August 2025 ISSUE 70

AIR PILOT

INSIDE

CENTRAL FLYING SCHOOL PROFILE
FLYING BOAT OF THE CENTURY
BBMF FIGHTERS RETURN

THE HONOURABLE COMPANY OF AIR PILOTS
incorporating Air Navigators

PATRON:
His Majesty The King

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

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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.

AUGUST 2025

17th	APFC Summer Barbecue	White Waltham

SEPTEMBER 2025

8th	Company visit	RNAS Yeovilton
9th	Company visit	Leonardo Yeovil
11th	GP&F	APH
11th	Court	Cutlers' Hall
23rd	APT/AST	APH
24th	Luncheon Club	RAF Club
24th	Tymms Lecture	RAF Club

OCTOBER 2025

9th	GP&F	APH
12th	APFC Peter Davis Lunch	White Waltham
19th	APFC End-of-Season Lunch	White Waltham
23rd	Trophies & Awards Banquet	Guildhall

Cover photos: Supermarine Spitfire XVI TE331 (BBMF); Short S.23 *Canopus* (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.

A MESSAGE FROM YOUR EDITOR...

The British government's Strategic Defence Review published in June heralded a surprising change in policy with the announcement that for the first time since 1998 Royal Air Force aircraft would carry tactical nuclear weapons – and that the service would have a dedicated fleet of aircraft for the purpose.

The announcement does not signal a return to the 1950s and '60s when the UK's primary nuclear deterrent was the V-Force of Avro Vulcans, Handley-Page Victors and Vickers Valiants – that primary role will stay (as it has done since 1969) with the Royal Navy and its fleet of *Vanguard*-class nuclear submarines carrying Trident submarine-launched ballistic missiles – themselves due to be replaced in the next decade. Rather, this is a return to the situation before 1998 when the RAF retired its last tactical nuclear weapon, the WE177 bomb, which was carried at various times by the Vulcan, Hawker-Siddeley Buccaneer, SEPECAT Jaguar and Panavia Tornado, as well as by RN de Havilland Sea Vixens, BAe Sea Harriers and a variety of helicopters.

There are differences this time round: where WE177 was British-designed-and-built (albeit based on the American W59) and deployed independently by British forces, the B61-12 which the RAF will now field is American-built, the stocks of it will be held under US control, and its use will be only with the agreement of the USA and NATO. The platform which will carry it is the Lockheed Martin F-35, already in limited service with the RAF in its F-35B Lightning II VTOL variant, but as the F-35A conventional take-off-and-landing model, which has a combat radius of 590 nautical miles (1,100km), for the nuclear role. That makes it a less capable weapons-delivery system than the Tornado GR4 (750 nautical miles) far less the Vulcan (2,250 nautical miles), so it will fill very much a short-range tactical role which has come back into focus as a result of the Ukraine war.

Nor does the planned acquisition (no firm order has yet been placed) of 12 F-35As signal an overall increase in RAF combat aircraft numbers, as they are included in the 138 F-35s on the so-called 'program of record' for the UK, of which only 48 have been firmly committed for (ie ordered) so far. It does, nevertheless, signal a significant increase (restoration?) in capability for the RAF, assuming of course that the budget for it is ever released.

Allan Winn - Editor

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NEWS ROUNDUP

THE LIVERY DINNER

The Company's annual Livery Dinner was held at Drapers' Hall on 22nd May. At a Court meeting before the dinner, five new Liverymen were clothed. Some 140 Liverymen and their guests – including the Masters of the Communicators, Stationers and Tobacco Pipe Makers – heard a wide-ranging speech by the Chief Executive of the CAA, Rob Bishton.

New Liverymen: Richard Grant, James Winspear, Lester Sly, Master John Denyer, Gordon Pell, Joanna Salter

The Master with Master Air Pilot Liveryman Michael Bagshaw

The principal guests: Master Communicator Jason Groves CC, Master Stationer Paul Wilson, The Master, CAA Chief Executive Rob Bishton, Master Tobacco Pipe Maker Henry Tuck

Guests at dinner in the magnificence of Drapers' Hall

MASTER'S GARDEN PARTY

By PM Colin Cox

As the old adage goes, if you can remember the '60s, you weren't there! If you can't remember the Master's Garden Party/Ascot Race Day, on Saturday 21st June, however, you weren't there either.

Traditionally this is the longest day of the year, and this year it was also billed as likely to be the hottest. For that reason and, with the dress code being advertised as 'smart casual' many, including yours truly, dispensed with the usual formality at Company events of jacket and Company tie.

Of course, the first person I bumped into on the day was our Events Co-ordinator, David Curgenven, who challenged me as to whether I had actually consulted Debretts. Needless to say, David *was* decked out in the appropriate attire! Luckily for me, PM Towell's Mistress, Linda, came to my rescue with an updated version of 'acceptable attire' for such events, describing 'smart casual' as being no T-shirts, torn jeans or flip-flops etc.

The Master's idea of holding a replica of a day at the

Ascot Races in a field in the Hampshire countryside turned out to be an inspired piece of thinking. The 'Great and the Good' of our Honourable Company turned out, with many, indeed, in their finery, to be met with more than just one glass of 'bubbly', followed by a most convivial lunch amongst the hay bales.

Of course, an English summer wouldn't be complete without the odd rain shower and, luckily for us, it was indeed just the odd one, short, sharp shower that caused the assembled race-going glitterati to decamp and watch the first race in front of the big screen set up in the lounge area of the most substantial, barn-type building.

Once the race was over, the excited winners rushed outside to collect their winnings from the on-site bookies beside the tote board. The losers were left contemplating how to compound their losses over another glass of, what has to be said, was very reasonably priced wine, compared with that inevitably being enjoyed by the 'poor people' at Ascot itself.

All the while we were being entertained by a superb jazz band playing a range of young and old favourites. The lovely lead singer was also detailed with choosing the best dressed couple of the day, that honour deservedly going to Upper Freeman Paul and Kim Heaver. There were also prizes for the best dressed lady (Nicci Voigt) and, much to my chagrin as Warden Dave Singleton's partner down the red-carpeted 'runway', *moi-même*, as best dressed gentleman (smart casual). I don't know who was more surprised, myself or David Curgenven.

All in all, this was a thoroughly enjoyable (and unique) day out, with special thanks going to David Curgenven for co-ordinating the day and our hosts, the Master and his Consort, Kate. □

Happy party-goers

The bookie does good business

Best-dressed couple, Paul and Kim Heaver

The scene at Ascot-by-Hampshire (John Denyer)'

CATALINA TO BISCARROSSE

By PM Richie Piper

The sole flying Consolidated PBY-5A Catalina in Europe, *Miss Pick Up* G-PBYA, still operates on water occasionally, and most years flies down to Biscarrosse near Bordeaux to carry out water operations on the lake, which used to be the Air France *hydrobase* for its trans-Atlantic flying boat service. The Catalina overnights ashore at the airfield Biscarrosse Parentis rather than staying on the lake, which would require the batteries left on to power the bilge pumps and a watch to stay on board whilst moored. The lake is very large – 35.4km^2 - and hence can accommodate most wind directions with only the marine traffic (and 30 oil platforms in the water!) to worry about. Because of the nearby airfield, circuits are kept below 400ft and, recognising the missile range to the West and noise sensitivity, circuits are flown within the boundary of the lake. In practice, this causes no issues other than choosing a landing lane between the oil platforms.

The Cat picks up its mooring

VULNERABLE NOSE

The Catalina was originally designed as a flying boat, and the undercarriage was only added after some 1,800 had been built. It is a compromise, and the nose gear doors are fairly vulnerable, with many Catalinas having been lost because of their failure. Hence, we mostly use a "glassy water" technique, landing in a level attitude without flaring in a descent rate of 100-150ft/min at 72kt. This keeps the doors out of the water whilst planing on the step. It being essentially a flying boat rather than a seaplane, the accuracy required in all three axes is much higher than that needed in landing on the ground. This is particularly important in yaw, in which the aircraft is divergent, and a lack of precision can lead to a water loop.

An engine-change in the field

This year's exercise, as well as incorporating two weeks of water training for initial issue or renewal of Catalina water type ratings (which also saw the CAA inspect and approve our training scheme), also included shareholders taking family and friends for flights along the spectacular coast including the 106m-high *Grande Dune du Pilat*. The trip was scheduled to culminate in displaying at the water festival airshow, to help defray the expense of the transit down to Biscarrosse and back. Sadly, the high-time starboard engine had issues, leaving the aircraft grounded and missing the air show. Our brilliant engineering team carried out the diagnosis and determined it would require our spare engine to be shipped to France to be fitted out in the field. This was duly done and the aircraft flown back to the UK to continue its display season. □

GASCO UPDATE

By Upper Freeman Stephen Hayman

The 305th GASCo Council meeting was held on 1st July, but the AGM scheduled for the same day was deferred for lack of a quorum. Amongst issues raised were:

- The AAIB's accident publications are going digital in the near future. This decision was not popular, but it seems it's the way forward;
- Already this year there have been five fatal GA accidents in the UK;
- GASCo is taking bookings for its *Weather Decision Making* in conjunction with the Met Office at Exeter in the Autumn and *Ditching & Sea Survival*;
- Enquiries about hosting one of GASCo's safety evenings, seminars, webinars or other safety-related activities, or to have GASCo attend another organisation's event should be addressed to **penny@gasco.org.uk**;
- Ongoing issues with Lithium batteries: they can be affected by damage/heat/incorrect recharging, resulting in smoke (noxious fumes)/fire/explosion, all within a matter of two seconds - difficult to deal with in the air! □

COMPANY VISIT: MIDDLE WALLOP

By Assistant Glen Fricker

Fortunately, the weather forecast on 17th May for Duxford (interpolating between Luton and Mildenhall!) was spot on, David Curgenven and I took off from Duxford into rapidly clearing weather for our flight to Middle Wallop. By the time we were halfway past Luton, the 1,200ft overcast had disappeared, giving way to CAVOK conditions. Just 50min later (aided by a 20kt tailwind!) we, along with four other company members' aircraft, arrived at the largest grass military airfield still in operational use in Europe - Middle Wallop.

The airfield is the headquarters for the Army Air Corps and was first built in 1938 to accommodate flying training units for the RAF. During the Battle of Britain, it hosted 609 Squadron, equipped with Supermarine Spitfire Mk1s, and 238 Squadron flying the Hawker Hurricane Mk1. Towards the end of 1940, 604 Squadron was based here with Bristol Beaufighter night-fighters. Amongst 604's ranks was John "cats eyes" Cunningham.

