

DECEMBER 2020 ISSUE 42



AIR PILOT



INSIDE

THE STORIES BEHIND 2020's
TROPHIES AND AWARDS

REMEMBERING A SPECIAL
SPITFIRE INTRODUCTION



THE HONOURABLE COMPANY OF AIR PILOTS

incorporating Air Navigators

PATRON:

His Royal Highness
The Prince Philip
Duke of Edinburgh KG KT

GRAND MASTER:

His Royal Highness
The Prince Andrew
Duke of York KG GCVO

MASTER:

Captain John P Towell FRAeS

CLERK:

Paul J Tacon BA FCIS

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A Livery Company of the City of London.

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

DIARY



All physical events have been postponed until further notice. Some meetings will take place through video-conferencing. For the latest situation please visit the calendar page of the Company's website:

<https://www.airpilots.org/members-pages/company-calendar/>

Guidelines for submissions to Air Pilot

Please submit contributions as follows:

- Text in word document, including your name below the title of the piece;
- No embedded photos;
- All images to be sent as jpeg files with a file size of at least 2 MB;
- More than 2 images to be sent via a Dropbox file, rather than an e-mail attachment.

*The Editors wish all Air Pilots
and their families the happiest
possible Christmas
and a more optimistic and
prosperous 2021*

Cover photos: The Boeing CH47 Chinook clocked up 40 years of service with the RAF on 22nd November: it features in three of this year's Trophies and Awards, alongside Harbour Air's electric conversion of the de Havilland DHC2 Beaver.
(Crown copyright/MoD; Harbour Air)

A MESSAGE FROM YOUR EDITOR...



The world's airlines will need 27,000 new pilots by this time next year, and 219,000 of them by the end of the decade – but don't go wasting your money training to be an airline pilot, as there's going to be a glut of them for the next ten years! Existing pilots on furlough, recently made redundant or whose employers are on the brink or collapse, pilots part-way through their training, and those yet to embark on a flying career could all be excused for being more than a little confused by those two messages, both issued in November:

Unsurprisingly, the buoyant view came from training and simulation provider CAE, which has much to gain from selling its services to pilots and their employers; and the gloomy view from BALPA, the British pilots' union dedicated to protecting the interests of its members.

The core of CAE's case lies in its prediction that global fleets will grow – despite current woes – by 7,800 airliners and 3,600 business aircraft by 2029, and in the numbers of pilots who will retire or otherwise leave the industry in that time. With median ages of pilots being 46 in airlines and 49 on business aircraft, CAE predicts that 38% of the current 333,000 airline pilots, and a massive 76% of 54,000 business-aircraft pilots, will have retired and need replacing by 2029. It bases its estimates of demand for new pilots on crew ratios varying between ten and 17 per aircraft for new airliners and two to four for business machines.

Against those optimistic numbers, BALPA says there are already 10,000 unemployed commercial pilots in Europe alone, and more in training for whom there are currently few prospects of a job, or even of completing their training. It encourages those contemplating spending £100,000 or more on training to think again, and urges them to get experience in another profession – or at least follow a modular training route - while the industry goes through its current low patch, giving them the option of something to fall back on if pilot jobs don't materialise.

It is possible that either, both or neither of these messages eventually will prove to be correct: what is true in the meantime is that on its own neither is helpful to a pilot community in turmoil. The challenge to the whole industry – including our own Company – is: can we reach a consensus view of the future, in a constantly changing present, to give sound guidance to those whose futures currently lie in such confusion?

Allan Winn - Editor

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NEWS ROUNDUP



LUNCHEON CLUB NEWS

BY PAST MASTER CHRIS FORD, CHAIR OF THE LUNCHEON CLUB

I hope this finds all those who support the Luncheon Club in good health in these very strange times.

I am very keen to try and progress with options of us being able to meet up in the near future. However, as many of you will know the RAF Club (along with many other establishments) has had to severely cut its capability to host functions. Whilst we are in lockdown there are none whatsoever. Hopefully when the restrictions are lifted in the first instance the Club will be able to host a maximum of 30, yes just 30, in the Sovereign's Room.

I have tentatively booked **2nd February 2021** as the next occasion when we may be able to meet up. I have asked Freeman Vic Flintham to 'stand by' and be prepared to give us a talk about the history of the development of Close (very close) Air Support during World War II.

