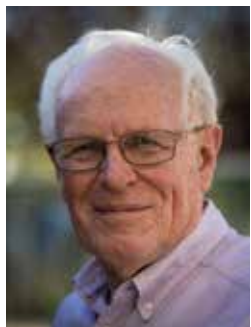
- Text in word document, including your name below
the title of the piece;
- Photos as separate attachments, not embedded in
emails;
- All images to be sent as jpeg files with a file size of
at least 2MB;
- Attachments totalling more than 15MB to be sent
via WeTransfer only.



Access the Company's
website via this QR code,
or follow us on
Twitter, @AirPilotsCo



A MESSAGE FROM YOUR EDITOR...



In May, not for the first time, London Gatwick airport had to be closed briefly because of the suspected presence of an unmanned air vehicle. Fortunately, this time (unlike in 2018 when the airport was closed for more than 24h for a similar incident), the interruption was brief – some 50min – and on a Sunday afternoon, so ‘only’ 12

incoming flights had to be diverted. In neither case has a drone, or an operator, ever been positively identified, but the industry can ill afford to carry on under the threat of disruptions (and to the safety of aircraft, crews and passengers) arising from rogue drone operations, phantom or real.

The obvious counter to such threats must be the tighter regulation and control of drone operators – even those of the smallest ones which appear to be the culprits in the Gatwick incidents – and on the drones themselves, coupled with stronger enforcement of those regulations. Is there a technology that will reliably stop a drone from exceeding a local height restriction or entering an area of controlled airspace such as approach/departure around an airport – and even for safely neutralising a trespassing drone without endangering those on the ground?

There is clearly also a need for much better means of detecting small aerial vehicles: the UK CAA has a drone registration system for operators of drones carrying cameras and/or weighing more than 250g, but that’s for the operator, not the drone itself. How onerous (or controversial, given the continuing resistance from some private pilots to their fitment on light aircraft) would it be to require an active transponder or even just a simple passive radar reflector on all drones of over 250g?

That would not just be for the benefit and safety of existing aerial traffic. The larger freight and passenger drones now being developed will themselves need the random smaller ones to be identified too – they are at least as vulnerable to collision as are larger aircraft, and eventually are likely to be operating in highly drone-congested airspace with unstructured, non-controlled flight paths.

There is plenty of attention being given by regulators around the world to the integration of drones and eVTOL aircraft into current and future airspace management systems, but almost all of this work seems to assume that such machines will be under the control of ‘Operators of Good Intent’, working within the rules and regulations. Perhaps as much attention needs to be paid to those who are not.

Allan Winn - Editor

IN THIS ISSUE...

NEWS

- 4 Visit to de Havilland Museum
- 5 Luncheon Club
Bursary winner's report
- 6 Visit to Bentley Priory
- 7 Gazette
- 8 The Master's Message



- 10 Regional Reports:
 - 10 North America
 - 11 Australia
 - 12 Hong Kong
- 14 The Young Air Pilots
- 15 From the Desk of the DAA
- 17 Joining the Livery

FEATURES

- 18 Taking hyperbole out of hypersonics
Project MONET
- 21 Cranfield's new flying laboratory



- 22 The Company's Affiliated Units
- 28 Profile: 2 Flying Training School
- 30 Green City update
- 32 The 2023 Cobham Lecture
- 34 Exploring the Company's Archive
- 36 Into the Overshoot

NEWS ROUNDUP



VISIT: DE HAVILLAND MUSEUM

By Liveryman Jeff Cleary

On a very, very wet and grey day, we assembled at Salisbury Hall in North London in the de Havilland Aircraft Museum. We were met by Peter Shallcross, who would be our guide for the day. He had started out as a volunteer and was now the museum's archivist. He is



The Air Pilots catch up on de Havilland history (pics by Jeff Cleary)

clearly very passionate and knowledgeable on all things de Havilland. We started our visit by learning about the history of the site, from the middle ages onwards - a little

unexpected if I was honest, but interesting, nonetheless. Then on to the man himself, Geoffrey de Havilland, and his early life of building motor bikes and working for car manufacturers, a familiar pattern for many of the early aviation pioneers.

By 1909 he was building, and flying (self-taught!) his own designs and by 1912 he was breaking aviation records. All this was while he was working for various aviation companies - Royal Aircraft Factory and Airco (The Aircraft Manufacturing Company) and, in 1920 after Airco was closed, he bought up the remains and formed the de Havilland Aircraft Company.

We were shown artefacts of some early aircraft, and historic documents, also, some of those early machines, including the DH.87 Hornet Moth, de Havilland Cierva C.24 Autogyro, DH.82 Tiger Moth and a replica DH.88 Comet Racer. One interesting exhibit was the DH.82 Queen Bee, one of the first remotely operated aircraft, or drone in modern speak, and this was from 1943. *[Note: if you would like the full experience that we had - now go and sit in a freezer to read the rest!]*

ICE-COLD HANGAR

We are all aware of just how cold a hangar can be, but the museum has really mastered ice-cold hangars - especially the second hangar we visited, with its three jewels sitting proudly. These were, of course, the three

DH.98 Mosquitos. The museum has the original prototype from 1940, a 1945 F.B. Mk VI and another 1945 veteran but in bomber configuration, a B. Mk 35.

We were told of the design history, the problems with aerodynamics, strength, and also the gluing and bonding issues that needed to be overcome. There are many side exhibits telling the story of such a wonderful aircraft, and we were also shown various armaments that the Mosquito could carry. To see three Mosquitoes just sitting there was a magnificent sight.



The de Havilland Museum's most important exhibit: the DH.98 Mosquito prototype

We were then taken back to the first hangar, to view de Havilland's post war designs: the venerable Chipmunk sitting in pride of place, as well as the jet-age Vampire, Venom and various famous engines on display. Along the side is the fuselage of an Air France DH.106 Comet, de Havilland's foray into civilian jet travel.

After a light lunch and a warming cup of tea, we had the chance to view some items that Peter brought out of the archive, including some wind tunnel models and early designs for VTOL passenger aircraft, re-discovered only that week.

The group then ventured outside, which surprisingly appeared to be warmer than the hangar! Outside there are a BAe 146, DH.104 Dove, DH.114 Heron, DH.121 Trident fuselage, DH.125 and a couple of Comet noses.

It was a wonderful and informative day. The museum has the honour of being the oldest aviation museum in the UK. The day was originally organised by my good friend and fellow Biggin Hill pilot, Liveryman Graham Powell, who sadly passed away just before Christmas. The visit arrangements were taken over by David Curgenvin, so a big thank you to David. □

AIR PILOTS' LUNCHEON CLUB

By Liveryman Ruth Cundy

"The longevity of this fine event is well established. With ongoing facts and maybe some fiction..."

(John Robinson – 19.4.23)



825 NAS Westland Sea King HAS.2As aboard MS Atlantic Causeway, en route to the Falklands (Crown copyright)

Sixty-seven members and guests sat down for lunch in the RAF Club on Wednesday 19th April to dine on steak-and-ale pie and apple-and-blackberry crumble. It was good to see so many partners and guests amongst the Air Pilots, both old and new. Liveryman John Robinson, founder of the Luncheon Club gave the grace, in the now traditional rhyme, welcoming our new Master; guests – and high hopes for the produce of the kitchens.

Our after-luncheon speaker was John Boughton, whose most recent role was Director of Customer Business for the Rolls-Royce Defence Sector, leading the Global Customer Business organisation for Defence Aerospace. John spoke of: "...the most challenging flying I had ever encountered" during the Falklands campaign in 1982. He served 12 years in the Royal Navy, seven of them as instructor. At the time of his deployment he was serving as a Qualified Helicopter Instructor on the Westland Sea King Training Unit. He was awarded the Queen's Gallantry Medal following the Falklands War.

His was a fascinating talk, well-illustrated, covering the journey south on a converted merchant ship and, on arrival in the South Atlantic, focusing on the detail of daily tasking from a pilot/aircrew perspective. Most poignantly, he covered his personal recollections of events surrounding the RFA *Sir Galahad* attack and the accompanying personnel rescue.

This, the 65th meeting of the Luncheon Club, was a lovely event – we should do it again sometime! The next Luncheon Club will be held on 20th September at the Royal Air Force Club, when our speaker will be Upper Freeman Andy Richardson – well armed with a script covering Britain's V-Bombers, the ultimate peacekeepers. I look forward to seeing you there. □

CONTINUING PROFESSIONAL DEVELOPMENT REPORT

By bursary winner, Associate Alex May

Completing the IRI (Instrument Rating Instructor) course has been great fun and the next step in my instructional journey. I really enjoyed doing my MEIR (Multi-Engine Instrument Rating) and even back then knew that this was something on which I would like to instruct in the future. The first step towards this is completing my IRI course. From this I will be instructing students towards the award of an IR(R)/IMC rating. I plan to continue to do this to enable me to upgrade to IR and then to MEIR once I have completed the requirements for a Multi Engine Piston CRI (Class Rating Instructor). The course itself was good fun, with it being very heavy on the theory side. From my own experience, I know that some of the concepts in IFR flying can be difficult to grasp at first, so it is great to be able to bring my own experiences into the teaching of this, to help students become competent with these concepts and also be able to apply them in the aircraft. I am excited to have my first student for this course and be able to pass on my new knowledge and skills, and introduce them to the world of IFR flying and all of the skills that come



Alex May celebrates 1,000h

along with that. Being based in Scotland it is ideal for this as we have every approach imaginable available to us, allowing the students to have a first-class experience and the most well-rounded training possible. I have to thank the Honourable Company once again for its continued support and opportunities for continued development! □

VISIT: BENTLEY PRIORY MUSEUM

By PM Dorothy Saul-Pooley

On a chilly grey April morning, 32 members of the Company gathered for coffee in the downstairs café at the Museum which has opened in the grandiose building of Bentley Priory.

We were split into two groups for a guided tour.

Our guide provided a comprehensive and fascinating history of Bentley Priory, starting with the pilgrims who visited Walsingham in the 12th century on their way to Canterbury. It is believed that the priory was founded by Ranulph de Glanville in 1170 when the grounds around the priory extended to 685 acres (275ha), larger than the whole of the town of Stanmore.

During the dissolution of the monasteries in King Henry VIII's time, the priory ceased to exist and the King himself owned the land, as he accumulated money to build defences such as the Cinque Ports. In the mid-18th century an entrepreneur, James Duberly, who had made his fortune supplying naval uniforms, bought the priory and, as the site was 502ft (153m) above sea level, he thought he could build a mansion and look down on his neighbours!

A SOCIAL AND POLITICAL HUB

In 1788, Bentley Priory was sold to John James Hamilton, the 9th Earl of Abercorn, who became the 1st Marquess of Abercorn in 1789. The Marquess of Abercorn was one of the few men to hold peerage titles in England, Scotland and Ireland. During his ownership, Bentley Priory was a social and political hub. Visitors included politicians Pitt, Canning and Lord Liverpool and poets Wordsworth and Sir Walter Scott.

In 1789, Sir John Soane was hired to rebuild the property and installed the beautiful ceiling now seen in the hall.



Spectacular stained-glass windows honour World War II fighter pilots (All pictures Dorothy Saul-Pooley)

There are fabulous stained-glass windows, and another feature is the rotunda, closely modelled on the one in the Bank of England Director's court. (Sir John Soane was a collector of beautiful objects and his collection of over 44,000 artefacts is now housed in the Wallace Collection, the British Museum and the Sir John Soane Museum.)

Bentley Priory became a sort of club for the great and the good – Sir Walter Scott wrote there, royal visitors

included Queen Adelaide (the widow of William IV) and a room is dedicated to her. Its spectacular ceiling was restored before the building was reopened as a museum and its red velour wallpaper is more reminiscent of a private club.



The extraordinary ceiling of the Rotunda

ITALIAN GARDENS

After Queen Adelaide's death, the estate was sold to Sir John Kelk, noted civil & railway engineer, who had helped Prince Albert with his projects after the end of the Great Exhibition of 1851. He added a picture gallery, conservatories, the clocktower and commissioned the creation of the Italian Gardens, which have been restored and are accessible to Museum visitors and are a replica of those seen at Osborne House on the Isle of Wight.

The estate was sold in 1882 to Frederick Gordon, of Gordon Hotels, who converted Bentley Priory into a hotel. Despite spending £48,000 to extend the Railway Line from Harrow to Stanmore to attract guests, the hotel was not a success; however, he had eleven children and they all lived in lodges around the estate. In 1908, the hotel was sold, and Bentley Priory became a girl's school, home to 70 boarders. In the early 1920s the school closed, and Bentley Priory stood empty for a few years until 1926.

ENTER THE RAF

In 1926, the Priory estate was split up and one lot comprising of the Priory itself and around 40 acres was sold to the Air Ministry, for a sum believed to be £25,000. In May 1926, Inland Area (Training Command), part of the Air Defence of Great Britain (ADGB) moved into the Priory. As the RAF grew in size, the ADGB was dissolved and Bomber, Coastal, Fighter and Training Commands were created.

In July 1936, RAF Fighter Command was created and moved into Bentley Priory. Air Chief Marshal Sir Hugh Dowding became its first Commander-in-Chief. Fighter Command amalgamated with Bomber Command in 1968

to form Strike Command and Bentley Priory became an administrative and training unit. The RAF was Bentley Priory's longest serving resident, occupying the Mansion House and grounds until it departed in 2008.

The museum was opened in 2013 and there is a wonderful juxtaposition of RAF history within this extraordinary architectural gem. The main entrance hall honours the Spitfire and Hurricane pilots and contains exquisite stained-glass windows and an apse displaying the elements of the Dowding System.

INTERACTIVE DISPLAYS

Further down the hallway is a beautiful Battle of Britain lace panel, one of 38 created by the Nottingham lace makers. An ordinary-looking door reveals an interactive



Battle of Britain plotters are depicted in bronze

room where 3D films and animation recreate Dowding's office and tells the story of Fighter command and the Dowding System. We heard stories of Dowding's

rise through the air force, the recruitment of Sir Keith Park as his assistant and the relationships with Leigh Mallory and Douglas Bader. In the rotunda are fascinating displays of Battle of Britain memorabilia, plenty of interactive exhibits for younger

visitors and an impressively large portrait of HM Queen Mother who visited every year until she was 90.