This quote on operating from the airfield is believed to have been written by Air Cdre Roderick Chisholm, who flew both the Beaufighter and de Havilland Mosquito from here: "*. . . two runways of 1,400 and 800yd, which undulated so that their bumps would catch the unwary coming in to land. Ten tons of Beaufighter thus required a fair degree of accuracy in the approach speed. If you had 10-15mph too much on the clock as you came over the hedge, the aeroplane would then float for a hundred yards or so before touching down at 80mph, and thus use up the spare margin of distance available for stopping. Weak brakes then meant a trip through the far hedge, or an exciting ground loop. So we all quickly learned the value of precision flying and brought our aircraft in to land within 1 per cent of 105mph on the approach and 90mph over the hedge.*"

Numerous other RAF and USAF squadrons were based here until January 1945 when the base was handed over to the Navy, becoming RNAS Middle Wallop, HMS *Flycatcher*. This arrangement lasted for just over a year, when the station reverted to RAF use. The Army Air Corps was officially formed on 1st September 1957 and based at Middle Wallop from 1st October 1958.

MUSEUM TOUR

We were met at our aircraft by George Bacon, who most ably hosted our visit. The 23 attendees were split into two groups for the first item on the agenda, a tour of the Army Flying Museum. George was assisted - in fact all day - by Liveryman Mike O'Donoghue, whose expertise was in (but certainly not limited to!) rotary wing flying, whereas George's speciality was the fixed wing side.

A walk through a timeline of exhibits took us from the early forms of Army Aviation–the "spy in the sky", utilising balloons for artillery spotting troop observations and communications, from as long ago as the1880s. Later trials were carried out with man-lifting kites: one particular flight set a new altitude record of over 3,000ft!

The Apache explained (all pics G Fricker)

Operations using fixed-wing aircraft for spotting were approved as a result of Capt Bertram Dickson reporting on troop movements during a manoeuvres exercise on Salisbury plain in 1910. Amongst the official observers were Lord Kitchener and Winston Churchill, who championed the use of aircraft for military purposes. Once the Royal Flying Corps was created by Royal warrant on 13th April 1912, the previous aviation-related duties of the Army were taken on by the Military Wing of the RFC, there being a separate Naval Wing.

Following the early history part of the tour, we were taken through the first part of the hangar, which displayed examples of a Sopwith Camel, various marks of Auster AOP (Air Observation Post), Saunders-Roe Skeeter, Bell 47 (Sioux) Westland Lynx and Scout and Sud Aviation Alouette helicopters. Suspended from the roof were a manlifting kite as well as de Havilland (Canada) Beaver and Britten-Norman Islander aircraft. Our tour then continued along an upstairs corridor which displayed a "campaign trail", illustrating the Army Air Corps involvement from World War Two gliders up to the present day.

GLIDER HISTORY

The first Glider Pilot Regiment troop deployment was on 19th November 1942 in Norway (Operation Freshman), which involved two Airspeed Horsa gliders towed by Handley-Page Halifaxes, tasked with destroying the German occupied heavy water plant at Telemark. Sadly,

Unpowered oddity - the Hafner Rotachute

the mission was a complete failure with the loss of all 34 sappers and one Halifax crew. More successful wartime glider operations however did follow, to Arnhem and Pegasus bridges for example. The "campaign trail" detailed the AAC's actions in the Falklands, Gulf wars, Aden, Kosovo, Malaya and more recently Afghanistan. The "trail" led us to the second part of the hangar which housed an excellent collection of Army gliders. Examples of the Horsa, and Slingsby Hengist troop-carrying and General Aircraft Hamilcar tank-carrying gliders are exhibited along with General Aircraft Hotspur and Slingsby Kirby Kite training gliders. Troop carrying glider operations were advocated by Winston Churchill, following his discovery of the successful use by the Germans of glider-borne troops in Belgium and Crete. Suspended from the roof is a single-occupant Hafner Rotachute unpowered single-occupant autogyro for battlefield troop deployment.

At the end of the Hangar are a de Havilland Chipmunk, as used for basic training by the AAC, and half a dozen helicopters: a Falkland Islands-captured Sikorsky S76 suspended from the roof, a Bell UH-1 'Huey', another Lynx and Westland Scout, along with a Bell Cobra and early series Westland Apache.

The two tour groups gathered outside where there are displayed another DHC Beaver and Westland Scout; to the far southern side of the car park is a memorial walkway, dedicated to all those who have lost their lives in the service of British Army Flying. This ended our tour of the museum (well worth a visit if you're ever passing that way! Postcode SO20 8FB).

From there it was a short drive to the Officers Mess for a quick visit to the Tavern - a bar very reminiscent of the RAF Club's "Running Horse". We then met our official host, the station CO Col Brendan Shaw, for an excellent lunch in the Officers' Mess.

BACK TO TODAY

Back airside in the hangars, first-off was a good look round the Boeing Apache attack helicopters. Jim Trayhurn, an Apache instructor, most excellently presented the aircraft to us. The model currently in use is the AH64-E, an extremely adaptable and lethal weapons system. It can do as much as an AWACS surveillance aircraft can do by patching through to various data sources, also using a plethora of its own sensory systems from infra-red and lasers to the good old Mk1 eyeball! There are similarly many types of munitions that it can carry, capable of taking out accurately a range of targets from an individual person to a ship or building.

The WAH64-D Apache first used by the British Army in 1995, 67 of them having been built by Westland under licence from Boeing. The unit cost then was around $US48million: the unit cost for the latest "E" models, built by Boeing itself, has fallen to around $16million, thanks to the re-use of non-lifed components. Apparently there have been occasions where the ordnance fired from the helicopter has been valued at more than the cost of the helicopter itself!

Our next part of the visit was to the hangar containing the airworthy part of the historic collection, Auster Mk1 and AOP9, a Chipmunk and Beaver, plus Westland Sioux and Scout helicopters. There is also a near airworthy Saunders-Roe Skeeter, which is grounded at the moment as the main rotor blades have reached their component lives. I don't suppose anyone happens to know of the whereabouts of any suitable replacement units?

Beaver and Alouette attract attention

The visit finished with us been shown around a Boeing Chinook, which was at Boeing's facility there for testing new modifications. Upper Freeman Rich Pillans and Freeman Vaughan Dodsworth showed us round the Chinook - quite a large and extremely versatile transport helicopter. Figures of just over 100ft in length from front to rear rotor tips, an empty weight of 12t and a fully loaded weight of 24.5t give some idea of just how much it can carry. A typical load might be 44 fully armed troops. That concluded an excellent visit: our most grateful thanks to all who made it possible. □

AFFILIATED UNIT NEWS: RAF BATTLE OF BRITAIN MEMORIAL FLIGHT (BBMF)

The late Sqn Ldr Mark Long (Charlotte Graham)

On 25th May 2024 the RAF Battle of Britain Memorial Flight (BBMF) suffered its first fatal accident since its inception in 1957. On that day Supermarine Spitfire Mk IXe MK356 crashed shortly after it had taken-off from RAF Coningsby and tragically its pilot, Sqn Ldr Mark Long, lost his life.

In the immediate aftermath of the accident, the BBMF Rolls-Royce Merlin-engine historic aircraft – the Avro Lancaster, Spitfires and Hawker Hurricanes – were subjected to a "pause in flying" while the Service Inquiry investigated the cause of the accident. The Inquiry is still ongoing and has yet to publish its report. The BBMF Spitfires and Hurricanes were unable to fly for the remainder of the 2024 display season, although the Lancaster was allowed to recommence flying at the end of July 2024. The Lancaster had undergone a huge amount of engineering work during the 2023-24 winter maintenance period including, but not limited to, the fitment of brand-new tailplanes and a new tailwheel support structure, as well as new engine bearers for two of the engines. Its return to flying was greeted with much acclaim and it flew the flag for the BBMF for the remainder of the 2024 display season.

2024-5 WINTER MAINTENANCE

During the winter maintenance period of 2024-25 the BBMF Hurricanes and Merlin-engine Spitfires underwent standard annual maintenance, while the Lancaster was scheduled for a 'Primary Star' maintenance programme (a maintenance procedure not quite as deep as a 'Minor' maintenance programme). In addition, the Lancaster's No 1 engine, which was out of life and in need of refurbishment, was also changed for a zero-hour Merlin.

The completion of a remarkable multi-year project to develop and manufacture replacement main wheels for the Lancaster saw new wheels delivered in time for the aircraft to restart flying in 2025. The BBMF engineers worked across the Easter break and bank holiday to ensure that the Lancaster was ready and available to lead the VE Day 80 flypast over London on 5th May.

BBMF FIGHTERS

Meanwhile, Rolls-Royce Griffon-engine Spitfire PR Mk XIX PM631 was allowed to begin flying again from early October 2024 and was flown occasionally across the winter period. Clearance to recommence flying with the BBMF Merlin-engine fighters was granted on 19th March 2025. On the same day OC BBMF, Sqn Ldr Mark 'Suggs' Sugden, flew the post winter maintenance air test on Spitfire Mk XVI TE311, the first flight for a BBMF Merlin-engine fighter since May 2024. It was also the first time that Spitfire TE311 had been seen in the air with its special new tribute markings to Sqn Ldr Mark Long on its starboard side, where the code letters L-NG with the roundel in between effectively spell LONG.

Spitfire Mk XVI TE311 carries a tribute to Mark Long

BACK IN BUSINESS

With Public Display Authority granted by the AOC 1 Group on 27th May, the BBMF was fully back in business. The imminent return of Douglas C-47 Dakota ZA947 and Spitfire Mk Vb AB910 from extended Major maintenance programmes under external contract, will see the BBMF fleet back to full strength and the Flight is now engaged in an extensive and busy 2025 display season, with its future secure. □

COMPANY VISITS: THE UNIVERSITY OF SOUTHAMPTON AND SOLENT SKY MUSEUM

By Liveryman Ian Gee

The Company was invited for a tour of the Boldrewood Innovation Campus at the University of Southampton, followed by a visit after lunch to the Solent Sky Museum, celebrating "…Hampshire and the Solent region being the centre of the world for aviation research development between 1910 and 1960".

UNIVERSITY OF SOUTHAMPTON

The wind tunnel which we viewed is ex-Farnborough and able to generate a velocity of up to 80m/sec (180mph). It is used for testing items from landing gear and flaps through to work for the automotive industry. Lined with about 500 'anechoic' wedges, it can measure aerodynamic loads and acoustic frequencies. One project is to cut out noise outside the airport footprint.

The Master masters simulation

The towing tank is the biggest at a UK University, being 138m long with a speed of up to 10m/sec generated by a wavemaker. [The first use of models to determine the behaviour of ships was by Frederik Chapman in Sweden 250 years ago.] It can generate sea states to replicate different parts of an ocean. Models are attached suspended from a cable-driven carriage, upon which we were able to ride at 3m/s, with measurement by dynamometers.