Ever the optimist, I hope to have Past Master Dorothy Saul-Pooley speak after the Luncheon Club on **27th April** and that former Assistant Kent Johnson will be able to

make the journey over from Texas for the meeting on **21st September**. These will all be advertised on the Company web site and prospective attendees should notify the office of their interest in the first instance. There is one further function to mention. Following the cancellation of this year's Summer Supper, which was due to be held at Girdlers' Hall, the Learned Clerk has kindly negotiated with The Worshipful Company of Girdlers that we can hold our 2021 Summer Supper in their magnificent Hall. The date we will hold the event is **Tuesday 13th July 2021**. I have been disappointed that we have been unable to entertain anyone this year, BUT circumstances seem to have got the better of us somehow. No doubt it will be some time before normality returns to our Company social life. Rest assured though, I will do my best to arrange events that are interesting and if necessary small enough such that at least some can attend. □

GAZETTE

APPROVED BY THE COURT 19th NOVEMBER 2020

ADMISSIONS

As Upper Freeman

Martin Peter BAGGALEY (HK)
Benjamin BOSSHARDT (HK)
Joseph Richard BOULEY (NA)
Jason Michael CAVE (HK)
James Stafford FERRAND
James Nabil HAZOU (HK)
Ben Alexander LEVEILLE (HK)
Lester George SLY (HK)

As Freeman

Lord Byron DAVIES
Peter John GELDARD
David Gordon RICHARDSON

As Associate

Constantin DARANUTA (OS)
James William Edward EASTCOTT
Peter John Vickers ELLIOTT
Benjamin GOODE (AUS)

ACKNOWLEDGED BY THE COURT 19th NOVEMBER 2020

REINSTATEMENT

Pamela MELROY (AUS)

REGRADE

To Livery

Alan CARTER
Victor ROBINSON
Edwin BRENNINKMEYER

To Upper Freeman

Paul DARE (AUS)

To Freeman

Will WRIGHT

DECEASED

Ron BRIDGE
John MILLETT
Barry NEWTON

RESIGNATIONS

Pavel ASTASHKIN (NA)
Thomas BENSON
Timothy BRYMER

Matthew CLATWORTHY
Peter COKER (HK)
Thomas CURTRESS
William DOODY (HK)
Andrew HASKINS
Michael HILL
Gemma JEFFERIES
Samson KWOK (HK)
Robert LEROUX (NA)
Derek LEVY
Niclas LOENNBORN (HK)
Christopher LUCK
Timothy MILLER
Michael MYLAN (HK)
Stuart PRYKE (HK)
David RATCLIFFE
Reginald SHANAHAN
David SMITH (NA)
Derek SPICER
Colin TERRY
Adam WALICZEK (HK)
Emma WORLEY
Gerald WORLEY

R101 COMMEMORATED

BY PAST MASTER CHRIS FORD, CHAIR OF THE LUNCHEON CLUB

The Master was keen to represent Air Pilots at Cardington on the 90th anniversary of the loss of HM Airship R101, but it seemed that all events planned to commemorate the event had been cancelled due to Covid-19 restrictions. Despite all enquiries drawing a blank he decided to make a solo visit to the memorial at Cardington cemetery to pay his respects on 5th October. Quite by chance, he arrived a few minutes before midday and was amazed to see that a small service of remembrance was about to take place. We are not sure who was more surprised - those in Cardington cemetery, or the Master, who was very grateful to be invited to join the group by Paul Ross of the Airship Heritage Trust and Rev Stephen Smith, Vicar of the parish church of St Mary, Cardington. Permission for a very small socially distanced service had apparently been granted on condition of absolutely no publicity and the minimal number of participants.

After opening prayers, a roll call of those who died on R101 was read out followed by the Last Post. After the exhortation and silence wreaths were laid on behalf of the Royal Air Force, The Airship Heritage Trust, relatives of the victims and Cardington Parish Council. This was followed by the *Reveille*, the *Lord's Prayer* and the moving ceremony closed with prayers and a blessing. The Airship Heritage Trust has recently overseen and paid for repairs and steam cleaning of the tomb, memorial and surrounding paving which all looked in splendid condition in the bright

sunshine. Heavy rain showers were a feature of the day, but fortunately the service was during a dry period. After the service Reverend Stephen Smith kindly opened St Mary's church so the small party could view the standard from R101. Photographer Darren Harbar recorded the event and generously shared his photographs with the Master for use in *Air Pilot* along with the self-portrait taken just before the next rain shower. The cemetery affords excellent views of the Cardington airship sheds, which Air Pilots visited a few years ago as guests of Hybrid Air Vehicles to see the Airlander airship. HAV has moved out of Cardington and is looking for a suitable site for a custom-designed production hangar for the latest Airlander 10. The shape of the envelope has been designed to be more aerodynamically efficient. The first flight is targeted for 2023/24, with type certification in 2024/25. Later versions from 2030 will be all-electric and might use hydrogen fuel cells, giving a very environmentally efficient vehicle. □