The Filter Room is a lifelike full-size reproduction of the working environment that would have existed in 1940. Women worked there as plotters and tellers analysing information from the radar stations about the raids. We were treated to a lengthy and detailed explanation of their roles and there were information panels around the room specifically describing various individuals' experiences. Next to the Filter Room is the Operations room, which contains a scale model of a plotting room in 1:10 scale, enabling this design to be recreated throughout the country so that personnel could switch from one Ops room to another.

The incongruity of the beautiful marble fireplaces, high stuccoed ceilings, chandeliers and silk drapes contrasted starkly with the functional planning area and the museum displays and video shows on continuous loops. Through the tall windows one can look out onto the beautiful Italian gardens and beyond to the views of the wooded acreage. Some might recall the last visit of the then-Guild, when, in the mid-1990s, we enjoyed a Summer Ball at Bentley Priory and some of us stayed overnight in the still-working mess. The transformation into a museum, whilst retaining the architectural elegance is a successful and intriguing blend. Our visit was completed with a simple lunch in the conservatory café. □

GAZETTE

**APPROVED BY THE COURT
18 MAY 2023**

ADMISSIONS

As Upper Freeman

Jordan Cameron BRIDGE
Michael Peter FOOTITT
David Stephen FOSTER
Noel HOWARD
Lukas KAUFMANN (OS)
Andrew Joseph MILLS
Robert Charles MYBURGH (OS)
Colin THIRLWALL
Leonardo Fante VICIOSO (OS)
Connell Dawson WESTON (NZ)

As Freeman

Janet Elizabeth HOOPMANN (AUS)
Brian WHEELER

As Associate

Esha DONGARE
Andy Daniel LIMBAYA
Hugo John McCARTNEY
Alessandro PALETTA
Danielle Dorothy PARKER
Olivia Aimee Rose POHL
Lee SINCLAIR
Andrea TROSO

ACKNOWLEDGED BY THE COURT 18 May 2023

REGRAIDING

To Livery

Marcus HOWES

RESIGNATIONS

Steven PRICE
Paul SYKES

FORFEIT ALL BENEFITS

Martin BALSHAW
James GARFIELD DAVIES
Jason HOLT

Bryce McCABE

Alexander QUESSY

Nicholas ROGERS

DECEASED

Ian BURNETT
Malcolm CLARK
Norman HUTCHINGS
Jeremy MILES
John STERLING





THE MASTER'S MESSAGE

By The Master, Capt Jonathan Legat

The first five weeks of my Mastership have been busy, to say the least, not quite back to the pre-Covid-19 levels but getting there.

Before I regale you with some of the occasions at which I have been able to represent the Company on your behalf, I want to take you back to the Installation Ceremony. Once the new Master has been installed and 'given control' he/she in turn installs the new Master Elect, Warden and Assistants. He then closes the meeting of the Court, but on this occasion before closing I announced that I was, quoting the IPM from the T&A Banquet last year, going off-piste. For a skier such as myself, this was nothing out of the ordinary, except that it was in Merchant Taylor's Hall. IPM Robin Keegan, who was wondering what on earth I was doing, was even more confused when I asked him to stand, in the process getting his name wrong, oops... egg on face, but hopefully redeemed as I had the very great pleasure of presenting him with his Master Air Pilot's Certificate. I know you will agree with me that this was very well deserved. I am particularly grateful to his Consort, Eileen, for assisting in the conspiracy to organise this without Robin's knowledge. To everyone's relief I then went back on piste and closed the meeting.

In a short speech after the Installation dinner, I said that I see the role of Master as being primarily Ambassadorial. To this end I, and Mistress Dominique, intend to represent the Company at as many functions as possible; and while it will be very enjoyable for us it will be equally tiring, but worth every minute. It is indeed a privilege to be accorded this role.

MULTIPLE EVENTS

As in previous years, my first week included the Lord Mayor's Banquet for Masters at Mansion House, the United Guilds Service at St. Paul's Cathedral followed by a delightful lunch in Stationers' Hall and then the Young Aviators' Dinner at the RAF Club on consecutive days, not helped by the rail strikes but, as I've said before, aviators have a 'can-do' attitude and we managed to make it work.

I shall not bore you with the details of all the other events, but one I found of particular interest was the Scientific Instrument Makers SIMposium on nuclear fusion. The speakers were all in agreement that we will probably see working proof-of-concept reactors in the next 10 years or so, but not fully functioning power stations until

the second half of this century. Fusion reactors have the potential to be much smaller than fission ones: I wonder if they will be able to power aircraft? It is a fascinating subject which I strongly recommend you read about further online.

The service commemorating the 105th anniversary of the formation of the RAF, held at St Clement Dane's saw (heard) the first public performance of a new RAF anthem: *Per Ardua Ad Astra*, with words by Grahame Davies and music by Paul Mealor. It was magnificently performed by the church's choir, organist and the Central Band of the Royal Air Force. I am sure it will become a regular piece on special occasions. On leaving the church, I was delighted to hear the bells pealing (unfortunate pun?) Oranges and Lemons.

You will read elsewhere in the magazine details of the Luncheon Club speaker and the Cobham Lecture. From my point of view, both were very informative and well received.

DINING WITH AFFILIATES

When the invitation to the Affiliates Dinner on board HMS *Prince of Wales* in dry dock at Rosyth on the Firth of Forth came to the office, including the offer of overnight accommodation on board, how could I refuse? So it was



The convivial Assistants' Dinner

that I took the long train journey from Kings Cross to Edinburgh and on to Inverkeithing. You will know from my profile in *Air Pilot* that I started my flying with a Royal Naval Flying Scholarship; I took with me my RNFS wings, which I must say are one of my proudest possessions, and was pleased to be able to show them to Capt Richard Hewitt OBE and his Officers. The hospitality of Capt Hewitt and his crew was to the highest standard,

as you would expect of the Royal Navy. The Head Chef and his team did a magnificent job presenting us with a splendid dinner and excellent breakfast, which we enjoyed in the Flag Cabin Dining Suite where I was delighted to see, proudly on display, the sword which the Company presented to the ship in 2021. I was impressed by the Officers who looked after us: a big 'thank you' to them all. Capt Hewitt is rightly very proud of his ship and crew, and I look forward to seeing them back at sea in the near future.



The sword presented by the Company has pride of place aboard HMS Prince of Wales

I left the ship mid-morning to return to Cutlers' Hall for the Assistants Dinner. (I did say earlier in this message my year would be tiring, but well worthwhile). Those present included our two new Assistants, Dr Eleanor Ivory and Grp Capt Baz Dale. The Learned Clerk gave his very useful presentation on the structure of the Company and the function of the Court. Having praised the crew of HMS PoW I must also say how magnificently David and his team at Cutlers' looked after us. We all agreed it was a splendid formal, yet relaxed, occasion evidenced by people's apparent reluctance to go home!

It is traditional that the Master hosts a Court Luncheon for the Wardens, Assistants, Past Masters, Secretariat and their partners. I see this as my opportunity to thank the Court for electing me and for their support during my year as Master. This year, for the venue, I chose the Winchester Royal Hotel, which is only a few miles down the road for me. The weatherman was kind to us, the sun shone and we were able to enjoy pre-prandial drinks in the delightful garden before proceeding to the Winton room for lunch. The hotel staff, in particular the chef, did a splendid job and, as at the Assistants' Dinner earlier in the week, people seemed to be reluctant to leave.

TOUR PLANS

Plans are progressing for the Master's tour, split again this year, first to the North American Region in the northern



The Master's Navy Wings – a proud possession

summer. One of the objectives of the Company is: 'to maintain a liaison with all authorities connected with licensing, training and legislation affecting pilot or navigator whether private, professional, civil or military'. To this end, as well as visiting our NA Branch where I hope to be able to attend the Abbotsford International Airshow, I shall travel east to Ottawa and Montreal to visit, amongst others, such organisations as Transport Canada and the Transportation Safety Board and ICAO. In Washington DC I hope to visit the NTSB, with which we have not had personal contact for some time, as well as the FAA, Flight Safety etc. For the Asia Pacific Region, New Zealand, Australia and Hong Kong plans are beginning to take shape for the visit later in the year, and I shall endeavour to make contact with similar bodies in those countries. Whilst we are strongly encouraging, nay insisting, on personal attendance at Court meetings, the value of Zoom, our lockdown friend, is being realised with the periodic Regional Conference Calls, enabling all branches to get together for a catch-up and chat, with not too much pain encountered because of the different time zones of the regions.

As I write, in the UK our excellent programme of Visits and Events has started (please go online to book your place) and the Air Pilots Flying Club's Fly-ins are taking off. I am looking forward to chairing the first meeting of the Court in this session and to hosting the Livery Dinner. Perhaps most importantly, I am looking forward to the Coronation of our Patron King Charles III. Finally, the perennial plea: we are always pleased to welcome new members and to grant Livery to existing members. I leave that in your hands.

Fly well, and as my mother always said: "Happy landings".

CORRECTION

In my first message I incorrectly stated that the RNLI had little relevance in the City. The RNLI's Tower Lifeboat Station is the busiest lifeboat station in the country and its area of operation includes that part of the Thames which flows through the city. I am happy to publish this correction. □

REGIONAL REPORTS

Pilots, Politics and Prose in the NA Region

By North America Region Chairman Simon Lawrence



As we move into spring in the NA Region, aviation continues to move forward. Despite first quarter losses for most of the major airlines, the outlook for summer traffic is positive as people continue to book travel, following the Covid-19 outbreak. Most airlines are projecting



North America Region Chairman Simon Lawrence (l) lunches with Francis Gary Powers Jr

a profitable summer despite possible economic headwinds.

With the advent of 1st May and with recent “political” events in Russia involving the arrest of a basketball player last year, and a journalist this year, I was

reminded of another American arrested by Russia, 63 years ago. On 1st May 1960, pilot Francis Gary Powers was shot down, while flying his CIA Lockheed U-2 spy plane over Soviet airspace. He was arrested, tried, found guilty of espionage and spent 21 months in a Soviet jail, before being swapped for a Russian spy. For those of us with a taste for history and/or aviation, that event is one of those that stands out in the “memory banks” as being noteworthy. For those who came along after that 1960 date, the story was highlighted in the 2015 Hollywood film *Bridge of Spies*, directed by Steven Spielberg and starring Tom Hanks.

LUNCH WITH THE SON

I recently had the opportunity to sit down for lunch with the son of Gary Powers, Francis Gary Powers Jr, at a local restaurant, to discuss the shooting down of his father's aircraft those many years ago, as well as the legacy he carries being the son of an aviation Cold War icon. Gary ironically lost his father at the age of 12 to a helicopter accident in 1977, 17 years after his father had survived being shot down by the Soviets from an altitude of 70,500ft.

Since his father's passing, Gary has lectured on the Cold War; his father; the U-2 Incident, espionage, the need to honor Cold War veterans, preserve Cold War history, and educate future generations about this time period.

He has written a book, *Spy Pilot: Francis Gary Powers, the U-2 Incident, and a Controversial Cold War Legacy* and helped to set the record straight about the fake news and conspiracy theories that surrounded the U-2 incident and tarnished his father's reputation. His book gives an overview of what it was like to grow up in the shadow of a famous Cold War figure and his search for the truth after his father's death.

Additionally, his research led to the USAF and CIA posthumously awarding his father the POW Medal/ Director's Medal and Silver Star. He has just written another book called *Enemy Territory*. This is a graphic novel about the U-2 Incident and has been designed for a younger audience. Gary is trying to bring history as well as aviation to a more youthful audience and has attended the EAA AirVenture Oshkosh for many years, where he speaks, and signs books and balsa wood U-2 models in an attempt to get a younger generation interested in aviation.

COLD WAR MUSEUM

In addition to books and worldwide speaking tours Gary told me that he is also the Founder and Chairman Emeritus of The Cold War Museum, just outside Washington, DC. The museum's mission statement says it is: “...an organization dedicated to the education, preservation, and research on the global, ideological, and



Francis Gary Powers survived being shot down 63 years ago

political confrontations between the East and West from the end of World War 2 to the dissolution of the Soviet Union.” Inside, the museum is filled with Cold War era memorabilia that preserves Cold War history, honors Cold War veterans and educates future generations how not to run their international political affairs.

Today Gary continues his quest to remove the infamy related to his father's name and replace it with American

Hero, while also trying to educate all of us on our Cold War past and how there is little benefit in repeating it. He recently spoke in the UK and this past March organized a tour through Germany of Cold War and espionage

related locations. He can be found online at **www.**

GaryPowers.com and his tours at **www.SpyTour.com**.

For me it was a great lunch, though it wasn't the food, but the taste of history, that made it so enjoyable! □



Regional Report: Australia

By Australia Region Chairman Spencer Ferrier

The period to the end of May each year calls for reflection by us Australians on our contribution to international order, our British history, and the uneasy start to the warrior relationship with the USA via the relationship between General Douglas MacArthur and Australian General (later Field Marshal) Sir Thomas Blamey.

Australia's and New Zealand's view of themselves is that the two countries came of age on 25th April 1915, when the Australian and New Zealand Army Corps stormed ashore at Gallipoli, bringing into existence the ANZAC tradition, which even now is the Golden Thread that connects these two countries.

Thus, ANZAC day is a day of great solemnity; there are formal services, principally occurring in Melbourne, where General Monash's inspired Shrine of Remembrance to World War I, and now later wars, is the focus in Victoria. Sydney also witnesses a most solemn dawn service. Adelaide saw a fly-past by a memorial flight, and services were held in Canberra, Brisbane and at many other places throughout Australia.

Tradition is that the Service of Remembrance commences at the time the ANZACs went ashore from their boats at Gallipoli, against the Turkish Army. The tradition holds in Gallipoli, too, where the Turkish Government, beginning with Kemal Ataturk, has embraced the strange brotherhood of a stalemate battle.