NATIONAL INFRASTRUCTURE LABORATORY

The NIL comprises five laboratories, for materials below and above ground. The Testing and Structures Research Laboratory's work incudes tensile, compression and fatigue testing on steel, concrete and metallic constructs, with high-speed cameras and up to 63t force. The Large Structures Testing Laboratory is industry-funded with a strong floor facility, cranes and the capacity to apply 250t force, examples of applications being for railways and wind turbine blades.

In the Boeing Flight Simulator Laboratory, students are able to make a connection to real life for their research projects via three basic flight simulators plus a more advanced Redbird machine, and a Diamond DA-40 full-flight simulator is on order. Continuing its long tradition of practical flying (including human-powered flights in 1961 and 2021, the university has recently replaced its Sherwood Scout with a Van's RV-12.

DRONES

Drones developed at Southampton have been flown in varied locations eg for British Antarctic Survey and onto HMS *Queen Elizabeth*. The ULTRA drone operates out of Thorney Island, with 450kg MTOW and 100kg payload. Trials are underway for delivering medical supplies to the Isle of Wight and for an 'air bridge' with the Isles of Scilly.

The big debate is on whether to operate drones in segregated airspace. Research includes a 'talking drone' and whether it makes sense to communicate intelligently with other users by broadcasting reports and maintaining separation. A problem is the lack of CAA approval to operate TCAS but discussions continue.

Yousif Alyousif is the 2025 recipient of the Honourable Company of Air Pilots (Saul) Prize for aviation safety research work: *Fatigue, Fracture and the Importance of Improving Aerospace Failure Investigations*. He is a final year research student and expressed his gratitude for the Prize. One of the most important aspects of a part is its life cycle and the failure mechanism which needs to be understood. Temperatures of up to 650°C are reached during his work.

SOLENT SKY MUSEUM

Noel Pemberton-Billing, founder of Supermarine, had a dream to 'Build boats which fly, not aeroplanes which float'. In 1914, he took four Avro 504s to France for the first strategic bombing campaign. Southampton Council funded a museum for a Short Sandringham flying boat and the R J Mitchell collection, which opened in 1984. Particular exhibits are a replica Avro 504, Supermarine S.6A which participated in the 1929 Schneider Trophy contest, Supermarine Spitfire F.24, the Sandringham (converted from a Sunderland) whose cockpit can be visited and the Saunders-Roe SR.A/1, the world's only jet-fighter flying boat.

Bob Wealthy gave an illustrated talk on a Britten-Norman Islander which had been restored, and showed us over a Trislander, formerly operated by Aurigny, which is due to be restored.

The Sandringham dominates the Solent Sky displays (pics - Ian Gee)

Grateful thanks to Dr Rodolfo Olvera, Daniel Carlson, Dr Andrew Robinson, Declan Clifford, Professor James Scanlan, Yousif Alyousif and Antonia Sauvain at the University, Bob Wealthy at the Museum and PM Dorothy Saul-Pooley and David Curgenven from the Company for arrangements. For the history of towing tanks, boats and seaplanes, see:

https://www.waterbird.org.uk/floats/boats/ □

LIVERYMAN PAUL WILSON, 1932-2025

Liveryman Capt Paul Wilson, Clerk to the Guild of Air Pilots and Air Navigators 1985-88, died on 8th June. He joined the RAF in 1950, spending 20 years in the service before moving on to BOAC. He later was involved in investigating human factors in aviation and the effects of fatigue on pilots at RAE Farnborough, and then managed the confidential reporting service CHIRP. Finally, he became an aviation consultant and expert witness.

He wrote a book *That was Close* about his aviation "surprises" and his widow Leslie says: "He has disproved the motto 'There are old pilots, and there are bold pilots, but there are no Old Bold Pilots!'. He lived to 93 despite two life-changing aircraft accidents in the RAF, and many hair-raising experiences in his career." □

GAZETTE APPROVED BY THE COURT 10 JULY 2025

ADMISSIONS

As Upper Freeman

Peter James BARRON (NZ)
Kevin James BEALE
Craig BRIERLEY
Vincenzo Emilio Bruno DI PIETRO (AUS)
Ronald Edwin LAWFORD (AUS)
Richard Michael MILLERIN
Matthew William SCOTT
Christopher THOMPSON (AUS)

As Freeman

Christopher John BRADBURY
Michael John GARFIELD
Mike Yanhao GUO (NA)
Kam Pong HUEN (HK)

As Associate

Sanjay KASHYAP
David PHILLIS (AUS)
Drew Paul ROBERTSON (AUS)
Rajvir SINGH
Weifan WEI (AUS)
Jamie YARNOLD

ACKNOWLEDGED BY THE COURT 10 July 2025

REINSTATEMENT

As Upper Freeman

Ron KARO (OS)
Philip WIGNALL

REGRADING

To Livery

Christopher STRADLING
Joanna SALTER
Ian DAVIES
Andrew HOY
Kelvin ROBERTS
Susan HAWKINS
David HARRIS

RESIGNATIONS

David ANDREOLETY
Tristan CRAWFORD
William CUMBERLIDGE
Ryan FOILS
Mark INGRAM (OS)
Alexander MACANGUS
Suzannah McKEE

FORFEIT ALL BENEFITS

Brod LARKMAN
Danielle PARKER

DECEASED

Danny RAE
Lord TEBBIT
Paul WILSON

MASTER'S MESSAGE

By The Master, John Denyer

One of the more important things the Honourable Company of Air Pilots does each year is to give young pupils from London schools an experience that may help them in making their study and career choices over their next few years. This year we are supporting some 230 youngsters by providing a day's gliding experience at Cambridge, Dunstable and Booker gliding sites. I had the opportunity to join a dozen 11–12-year-olds from Bermondsey at London Gliding Club in June - just one group of many over the coming weeks.

School pupils at the London Gliding Club, Dunstable

It was great to watch the transformation of a minibus full of shy, self-conscious pre-teens glued to their phones first thing in the morning to an engaged group of young people, grinning uncontrollably as they step out of a glider after their flight. For some it is their first time in any aircraft and for others a rare trip outside the capital. I am proud of what the Company does in bringing on the next generation of pilots. These 230 flights for schools are, of course, in addition to the 72 gliding, PPL and flight instructor scholarships that we awarded this year. When asked "What does the Air Pilots do?" I usually start with this statistic!

SOME SPECIAL EVENTS

Our Livery Dinner at Drapers' Hall in May was, as usual, a wonderful event and it was encouraging to see the number of guests back up to pre-Covid-19 levels. We had an excellent guest speaker – Chief Executive of the CAA, Rob Bishton. Rob has worked extensively in the aviation industry, including positions at Fastjet, Astraeus, and easyJet. A qualified commercial pilot, he has more than 10,000 flying hours on Boeing 737 and 787 aircraft and is also an active GA fixed-wing and helicopter pilot. I took the opportunity in my speech to reflect on "Just Culture" reporting environments within aviation organisations, regulators and investigating authorities. The aim of Just Culture is to promote continuous learning from mistakes and to encourage pilots to openly share essential safety-related information – a long-standing culture with which we are all very familiar. However, we have seen recently an increasing tendency from commentators towards unprofessional reporting and misrepresentation following accidents that puts at risk the integrity of long-established aviation safety systems. Accident investigations must not be "concluded" by such instantaneous narrative before the formal investigation has barely begun.

One of the special privileges of any Master's year is the invitation to the Royal Garden Party at Buckingham Palace. The event takes place whatever the weather, and this year we were blessed with warm sunshine as we enjoyed the Palace garden, the two military bands and, of course, the immaculately prepared sandwiches! I was fortunate to be introduced to HRH The Duke of Edinburgh, and I took the opportunity to congratulate him on his recent appointment as Master of the Master Mariners.

The Master and Konsort Kate at Buckingham Palace

"THE CITY" GOES NORTH OF THE BORDER

The weather was also kind to us for my Master's Royal Ascot-themed Garden Party, where a great afternoon was enjoyed by all. The same was not quite true for the annual Livery Masters' away-weekend, which took place this year in the Lord Mayor's hometown of Aberdeen. The weather was sunshine and showers with a definite emphasis on the showers! We were guests of the Seven Incorporated Trades of Aberdeen, formed in 1587 and akin in many ways to the London Livery Companies. They include Bakers, Tailors, Weavers and the like. We were especially honoured to have HRH The Princess Royal as guest of honour at the formal dinner on the first night.

The Seven Trades organised a comprehensive programme including visits to the port, the art gallery, Balmoral and a Saturday night black tie ceilidh where one was definitely unfashionable if not wearing something tartan - and no, I did not wear a kilt! The weekend was a great opportunity to meet lots of interesting people and more than fulfilled its purpose as a team-building and networking event for the Masters and their consorts, 191 of us in total – the

Aberdeen, venue for the Livery Masters' Away Weekend

largest such gathering for a long time.

LEARNING AND CELEBRATING

The role of Master is largely about representing the Air Pilots at City events and elsewhere. Among the many lunches, banquets and visits so far this summer, I have found the learned lectures of other Livery Companies particularly interesting. In the equivalents of our own Cobham and Tymms lectures, I have learned about the role of the Client in large architectural projects from the Architects, eye health from the Spectacle Makers, the environment and human rights at the City and Legal lecture, and a fascinating piece of work that the Actuaries have carried out for the Royal National Lifeboat Institution. The latter calculated how many people were alive today (including their descendants) as a result of all the lives saved by the Institution over the 200 years since its formation in 1824. The answer is between three and five million!

One particularly memorable occasion was an invitation from the London Air Ambulance to celebrate the success of the huge fund-raising drive to purchase their two new Airbus H135 helicopters. You will recall that Past Masters Keegan, Legat and Piper chose the LAA as their charity, so it was a delight for Kate and me to hear this good-news story at a presentation at BAFTA HQ in Piccadilly, with an opportunity to talk with many of the crew and staff.

COMMON HALL

One of the privileges of being a Liveryman in any Company is to attend "Common Hall" to elect the Sheriffs of the City of London, and several Air Pilots assembled at Guildhall on 24th June to do just that. It is a great event with gowns, chains and much historic formality, and one of the occasions when one is reminded that, as a Liveryman of the City of London, you are part of something much bigger than your own Company. If you are a Liveryman and have never attended Common Hall, I can thoroughly recommend it, and the ceremony is followed by a very sociable lunch with other Companies at The Stationers' Hall. Before processing into the Great Hall, the Masters assemble in the Guildhall crypt to "gown-up" and help each other with our chains, which can be quite fiddly! Then follows the not-insignificant task of lining everyone up in reverse order of their Companies' precedence (seniority), starting with the two new companies of 2025, the Worshipful Companies of Entrepreneurs and Communicators, numbers 112 and 113.