(Top right)
Wreaths are laid
at the Memorial;
(Bottom right)
R101's Standard
in St Mary's
Church,
Cardington;
(Left) The
Master pays his
respects
(Darren Harbar)





MASTER'S MESSAGE

Captain John Towell

December is a time for family and festivities, a time for reflections, and a time to look ahead with optimism to

the New Year. Some will consider that 2020 is a year to forget because as well as the restrictions to our social interactions and way of life, many have experienced devastating effects to health, family, businesses and employment. Airlines and their staffs have experienced a year unlike any other and have been wrestling with significant threats on an unimaginable scale. The first wave of Covid-19 brought hardship, anxiety, frustration and tragedy to many nations around the world. In response governments have taken extraordinary measures whilst managing health, economies and virus transmission with some significant regional differences. As I write this message on November 5th, bonfire night, the political situation in USA is explosive! Covid-19 is resurgent across Europe and Parliament has declared that England is the latest country to follow Germany, France and others back into lockdown.

The pandemic created a worldwide crisis which led to rapid and significant changes in many organisations and businesses. Companies will experience enduring change and will settle into a "new normal" way of working when the crisis eases. Air Pilots adapted quickly to the lockdown in March when the Learned Clerk and secretariat

The Master and his sister Mary had a combined service of more than 50 years with BA



seamlessly introduced remote working from home. The GP&F and Court switched to communicating by Zoom to effectively manage business. We can already see that several aspects of remote working have brought positive and effective changes which complement the face-to-face business which we still see as an important part of Company working. Despite Covid-19 we have found that in some respects we have been more in touch with our members than in a normal year. The Company is now better connected by the regional conference calls, we see more effective working within the International Technical Forum and our young member groups have become much more involved. We have found that by working together rather than in isolated regions or groups we can often achieve even better results.

When planning my year as Master my ambition was to bring the Company together to support the development of young members who in turn would help succeeding generations. The vision was to improve mentoring and create a suite of skills and knowledge courses that would be delivered by Air Pilots sharing their immense knowledge, skill and understanding. The intent was to help improve the employment prospects of young members and, because they would become more engaged, they would wish to remain long term members of the Company. Air Pilots of all ages and from different backgrounds have contributed a great deal to the

development, and the work continues. The pandemic has accelerated the rate of progress and much has been achieved since March. The original idea was that training would be delivered in Air Pilots House but with lockdown we found that it could also be very successful online. The excellent New Normal and Level Up training days were supported by an impressive range of speakers covering a wide range of subjects. I was extremely impressed by the quality and professionalism of these days which demonstrated just how much has been achieved this year. It is a great credit to the young members team that they were able to create and present these events with so much useful, practical and thought-provoking material. Young members have shown great maturity,



leadership and resourcefulness and in some areas have shown us the way forward.

When people regain confidence that air travel is not an undue risk to their health, and quarantine restrictions are removed, the demand for travel will return and airlines will start to recover. Just as spring follows winter the effects of the pandemic will start to recede, but despite many predictions we do not know when this will be. It will be a great relief when pilot recruitment signals the green shoots of recovery for pilots. In the meantime, these are very difficult times for so many pilots who are seeking employment. The New Normal and Level Up courses were structured to give support in this area and covered a wide range of helpful ideas and suggestions. These included sideways steps to short-term alternative employment, developing transferrable skills, CV writing and job application workshop. The importance of spending time wisely improving knowledge and skills, the power of a positive mindset, showing resilience, flexibility and grit and the benefits of volunteering. For more information, please contact careerdevelopment@airpilots.org. Video recordings are at <https://www.airpilots.org/members-pages/young-air-pilots/career-development-and-training/>

I was privileged to be amongst a very small congregation and representing Air Pilots at the service of Thanksgiving and Rededication to mark the 80th anniversary of the Battle of Britain in Westminster Abbey, the first non-virtual event of my year.