In both big and small towns across Australia and New Zealand there are many monuments to those who took part and did not return, as well as the lists of those who

did return. Nothing could be a more powerful reminder of the effort of the ANZACs than to see those monuments where now those who are named have departed us, but the fact of their monument still stirs us when their effort is celebrated. The celebration is not in victory, but in the national effort to preserve our society that they put their name to.



B21 – not for Australia (Northrop Grumman)

I attended a ceremony at the small fishing village of Patonga, NSW, for the dawn service and again saw the crowd of people, standing in memory of those ANZACs and all of those who have served Australia and New Zealand when called to do so. The village ceremony was led by 2nd Lt (Ret'd) Peter Crook of Royal Australian Army 161 Recce Flight, which was based in Nui Dat, Vietnam.

Otherwise, the Australian Government has announced a Defence Strategic Review of the Australian Military, which is being implemented, with the announcement that the Northrop Grumman B-21 Raider will not be taken up by Australia. The Civil Aviation structure in Australia is to be reviewed with a White Paper which will be published in the latter part of 2023. □



Some of the aircraft from the ANZAC memorial flypast over Adelaide

Regional Report: Hong Kong

By Liveryman Chris Hazzard, Vice-Chairman Hong Kong Region

Capt Chris Hazzard gives us an insight into the process of an aircraft's acceptance from Airbus on completion of its build in Toulouse and prior to its delivery into service.



Capt Chris Hazzard and the acceptance crew

In 2013 I was lucky enough to be invited to join the Flight Technical Section of Cathay Pacific on the Airbus A330/A340 team. We are a very close-knit community of four Airbus pilots and four Boeing pilots, responsible for the airworthiness acceptances of aircraft into our respective fleets and also the quarterly qualification of the airline's flight simulators.

In 2016 the airline started taking delivery of the magnificent A350 aircraft, having ordered a mix of A350-900s and A350-1000s. At the time of the initial aeroplane order, the airline and manufacturer set a delivery schedule. This is often subject to change due to supply chain problems and the needs of the customer, though the manufacturer is keen to get the aeroplanes out on schedule, not just for cash flow but for parking space on the ramp in Toulouse too! At about one month to go, the date of the test flight is set in semi-liquid concrete.

The flight test and engineering acceptance teams are informed of the impending task and pilots and engineers tasked with the job are nominated. From a pilot perspective, this needs to be accommodated within our roster (and can occasionally lead to quite significant disruption). If the cockpit test team has not conducted a test flight within the last six weeks a four-hour simulator session is booked to practise the acceptance schedule

profile in advance of the actual flight test.

The positioning flights to Toulouse can be fraught, at a personal level: the duty travel is standby and subject to traffic load on the day of the flight, so quite significant care is taken to try to ensure that we are not turned away at the check-in desk! It has happened! Once in Toulouse the first few days are spent in a personal battle with jet lag.

FIRST-DAY CONFERENCE

The first day of the aeroplane handover starts with a conference with the Airbus engineers at 08:30. The conference is led by Airbus' Delivery Team manager, usually a Final Assembly Line manager. We are lucky enough to have had the same Airbus engineer for the last five years. He works closely with our resident Engineering Manager who has now been in Toulouse since the start of the A350 project. At the end of the production process an in-house test flight is carried out in accordance with the Production AirTest Manual (PATM).

At the initial customer conference, the Airbus team outlines the build process of the aeroplane being accepted and details all the snags detected and outstanding from its own, in-house, engineering checks and test flight. Often the aeroplane will require a second test flight before we get there, most frequently because of noise levels at the main passenger doors being above the prescribed levels. The Airbus engineers run two logbooks through the testing process, the Technical Logbook (TLB) and the Quality Logbook (QLB). The TLB tracks all major issues



The A350's ACMS gives vital information during the test flight

and the QLB tracks those items that may detract from a passenger perspective, such as poor trim quality in the cabin and even paint runs on the fuselage exterior.

For the customer acceptance crew, the first day is spent checking as many systems as possible, in accordance with the Airbus Customer Acceptance Manual (CAM), with the Airbus-appointed Ground Test Engineer. This is the longest day of the whole week, starting with the conference at 08:30 and finishing around 18:00, with only short breaks in between sessions.

FLIGHT TEST DAY

Day Two is Flight Test Day. Having previously practised the test flight profile in the sim, we are very familiar with the process. The Airbus Test Pilots are consummate professionals - many, but not all, are ex-military. They subtly ascertain the customer pilot's experience and background prior to the flight, and once credentials are established, they quickly relax. The Flight Test begins with a thorough briefing, covering every aspect of the forthcoming flight as well as the 'domestics' such as weather, ATC requirements and take-off performance, since the aircraft weights are already known.

Once at the aeroplane, the walk round is conducted by the ground engineers, so all we need to concentrate on is ensuring switches are in the correct position and that the FMC is correctly programmed. That, though, is a fairly straightforward task - we only need to load the weights, the departure SID and the take-off performance from the FlySmart App.

Toulouse Flight Test, which sits to the west of the runway has its own ATC, St Martin, which controls all ground movements. Once the aeroplane ventures out of the fenced area we hand across to Toulouse ATC for departure. Airborne, each flight test has its own dedicated controller who keep us away from any conflict. There are a couple of ground checks to be carried out before take-off, such as alternate brakes, thrust set against the park brake (to ensure a warning generated) and then once the take-off roll starts, we mis-set the required thrust, again to confirm a warning is generated.

AIRBORNE

Once airborne above 100ft we check the autopilot engagement/disengagement functions and then continue to above FL80 where the Airbus flight control laws and limits are checked. The flight continues to FL310 for functional checks of most of the on-board equipment with the use of real-time monitoring from the ACMS (Aircraft Condition Monitoring System). It is at this point that the cabin engineers get to work, confirming that the cabin equipment is in good order, particularly compartment doors: at the service ceiling the A350 fuselage expands by up to 5cm radially and, as a consequence, lavatory doors may suffer from track deformities. Once at the service ceiling (FL430 for the A350-900 and FL410 for

the A350-1000) we cold-soak and then start the APU to confirm its availability within all areas of the flight aeroplane's envelope.

A recent change in policy from the Hong Kong Civil Aviation Department (HKCAD) has allowed us to take significant portions of the results of the PATM rather than to actually fly and test aircraft systems on the customer test flight. One area where we still test is the low-speed handling qualities and protections of the aircraft fly-by-wire systems at medium altitude, usually around FL110-130. In the clean configuration, the aircraft is carefully decelerated to 'V Alpha-Max' which in the clean configuration and 160t AUW equates to 141KIAS (265km/h). In the Config Full (full flap, landing gear down) situation the 'V Alpha Max' reduces to 103KIAS. Even at this low speed the aircraft flies well and responds quickly and accurately to roll demand from the pilots' side stick. Engine response times are excellent, even at these low speeds, and aircraft response to Alpha-Floor is immediate.

Once the low-speed handling is complete the test flight is almost over, and we recover to Toulouse, usually for an autoland, to confirm system functionality. Post-flight is spent collating data prior to a wrap-up conference usually held at around 5pm. The next two days are busy with report writing and confirmation of the data from the Airbus PATM.



Another test flight successfully completed

The airline likes to have us back in Hong Kong as soon as possible, so we fly commercial back home. A delivery team is flown out to Toulouse once the Technical Acceptance has been signed by the engineers and once Transfer of Title has been carried out, no time is wasted in getting the new aeroplane back to Hong Kong and into service. The new aeroplane could very well find itself en route to New York JFK as its first revenue service. □



REPORT: THE YOUNG AIR PILOTS

By Young Air Pilots Chair, Freeman Dom Registe

The start of the Air Pilots year is typically a busy period in the Young Air Pilots calendar, and this year has most definitely followed tradition. With the Young Aviators Dinner opening proceedings, followed by *Pilot Careers Live* and the culmination of scholarship selection, there have been numerous opportunities for young members to engage and support the company in a variety of capacities.

YOUNG AVIATORS DINNER

The Young Aviators Dinner, founded by Upper Freeman Lucie Murphy in 2015, has thrived over the years to become the pre-eminent social occasion for young aviators in the country. In partnership with the Air League, the event enables aspiring aviators the rare opportunity to meet prominent industry figures, professional pilots and peers in the comfortable setting of the RAF Club. With demand far exceeding supply as expected, tickets sold out in advance and there was a notably strong contingent of Young Air Pilots in attendance.

We were incredibly fortunate this year to have two guest speakers in the forms of Capt Allister Bridger, Director of Flight Operations at British Airways, and Capt Malcolm Sutherland, Managing Director of TUI Airways (and an Upper Freeman of the Company). Both unquestionably headline acts in their own right, they jointly delivered an inspiring keynote speech and captivated the audience with a privileged insight into the aviation industry as they see it and some key steps to take in order to progress.

In addition to giving their keynote speeches, both stayed well beyond the event's formal conclusion, speaking to young members and answering any questions that came



Speakers at the Young Air Pilots Dinner: Capt Malcolm Sutherland (l) and Capt Allister Bridger (r)

their way. With the schedules of modern-day Pilot Managers firmly on the upper side of the busy spectrum, it was very much appreciated and on behalf of all of those in attendance, Thank you!

Great conversation, new friends and the hospitality of the RAF Club underpinned what was an incredible night and without question next year's event promises even more so. I most definitely look forward to seeing you there.

PILOT CAREERS LIVE

The company's presence at *Pilot Careers Live*, Heathrow, is one of the highlights of the promotional calendar and this year a strong team was in place to support. Capitalising on the vast array of experience within the company, the team was very well placed to provide impartial advice from all areas of the industry and aid the next generation of aviators.

With tangible positivity from exhibitors and active routes of recruitment from a number of airlines present, it was perhaps the most buoyant *Pilot Careers Live* since before the pandemic. Long may the trend continue! With



Associates and 2022 PPL Scholars Maleha Khan (l) and Grace Kripigans (r) at the Dinner

an engaging and highly enjoyable day complete, many of the team retired to the RAF Club for an informal social and well-earned respite. With a number of other events adorning the Air Pilots promotional calendar in the near future, as always, the more the merrier, so please do reach out if you wish to become involved.

Recent weeks have also seen the culmination of Gliding Scholarship selection, with the conclusion of the Flight Instructor and PPL Scholarships also to be complete by the time this is published. With the full PPL scholarships which the Company offers being very much a rarity in the world of aviation, and the perceived 'starting point' for many aspiring pilots, naturally the scheme has become a flagship within the industry, making up the bulk of the applications received across all three scholarships available (FI, PPL, Gliding).

This year however has seen a record number of applications for gliding scholarships, thanks in part to some strategic outreach across organisations such as RAF Air Cadets, UK Junior Gliding and local gliding clubs. Whilst the benefits of such a prestigious Company scholarship speak for themselves, raising awareness and encouraging those from diverse backgrounds who had not thought aviation was open to them is always satisfying.

Needless to say it was extremely gratifying to see the positive results of these efforts during the course of the scholarship season so far and, unquestionably, we all look forward to seeing the next generation of aviators taking to the skies. □

FROM THE DESK OF THE DAA



By the DAA, PM Nick Goodwyn

The UK Air Accidents Investigation Branch (AAIB) has recently published its *Annual Safety Review* which includes information on occurrences and the safety action taken or planned

in response to AAIB investigations concluded in 2022. In that year the AAIB received 778 occurrence notifications (compared with 746 in 2021, 553 in 2020 and 826 in 2019) and opened two formal and 27 field investigations. A further 78 investigations were opened by correspondence. Of all those notifications, nine were into fatal accidents in the UK, resulting in 11 deaths.

The recurring themes for General Aviation accidents continued to be: loss of control in flight during aerobatics; partial power loss; or flight into clouds by unqualified pilots. The dominant recurring themes in the accidents and serious incidents involving commercial air transport aircraft were: mishandling of the aircraft during landing or go-around; complex electrical failures leading to system degradation; and failures to achieve take-off performance.



Crispin Orr, Chief Inspector of Air Accidents

As part of the report, and reflecting on 100 years of accident investigation regulations, Crispin Orr, Chief Inspector of Air Accidents (and Upper Freeman) said: "It is remarkable how much aviation safety has improved over the last 100 years through incremental changes

to the way that aircraft are designed, manufactured, maintained and operated. Almost everywhere one looks across the aviation eco-system there are physical systems and standard practices that have been introduced to improve safety as a direct result of learning from previous accidents and incidents. This has been underpinned by an open reporting culture, and a clear focus on improving safety without attribution of blame."

He continued: "That important work continues with increased emphasis on learning from serious incidents. In-depth investigation of these occurrences provides an opportunity to identify safety issues, and make recommendations to address weaknesses, before they become manifest in an accident. This has helped to make aviation one of the safest forms of transport and is an

approach that is now emulated across other transport modes and other domains such as healthcare".

TRAINING ACCIDENTS

Reflecting on reports from authorities of other Air Pilots regions, the Civil Aviation Authority of New Zealand, which actively monitors safety-related events to influence a safe airspace environment for all aviation activities, in the 2019/2020 year was notably concerned by three fatalities in training aircraft accidents. A further review revealed there had been 16 fatalities in flight training in the previous 15 years, and it concluded that these data indicated the need to assure the safety of commercial flight training operations. The Authority analysed all fixed-wing flight training sector incidents, CAA accident reports, and accident reports from the Transport Accident Investigation Commission and aviation operators. This led to the identification of several themes and issues contributing to the accidents.

One of those themes was the prevalence of near-miss events in the aerodrome circuit. The CAA's Monitoring and Inspection team visited flight training organisations to get their perspective. These engagements revealed that the correct circuit joining procedures, or the need to use them, were not well understood by students or other users. It was noted that: "The standard overhead join is particularly challenging for students to execute. It's also a challenging manoeuvre to teach because it involves describing the aircraft movement in three dimensions and making decisions based on the conditions encountered". As a result, the CAA (NZ) has mounted a safety campaign to address this issue through video and other training media.