As we stood in line I was reminded that, although the Air Pilots is one of the "modern companies", we are one of the oldest of the modern ones. Until the 20th century the last of the "ancients" was the Carmen, or makers of hand carts, dating from 1746 and with a precedence of 77. There then followed a gap of nearly two centuries before the Master Mariners was formed as number 78 in 1926, closely followed by the Solicitors (79), the Farmers (80) and the Air Pilots (81). This means that 28% of the Livery Companies are younger than us, making us perhaps "Livery teenagers"!

LOOKING AHEAD

By the time you read this Kate and I will be in North America on the first part of the Master's tour of the regions. I am indebted to the regional Chairs and their teams for putting together a full and interesting programme and, as I write this, I am booking the last few flights and hotels for the second leg of our tour in October/November to Australia, New Zealand and Hong Kong. The Master's tour is undoubtedly one of the highlights of the year. Some of the tour statistics of a Master's tour are interesting. In North America I have some 14 meetings in 12 days in five cities across four time zones, including with IATA, ICAO, the NTSB and FAA. Overall, "Konsort Kate" and I will make 19 flights across both legs of the tour and stay in 17 hotels. We are looking forward enormously to the trip and, especially, the opportunity to meet many of our overseas members.

The bustle of Common Hall

It is an honour for us to represent our great Company as your Master and Consort and I hope that while we prepare for our travels, you have a most enjoyable summer and perhaps an opportunity to get away somewhere for a holiday. □

REGIONAL REPORTS

Regional Report, New Zealand: Lessons of Erebus

By Upper Freeman Wg Cdr Richard Beaton RNZAF

The image of the wreckage of an Air New Zealand Douglas DC-10, strewn across the remote icy slopes of Mount Erebus in Antarctica 45 years ago, remains firmly etched in many New Zealanders' memories to this day.

For a variety of reasons, this accident became more than a tragedy for the victims and their families, as understandable blaming, court cases, public apologies and continued pursuit of a national memorial have all been drawn out over decades.

It is therefore understandable that any discussion of the Erebus disaster can still easily evoke further emotional debate and trauma. It was, after all, a national tragedy and remains New Zealand's worst peacetime disaster.

The ill-fated DC-10 (Eduard Marmet)

As important as understanding this tragedy is for New Zealand's national history, and for continued healing, as with any aircraft incident or accident there are lessons to be learned for any professional aviator – young or old – and for other participants within the wider industry.

The aim of this article is to discuss some of the core aviation safety lessons from the accident, with the hope that these lessons are not lost. Whilst aviation technology and systems may have improved throughout the years, many hazards in aviation are persistent, lying dormant, waiting to be reactivated through the smallest individual or systemic inattention.

WHAT CAUSED THE CRASH?

Flight 901 crashed into the lower slopes of Mount Erebus in Antarctica shortly before 13:00 on 28th November 1979. A scenic flight to the continent, which had been safely conducted many times before, tragically ended on the mountain, killing all 257 passengers and crew.

Laying aside the debate on the deep root cause analysis and the subsequent controversial investigations and inquiries, the reality is the crew thought they were somewhere they were not. Not helped by the environmental conditions (sector whiteout), the flight crew flew straight into the side of the mountain.

It is well understood today that aviation accidents are often complex with multiple contributing factors ranging from equipment, training, organisational systems and processes, along with the ever-vulnerable human factor. This understanding was not necessarily the same in 1979, with the common misconception that most aviation accidents arose from either technical failure or 'pilot error'.

The accident led to numerous investigations and ultimately resulted in several key safety findings that continue to be relevant for pilots and the aviation industry today.

NAVIGATION AND ROUTE PLANNING

One of the lessons learned from the disaster was the critical importance of accurate navigation and route planning. The accident highlighted the need for: precise coordination between flight planning and navigation systems; clear communication of any changes to flight paths or waypoints; and thorough briefing of flight crews on route qualifications and specific geographic features of their destination – particularly for unfamiliar or higher risk destinations.

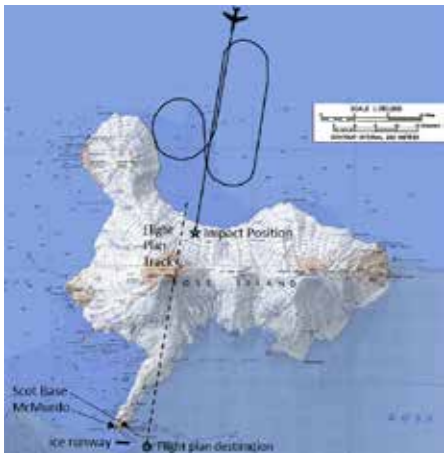
These findings led to improvements in how airlines prepare and communicate flight plans to their crews. Today, pilots should undergo extensive route and aerodrome qualification training for each destination they fly to, particularly if those locations have unique hazards or uncommon procedures.

SECTOR WHITEOUT AND MSA

The Erebus disaster brought attention to the phenomenon of sector whiteout, a condition that was not well understood at the time, even by experienced polar pilots. This weather phenomenon can create visual illusions making it difficult for pilots to distinguish between the sky, snow-covered ground, and the horizon.

As a result of this finding, there has been increased emphasis on: training pilots to recognise and respond to whiteout conditions; developing procedures for flying in areas prone to them; and enhancing awareness of visual illusions in aviation – a common syllabus item in human factors (HF) training.

Aviation today still relies on human crew, particularly commercial flights with fare-paying passengers. HF training therefore remains critical, and understanding environmental phenomena, such as whiteout, remains an important part of any training system.



The flight path of Air New Zealand Flight 901 (Wikimedia Commons)

The accident also underscored the critical importance of clearly defining and adhering to minimum safe altitude (MSA), especially in challenging terrain and weather conditions, with clear procedures and/or limitations for when descent below MSA is allowed and under what conditions - eg visual meteorological conditions (VMC). This led to: enforcement of MSA rules and clear policy on when it is permissible to descend below MSA; enhanced training on the importance of altitude and positional awareness; and implementation of improved altitude warning systems in aircraft.

SYSTEMIC ERROR AND TECHNOLOGY

The Erebus disaster contributed to the development and understanding of the "systemic error" concept in safety. This recognises that accidents are often the result of a series of small incidents or failures within a system, rather than a single catastrophic event or individual error.

Key aspects of this concept include: viewing safety as a holistic system rather than focusing solely on individual components; implementing multiple layers of safety checks and balances; and encouraging a culture of reporting and learning from minor incidents before they escalate.

Unfortunately, it took a while for the wider aviation industry to adopt some of the concepts of systemic error raised by the Erebus inquiry. This concept was not globally adopted by the International Civil Aviation Organization (ICAO) until it published *Human Factors Digest No.7* in the 1990s.

The tragedy spurred significant technological improvements in aviation safety. These include: enhanced navigation systems, including GPS and satellite-based technologies; improved terrain awareness and warning systems (TAWS); advanced autopilot and flight management systems.

Pilots of modern aircraft are blessed with an array of technological safety enhancements, but how good are our basic skills without some of these systems? How do we preserve our situational awareness skill set in degraded safety system scenarios?

ENDURING LESSONS FOR PILOTS

All the issues listed in some way contributed to the Erebus crash. Although this accident was over four decades ago, many of the hazards and risks are still present, or could easily re-emerge, if our industry forgets.

For pilots today, the Erebus disaster offers several enduring lessons. **Constant vigilance:** always maintain situational awareness, especially in challenging environments. *What strategies can you use to maintain situational awareness?* **Trust but verify:** while relying on instruments and flight plans, always cross-check information and be prepared for discrepancies. *What actions do you personally take to verify information and the source?* **Weather awareness:** understand and respect the power of weather phenomena, particularly in extreme environments. *When was the last time you studied or refreshed your aviation meteorology theory?*

Adherence to procedures: strictly follow established safety procedures and minimum altitude requirements. *How well do you know your company standard operating procedures?* **Continuous learning:** stay updated on new safety practices, technologies, and lessons from past incidents. *How often do you professionally self-educate? Have you seen the volumes of aviation safety magazines available online, going back decades?* **Effective communication:** ensure clear and accurate communication within the flight crew and with ground control. *Do you make system-wide clear communication a key training objective in your organisation or personally?* **Systems thinking:** recognise that safety is a result of the entire aviation system working together, not just individual actions. *What role do you play in the wider aviation system and how can your activities affect other parts of the safety system?*

The Erebus disaster, while tragic, has significantly contributed to the advancement of aviation safety. The lessons learned continue to shape pilot training, aircraft design, and operational procedures, making air travel safer for everyone. By understanding and applying these lessons, pilots can honour the memory of those lost and contribute to the ongoing improvement of aviation safety.


The wreckage of the DC-10

This opinion piece is the opinion of the author and is not an official view of the Royal New Zealand Air Force. □

Regional Report: Australia

By Liveryman Adrian Young, Chairman

The past two months have seen the Honourable Company of Air Pilots – Australian Region make significant strides across governance, member engagement, education, and industry collaboration. We're undertaking a comprehensive review of our Regional Constitution to better reflect contemporary governance standards and the evolving nature of our work. This important initiative will be shared with our members in the coming months for feedback and discussion.

MEMBER WEBINAR SERIES LAUNCH

In July we were proud to launch the *Members Webinar Series*, spotlighting the expertise within our own ranks. These sessions will run monthly through to March and are designed to foster connection and share insights across our diverse aviation community. Topics will align with those of our Working Groups and include areas such as military aviation, general aviation, Line Operations Safety Audit, safety & training, ATC/ATSB, airlines, and more. We welcome nominations from members keen to contribute.

SCHOLARSHIPS

This year's scholarship round saw nearly 70 applications from aspiring pilots nationwide. We're thrilled to announce the recipients of the 2025 Australian Region Scholarships. For the ATPL theory course: **Connor Thorpe** (NSW); and **Will Erwin** (QLD) – 3 subjects via HCAPA Education Trust. For instrument rating simulator instruction: **Fei-Fei Hardy** (QLD) in MEIR training; and **Orla McCann** (WA) in IF currency/renewal. For commercial pilot interview coaching: **Sanya Mann** (WA); **Merve Akinci** (NSW), and for a helicopter underwater escape training and emergency breathing system (HUET and EBS) course: **Imogen Petterson** (NSW).

The next round will open soon, offering GA Ready, Upset Recognition & Prevention, and Gliding Training grants for pilots under 30. These scholarships reflect our commitment to safety, skill, and airmanship across all sectors of aviation.

UNIVERSITY OF NEW SOUTH WALES PARTNERSHIP

We're excited to deepen our collaboration with UNSW Aviation. Key initiatives include: a scholarship for the UNSW Instructor Rating; access to the UNSW Boeing 737 simulator for Australian Region members; mentorship opportunities for aviation students and joint efforts in high school outreach and awards. This aims to strengthen aviation education and career pathways across Australia.

TECHNICAL & AIR SAFETY ENGAGEMENT

Our Technical and Air Safety Committee has been active on several fronts. We're contributing to the **Australian Hazard Wildlife Management Group**, with support from Young Air Pilots Australia. The Region will attend **PACDEFF**, The Pacific and Australasian CRM Developers' and Facilitators' Forum, with three slots allocated to Young Air Pilots members - an excellent opportunity for networking and industry engagement. We've been involved in multiple **CASA consultations**, including Draft Part 176 (Aerodrome Rescue & Firefighting); Part 121 discussions on Extended Diversion Time Operations and Required Navigation Performance Authorisation Required departures; advisory circulars on Safety Management Systems for aerodromes and R/T phraseology; transition to the ACR/PCR (aircraft and pavement classification ratings) system for runway classification; and promotion of CASA-verified drone safety apps.

We continue to engage with the **Aviation State Engagement Forum**, monitoring changes in airspace, ATC operations, and meteorological services. We're actively involved in the Bureau of Meteorology's newly-formed **Aviation Meteorological Services Operational Group**. Key discussion points include: accuracy of Terminal Aerodrome Forecasting 3 and broader TAF forecasting; impact of TAFs on Airport Collaborative Decision Making and air traffic flow; use of the Aviation Verification System; concerns around Automatic Weather Stations; and the future of Low Level Windshear Alert System and X-band radar acquisition.

A further major focus for us is securing a seat on the **General Aviation Advisory Network** (GAAN). We're in discussions with the Chair and Department to ensure that the Region's voice and expertise are represented in shaping the future of Australian GA. □

The Australian Scholars: Imogen Patterson, Connor Thorpe, Orla McCann, Sanya Mann, Will Erwin, Fei-Fei Hardy

Regional Report: Hong Kong

By Liveryman Rob Jones, Chairman

In keeping with our Company objective of liaison with other professional bodies involved in aviation, on behalf of the Hong Kong region I recently attended the 60th Liaison Group Meeting on Aviation Weather Services at the Hong Kong Observatory.

The Region has a very close relationship with the Observatory in Hong Kong. We are regularly consulted for our advice and input on current and future matters relating to meteorology and its effects on aviation. The topics of this meeting were more weighted towards the future, including how information is shared with pilots digitally, its format and questions on whether we believe additional data are needed.

The first topic was regarding volcanic activity: we currently receive information on the ash cloud and its dispersal, both laterally and vertically. Alongside this information the Observatory consulted the Air Pilots on the potential sharing of sulphur dioxide (SO_2) emissions, which also occur from volcanic eruptions, and whether this would be useful. The detection and monitoring of SO_2 emissions is a new ability being contemplated by the Observatory.

SO_2 emissions are both corrosive to aircraft and pose a health risk to their occupants. We agreed that this information may be useful to pilots, and indeed dispatchers, for avoidance planning. There are several limitations, however, that need consideration and further investigation, the main limitation being the inability to detect the height of the emission and its concentration at different heights. The current ability is only to look down from satellites and detect its presence laterally. It was noted by airlines present that at high altitude the concentration may be so low that avoidance is not necessary. The Air Pilots recommended that the Observatory consult with the local aircraft and engine maintenance companies to see if data could be correlated to show any adverse effects of passing through the areas of SO_2 detected by satellite.

SWIM

The liaison group was also briefed on a longer term and collaborative project. The System Wide Information Management (SWIM) framework, developed by the US Federal Aviation Administration (FAA), revolutionises aviation by enhancing data sharing, including critical meteorological information. SWIM meteorology integrates weather data into air traffic management, improving safety, efficiency, and decision-making across airspace.

SWIM meteorology aggregates real-time and forecast weather data from multiple sources, such as the National Weather Service (NWS), radar systems, and automated weather stations. Key sources include Meteorological Aerodrome Reports (METARs), Terminal Area Forecasts (TAFs), Significant Meteorological Information (SIGMETs), and Pilot Reports (PIREPs). These datasets cover parameters like wind speed, visibility, precipitation, turbulence and icing conditions, which are vital for flight planning and operations.

Through SWIM's service-oriented architecture, meteorological data are standardised and disseminated via platforms like the SWIM Terminal Data Distribution System (STDDS). Airlines, air traffic controllers and pilots access these data in near real-time, enabling proactive responses to adverse weather. For example, controllers can re-route flights to avoid thunderstorms, while pilots can adjust altitudes to minimise turbulence, reducing delays and fuel consumption.

SWIM helps pilots avoid hostile Met (iStock/Guvendemir)

The benefits of SWIM meteorology extend beyond safety. By optimising flight paths based on accurate weather forecasts, airlines can reduce emissions, aligning with sustainability goals. Collaborative decision-making, facilitated by SWIM's data sharing, minimises disruptions arising from severe weather events, such as typhoons and blizzards.

Challenges remain, including data latency in remote areas and the need for enhanced predictive models for phenomena like convective weather. Future advancements in SWIM meteorology may leverage artificial intelligence to improve forecast accuracy and make allowance for drone operations.

In conclusion, SWIM meteorology is a cornerstone of modern aviation, transforming how weather data are accessed and utilised. By fostering collaboration and precision, it ensures safer skies and a more resilient air transportation system. The Air Pilots region in Hong Kong is privileged to attend these meetings and continues to liaise closely with Hong Kong Observatory to improve safety and awareness. □

Regional Report, North America: A trial of certification

By Freeman Hal Adams, North America Region Chairman

What follows is, hopefully, an interesting, if not rather challenging, certification experience: certainly, it is a recap of a one-time victory over the aviation certification bureaucracy.

In 2002 US company Accord Technology (AT), of which I was then a business partner and COO, certified the first GNSS-compliant (GPS) receiver/sensor to then "new" GPS wide area/satellite-based augmentation system (WAAS/SBAS) navigation standards, UA FAA TSO-145c.

Today, it seems that everyone has GPS/GNSS-type solutions, encompassing platforms of all types, stand-alone nav devices, phones, wrist watches, etc. Those devices have been around for a while, with aviation authority approval growing as proven capability and reliability allow. At the time of our first aviation certification, it took a lot of effort to get the attention of the appropriate authorities.

Our initial experience with the US FAA GPS certification approval, in the 1990s, proved to be a challenging voyage. The FAA had issued new requirements to cover the augmented GPS solutions. It had compiled a much-more-than-usually complicated set of performance standards *Minimum Operational Performance Standards DO-229* of which the current version DO-229(E) covers no fewer than 540 pages.

While the major aviation GPS equipment providers were pondering or complaining about the compliance challenges with the new requirements, we quietly proceeded to achieve the first certification approval for a TSO-145 "receiver" and -146 "nav sensor". However, the journey, or 'process' in FAA language, was certainly interesting for us.

FINDING A BASE

We first decided to base ourselves in the Northwest USA, as, at the time, the FAA's Seattle office was most familiar with the GPS standards and certification requirements. We had been advised and encouraged by numerous FAA staff to complete the GPS WAAS certification, as the industry badly needed a more robust GPS to expand the operational envelope for operators. Airline operators were particularly aggressive in their lobby efforts!

We quickly realised that trying to reach the Seattle FAA Aircraft Certification Office (SEA ACO) was not so easy. I think at the time it was in the middle of Boeing 777 certification. I was informally advised that if the phone caller identification did not say "Boeing", the FAA ignored the call!

When we objected about the lack of connectivity at FAA SEA ACO, it was suggested that we work with the Long Beach (California) ACO – but there was not much improvement in connectivity.

Luckily for us, the chief of the Anchorage (yes, Alaska!) ACO advised that it would be pleased to work with us. We moved our operation to the Anchorage area and proceeded to get aligned for FAA approval: a major hurdle seemed to be cleared. By then, we were ready to work with the FAA headquarters GPS team that had written the new requirements.

Accord Technology's receiver and sensor were vital components in modern GPS

Then we encountered the US FAA headquarters certification office which, we soon found, was slow to respond.

DIRECT LINE

Our lucky break was that the ANC ACO Chief had a "direct line" to the FAA Director. The ANC ACO Chief was an engineer/pilot who led his staff in an intense aircraft environment, a mix of general aviation, airline and military operations. This seemed like a really good alignment and working relationship. Soon, we had completed all the design and certification units and, most importantly, the mounds of paperwork to support the certification. Then it all slowed down dramatically, as the FAA headquarters certification team got officially involved.

While we were contemplating playing a 'political card' to get FAA headquarters to act, I received a call from the ANC ACO Chief inviting me to come and brief the FAA Director on our GPS and the challenges of dealing with FAA headquarters. This meeting occurred during the Director's annual official visit to Alaska. We briefed the Director on our certification "progress", or lack thereof, and he simply said he "…would take care of it", as the industry was badly in need of the new GPS WAAS Sensor/ receiver. Within 48h of my meeting and briefing the FAA Director, I had a call from the head of FAA GPS team inviting me to FAA DC headquarters to discuss how to get our GPS certified, ASAP. Certification then proceeded quickly and we caught the industry by surprise! What a fun, if not slightly painful, journey through FAA certification! □

REPORT: THE YOUNG AIR PILOTS

By Associate Chris Barrott, Chairman

It has been a great pleasure to see many Young Air Pilots (YAPs) enjoying the fantastic spring and early-summer weather in their recreational and professional flying. To continue this, the YAP committee is excited to a support a strong summer programme of social, aviation and professional development events that should cater for our diverse membership.

The new committee is settling into the rhythm, with some exciting projects behind the scenes. However, as I always say, if you think we can do something better, or you have something to offer, we'd always like to hear from you. You can get in touch with us at **youngmembers@airpilots.org**.

SCHOLARSHIPS

Many YAPs have been instrumental in the selection process for the Company scholarships this year, which is something we are always proud to support. The courses for the 12 PPL scholars are well underway and they are making the most of the advantageous weather, with the first of the week-long residential gliding courses also set to start in August, with over 50 places offered.

Each PPL scholar is 'buddied' with a past scholar to help them navigate the challenging task of completing the PPL by the end of September. We are also looking for more YAPs to support the gliding scholarship award ceremonies, where certificates are awarded at the end of the residentials. Dates have been posted in the WhatsApp community, so please get in touch if you are interested. Best of luck to all the scholars, and we look forward to welcoming them to The Company at the end of summer.