We also know that there is a focus on improving the education and teaching of partial loss of power, especially in the circuit. New Zealand, Australia (and Singapore) work and collaborate closely together on safety matters. In the Australian Transport Safety Bureau annual report, two events were highlighted: the evacuation of an Airbus A330 passenger aircraft at Sydney Airport, New South Wales, on 15th December 2019, where the investigation highlighted the importance of clear passenger information and commands and resulted in the airline amending its safety material, cabin crew training, and other procedures; and the mid-air collision of two twin-engine training aircraft near Mangalore Airport, Victoria, on 19th February 2020, fatally injuring four pilots. The accident was the first mid-air collision in Australia between two civilian aircraft

operating under instrument flight rules procedures that have been in place for many decades, and the investigation highlighted the potential for the use of 'ADS-B IN' technology to improve pilots' situational awareness in non-controlled airspace.

BELOW AVERAGE

The Transportation Safety Board of Canada's annual report to its Parliament identified that the total number of accidents reported in 2021 (190) was 12% higher than the previous year's total of 170 accidents, but 21% below the yearly average of 239 accidents reported in the previous 10 years (2011 to 2020). Most (183) of the accidents in 2021 took place in Canada and involved Canadian-registered aircraft. In general, the number of air transportation accidents has been decreasing in the last decade. The TSB recorded 22 fatal air transportation accidents involving 32 fatalities in 2021. This was up considerably from 12 fatal accidents involving 16 fatalities in 2020 but is still 21% below the average of 28 fatal accidents involving 47 fatalities over the ten-year period of 2011 to 2020.

Eight of the 32 air transportation fatalities in 2021 involved commercial operations: one of them under air taxi regulations and seven under aerial work. There were no fatalities involving

airliner operations, commuter operations, or flight training operations in 2021. The remaining 24 (of 32) fatalities in 2021 were linked to privately registered aircraft and involved recreational operators. Eight accidents in 2021 involved a release of dangerous goods. Any specific trend in accidents was not readily obvious; however controlled flight into terrain (both fixed and rotary wings), fatigue management and incidents relating to extreme weather conditions prevalent in parts of Canada were noted.

The Civil Aviation Department for Hong Kong, in its annual report focused on air traffic and airspace management, and also the proliferation of and need to inculcate EVTOL and other Remote Piloted Systems.

Across these reports, there is rich territory for the Air Pilots, through the emergent training and standards technical group, the instructors sub-committee and the International Technical Forum to offer comment and advocate for safety.

TOWARDS INTEGRATION FROM SEGREGATION

Co-incidentally, on the last point from Hong Kong, in April, the UK CAA published an Airspace Policy Concept: *Airspace Requirements for the Integration of Beyond Visual Line of Sight (BVLOS) Unmanned Aircraft*. This CAP describes a vision for the integration of BVLOS unmanned systems into UK airspace. The CAA's Airspace Modernisation Strategy (AMS) describes a transition from the current use of segregated airspace through use of temporary danger areas such as (for example currently) along the south coast, towards operations in unsegregated airspace supported by transponder mandatory zones. It states that at this point such aircraft platforms will be considered to have been 'integrated' if they are able to enter the airspace system routinely without the need for 'special provisions'.

The CAA accepts that, given the limitations of today's technology and existing rule sets, an incremental approach is required to transition from segregated to unsegregated

airspace. It is understood that though this concept has been published by the CAA, much of the provisional work has been done by NATS (National Air Traffic Services) and there appears to be



Integrating BVLOS unmanned systems into UK airspace remains a challenge (Honeywell)

an implicit assumption that all aircraft will need to have enhanced electronic and other multi-spectrum conspicuity aids to enable the integration of future systems. At a recent meeting of the NATMAC (National Air Traffic Management Advisory Committee) it was widely accepted that much work is required, not least in some basic decision making such as, under Rules of the Air who (or what) will have right of way, and that there is yet to be any agreement or principle on the altimetry requirements of all platforms to enable safe separation. Once again, collaboration by the Airspace Technical Group and the UAS Technical Group may allow the Air Pilots to offer expertise and opinion and ensure that all parts of the aviation community are effectively represented.

The full document is at:

[https://publicapps.caa.co.uk/docs/33/Airspace_Policy_Concept_BVLOS_UA_Integration\(CAP2533\)-20230403.pdf](https://publicapps.caa.co.uk/docs/33/Airspace_Policy_Concept_BVLOS_UA_Integration(CAP2533)-20230403.pdf)

□



HAVE YOU EVER THOUGHT ABOUT BECOMING A LIVERYMAN?

By Warden John Denyer

The prestige attached to the role of Liveryman reflects its status as an important element of the membership of all 110 of the City's Livery companies. The Air Pilots is permitted by the Court of Aldermen to have up to 600 Liverymen. Today we have 531 Liverymen so we have some vacancies and in my year as Chair of the Livery



A badge to be worn with pride

Committee I have an ambition to boost that number closer to the cap. Any Freeman or Upper Freeman is eligible.

So why might you consider putting yourself forward? As a Liveryman

and having been invested with the Livery at a special Court meeting prior to one of the annual events such as the Trophies and Awards (T&A) banquet, you are thereafter entitled to attend the annual Livery Dinner, which is as stunning as the T&A, but smaller and limited to members of the Livery and their guests. The Dinner is a great event to invite pilot friends or colleagues who might be thinking about joining the Company. Importantly, you also become eligible to stand for election as one of the 15 Assistants to the Court. Assistants vote on the important business of the Company, including electing each year the new Warden who will normally progress to become Master. As an Assistant you may well wish to stand for that special honour yourself. Moreover, Liverymen of all Companies form the electoral roll of 'Common Hall' and are therefore eligible to vote in the Election of Sheriffs and to attend the election of the Lord Mayor - a spectacular ceremony in the Guildhall.

BENEFITS

In addition to the personal benefits, the Livery also benefits the Company. As mentioned, the governing body - the Court - is made up entirely of Liverymen and it is important that we have a broad range of members of the Livery from whom to elect Court members. Additionally, the "Livery Fine", the one-off payment that you pay on becoming a Liveryman, is an important source of income for the Air Pilots. This is increasingly significant at a time of rising costs and while we are also ring-fencing some funds for the additional special events during our centenary year in 2029. The Fine is currently £725 which is a large sum for many but can be paid in instalments. Perhaps the

word "Fine" has negative connotations, but as you see you get quite a lot for your money. Having paid the Fine, your annual subscription thereafter as a Liveryman remains the same as for an Upper Freeman.

If you are interested or would like to find out more, please get in touch with me through the office at office@airpilots.org. You can also find further information on the benefits and process of becoming a Liveryman at www.airpilots.org/members/livery/. You may nominate yourself by sending me, through the Learned Clerk, an email with a few paragraphs on your flying experience and/or career and other relevant achievements, background and interests. Please provide details of any service you have provided to the company such as committee membership or helping with the scholarships programme. An indication of the personal benefits you could bring to the Company as a Liverymen is very helpful.

PROPOSE ANOTHER

Alternatively, any Freeman or Upper Freeman can propose another Freeman or Upper Freeman whom you consider to be a worthy candidate. You can do this by writing to me *in confidence* through the Learned Clerk providing similar information to that outlined above. This nomination should be without the prior knowledge of the Freeman concerned if possible.

The Livery Committee will review the nomination and providing it meets the necessary standards, forward



New Liverymen are clothed at Court meetings held before Company dinners

it to The Court for its decision. Following invitation to the Livery there is a ceremony of gaining the Freedom of the City of London at the Chamberlain's Court in Guildhall. This is itself a tradition-filled and enjoyable occasion to which many bring family and friends. Then, following payment of the Livery Fine, you are a Liveryman. Finally, even if none of the above has convinced you, Freedom of the City carries with it the additional privilege of being able to drive sheep across London Bridge (which you can still do at an annual event organised by the Woolmen)!

Good luck, and I look forward to hearing from some of you! □





HALTING HYPERSONIC HYPERBOLE

By Freeman Donagh McCullagh (Space Technical Group)

Allowing ourselves to be confused on what 'hypersonic' means needlessly increasing anxiety: we can separate genuine new developments from hostile-state propaganda by tightening definitions and avoiding 'OMG' clickbait.

*'The Financial Times this week reported that the first [Chinese] test was in August [2021], rather than at the end of July. China subsequently conducted a second hypersonic test on August 13, according to two people familiar with the matter... Three people familiar with the first test in July said it stunned the Pentagon and US intelligence because China managed to demonstrate a brand-new weapons capability, although they declined to elaborate on the details. One person said government scientists were struggling to understand the capability, which the US does not currently possess, adding that China's achievement appeared "to defy the laws of physics".' Demetri Sevastopulo, Financial Times 21 October 2021*¹

*'Vladimir Putin is set to unleash new hypersonic missiles – capable of reaching speeds of over 6,600mph. The 'unstoppable' Zircon missiles will be test-fired from a frigate during naval exercises off the coast of Africa. They will be aimed at a surface target at a distance of more than 310 miles. The so-called 'training launch' of the nuclear-capable missile is the latest show of strength by the Kremlin dictator.' Tom Sanders, Metro [London] 3 February 2023*²

Breathless and shallow journalism like this has been in ample supply in the last couple of years. My motivation for writing this piece is to help fellow Company members recognise a knowledgeable piece of general and industry journalism from 'OMG clickbait'. Publishing constraints mean we can provide no more than an overview of categories of hypersonic vehicles today: there are more knowledgeable people in the Company to offer greater technical analysis if required.

'HYPERSONIC....MEANING...?' INCREASING FREQUENCY OF MENTION IN THE PRESS.

We're allowed some confusion as I would argue that the term 'hypersonic' is being asked to carry a lot of weight. It's a term that can be applied equally validly anywhere from 1950s technology to (most likely) the most secret

advanced defence aerospace projects today. The confusion starts with the term 'hypersonic' being used solely to refer to the speed of greater than Mach5. This speed having been achieved in the 1950s, much of the recent R&D is focussing on increasing vehicle manoeuvrability to avoid or feint local defences.

TIGHTENING DEFINITIONS HELPS US IDENTIFY NEW DEVELOPMENTS

If we start with the standard aerodynamic definition of supersonic as being greater than Mach1 and hypersonic as greater than Mach5, many readers will quickly recollect that we've had vehicles, unmanned and manned, travelling through the atmosphere at speeds of Mach5 and above since the 1950s.

In the 1950s, unmanned vehicles in the shape of Inter-Continental Ballistic Missile re-entry vehicles were travelling at around Mach6 at 30,000ft, at least from the date of the open source report referenced as 1962³; manned vehicles in the shape of the Bell X-15 were travelling at over Mach 5 at 70,000ft, again in 1962⁴. To complete this nanoscale historical survey, the initial ballistic re-entry speed of the NASA Space Shuttle from 1981 was around Mach25 before entering the aerodynamic flight regime.

To cap this off, the initial idea of a hypersonic manned aircraft as a developed engineering proposal came in around 1940, with Eugen Sänger's *Silbervogel* sub-orbital glide bomber concept. I say "developed", rather than "sound" proposal, as later calculations showed the craft would have likely burned up on re-entry.

With the exception of the X-15 flights, the common point of the post-war efforts is an initial rocket boost to extremely high/orbital altitudes, with the kinetic energy to reach hypersonic velocities being achieved through falling, either by gracefully gliding or *falling* ballistically.

BEWARE OF OLD WINE IN NEW BOTTLES

This brief historical survey together with recent news reports allows us to see that there are four broad categories of hypersonic flight regime:

1. Ballistic unmanned hypersonic flight: a) unmanned

¹ China conducted two hypersonic weapons tests this summer | Financial Times (ft.com)

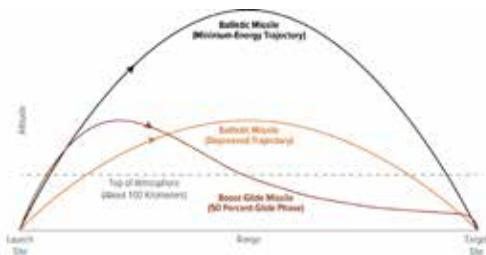
² Putin to test-launch new hypersonic missiles off coast of Africa | World News | Metro News

³ Data for ICBM Re-entry Trajectories (rand.org) Table A-1, p12. ⁴ Flight 96 of the X-15 programme; July 1962. A number of earlier flights reached Mach5+ but at what most Company members would consider extremely high altitudes of well over 100,000ft. Those flights were immense efforts and even more challenging due to their altitude. I make the differentiation to show what the X-15 was doing in something closer to most HCAP members' 'home territory.'



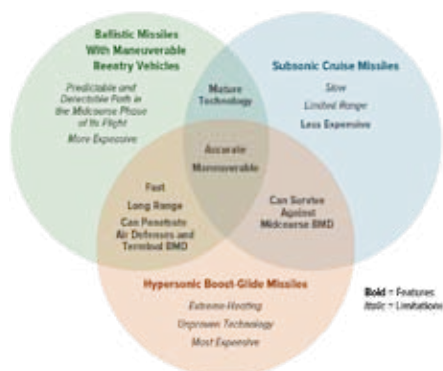
- satellite capsule recovery and missile warhead re-entry from exo-atmospheric altitudes; b) quasi-ballistic (limited manoeuvrability in initial rocket-powered flight) trajectory remaining within the atmosphere;
2. Ballistic manned hypersonic flight: manned spaceflight atmospheric re-entry from exo-atmospheric altitudes;
 3. Powered unmanned aerodynamic hypersonic flights remaining within the atmosphere: test vehicles and rocket & scramjet cruise missiles: a) fully manoeuvrable (inc. boost glide); b) non-manoevrable (current scramjet propulsion testbeds);
 4. Powered manned hypersonic flight. From what we know publicly, in hibernation.

Including the sub-categories contained in these four we have six classes. with Category 3a especially the mother lode for current research. This helps us identify the genuinely new technology from the mature in new branding. Hostile nations attempting to blur the categories by talking of Cold War-era Category 1 vehicles as Category 3 are trying to pull a fast one on the global audience.