CADET SCHEMES & MENTORING

We have recently seen the launch of the Jet2 FlightPath initiative as another fully-funded route to the flightdeck. Some YAPs have made it through to later stages, and we wish them the best of luck.

A reminder that the refreshed YAP-driven mentoring scheme is set to relaunch soon, focussing on ensuring that our network is used effectively and for the benefit of all the members. Mentoring is not just for aspiring pilots, but for any member at any stage. Perhaps you are coming up to your command, and need some help? Or you are looking for some advice about how to get into a niche area of aviation? Let us know, and we can put you in touch with appropriate people. Register your interest at **mentoring@airpilots.org**.

INSTAGRAM TAKEOVERS

The **@youngairpilots** Instagram has seen some exciting "takeovers" from Young Air Pilots, where the community is shown a "Day in the life". We have enjoyed seeing behind the scenes looks at some general aviation, long haul and airshow flying. Make sure to follow the page if you haven't already and get in touch with the committee if you have something exciting to share.

Examples of the social media posts from Young Air Pilots

SUMMER FLYING & FATIGUE

For many of our members, the summer will be the busiest and most challenging operating environment of the year. We must be conscious that the fatigue and operational disruption can lead to increased physical and mental strain.

It is important to prioritise rest and assess alertness regularly, especially when faced with long or complex duties. Fatigue is not a sign of weakness but a critical safety consideration. Protecting oneself, colleagues, and passengers requires vigilance, communication, and the courage to report when safety margins are at risk. Always remember that there are many within The Company who have 'been there, done that'. If you need support, no matter how little, make sure to speak out, and tap into our collective experience.

EVENTS CALENDAR

Following a busy schedule of June/July events, the late-summer dates – in addition to main Company events listed on p2 - for your diary are:

Mon 18th August: Future Pilot Assessment Day & Social (London)

Sat 6th September: YAP Summer BBQ (White Waltham)

All ticketing details are circulated by email and on the YAP WhatsApp community. □

SINGLE CREW INCAPACITATION

From the Desk of the DAA, PM Nick Goodwyn

PILOTS BE AWARE – THE FUTURE OF SINGLE PILOT OPERATIONS was the title of the DAA article for the April 2023 edition of *Air Pilot*. The subject of crew composition for commercial air transport (CAT) operations was highlighted with increasing demand from industry and challenge from academia to review the advance in technologies, not least the introduction of artificial intelligence (AI) in the cockpit, and their applications in future crewing solutions. EASA, under draft concepts of extended minimum crew operations (eMCO) or single pilot operations (SiPO), proposed to research a pitch for limited solo flying in the less strenuous cruise phase from European aircraft makers Airbus SE and Dassault Aviation SA, with at least two pilots remaining in the cockpit for take-off and landing.

Would you find it lonely up here? (iStock)

The eMCO-SiPO project was funded under the Horizon Europe Work Programme 2021-2022. In that programme, the European Commission entrusted EASA with the management of six research actions with a budget of €14.2million. The eMCO-SiPO project addressed one of the actions of the work programme, entitled *Safety standards for the introduction of key concepts and technologies*.

Whilst this project was a European funded initiative, the concept had attracted attention worldwide, with similar trials proposed across other aviation jurisdictions and OEMs/Operators and where EASA was to go would, in all likelihood, have been followed by the UK.

TWO CONCEPTS

The first operational concept to be examined was eMCO, in which single-pilot operations were to be allowed during the cruise phase of the flight, nonetheless achieving a level of safety equivalent to today's two-pilot operations. This should offer at least an equivalent overall level of safety through compensation means (eg ground assistance, advanced cockpit design with workload alleviation means etc). The eMCO concept was, in particular, relevant to large aeroplanes operated in CAT operations, for which no fewer than two flight crew members are currently required under the Air Operations Regulation.

In the SiPO concept, at a later stage, in which end-to-end single-pilot operations might be allowed, should have offered at least a level of safety equivalent to today's two-pilot operations provided that compensation means similar to those for eMCO were in place, with the additional requirement of a capability to cope with pilot incapacitation.

On 18th June this year, EASA officially concluded its scientific study into eMCO-SiPO, carried out by a research consortium led by the Royal Netherlands Aerospace Centre (NLR). The study examined the safety implications of removing one pilot from the flight deck – for either part (eMCO) or, potentially, the whole of the flight (SiPO). The Air Pilots International Technical Forum had discussed and raised significant and valid reservations about the proposals on safety grounds and concerns over a push for innovative crew solutions driven by commercial imperatives. The publication of EASA's final report on the safety risks of single pilot flying marks the close of a critical research phase and, with some relief to us, a significant pause in the industry's push toward reduced crew operations, as it concluded that an equivalent level of safety between eMCO and normal crew operations could not currently be demonstrated.

For pilots, it was a clear validation: safety concerns are real, substantiated and supported by science. It is suspected that this is not a final verdict, but it is a firm reminder that safety cannot be compromised for the sake of commercial convenience.

The project created a risk-assessment framework describing how current operations are executed by normal crew operations with a crew of two pilots being present in the cockpit throughout the whole of a flight. This framework was compared with the situation where, during eMCO segments one pilot is resting and the other is controlling the aircraft alone. The baseline risk-assessment framework was scenario-based with four main categories of scenario, corresponding with high-level flight crew management tasks: flight coordination; aircraft movement; flight path; and contingencies.

The eMCO-SiPO research tasks on failure condition management, sleep inertia, pilot incapacitation management, pilot fatigue, boredom and physiological needs were described in the context of each of the scenarios, highlighting the consequences for flight safety. The main question to be answered within this project was whether eMCO could be executed with an equivalent level of safety compared with the current operational concept, flying consistently with a crew of

two in the cockpit. It was identified that there would be situations in which an equivalent level of safety could not be demonstrated. The most significant areas for consideration were pilot incapacitation detection, cross-checking and sleep inertia.

PILOT INCAPACITATION MONITORING

In conventional two-crew operations, the remaining crew member can usually identify a pilot incapacitation issue relatively quickly and accurately, assuming that only one crew member becomes incapacitated at any one time. Detection does depend on the type of incapacitation and the alertness of the non-incapacitated crew member. However, in the scenario where incapacitation detection would rely on specific equipment, or pilot inputs into the flight systems, this detection capability is not yet considered sufficient – especially for situations of partial or subtle incapacitation.

The level of safety provided by current technological equipment that could be used to detect incapacitation does not yet seem to be equivalent to that provided by a human, such as a second pilot. Further, many sudden medical events that lead to incapacitation are impossible to prepare for or to predict. As a result, detection of incapacitation is considered likely to occur later in eMCO compared to normal two-person crew operations.

FATIGUE AND DROWSINESS

Regular cockpit checks by cabin crew can help mitigate the risks of pilot incapacitation or impairment, particularly for drowsiness or fatigue. These checks can also counteract boredom in the pilot flying. However, such checks are only supportive and the study concludes that they should always be combined with robust methods for effective detection of incapacitation and drowsiness. Cabin crew members might be too late to detect fatigue since they cannot constantly monitor the pilot.

SLEEP INERTIA

Scientific literature shows that pilots may experience sleep inertia (the feeling of grogginess, disorientation, drowsiness, and cognitive impairment that immediately follows waking from their rest), and that this state can last up to 35min. However, it is unclear how the intensity and frequency of sleep inertia varies between individuals and situations. Because of this uncertainty, it is unclear what level of decision-making or operational actions can safely be expected from pilots during this period of sleep inertia.

The study says that therefore, clear guidelines need to be defined for pilots' responsibilities, actions and decisions expected of them immediately after rest. These guidelines should cover a range of operations and conditions, from normal flight through to the various interrupted eMCO levels. The guidelines should also specify the types of information and decisions that can be safely processed by the waking pilot to maintain optimal crew performance.

Who is monitoring the single pilot? (iStock/Gevumdemir)

CROSS-CHECKS

Cross-checking is a key safeguard against human error and has many forms during normal multi-crew operations. When a pilot is flying alone, however, the opportunity for cross-checking does not exist in the same way. Up until now no technological and procedural solutions have been identified to mitigate this limitation.

PHYSIOLOGICAL NEEDS

A practical obstacle for eMCO is how the physiological needs of pilots during different eMCO circumstances would be addressed. A multitude of (medical) conditions regarding urination, defecation and menstruation can cause an increased (and uncontrollable) urge to go to the toilet more frequently (and longer) than anticipated. When the physiological urge is high, it might not be possible for the pilot previously flying to wait until the sleep inertia of the pilot newly flying has dissipated. This would lead to a condition where the pilot newly resting must be considered as incapacitated while the pilot newly flying is affected by some degree of sleep inertia.

It was therefore concluded that an equivalent level of safety between eMCO and normal crew operations can currently not be demonstrated. The final report marks the end of this particular research project and a clear indication that the single-pilot concept is not yet fit for purpose with allied safety - but the discussion is far from over. The Air Pilots should remain ever vigilant and committed to ensuring that safety stays at the heart of every decision shaping the future of aviation. The full report is at **https://www.easa.europa.eu/en/research-projects/emco-sipo-extended-minimum-crew-operations-single-pilot-operations-safety-risk**

Although it is not directly related, but of interest and for information, the UK CAA has just published a new Safety Sense Leaflet on Pilot Health and Performance which is highly recommended for all to download and view:

https://www.caa.co.uk/our-work/publications/documents/content/safety-sense-leaflet-24/?mc_cid=76d5f86bdb&mc_eid=3a86d5bc96 □

AFFILIATED UNIT PROFILE: CENTRAL FLYING SCHOOL

By CFS staff

The RAF's Central Flying School (CFS) aims to teach, develop and assure today's finest military aircrew instructors, to build tomorrow's exceptional air and space-domain warfighters. It consists of a Development and Delivery Wing and Examination Wing, which work collegiately to ensure and maintain the world-leading standards associated with CFS-accredited aircrew instructors.

DEVELOPMENT AND DELIVERY WING (D&D WING)

D&D Wing specifically aims to: train aircrew instructors and flying training managers on behalf of the Ministry of Defence; maintain the Central Flying School Manual of Flying; and to research, develop and consult on the delivery of innovation in flying training (FT). It does this through several functions, each of which is further explained below.

Training overseas air forces is an important role for CFS

COURSE DELIVERY

D&D Wing's primary role is the delivery of courses to UK MoD aircrew, and the instructional cadres of international military partners. The courses deliver foundational instructor training in the Aircrew Instructor Course (AIC), followed by further development training in Enhanced Instructional Techniques (EIT), after instructors have around 18 months of experience. In addition, instructors delivering day-to-day management of FT systems receive the Flying Training Managers' Course (FTMC).

The current AIC has developed from an amalgamation of what was formerly 'CFS Ground School', and the former AIC, which was for non-CFS candidates. Previously the courses were 3-4 weeks long, residential, and covered the basic theoretical concepts and processes required to be an effective aircrew instructor. However, with the availability of technology allowing more effective remote delivery, face-to-face training time has been reduced to a single week, with an online module delivered using a blend of online computer-based training and instructor-led interactive seminars.

The EIT course is designed to upskill qualified instructors by introducing coaching techniques through workplace-based learning and deepens understanding of adult learning and human psychology. Instructors return to CFS after about a year of experience as a non-probationary instructor, and explore topics which include elements of neuroscience, motivation, mindset, personality types, performance under pressure, and coaching.

The FTMC is delivered by the D&D Wing Training Team and provides an awareness of the policies and processes that are crucial in establishing and managing defence training systems instructors in roles with a training management responsibility. Recent efforts by the team resulted in successful delivery of a hybrid version of the course, integrating course attendees working remotely with the attendees in the classroom.

This approach added the capability to deliver training to the more remote air stations, using online whiteboard platforms to host activities and conducting the training over MS Teams. Multiple cameras allowed remote attendees a sense of being in the classroom, ensuring the course ran seamlessly, losing neither fluidity in the delivery nor failure in the transfer of knowledge and skills that the course aimed to achieve.

PERFORMANCE ENHANCING STRATEGIES (PES)

The PES initiative, created by the human performance and research and development members of D&D Wing, delivers development of both instructor and non-instructor aircrew. It includes the formal inception of two key components for supporting trainees: psychological skills training (PST) and performance coaching. PST for trainee aircrew was proposed by CFS to the Directorate of Flying Training as a critical requirement, and introduces psychological tools inspired by elite sports to build mental resilience and support learning. Topics include goal setting, visualisation, self-talk, attention control, stress management, and self-reflection. This training will be delivered by performance psychologists, with operational insights provided by experienced aircrew.

Alongside PST, one-on-one performance coaching helps aircrew to understand and manage personal challenges and improve overall performance. These sessions are low-intensity but focused, encouraging individuals to take ownership of their development and apply practical strategies to build a proactive, accountable mindset that supports long-term growth and operational excellence.

RESEARCH AND DEVELOPMENT (R&D)

The R&D section is dedicated to exploring innovative technologies and techniques that have the potential to enhance aircrew instruction and FT effectiveness. One

area of investigation has been the use of extended reality technologies, with one notable project investigating the effectiveness of high-specification virtual reality (VR) flight training devices. Conducted in collaboration with Ascent Flight Training and the Defence Science and Technology Laboratory, the randomised controlled trial took place on 72Sqn at RAF Valley with 'ab-initio' trainees. The results demonstrated that such VR devices can be an effective part of a blended flight training approach, and the findings helped to provide support for the introduction of VR and mixed reality devices across the Beechcraft Texan T1 and BAE Systems Hawk T2 platforms at RAF Valley.

Relatedly, CFS launched project immersive instructor training (PIIT) at RAF Shawbury with funding from the RAF's Astra innovation programme. This initiative introduced 360° virtual reality headsets to the CFS (Helicopters) Squadron, along with the necessary infrastructure to produce immersive footage of live flying events. The project was designed to address the challenge of reduced live flying hours, by accelerating the knowledge acquisition and confidence of trainee Qualified Helicopter Instructors and Qualified Helicopter Crewman Instructors - all while minimising risk and reducing the demand for additional human or aircraft resources.

To ensure maximum benefit from greater access to new simulation technologies, it is important that the psychological aspects of their usage closely mirror the live environment. Therefore, the team conducted a comprehensive trial examining the potential of a simulated air traffic control environment (SATCE) in enhancing the psychological fidelity of simulated training. This study tested SATCE software that introduced realistic airborne entities and interactive ATC into the VR simulator environment. The findings revealed that overall workload increased only when both ATC and airborne entities were present – probably because of the heightened attentional demands. These insights have since led to a promising collaboration with Ascent Flight Training to further explore SATCE's potential.

Most recently, given trends in modern operations and military aviation technologies, it has become increasingly apparent that frontline aircrew competency is more reliant on the ability of individuals to adapt and make decentralised decisions. Therefore, the team has focused on 'Airmanship', with the team assessing instructors' perceptions of trainees' airmanship standards, and capturing instructors' conceptualisations, development strategies, and assessment challenges related to specific airmanship skills. The research has highlighted several areas that will lead to improvements in the conceptual and airborne training of airmanship skills.

EXAMINATION WING (EXAM WING)

CFS Exam Wing is responsible for ensuring the quality and safety of all pure flying and flying instruction across UK defence aviation. The team stays current on every platform within 22 Group and is supported by a network of CFS agents who bring frontline, type-specific expertise.

CFS investigation of high-specification VR technology helped its introduction into service

Collectively, the CFS examiners have logged over 95,000 flying hours, with more than 30,000 of those being instructional. Exam Wing is also regularly called upon to support 'defence activity other than operations', which includes deploying to partner nations to carry out mutual assurance tasks, share best practices, and collaborate on the development of FT. Recent deployments have taken the wing to Brunei, Kenya, Hong Kong, India, Pakistan, Qatar, Oman, and Saudi Arabia.

The Wing is split into specialisms within FT and across a number of locations. They are made up of the following:

- The Elementary Team of four members, based at RAF Cranwell, focuses on assuring flying and instructional standards for elementary flying training, as well as within the University Air Squadrons and Air Experience Flights. They also oversee the commercial training providers involved in the RAF Air Cadet Pilot Scheme.
- Fast jet examiners are stationed at RAF Valley in Anglesey, where they ensure the quality of fast jet flying instruction across both 1 and 22 Groups.
- The CFS Gliding Examiner, based at RAF Syerston, oversees flying activities for No 2 Flying Training School (2 FTS), primarily on the Grob Viking T1. This includes assurance work at the Central Gliding School and across the UK's 10 Volunteer Gliding Schools.
- Multi-engine examiners are also based at RAF Cranwell. This team includes two Qualified Flying Instructors and two Qualified Mission Aircrew Instructors. They provide assurance across all MoD multi-engine platforms; from the Beechcraft Shadow and Boeing C-17 to the Battle of Britain Memorial Flight's heavy aircraft. They are also responsible for instructional assurance of certified remotely piloted air systems (RPAS), including the General Atomics Reaper and upcoming Protector platforms.
- Rotary wing examiners are based at RAF Shawbury. Although they work alongside 1 FTS, they operate independently. This team assures helicopter instructional standards across all three Services and various contractor flying approved organisations (CAFOs). Since 2021, the team includes three Qualified Helicopter Instructors, and two Qualified Helicopter Crewman Instructors. □

THE CENTENARY IN 20 ARTICLES:

Air Pilot's centenary series continues with the first of 10 articles celebrating some of the most important and influential aircraft types of the past 10 decades – in this issue, 1929-39, exemplified by the aircraft that truly opened up the Empire flying routes.

THE SHORT C CLASS FLYING BOAT

By Assistant Seb Pooley, Chairman, Centenary Steering Committee

In the decade before World War Two, a revolution took flight from the waters of Britain's imperial outposts. It was a time when aviation was both adventurous and elite, and few aircraft captured the public imagination as did the Short C Class flying boat. Also known as the Empire flying boat, this elegant seaplane was more than just a technical marvel; it was the floating embodiment of British power, connecting continents through the skies. Beyond its polished fuselage and imperial routes lies a deeper story, one of pioneering airmen, extraordinary professionalism and a quiet, enduring influence through our fledgling Guild.

AN IMPERIAL DREAM

Conceived in the mid-1930s, the Short C Class flying boats were the workhorses of Imperial Airways, Britain's flagship international airline. Designed and built by Short Brothers, the oldest aircraft manufacturer in the world, the aircraft were intended to service the Empire's most vital and far-flung territories. The British government's goal was clear: to establish a dependable and prestigious network of air routes stretching across Africa, India, Southeast Asia and beyond to Australia.

Centaurus, the third S.23 built, was destroyed in a Japanese air raid on Broome, Northern Australia, in 1942

The first C Class aircraft, *Canopus*, took to the skies in July 1936. With its high wing, sleek hull, and four Bristol Pegasus engines, this flying boat was designed to operate without the need for traditional airfields, a necessity in regions where paved runways were few and far between. Each C Class aircraft bore a name beginning with *"C"* — *Canopus, Cambria, Caledonia*, to name a few — evoking classical strength and elegance.

Flying at a cruising speed of around 165mph (275km/h) with a range of over 700 miles (1,130km), the aircraft linked coastal cities and colonial outposts by alighting on rivers, lakes and harbours. Stops such as Alexandria, Karachi, Rangoon, Singapore and Darwin, became waypoints in a skyborne artery that sustained the British Empire's farthest reaches.

Cutaway model shows the arrangement of accommodation on the C Class

LUXURY ALOFT

The C Class wasn't merely utilitarian; it offered a level of comfort few could imagine in commercial air travel. The cabins were spacious, fitted with reclining seats that could be converted into bunks for overnight flights. Passengers were served hot meals and refreshments by uniformed stewards. Interiors were decorated with wood panelling and rich fabrics, and the atmosphere evoked that of a first-class train carriage or luxury yacht.

However the luxury masked the challenge behind each flight. Operating a flying boat was an intricate dance of airmanship, engineering and seamanship. Each leg of a route involved not only air navigation, but water landings and take-offs, sometimes in rough seas or unpredictable weather. This environment is where our early Guild found its greatest relevance.

EXCEPTIONAL AIRMEN

The Guild arose from a simple but urgent idea: as aviation advanced, the need for professional standards,

TECHNICAL SPECIFICATIONS — SHORT S.23 C CLASS FLYING BOAT

Manufacturer	Short Brothers (Rochester, UK)
First Flight	July 1936
Number Built	42
Wingspan	114ft 0in (34.75m)
Length	88ft 0 in (26.82m)
Height	31ft 9in (9.68m)
Empty Weight	27,500lb (12,474kg)
Max Take-off Weight	53,000lb (24,040kg)
Engines	4 × Bristol Pegasus XC radial (920hp each)
Cruising Speed	165mph (266km/h)
Range	760 miles (1,223km)
Service Ceiling	19,000ft (5,800m)
Crew	5–6 (pilot, co-pilot, navigator, radio op, engineer, steward)
Passenger Capacity	Up to 24 in luxury configuration

mutual support and knowledge-sharing among pilots and navigators would become essential.