A schematic view of different hypersonic trajectory regimes (General Accounting Office, US Government)

An alternative schema developed by the US Congressional Budget Office below provides a neat summary of strengths & weaknesses of the technologies.



An alternative slicing of analytical dimensions provides a useful description of pushing out allocations of aerodynamic regime (Congressional Budget Office, US Government)

The weakness identified in the bottom circle of 'extreme heating' is the critical engineering problem being faced by atmospheric hypersonic vehicles being prepared for defence purposes. The heating, caused as much by

compression of the atmosphere ahead of the vehicle - 'the air not getting out of the way fast enough' - as atmospheric friction, brings two problems to designers:

- a) Maintaining the structural strength of the airframe - avoiding 'cooking' the guidance avionics etc. within the hypersonic structure; and
- b) A high temperature plasma surrounding the airframe leading to a barrier to electromagnetic signals either received into or transmitted out of the vehicle.

The second provides big problems for military-type projects where an objective will include avoiding local anti-missile defences and/or attempting to hit mobile targets. Dynamic guidance would be a game changer and seeking a solution plays most likely to the strengths of the US technological base against hostile nation competitors.

WHAT IS THE CURRENT STATE OF THE ART?

For the absolute bleeding edge of developments, we can bear in mind the adage: "Those who talk don't know, and those who know don't talk." What this Company member can do is look at what we're allowed to know as of the time of writing (April 2023). I'd like to stress this is meant only as a snapshot, starting with the US as linchpin of Western defence to set a frame before moving onto the major hostile nation efforts.

UNITED STATES

The US CBO report of January 2023 references field trials for two projects commencing this year:

- *Long Range Hypersonic Weapon (US Army)*: a Type 3a ground-launched boost glide weapon with a 3,000km range.
- *Air-Launched Rapid Response Weapon (USAF)*: a Type 3a air-launched boost glide weapon with a 1,000km range. Cancelled in March 2023.

The USAF also has a Type 3a air-launched hypersonic cruise missile in the pipeline with fielding date and range undisclosed. Unsurprisingly, in the light of traditional inter-service rivalry, the US Navy also has budgeted for both a sea-launched boost glide weapon (fielding stated for 2025) and a hypersonic cruise missile (fielding in 2028), both of them Type 3a.

RUSSIA

- *Avangard*: a hypersonic glide vehicle launched by existing heavy ICBMs, land- and submarine-based. The use of heavy ICBMs as launchers indicates that this has the classic Type 1b trajectory into space until it returns into the atmosphere, becoming arguably a Type 3a in its last stage. The bulk of its flight time is as a Type 1b classic Cold War ICBM-launched warhead.
- *Kinzhal*: described as a 'hypersonic missile' by the Russian government, but it appears to be a clear

Type 1b. It is a standard air-launched ballistic missile, in service from 2017, developed from 1980s technology and derivative of the land-based *Iskander* SRBM. It has seen limited use against fixed targets during the Ukraine invasion.

- *Zircon aka Tsirkon*: a naval hypersonic cruise missile.



A Kinzhal missile under a Mikoyan MiG-25, Moscow Victory Day Parade 2018 (Mil.ru)

Unlike the other Russian items, this is an honest-to-goodness modern 'hypersonic missile' as a Type 3a. It has been stated to be operational by the Russian government since January 2023, but

there remains major scepticism on what 'operational' means in this context ⁵.

CHINA

- *DF-ZF*: Unlike the Russian efforts, this is a manoeuvrable hypersonic glide vehicle (category 3a) that apparently entered operations in 2019 on top of a DF17 booster for some 1,500km range. It has shown a depressed maximum altitude in tests (peak altitude at 60km or around 20km below the lowest definition of 'edge of space' ⁶) and a stronger case for

⁵The Zircon: How Much of a Threat Does Russia's Hypersonic Missile Pose? | Royal United Services Institute (rusi.org)

⁶Although the 80km figure is debatable. Donagh McCullagh, Are We There Yet? *Air Pilot* (Dec 2020) pp14-15.

it being closer to a Type 3a than the Russian *Avangard* missile. Looking away from the trajectory of the DF-ZF, disclosures on capabilities of the platform are similar to the 1980s Pershing 2 missile which caused great concern to the Soviets. Again, the capabilities being achieved by a hostile nation *in this weapon* appear marginal.

OTHER INTERNATIONAL PROGRAMMES: FOR ANOTHER ARTICLE

We should also be aware of programmes in place, or being established, under the AUKUS umbrella, India, Japan, by our European allies and, as a class of its own, North Korea. This article concentrates on hostile nation developments and communications. Space prevents us from looking at allied/neutral nations' programmes, which may be examined in a future article.

CONCLUSION

The aim of this article is to strip away some of the spin by major hostile nations by use of a simple hypersonics taxonomy. We can see that much of what has been developed by China and Russia is either old wine in new bottles, propaganda articles that are being fielded too soon or technology demonstrators. From what the media is telling us today, we are not being faced by an armoury of superweapons. Those who disseminate OMG clickbait are helping China and Russia. In societies that aim to practise free speech, we can't restrict the production of such journalism. Our only popular defence is education. □



PROJECT MONET

By PM Nick Goodwyn

In a recent joint announcement, the MOD and Swift Aircraft confirmed the award of a contract with the UK MoD to help support the RAF's path to a sustainable aviation future. Named Project MONET, it will demonstrate technologies that aspire to have the potential to deliver net zero emissions in flight. The Swift aircraft will provide a test bed for the project, and is digitally designed to use a variety of power plants where the aircraft is able to demonstrate measurable real-world performance characteristics with its various chosen green power sources.

As part of the RAF's *Net Zero 2040* programme, the challenge of Project MONET is to inform the development of a net-zero aircraft fleet with the equivalent performance and endurance of the RAF's existing Grob Tutor training aircraft. The Tutor currently supports the training of front-line aircrew, university Air

Squadron Cadets and RAF Air Cadets air experience flights. To deliver this, Swift Aircraft states that it has plotted a spiral development path that will demonstrate the aircraft capabilities of the Swift and follow this with the transition to a sustainable power system.

The range of sustainable aviation technologies includes the potential for all-electric battery power, synthetic fuelled internal combustion engines, hydrogen cell, and hybrid.

The commencement of Project Monet is a joint initiative between the MoD's Rapid Capabilities Office (RCO) and Industry, and will see the development of two experimental flying test aircraft to showcase the capabilities and potential of a range of sustainable technologies. The two-year partnership with Babcock and Swift Aircraft using the new light training aircraft design also aims to provide a means to evaluate a broader range of factors including logistics, ground operations, human factors, and certification. □



The new Swift Trainer (Swift Aircraft)



NATIONAL FLYING LABORATORY CENTRE OPENING

By Master-Elect Richie Piper

Earlier this year HRH The Princess Royal visited Cranfield University to officially open the National Flying Laboratory Centre's new flying classroom, a

specially adapted Saab 340B aircraft which will help up to 1,700 students gain invaluable flight test experience every year. Richie Piper was in attendance to represent the Air Pilots Trust and Air Safety Trust, which had funded the type



HRH The Princess Royal officially opens the new Flying Classroom (R Piper)

ratings of the chief pilot and co-pilot to enable operations to commence with the Saab 340 which had replaced the previous BAe Jetstream. Assistant Seb Pooley was also present as his business, together with Bose, had provided headsets for the aircraft.

Her Royal Highness, before officially opening the centre, boarded the Saab and was shown the advanced in-flight technology which helps students from across the country analyse live flight data and see aerospace theory demonstrated in reality.

In this way, the National Flying Laboratory allows students to experience various flight profiles whilst monitoring instruments repeated on the seat back monitors as part



Special equipment inside the Flying Classroom includes seatback instrumentation screens (R Piper)

of their studies. This is not just for Cranfield students but for colleges from all around the UK. The new flying classroom will have advanced satellite communications systems which can transmit live flight data, video and audio right into school classrooms around the world for a younger age group. This global-connected classroom will help to inspire future generations to follow careers in engineering and aviation. More than 1,200 aeronautical students from over 20 universities will fly in the unique SAAB 340B Flying Classroom and Laboratory each year as part of their degree course.



The Saab 340B has replaced an elderly BAe Jetstream 31 (Cranfield University)

The flying classroom is also used to advance industry research, supporting the development of airborne technologies and procedures for future flight operations. Cranfield is the only university in Europe to have its own airport, pilots, air navigation service provider, and its own teaching aircraft. □



AMAZING AFFILIATIONS

By Warden Elizabeth Walkinshaw

As Middle Warden, I have the responsibility of overseeing the Liaison Officers for our fantastic Affiliated Units and co-ordinating update reports from our Liaison Officers for Court meetings.

The Liaison Officers (LOs) are our links with our Affiliated Units and are usually selected from members of the Court. The principal role of the LO is to maintain good communication with an Affiliated Unit and to ensure there is mutual understanding between both parties. There is much inter-action between the Company and Affiliates, such as the granting of awards, exchange of visits, joint activities and dinner guest attendances.

The Honourable Company of Air Pilots Affiliations are based on the active profession on which the Company is founded, and the Affiliation programme has great importance to the Company in providing links with the Service and other units associated with aviation.

It all started back when Robert Pooley was Master, and the first Affiliations were established in 1988. A summary of Robert's initiative shows that the Armed Forces were an important part of what he had planned, so No IV (AC) Sqn, where he was SAC, was top of his list. There was the Army Air Corps, with which he had been deeply involved in many aspects. Then the Fleet Air Arm, with HMS *Illustrious*, together with 899 Naval Air Sqn were also important. Subsequently the Royal Flight, suggested by Prince Philip, and then came the Royal Marine Air Squadron and the Royal Air Force School of Navigation. HMS *Illustrious* was decommissioned in 2014 and HMS *Ocean* became our Affiliated Unit until 2017.

I can only give you a brief synopsis on each, as this article is limited by size, but there is so much more to say about each of them so I am looking forward to future editions of *Air Pilot* which will contain articles on all our Affiliated Units and Associations and will go into much more depth than I can here. There are also Affiliations in our International Regions which I hope will be featured in future editions too. Our current Affiliations follow in date order with a description of the original affiliation reason in the title.

IV (AC) SQUADRON RAF:

1988 (Robert Pooley)

IV Sqn was formed in 1912 and served in both world wars in the roles of army co-operation and reconnaissance including imagery for the D-Day landings. In 1943 it became part of the Second Tactical Air Force, returning to the UK in 1999, standing down as a BAe Harrier Squadron in 2010 but re-activated at RAF Valley in its present role the same year. Today, it is part of No 4 Flying Training School, operating the BAE Systems Hawk T.Mk 2, an advanced jet trainer, providing lead-in trainer for pilots progressing to the Eurofighter Typhoon and Lockheed Martin F-35.



ARMY AIR CORPS (AAC):

1988 (Robert Pooley)

The Army Aviation Centre, Middle Wallop, conducts training for all army aircrew, consisting of Officer and NCO pilots. It is home to 2 (Training) and 7 (Training) Regiments, AAC. The AAC is the combat aviation arm of

the British Army, whose personnel are recognisable by their distinctive sky-blue berets. Battlefield helicopters are used to overwhelm enemy forces and to support and protect troops on the ground.

The aircraft operated by the AAC carry out reconnaissance missions, casualty evacuation, troop transport and anti-tank combat – as well as tactical-level collection of vital intelligence on enemy forces. Current AAC aircraft are the Agusta Westland Apache and Wildcat AH Mk II, Bell 212 and Sud Aviation Gazelle.

847 NAVAL AIR

SQUADRON: 1996

(1988- Robert Pooley- Royal Marines affiliation)

847 Naval Air Sqn is a small unit based at Royal Naval Air Station Yeovilton, often deployed away from the UK in





A Wildcat of 847 NAS on exercise (Crown Copyright)

support of UK amphibious operations and environmental training in the USA. All personnel are trained in specialised fieldcraft and survival techniques that allow them to operate in extreme environments, from icy tundra to desert conditions.

The Squadron provides armed reconnaissance, air support, anti-armour and light transport capabilities to 3 Commando Brigade Royal Marines on deployments across the globe. It flies the Augusta Westland Wildcat AH Mk1 and is part of the Commando Helicopter Force.



ROYAL AIR FORCE AEROBATIC TEAM (RAFAT)-RED

ARROWS: 2002 (linked through a visit)

In 2022, RAFAT moved from RAF Scampton to its new base at RAF Waddington and will celebrate its 60th Anniversary in 2024. The Red Arrows is one of the

world's premier aerobatic teams. Having initially flown the Folland Gnat, the team converted to the BAE Systems Hawk in 1980.

The team consists of pilots, engineers and essential support staff with frontline operational experience and represents the speed, agility and precision of the Royal Air Force and act as Ambassadors for the UK at home and abroad. It had flown almost 5,000 displays in 57 countries by the beginning of 2023.



Red Arrows displays have been entertaining crowds for 59 years (Crown Copyright)

CENTRAL FLYING

SCHOOL: 2003 (Link with a Flying Training establishment)

The Central Flying School, formed in 1912, is the oldest continuously-operating flying school in the world, celebrating its 111-year anniversary on 12th May this year. CFS Headquarters is at Cranwell, with examiners at RAF Shawbury, RAF Syerston and RAF Valley. CFS staff operate across the entire RAF aircraft fleet, from gliders to fast jets.



On behalf of Defence, CFS develops, delivers and promotes the highest standards of flying and flying instruction, in the synthetic and live environments, on fixed, rotary wing and relevant remotely piloted air systems. Today, CFS consists of Exam Wing and the Smith-Barry Academy (SBA), delivering a range of aircrew instructor courses, and also covers Flying Training Research and Development, AP3456 and Human Performance.



LONDON WING (ATC) ROYAL AIR FORCE

CADETS: 2007 (Closer link with Air Cadets)

London Wing is part of a UK-wide force of cadets aged between 13 and 20 years, which is sponsored by the Royal Air Force. The ATC offers young people opportunities to develop a

wide range of skills together with personal development with hands-on experience of activities and courses which challenge and develop skills. Cadets learn about the RAF and aviation in general to encourage a practical interest

in aviation and the Royal Air Force. Cadets gain air experience in the Grob Tutor and can train to fly Grob Viking gliders.



BATTLE OF BRITAIN MEMORIAL FLIGHT

(BBMF): 2007 (50th

Anniversary of its formation)

The BBMF, based at RAF Coningsby, is a regular RAF Unit funded by the Ministry of Defence. The Flight operates six Supermarine Spitfires, two Hawker Hurricanes, one Avro Lancaster, one Douglas C-47 Dakota and two de Havilland

Chipmunks (mainly used for training). These aircraft are flown in the season from May to September (depending on weather conditions and aircraft serviceability) which can encompass over 100 displays and approximately 800



The BBMF now has two Hawker Hurricanes on its strength (Crown Copyright)

flypasts. The BBMF's motto is 'LEST WE FORGET', which reflects its mission to maintain these historic aircraft in airworthy condition to commemorate those who have fallen in the service of this country.

101 SQUADRON ROYAL AIR FORCE:

2009 (Closer links following visits to Brize Norton)

101 Sqn was originally formed in 1917 at South Farnborough as a bomber squadron and was reformed in 1984 at RAF Brize Norton to operate



The Voyager replaced the Vickers VC10 in 101 Sqn service from 2013 (Crown Copyright)

the converted Vickers VC10 as an air-to-air refuelling aircraft and for air transport operations.

The Squadron currently operates the Airbus A330 Voyager, primarily in the air-to-air refuelling role but also for air transport operations. The squadron currently provides RAF and Coalition forces vital air-to-air refuelling in support of Operation SHADER anti-terrorism actions in Syria and Iraq.

UNIVERSITY OF LONDON AIR SQUADRON (ULAS):

2012 (Follow on from award of Annual Prize)

ULAS is an RAF Volunteer Reserve Unit that provides basic flying training, force development and adventurous training to undergraduate students at Universities within

London and the surrounding areas, additionally with



ULAS has an active social programme alongside its flying operations



sports competitions, ceremonial events, and social events throughout the year.

ULAS, the largest University Air Squadron, provides a taste of life in the service and experience helping members to decide on whether to take up a career in the RAF. Weekly training nights are held at the Town Headquarters, during term time, and Flying Training at its Flying Headquarters, RAF Wittering, with students flying the Grob Tutor.



ROYAL AIR FORCE COLLEGE (RAFC), CRANWELL: 2014

(Link with RAF Central Training Establishment)

Formed in 1919, the world's first Air Academy, RAFC was

established by Sir Hugh Trenchard (first Chief of the Air Staff). RAFC is the Royal Air Force military academy which provides initial training to all RAF personnel who are preparing to become commissioned officers.

The duration of the course is 24 weeks or 18 weeks for previously serving individuals and split into four modules- Military Skills where the basics of being part of the RAF is learnt, Know yourself to lead others, Line management & command and Consolidation (Summative assessment & graduation).

RAF BENSON: 2015

(Following visits from Air Pilots Flying Club)

RAF Benson opened in 1939 and in 1992 began its association with helicopters. In May 2020, No 22 Sqn re-formed at RAF Benson, providing operational evaluation, trials and testing of equipment and tactical



training for the crews of all helicopter types flown by the Joint Helicopter Command. RAF Benson is a support helicopter main operating base working within the Joint Helicopter Command.

RAF Benson is home to two front-line Westland Puma HC Mk 2 helicopter squadrons and one Operational Conversion Unit, flying a mix of Puma and Boeing Chinook HC Mk 4 helicopters. The Oxford University Air Squadron, the civilian National Police Air Service and the Thames Valley Air Ambulance are also based at Benson.



The Chinook is operated by 28 Sqn Support Helicopter Operational Conversion Unit at Benson (Crown Copyright)



HMS PRINCE OF WALES: 2018

(Follow on from HMS Illustrious and HMS Ocean)

HMS Prince of Wales, a Queen Elizabeth-Class aircraft carrier, is one of the most powerful surface warships ever constructed in the UK, with an expected service life of up to 50 years. She was named in 2017 and commissioned into

the Royal Navy in 2019. The warship is seen as a maritime platform, a highly versatile and potent joint defence asset, able to react at very short notice and to meet the widest range of tasks around the world. She is able to move 500 miles a day and embark 36 Lockheed Martin F-35B Lightning IIs and four AgustaWestland Merlin Helicopters.

Air Pilots on the flight deck of Prince of Wales in 2022





601 (COUNTY OF LONDON) SQUADRON RAUXAF: 2019 ('City' link)

601 Squadron, one of the first Auxiliary squadrons, was formed in 1925, disbanded in 1957 and reformed in 2017, located at RAF Northolt, and is now a Specialist Support Squadron of the RAuxAF. Its principal roles are to provide advice to the Chief

of the Air Staff and the RAF to help address important issues, to provide access to new networks that the RAF has not traditionally been connected with, and to develop advocates for the RAF. In recent years 601 Sqn has made the RAF Museum at Hendon its spiritual home and In July 2017 the Squadron was presented with its new Standard.

2 FLYING TRAINING SCHOOL (2 FTS): 2022 (Engagement with RAF Air Cadet gliding)

Headquarters 2 FTS was stood up at RAF Syerston, in January 2014, to oversee gliding training for the RAF Air Cadets. Commandant 2 FTS is the Delivery Duty Holder (Accountable Manager) for Central Gliding School and 10 Volunteer Gliding Squadrons (VGS), which operate *The Grob Viking is the backbone of the 2 FTS Volunteer Gliding Squadrons (Crown Copyright)*



the Grob Viking winch-launched (conventional) glider at nine locations around the UK. 2 FTS provides gliding training for the RAF Air Cadets and the VGS Qualified Gliding Instructors, as well as delivering Joint Adventurous Gliding Training on behalf of the Robson Academy of Resilience. [A full profile of 2 Flight Training School begins on p27 of this issue – Ed]



ROYAL AIR FORCE

MUSEUM: 2005 (Long association through visits and through PM Michael Fopp)

Although it is not a military unit, the RAF Museum is officially



affiliated to the Company. It opened at its London (Hendon) site in 1972 and was granted the Royal Charter on its 50th Anniversary. From 1979, the Museum also managed for the MoD the Cosford Aerospace Museum, renamed the RAF Museum Cosford in 1998 and the RAF Museum Midlands in 2022.



Recently restored Vickers Wellington MF 628, one of only two survivors, is the centrepiece of the new Bomber Command exhibition at RAF Museum Midlands (RAFM)

It is a National Museum, a Government non-departmental public body and a registered charity. The collection comprises around 1.3million objects which are held in trust to share the story of the Royal Air Force and its people, inspiring everyone with the RAF story.

A huge thank you to all who helped compile this summary of our Affiliated Units - EW.

□

AFFILIATED UNIT PROFILE: 2 FLYING TRAINING SCHOOL

By the Commandant 2FTS, Assistant Grp Capt Baz Dale



The affiliation of 2 Flying Training School (FTS) with the Honourable Company was approved in 2022 and aims to provide opportunities for positive collaboration between the RAF Air Cadets (RAFAC) and the Company.

There is a long history to 2 FTS and, following its initial creation in 1920 at RAF Duxford, in Cambridgeshire, it has been stood up and disbanded on numerous occasions. Over the past 103 years, it has been equipped with numerous aircraft types such as: Avro 504s; Avro Tutors; Hawker Harts, Furies and Audaxes; North American Harvards; Airspeed Oxfords; de Havilland Tiger Moths; Chipmunks and Scottish Aviation Bulldogs. It stood up in its present form on 31st January 2014, assuming command of some 27 Volunteer Gliding Squadrons (VGS) operating either the Grob Vigilant (powered) glider or Grob Viking (conventional) glider. It also has Central Gliding School (CGS) under command, whose Qualified Gliding Instructors (QGIs) provide the training assurance and standardisation of all QGIs under the Central Flying School model. The Headquarters for 2 FTS is currently at RAF Syerston, Newark, in Nottinghamshire.



2 FTS Volunteer Gliding Squadrons currently have 40 Vigilant gliders in active service

The unit is principally responsible for the delivery of gliding training for the RAFAC, but also delivers Joint Adventurous Gliding Training on behalf of the Robson Academy of Resilience. As the current Commandant 2 FTS, I am personally and legally accountable for the safe delivery of all RAF gliding operations, as the Delivery Duty Holder (DDH).

A CHALLENGING DECADE

RAFAC Gliding has had a hugely challenging time over the past decade. Barely three months after 2 FTS re-formed in 2014, all gliding activity was 'paused' due to airworthiness concerns with both glider fleets. It took over two years to progress the issues raised and, in March 2016, an Air

Cadet Aviation Re-launch was announced in Parliament, which saw the number of VGS reduced by nearly two-thirds across the UK. While the Vigilant gliders were initially included, a costly engine-replacement programme led to the decision to retire this fleet completely. All the Viking gliders had to go through a 'Recovery Programme', which led to a vastly reduced fleet size due to problems encountered during the project. Further issues had to be faced with a Government drive to rationalise the MoD Estate, which led to the closure of VGS bases such as Hullavington and Wethersfield, further reducing the 2 FTS operational footprint.

When I assumed command of 2 FTS on 1st March 2019, although 47 Vikings had completed the Recovery Programme, with an additional glider generated by the Approved Maintenance Organisation, Serco (Defence) Ltd, we only actually had 14 gliders flying in the Forward Available Fleet (FAF), at only a handful of the nine nominal locations around the UK. Four years later, and despite the further challenges of the Covid-19 Pandemic, I am delighted to be able to report that we now have 40 gliders in the FAF (building to around 47 by the end of this year), from an Active Fleet of 52 gliders (having 'recovered' an additional four in collaboration with Serco (Defence) Ltd), with plans to increase this number over the coming years. We have also just stood up 611 VGS, at RAF Honington, which is the last of the VGS to be brought online.

REDUCED FOOTPRINT

You will see from the map (Figure 1) the reduced footprint of the VGS around the UK, from a gliding perspective; however, the Air Experience Flights (under 6 FTS), operating the Grob Tutor, can be found in the gaps, including Northern Ireland, Wales and elsewhere in Scotland.



Fig 1: The VGS now have 10 bases in England and Scotland

Nonetheless, my ambition is to gradually improve the equality of opportunity for Air Cadet gliding over the coming years, as far as resources will fairly allow. Of note, five of the locations identified (RAF Syerston; RAF Kenley; RAF Kirknewton; RAF Little Rissington; and RAF Topcliffe)



are under my direct command, and I am Head of Establishment (Station Commander) for these units. The rest sit within either Royal Navy, Army or RAF control, and my VGS are lodger units on these bases.

A GENUINE 'WHOLE FORCE'

The Headquarters of 2 FTS, located at RAF Syerston, comprises a genuine 'whole force', and I have just over 40 personnel made up of regulars (very few); Full Time Reserve Service (FTRS); and Civil Servants (some of whom are in uniform as Aviation Officers within CGS). These personnel make up Operations Wing, Engineering Wing, and Support Wing, each commanded by an FTRS Wing Commander. Forward and Depth maintenance is carried out under contract by Serco (Defence) Ltd, and comprises just over 50 maintainers and management. The Glider Deliver Team (DT) has around 15 personnel, operating under Defence Equipment & Support (DE&S), and is based at RAF Syerston as a lodger unit.

The delivery arms of the organisation are the VGS, which (as the name suggests) are made up entirely of volunteers, although some are currently serving in the RN, Army or RAF in other professional capacities. Each is led by a Squadron Leader volunteer holding a RAFAC Commission. The VGS themselves are commanded by a Wing Commander volunteer, who was previously an Officer Commanding VGS. That individual sits as a full member of my Executive and Station Management Board teams, which is unique in the RAF. I remain in awe of the selfless dedication of all my volunteer cadre, who are hugely enthusiastic about the safe delivery of gliding training for our RAF Air Cadets.

In addition to the airworthiness issues which led to the gliding pause, 2 FTS continues to face a range of challenges to output, including the generation of suitable infrastructure (both overnight accommodation and for operations). Further issues include ensuring the regular availability of certain items of equipment (eg parachutes); access to sufficient gliding medicals in certain regions

under Defence Primary Health Care; changes to policy – for instance the evolution of training requirements for MT vehicles, and the availability of suitably qualified training personnel, such as for operating tractors. There is also a general lack of understanding of the specific requirements of a gliding operation – an example being the request to use electric vehicles to tow gliders across the length and breadth of the UK!

INCREASED TRAINING OPPORTUNITIES

However, it is not all bad news. As we have been able to overcome most of the different challenges over the past few years, the training opportunities we have been able to provide for the Air Cadets has increased year-on-year, and the aspiration is to deliver Gliding Induction Flights (GIF) for up to 10,000 Air Cadets within the next few years. Although a gliding experience is important, we would usually expect that our Air Cadets had previously been given the opportunity of air experience flying in a Grob Tutor, which they can do from 13 years old. What makes gliding unique is that, while our Air Cadets fly in a Tutor, they learn to fly the glider, up to solo standard initially. Those Air Cadets who show particular promise can subsequently apply for Flight Staff Cadet status on a VGS, undertake advanced Gliding Training, and ultimately become a Graded Pilot, which allows them to undertake GIF for other Air Cadets. That is the unique selling point for 2 FTS.

As we look ahead, my aim is to continue to build on the firm foundations laid over the past four years, and expand the gliding opportunities for the Air Cadets within RAFAC. While we obviously encourage those interested in the flying, and other, professions within the Armed Forces, I am equally keen to signpost those who might be interested in aviation and aerospace towards the opportunities which exist within the civilian sector. I firmly hope that our affiliation with the Air Pilots will provide the catalyst for success in what should become a mutually beneficial partnership. □

SCOTTISH SCHOOLS AIR RACE CHALLENGE

By Freeman Will Wright

Air Pilots members represent a significant breadth and depth of aviation - I'm sure you don't need reminding of this. We each have our own story, our own starting point, and our own *raison d'être* within the industry. From



Will Wright flies the Company flag (All photos Will Wright)

my perspective, our Honourable Company is particularly good at sparking the fire inside prospective young pilots and then nurturing those individuals through the course of their budding careers. Evidence of this can be found within the young members and particularly within the promotional team, who do a great deal of the 'on the road' outreach that is so necessary for achieving a prosperous future (within the industry and within the company). I am sure you will all remember the first time you tasted flight and forever turned your head skyward, to coin a phrase...