Among its early members were pilots and navigators from Imperial Airways, many of whom - including Capt Arthur Wilcockson (one of the seven members of the Guild's first Council) - flew the C Class aircraft. For them, the Guild wasn't just a fraternity, it was a platform to advance standards in flight safety, training, navigation and ethics. These men operated at the leading edge of what was possible in commercial aviation, and they brought their experience back to the Guild in the form of lectures, papers and peer mentorship.

The Guild promoted continuous learning and was instrumental in fostering a professional identity for aircrew in an era when aviation was still perceived by many as part sport, part spectacle.

FLYING THE EMPIRE

A typical C Class flight was as much a navigational feat as a technical one. Pilots flew without the benefit of today's digital aids. Long-range radio beacons were scarce and celestial navigation, using sextants and star charts, remained a vital skill. Weather forecasts were rudimentary, and diversions were often impossible because refuelling facilities were few and far between planned staging points.

Pilots faced decisions that required cool judgment and absolute confidence in their training and their crews. Co-pilots, engineers, radio officers and navigators worked in tight quarters, sometimes for 15–20h at a stretch. Of course, all of this happened whilst carrying high-profile passengers, diplomatic pouches or sensitive airmail.

It comes as no surprise that the Guild took pride in representing such individuals. Their service elevated aviation and many would go on to become instructors, airline executives or regulators, continuing the Guild's influence well beyond their flying years.

WARTIME SERVICE

The outbreak of World War Two brought swift change. Many C Class aircraft were requisitioned by the Royal Air Force, where they served as transports, maritime reconnaissance aircraft and air ambulances. Others continued to fly under BOAC, the wartime successor to Imperial Airways, carrying VIPs and vital communications across neutral airspace.

Once again, pilots from the Guild were there, applying peacetime precision in high-stakes, high-risk missions. Their wartime contributions were later folded into safety studies and operational handbooks, helping the Guild advance one of its core missions: improving aviation safety for all. Seventeen of the 42 built were lost during wartime service, five or six (one disappeared without trace) of those as a direct result of enemy action.

The S.33 was the later development of the S.23: Cleopatra, the second of three built, was scrapped at Hythe in 1946

DECLINE AND LEGACY

After the war, the age of the flying boat waned. New land-based aircraft, like the Lockheed Constellation and the de Havilland Comet, offered faster, higher and drier travel. By the late 1940s, the last of the C Class flying boats had been retired, with most of the survivors (nine had crashed in pre-war civilian service) being scrapped at Hythe in 1946-7 but their legacy remains powerful.

The Short C Class was the first aircraft to offer scheduled long-distance travel on a global scale. It showed that aviation could shrink empires and connect cultures. It laid the groundwork, technically and symbolically, for the modern age of global air travel. In our Company, the spirit of those pioneering airmen lives on through the strong connection we have with the kind of professionalism that the C Class era defined.

To look back at the Short C Class flying boat is to look at a time when flying was more than just transportation — it was theatre, diplomacy, exploration and mastery combined. It was a time when pilots needed sextants as much as throttle levers and when the success of a route depended as much on a crew's teamwork as on an aircraft's design. As we approach our Centenary year, our Company stands as the institutional memory of those early flying boat pioneers: a repository of skill, judgment, and shared purpose. □

A SHORT NOTE FROM THE ARCHIVES…

On 22nd October 1953, His Royal Highness, Prince Philip, Duke of Edinburgh, was installed as our Grand Master in a ceremony at Grocers' Hall. Prior to the Installation Ceremony, a donation of £300 had been received by the Guild from one Oswald Short for a Grand Master's Badge.

CAPT ARTHUR WILCOCKSON

One of the first group of Imperial Airways captains on the S.23 C Class was Arthur Wilcockson, a member of the eight-man Drafting Committee appointed in February 1929 to establish the initial details of the Guild of Air Pilots and Air Navigators of the British Empire. In April 1929 he was one of the seven members of the Foundation Council elected to supervise the formation and registration of the Guild, and in October of that year was elected as one of the first four Wardens.

In 1938, Wilcockson was the captain of the long-range S.23 MkIII *Cambria* for aerial refuelling trials: starting in January of that year, fourteen hook-ups were made with the Armstrong-Whitworth A.W.23 (one-off precursor to the Whitley bomber) of PM Sir Alan Cobham's Flight Refuelling company, when fuel loads of between 60 and 440 gallons (270-1,980l) were transferred. On two occasions, *Cambria* was ballasted to its MTOW of 40,500 lb (18.37t) with 4,400lb of sand in sacks, and then during the aerial rendezvous received 450 gallons (2,025l) of fuel, taking its all-up weight to 44,800lb. To reach its safe landing weight, not only did the extra fuel then have to be jettisoned, but the 4,400lb of sand sacks had to be thrown overboard by the crew! (In June of that year, the same two aircraft hooked up at 11:00am every morning, to prove that regular scheduled refuelling was practical.)

Wilcockson (far right) with fellow founder-members of the Company, Liveryman Alan Campbell-Orde, PM Sir Frederick Tymms and first Clerk Lawrence Wingfield at the 40th Anniversary reception, 1969

Liveryman Capt Arthur Wilcockson

REVIEW: *UNFIT TO FLY?* BY HUGH THOMPSON

Reviewed by The Editor

Biographies and autobiographies of those who have reached great heights in aviation are legion: the stories of those who have worked just as hard (maybe even harder) against the odds and built a career or life in aviation without hitting the headlines are less common. One of those stories is that of Hugh Thompson, whose book *Unfit to Fly* is published in a second, updated, edition. Unusually for authors whose books are reviewed in *Air Pilot*, Thompson is not a Company member, but at least £10 from each copy sold is to come to the Company and/or the Air League.

Unfit to Fly? tells the story of a farmer's son who wanted to fly from an early age but who suffered from birth with monocular eyesight and hearing difficulties and encountered nothing but discouragement in his ambitions from schools and the RAF. Told from an early age that he would never be able to qualify for a Class One medical rating, he nevertheless pursued a classic self-improver route, instructing (including type conversion ratings), glider towing and working his way up slowly through progressively heavier types on night freight to finally achieve – albeit briefly – his ambition of flying in the left-and seat as a scheduled airline captain.

Along the way he flew as a civilian pilot for the Army in Cyprus and Germany, and flew many workhorses like the de Havilland Twin Otter and Beaver, as well as rarer types such as the Scottish Aviation Twin Pioneer and Handley-Page Herald. All those were made possible when, five years after he had been told by the CAA Chief Medical Officer to come back with proof that he deserved one, he persuaded the CMO that over 4,000h of accident-free flying justified the issuing of a Class One Medical based on experience. Although in later years this was endorsed with the requirement to fly "as or with a co-pilot" he nevertheless has flown over 15,000h and made more than 22,000 landings over a 57-year career – and endured an astonishing number of the company failures and redundancies which typify third-level operations.

LEGACY AIRSTRIP

In parallel with pursuing his desire to fly, Thompson also followed the dream of giving something back to general aviation by building his own airstrip, finally establishing the still-active Milson strip on his family farm in Shropshire. The story of his battles with planners - and a hostile neighbour - to first establish the airstrip and then fight limits on the numbers of flights (10 a day plus, eventually, armed forces helicopters) and operating hours (no flights on a Sunday morning from a field largely used for weekend recreational flying) is as fascinating as that of his commercial career. Those who own and operate their own strips may share his frustration at being charged commercial, not agricultural, rates on an airstrip which could not, because of those restrictions, be operated on a commercial basis. There is a sense of real triumph in his account of the final fly-in (he was allowed two per year) he organised at Milson, a week after he had sold the property, when 85 aircraft flew in.

The book is scattered with lessons, anecdotes, philosophies and principles which Thompson has sought repeatedly to pass on to pupils and colleagues over his career, ('Never assume, always check' being one) and usually printed in bold type. It is, alas, also littered with typos and mis-spellings. Overall, the production qualities of the book leave something to be desired – a seemingly inevitable result of the understandable use of a self-publishing package for a title such as this. In particular the reproduction of many of the photographs as low-resolution images on matt paper is disappointing. The greatest criticism – again, increasingly prevalent in this day of cost pressures – is the lack of a proper index, surely something that AI should be able to solve for any author.

None of that detracts from what is a surprisingly absorbing volume, well worth reading (and buying to support the Company and/or the Air League).

Unfit to Fly? A civil pilot's lucky career, By Hugh Thompson: published by New Generation Publishing and available at **www.newgeneration-publishing.com** or from the author at **thompsonmilson@talk21.com**, £25 □

A SUMMER OF FLYING

VINTAGE AIRCRAFT TOUR

By PM Richie Piper

Every year on behalf of the DH Moth Club, Freeman Ron and Valery Gammons organise, with others, a two-day tour for vintage de Havilland types. The format is to base at an airfield with nearby accommodation (this year's being Sywell and its Aviator Hotel) and visit five or six airfields each day before returning to the base for a dinner.

The criteria for those airfields visited include good grass runways, availability of fuel at a sufficient number of them (participating aircraft having an endurance of around two hours) and willing to welcome 25 to 30 aircraft. The team works hard to arrange an itinerary to include well-known favourites, together with special strips not usually available, including gliding sites and, for this year, Newmarket Heath. Pooleys airfield diagrams are kindly provided courtesy of Court Assistant Seb Pooley.

PM Colin Cox and I have taken part in the Tour together in our Tiger Moth on a number of occasions, including this year, sharing the flying duties. PM John Towell and Freeman Malcolm Ward shared the Tiger Moth known as *Thunderbird Six* from its film appearance, as flown by Joan Hughes. Freeman Tom Kinnaid in his Tiger also joined the strong Air Pilots contingent. Unfortunately, this year, as in 2024, a front came through on the second day, bringing strong winds beyond our comfort zone in the Tiger. We therefore ran away bravely and lived to fly another day!

An eclipse of Moths (and others) on the Vintage Aircraft Tour (R Piper)

This year is the centenary of the first flight of the DH60 Moth, which is being marked by a number of celebrations under the DH600 heading. Therefore, it was fitting that the flight included two DH60s as well as the more numerous DH82A Tiger Moth, two Leopard Moths (one being Rob and Valery's example), Hornet Moths, a few Chipmunks and Tom Leaver's stunning Travelair 4000. The first day involved a northern loop with landings at Saltby, Sherburn in Elmet, (with a fuel stop at Fenland for some) and Newmarket Heath before returning to Sywell. □

APFC EARLY SUMMER VISITS TO TIBENHAM AND BERROW AND THE BROMSBERROW ESTATE

The large APFC contingent at Tibenham

Tibenham line-up includes Rob Owens' MBB Monsun, Tony Clinch's Sportcruiser and David & Sue Hawkins' Rockwell Commander

A line-up at Berrow