Outreach and mentoring also happen to be some of those things that I am personally passionate about, which is why it was satisfying to be approached by Associates Freddie Bull (ex-Scholar) and Allison Field (BWPA and Scottish Gliding Centre) to support the Scottish Schools Air Race Challenge 2022 awards day held on Tuesday 16th May at Fife airfield. Believe it or not, and despite the weather's MO in Scotland, plenty of flying does get done north of the border!

The day was a shining example of aviation stakeholders getting together in the name of driving the future of aviation, young people, and inspiring them to shape the future of our world. I thought it worth sharing a few bullet points on the day in the hope that it might encourage a few of you to seek out similar opportunities wherever and however that might materialise.

AN OVERVIEW OF THE COMPETITION:

- Design, build, and test either a quad copter (primary school) or a modular 'power-up' plane (secondary school) to complete a series of challenges;
- 60 Schools (both primary and secondary) invited to take part;
- Aim: develop teamwork and problem-solving skills while having fun!

- STEM focus: principles of engineering, forces, data, and aero design.

AN OVERVIEW OF THE DAY:

- Eight winning schools (four primary and four secondary) attended Fife airfield – around 120 students aged between 12-16;
- 4 'stations' – Pilot Q&A, glider sit-in and demo, drone flying exercise, and aircraft hangar walkaround;
- The overall winners were also afforded the opportunity to fly in a Eurofox (built by School students!) - pupils took it in turns to navigate over the three bridges of Edinburgh as well as overfly their school, with smiles and enthusiasm that very little can replicate.



Experiences available on the day included Husky flights

WHY EVENTS LIKE THIS ARE IMPORTANT FOR ME:

- Making aviation 'real' to young people – some students gained unprecedented exposure to an industry they otherwise would have been unlikely to encounter;
- Visibility of role models – there was a range of pilots there, a true representation of aviation (much like that of the Air Pilots) eg airline/gliding/PPL/drone
- Competence-based approach – a truly useful, and current, mechanism to think about personal growth and skill development;
- Above all – demonstrating that aviation is FUN!

WHAT IS AERO SPACE KINROSS?

Some of the high-level aims and relevant objectives of Aero Space Kinross add some context to the day:

- To create an aerospace discovery centre at the former MoD/NATO satellite comms station at Balado Bridge, Kinross;
- Showcase leading edge developments in the Scottish aerospace sector;
- Engage and inspire young people through play-based STEM activities.

<https://aerospacekinross.com/schools-air-race-challenge-2022/>

□

LEVERAGING LONDON TO MEET PARIS



Robert Seaman, Chair Green Aviation Task Group

The Green Aviation Event in October 2021 brought together Liveries, the City of London Corporation, Government, airlines and academia to take an interdisciplinary perspective on achieving Jet Zero – the UK’s strategy for achieving net zero aviation. The then-Master Nick Goodwyn asked us to keep the conversation going and this is what we have done through the Green Aviation Task Group. This inter-Livery group bridges the expertise and networks of the Liveries into the City of London Corporation at the heart of UK and global finance to provide an independent view on sustainable aviation. It considers sustainable aviation as the resilient stable position, and the growth of aviation’s profitability with minimal environmental impact – including net zero carbon emissions.

To make progress and add value to the narrative on sustainability, we have had to take an innovative approach on how Liveries and the City of London Corporation work together on the long-term and complex issue of net zero emissions and, more broadly, sustainability of this important sector for socio-economic well-being. Alderman Alison Gowman has championed climate change-related issues within the City, and she continues to foster an inter-Livery effort on climate action – chiefly focussed on what the Liveries themselves can do to reach net zero emissions in their own operations. In the spirit of the Green Aviation Event and Livery climate action, the Green Aviation Task Group was formed. It brings together

our own Livery and its partnership with the Worshipful Company of Scientific Instrument Makers, and now involves the Engineers, Information Technologists, Bankers, Investment Managers, Insurers, Solicitors, Fanmakers (powerplants) and Coachmakers (aeronautics). It is set to expand participation in the near future to involve the Tax Advisers and the Fuellers.

What do we actually mean by ‘green’? This term, and ‘sustainability’, are ambiguous in definition, not just for aviation but for every sector of the economy. Ask any airline executive what the most important topic on their mind is, and it will be “profitability” – airlines are notorious for running on slim profit margins. Without profitability, or at the very least a sound economic footing, an airline is not sustainable. The perspective of a sustainable ‘ecosystem’ founded on profitability and resilience is understated or not even discussed in most climate forums, yet it is a key enabler for sector to meet the Paris Climate Change Agreement outcomes. The transition of the aviation sector to net zero globally cannot be achieved without profitability, finance and investment and an innovative way of linking those key elements to zero emission energy infrastructure.

Despite dire impacts on demand of events such as Covid-19, the financial downturn, the Icelandic volcano and 9/11, most scientific studies seem to be promulgating a dream scenario in which the aviation sector continues its relentless and unabated growth out to 2050. This leads to the fallacy of demand management, and if that becomes ingrained within policy, it will affect airline profitability and pilot jobs. Last year taught us that existential shocks to airline operations occur all the time – the sector suffered

massive losses because the aviation network could not deal with the post-Covid-19 demand recovery – mostly because essential staff had been laid off during the pandemic.

RELiance ON PILOTS

Pilots are trained to build resilience – to overcome the startle effect of a failure and manage the event to rebuild safety margins. Much of the operational resilience last year was provided by pilots making up for the systemic lack. This was in the face of a gross lack of support from the UK government for pilots in comparison

"It has been clear that the aviation industry is looking to reduce carbon emissions and there are many programmes around greening airports and the surrounding infrastructure of flying. A combined effort is needed to cut through any silo thinking at a political and practical level. Like many issues, some short-term solutions seem viable but can create long term dilemmas. Political leadership is needed to drive innovation, and private investment will follow. The EU's plans to decarbonise the aviation sector by 2050 through an uptake in sustainable aviation fuel has received mixed reviews. The UK Government also has a strategy that needs careful scrutiny. It is good to bring a collective of minds from different disciplines together to challenge and then create the long-term solution that does not yet seem obvious and, is, in itself, sustainable."

Alderman Alison Gowman

to the support given by the EU and especially the USA – which now leads not only in the production of Sustainable Aviation Fuel but also in having the best market-based salaries for pilots.

Yet pilots, and more broadly the operational human resource, all of whom are needed to create the foundation on which net zero can happen, are not mentioned once in the UK's Jet Zero Strategy. Policy and science should step away from demand management, and focus on the real world and the need for resilience at all levels to deliver net zero aviation and provide the profitability to re-invest in next-generation solutions.

Our transition to net zero is being built on an unsound foundation because so many different measurement schemes (also known as Environmental Performance schemes) are being employed. Here, the Company's partnership with the Scientific Instrument Makers really comes to the fore, as a regulated measurement and baseline for performance are important not only for investors and consumers, but also for objective assessment of the impact of pilot action on carbon emissions. One measurement system may place a low value on flight efficiency, yet another may suggest a more significant effect. This issue of ambiguity also exposes the sector to litigation action as there is no clear standard of performance measurement.

Airbus A321 NEO – if the global fleet transitioned to this type of aircraft, flown efficiently in modernised airspace, total emissions could be reduced by 25-36%



SUSTAINABLE AVIATION FUEL

There are numerous technological solutions on the horizon, and it is important to keep an open mind, as well as an objective position on whether they will work their way through technology readiness levels and become viable options for airlines to choose from. A front runner is Sustainable Aviation Fuel (SAF) which reduces emissions by using either waste products or "Power To Liquids" in which carbon is captured from the atmosphere and combined with "green" hydrogen to yield hydrocarbons that can more or less be used without the need for modification in existing engines, subject to some approvals. Beyond 2030, there will not be enough waste source material to meet proposed legislated amounts of SAF, so that the rest will have to be provided by Power To Liquid – yet using this type of fuel for UK aviation at 2018 levels of consumption would have required 75% of the National Grid power. The same goes for the other long-term front runner, zero emission flight powered by hydrogen, which brings along storage and technological problems. There is not enough electrical energy, let alone source material, and an energy revolution involving nuclear, and renewables is needed to make this happen, involving around \$US2trillion investment. Investment managers unfortunately already see aviation both as a lower priority and a higher-risk investment, and we are asking this community to invest in an even riskier endeavour.

Airbus estimates that 88% of the global airliner fleet are of older generations. Next-generation aircraft like the Airbus A320-NEO series can reduce total emissions of CO₂ by 25-36% when combined with airspace modernisation and efficient piloting. Aviation's global emissions include around 600million tonnes of CO₂ (about 2-3% total emissions – though the contribution will grow). A straightforward transition of the global fleet to already-available airframes like the Airbus A320-NEO, operated efficiently in modernised airspace could therefore reduce total emissions by between 120 and 150million tonnes – around four to five times the current emissions of the whole UK aviation sector.

DISCUSSIONS WITH CANADA

Post-Brexit, the UK rebuilding of its economic strength and trade with its Commonwealth partners has never been more important. In February 2023, Sheriff Alastair King, Alderman Gowman and I met with the Canadian High Commission to discuss what sustainability means in terms of decarbonisation of trade routes (aviation and maritime), energy security and ensuring a diversified supply of rare earth elements essential for the digital and green industrial revolutions. Sustainability can play an important role for defence as well – adding resilience to main supply routes for example.



At the Old Bailey discussing decarbonisation of the trade route between the UK and Canada. L to Rt: Capt Paul Heathcote, Col Walker Canadian High Commission, Brig Gen Parsons Canadian High Commission, Sheriff Alastair King, Robert Seaman, Alderman Alison Gowman.

The Green Aviation Task Group's scope is global and multi-sector in order to independently assess the cost-effectiveness of solutions and their impacts on greenhouse gas mitigation. This is fitting bearing in mind the relationship that the Liveries have with the City of London Corporation – at the heart of global finance. The Lord Mayor seeks to support the financial and professional services transition to net zero carbon emissions not just in the UK but globally. Furthermore, the Corporation wants to understand the real-world economic impact of the financial services. Aviation, an industry hard to decarbonise, is a priority topic that could demonstrate the impact of the City's soft power overseas. We have a real opportunity to rally together the immense value of the Liveries, the global soft power of the City of London and our Commonwealth partners to leverage London as the instigator of real change in the aviation sector and its ability to meet Paris Agreement Outcomes. □

Many airlines are already trialling operations using sustainable aviation fuels on their existing fleets (Lufthansa)



THE COBHAM LECTURE 2023

By Master-Elect Richie Piper



At the RAF Club on 19th April, Master Jonathan Legat welcomed our speaker for this year's Cobham Lecture, Rick Newson, Head of the CAA Rapid Capabilities Office. Rick described his background in rotary aviation, initially serving in the Royal Navy flying Westland Sea Kings with a particular focus on SAR and latterly HEMS

operations in the Police and offshore sectors. Within the CAA, Rick's career has encompassed being a Flights Operations Inspector (FOI) and progressing to managing Flight Operations (Helicopter) where he was responsible for the global oversight of all UK helicopter commercial and public service air operations. In this role Inspectors continue to regularly fly with various operators to keep their skills current and assess operators. Rick's work at the CAA has included changes in risk assessment from linear to a systems basis. This involves taking an overall view of risk rather than of individual components, and follows a risk-based oversight cycle. This has been useful in assessments which Rick has been involved with, including the 2012 Olympics and specialist security operations.



Rick Newson with the Master

RAPID CAPABILITIES OFFICE

This approach to risk has continued with the establishment of the Rapid Capabilities Office (RCO) to address innovation within aviation. Two main principles apply to this work: the Risk Informed Decision Making (RIDM) model, already well proven by the military, to assure effective approaches in achieving objectives; and Continuous Risk Management (CRM) to address



The CAA now employs a risk-based oversight cycle (CAA/R Newson)

the implementation of the selected alternative. These two aspects work together to ensure effective risk management.

Rick highlighted several recent challenges that the CAA has had to address; from the collapses of Monarch and Thomas Cook airlines, EU exit, the Pandemic and the recovery of aviation post-Covid-19. The collapse of an airline creates a number of responsibilities for the CAA, one of the most immediate being the returning of passengers stranded overseas. This has generated much additional work for the CAA.

COPING WITH EVTOL

The developing market for eVTOL aircraft is an area

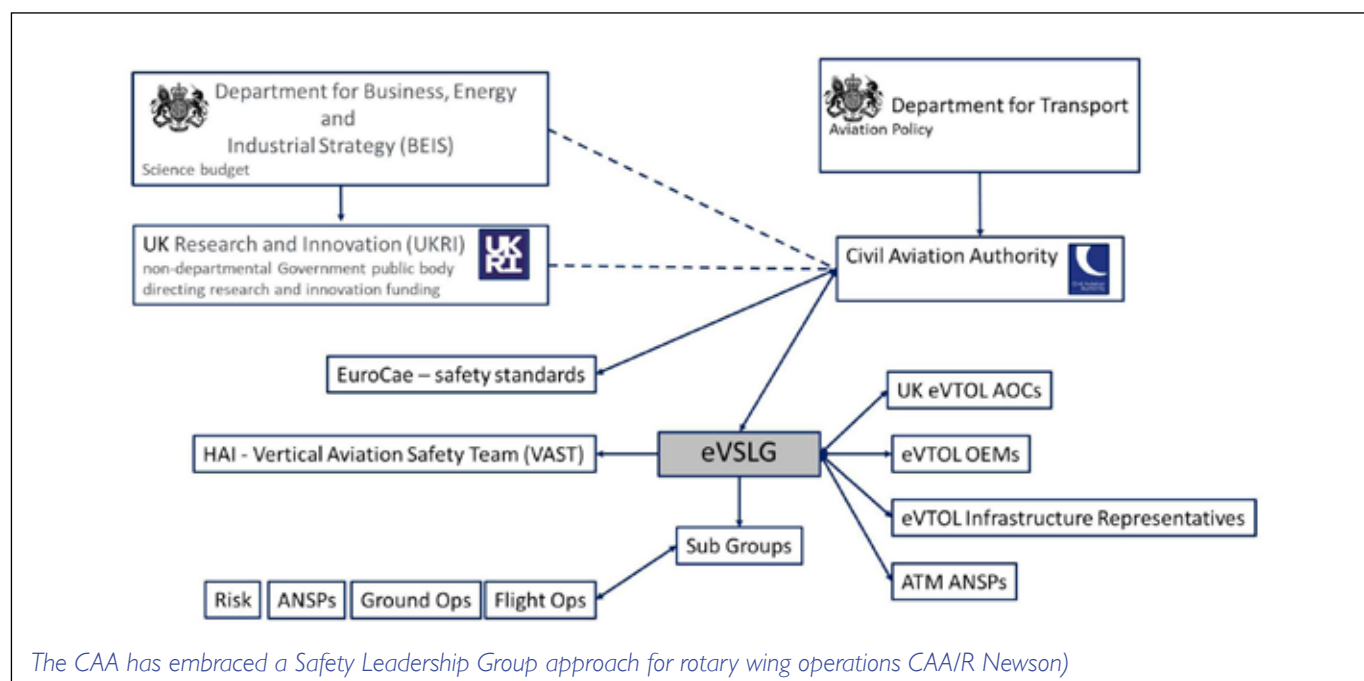
where Rick's rotary knowledge is useful as his role includes assessing emerging solutions and technologies. There is a variety of designs being advanced with vectored thrust being the most numerous and multirotor following close behind. However, Rick's personal view is the "lift + cruise" configuration will prove to be successful in the early phases, as this will be most efficient in terms of energy needs with current battery autonomy. He has



Lift-and-Cruise is seen as the most viable configuration for eVTOL – this is the Vertical VA-X4 (Vertical Aerospace/Virgin Atlantic)

flown an eVTOL simulator in the USA to experience the control laws which, after initial familiarisation, he judged to be very intuitive and followed a similar approach to that of the Lockheed Martin F35B Lightning II.

The Master called on the DAA Nick Goodwyn to give the vote of thanks. Nick particularly thanked Rick for representing the human face of the CAA and how it is trying to effectively regulate and manage risk of many rapidly advancing sectors. At the following reception Rick kindly continued to answer the many questions his presentation had generated. □



The CAA has embraced a Safety Leadership Group approach for rotary wing operations CAA/R Newson)

EXPLORING THE COMPANY ARCHIVE



By Freeman Peter Elliott, Hon Archivist

Readers of *Air Pilot* will be aware that PM Peter Bugge received the Sir Alan Cobham Memorial Award last year after nine years as the Company's Honorary Archivist. I am his successor, and my aim in this article is to introduce myself and some of the material held in the archive.

Most of my career was spent at the Royal Air Force Museum, and when I retired in 2016, my role was Head of Archives. After retiring I gained my PPL at Elstree and now fly a Piper PA 28 from Duxford, where I understand there is some sort of museum... I first met Peter many years ago, when PM Michael Fopp – then the Museum's Director General – asked me to visit Cobham House and offer advice on the storage and display of the collection.

The archive is now held at Air Pilots House, and stored in the Cobham Room on the top floor, where there are also three display cabinets housing a selection of material. Exploring the archive over the last year has been something of a journey of discovery, with some surprising discoveries on the way, alongside the sort of material that can be expected to appear in any corporate archive, such as the minutes of Court meetings and other committees, the Guild's and Honourable Company's newsletters, journals and magazines, as well as correspondence.

AMUSING DETAILS

Sometimes with archives it's the famous names that catch the eye, but equally it can be the smallest detail. Sir Sefton Brancker wrote to many eminent people in the first year of the Guild, offering honorary membership, and I was amused by the Marquess of Salisbury's letterhead, which gives his contact details: Hatfield House's phone

The Marquess of Salisbury's late-1920s letterhead



number (Hatfield 2) and small diagrams of an envelope, a telegraph (not just telephone) pole and a rather elderly locomotive, indicating the station just outside the grounds.

There are rather serious files dealing with work on noise abatement and hijacking, but in 1929 the Clerk also had to deal with a report that some parents of young ladies refused to let them fly as passengers, fearing that if the aircraft made a forced landing, their pilots might take



Instone Air Lines' Vickers Vimy Commercial G-EASL – hopefully any female passengers were not at risk from "...some licentious half-wit" pilot! (All images Company Archive)

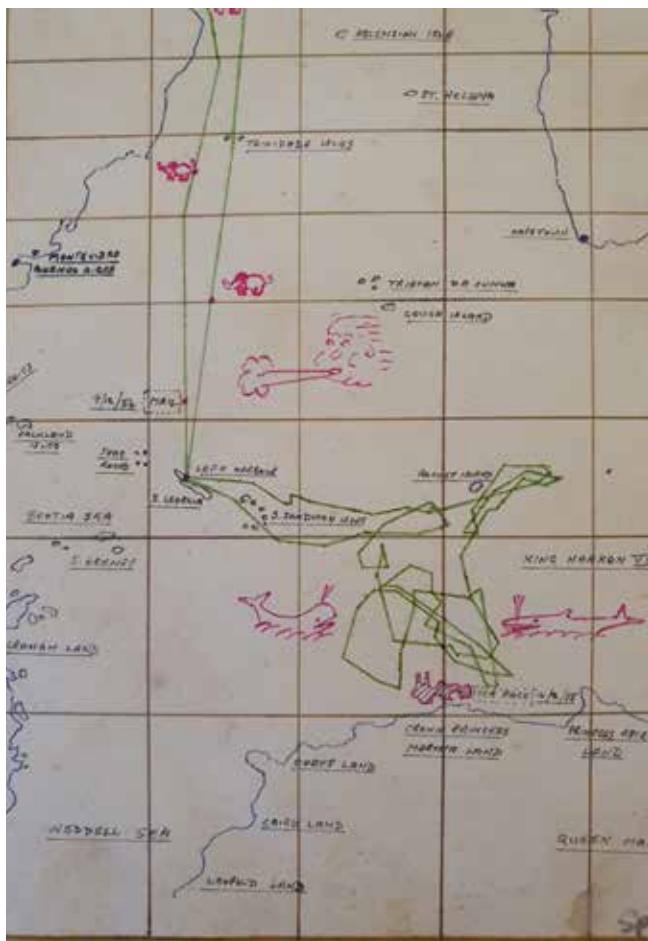
advantage of them. The "...conception that the Airman is some licentious half-wit" had to be eliminated and the idea that female pilots should be recruited specially to fly women passengers did not find favour.

In addition to the archives of the organisation, there

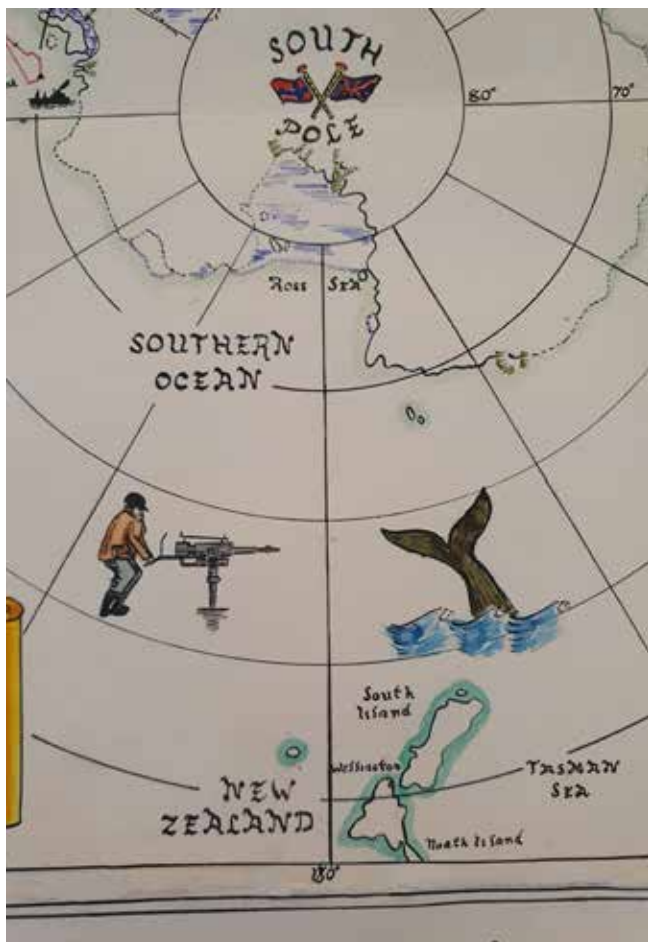
are papers relating to individuals, including a ticket for the first airline flight from London to Cologne in 1922, and papers of Captain Bob Smith, who undertook pioneering work flying helicopters from whaling ships. His report includes two well-illustrated maps, and a note suggests that the pink elephants shown in the South Atlantic might refer to some sort of – shall we say – party.

A ticket from Instone's inaugural service from Croydon to Cologne





Details from Capt Bob Smith's helicopter-whaling maps



SURPRISES

What have I found the most surprising items in the archive? One box contained a copy of *The Description and Use of the Globes and the Orrery* by Joseph Harris, 'Teacher of the Mathematics', published in 1757 – I'm not convinced that it was a set book for Air Navigators! The other 'wow' moment came when I unwrapped a framed letter from a young lady, thanking the Guild for the wedding present given to the then Grand Master, and simply signed 'Elizabeth'.

At present I'm building on Peter's work, creating a more detailed catalogue that can be made available online, via resources such as the Archives Hub, and thereby make the collection accessible to researchers and, of course, members. This is also an opportunity to mention the Aviation & Aerospace Archives Initiative <https://www.aviationarchives.uk/> which is currently conducting a survey to locate records created by airline operators. It's a project supported by the National Archives and the Royal Aeronautical Society, and any leads to airline archive holdings would be gratefully received.

There are dozens of photographs, mostly taken at social functions, which are providing a useful introduction to personalities associated with the Guild and Company. Like aircraft, all archives have their individual quirks and characteristics; I like to think I've achieved my type rating for this one!



The Great Orrery – 18th Century GPS

Finally, if you have any enquiries regarding the Honourable Company's archive, or have records that might be of interest, I can be contacted via **archives@airpilots.org** . I'm usually at Air Pilots House twice a month, and visits to see material can be arranged. ☐

INTO THE OVERSHOOT

A round-up of less-formal items which have caught the Editor's eye



ODE TO JOY

John Allen, long-time Clerk to The Worshipful Company of Cutlers and now Clerk to The Worshipful Company of Nurses, has made a habit of composing odes to the various organisations which have hosted him in his City career. Some have been published in book form recently, but this one, composed in 2008 in honour of the GAPANT&A, is awaiting the next volume. (John Allen) □



HELPING THE DISABLED TO FLY

Aerobility, the UK charity which provides people with disability access to the magic and wonder of flight, is currently accepting applications for its 2023 flying scholarships. The scholarships will offer 32 people of any disability or background five hours of flying, opening their way to learn to fly. Freeman Mike Miller-Smith, CEO of Aerobility, says: "We know first-hand how participating in aviation changes lives and we want as many people as possible to experience that." Members thinking of encouraging somebody to apply need to hurry: applications to www.aerobility.com/scholarships close on 9th June. (Aerobility) □

A NEST IN THE SKY

Air New Zealand has confirmed that it will be offering its Skynest sleeper pods to Economy passengers on its Boeing 787-900 services to Chicago and New York from September 2024. The Skynest will be a six-pod area, with each pod having a full-size pillow, sheets and blanket, ear plugs, a separate reading light, personal device USB outlet, ventilation outlet and a seatbelt. Each passenger will be limited to one 4h session per flight, at a likely premium of \$NZ400-600 per session. The bedding will be changed between each session, and a 30-minute transition time will be allowed for this. The lights will gently come on at the end of each session, and crew will politely wake any passengers who sleep through this. (Air New Zealand) □



ODE ON A GUILD OF AIR PILOTS AND AIR NAVIGATORS TROPHIES AND AWARDS BANQUET

The Guild of Air Pilots, and Navigators too,
Hold their Banquet at Guildhall, 'cos it's such a grand do;
We changed in a hurry. Was it white tie or black?
After checking the invite I put my studs back.

Badged and besuited we drove there in style,
But due to some roadworks it took us a while.
Then down to the cloakroom, just time for a pee Before
meeting their Master in the Old Library.

The whole place was heaving; the pikemen were there,
Standing erect with their poles in the air.
With airmen and women from all round the world,
There was plenty of chatter; and fizz being swirled.

We stood whilst their Chaplain delivered the Grace;
He said it with meaning and a reverent face.
Giants Gog and Magog looked down from aloft,
Guarding the Guildhall as our dinner we scoffed.

We had Prawn Florentine, which was served piping hot,
And Aberdeen Angus that just hit the spot.
It was beautifully tender; the sauce was superb;
By the time we'd had pudding my hunger was curbed.

My Master sat next to the Principal Guest;
He's the top man at Marks, where I buy the odd vest.
The lady beside me enquired if I flew;
I said 'Yes, as a passenger; but never as crew'.

We stood for the anthem, I began singing, 'God...';
But the whole room was silent, so I felt a bit odd.
As we supped at our coffee, the band entertained
With post horn and cornet, and quite unrestrained.

Their Clerk is a Kiwi who really can dash;
From his seat to the dais took him less than a flash.
As he read the citations, the acclaim grew and grew
For the acts of achievement, and brave deeds of a few.

The winners went forward their prize to receive;
Some of their exploits were hard to believe.
The crew of a Merlin won a standing ovation
For rescuing wounded from a hostile location.

One couldn't sign off without saying, 'Thank you',
To the Master and Wardens, and Court members too.
A better occasion we cannot recall,
And you'll always be welcome within Cutlers' Hall.

John Allen