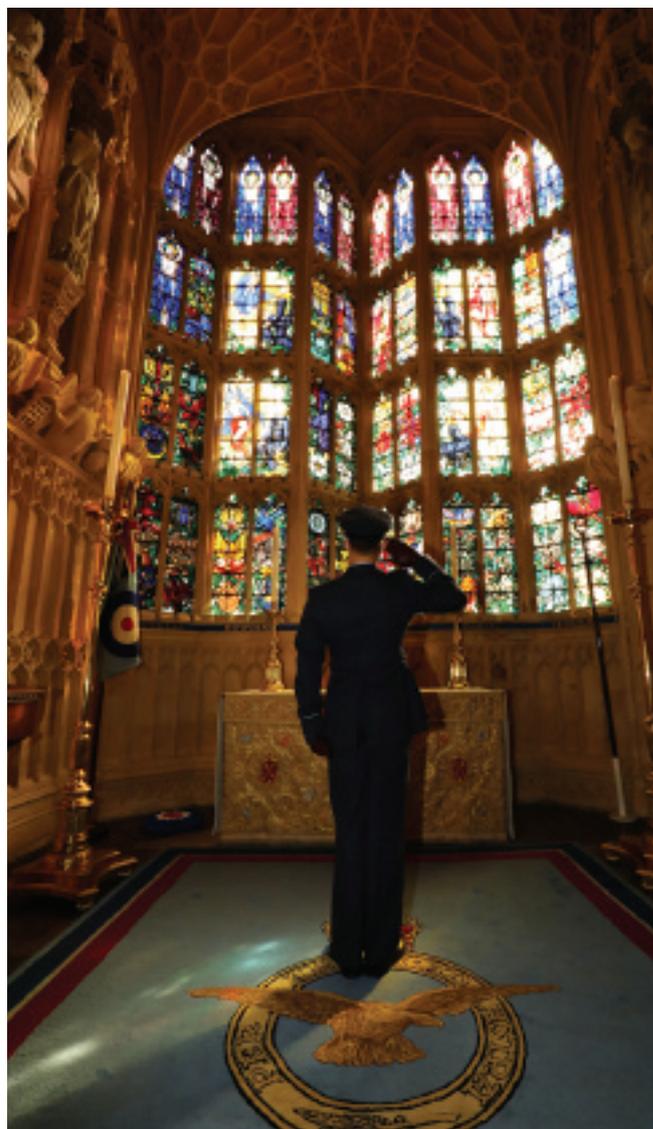
I am very grateful to Past Master Dr Michael Fopp who delivered the Tymms lecture *The Battle of Britain - After 80 Years Is It Still Important?* by Zoom webinar. The audience, which was much larger than is normally possible, came from around the world and included many Air Cadets and UAS students. The lecture was of a very high standard and was followed by a fascinating question and answer session. The occasion was a great success, and a lot of complimentary feedback was received.

Linda and I had been invited to Westminster Abbey for the Service of Remembrance on November 8th where I was to lay a wreath on behalf of the merchant air services at the Defenders Memorial. Sadly, the service was a victim of the latest lockdown.

We all eagerly await a return of our company social engagements, especially the signature events. It is a great pity that the Carol service in St Michael's Cornhill followed by supper which traditionally marks the start of Christmas has been cancelled. We very much hope that the AGM and

Installation can be held as usual in Merchant Taylors' Hall on 15th March 2021. If this is not possible, plans are in place to complete them remotely. In a normal year the Master writes the December message just before the Trophy and Awards banquet in October, following which the Master departs on the visit to the regions. Linda and I very much regret that travel and quarantine restrictions denied us the opportunity to visit and meet Air Pilots around the world. Some regions will be holding dinners which I hope to join remotely to send greetings.

The pandemic has made this a year like no other for all of us. We have each dealt with it in the best way we can. Linda and I have been very touched by the wonderful support we have received from the company at home and abroad. We look forward with optimism to a brighter future in 2021 and beyond and wish you and your families a Happy Christmas. □



The Battle of Britain 80th Anniversary service at Westminster Abbey (Aaron Chown, Press Association)

REGIONAL REPORTS

Australia Region

A PERSONAL VIEW

By Upper Freeman Rob Dicker, Chairman, Australia Region



How different can two years be? As I write in late October, this time last year we were preparing for the imminent arrival of the Master. The dry grass crackled under our footsteps and the worst fire season on record was just beginning. Aviation was, however, forging ahead with confidence. This year, due to the devastating effects of a virus we cannot see, we must content ourselves with talking to the Master via Zoom. Now our boots are caked in mud from one of the wetter years on record and we are unsure what aviation will look like in a year's time! I am also aware that as you read this many will be wondering what sort of a Christmas you will be having this year. Here in Australia interstate border restrictions are easing and there is a reasonable chance that we will be able to experience a near normal Christmas and southern hemisphere summer. That should translate into positive knock on effects for travel options and airline operations. The second wave of Covid-19 in Melbourne that I reported on back in October, has been overcome, after 11 weeks of tight restrictions in Melbourne and fewer restrictions in the rest of Victoria. Unfortunately, that outbreak led to most states imposing border restrictions of some sort that essentially required many travellers to quarantine for two weeks in designated hotels at their own expense. Understandably, those restrictions curtailed a lot of interstate travel. In the lead up to Christmas the states are under a lot of pressure to ease restrictions. In the most populous states of New South Wales and Victoria we now have daily new case numbers of community transmission that are in the low single digits, while all other states are at zero - numbers that politicians and epidemiologists in other parts

of the world can only dream of. Given those sorts of figures, many of you might find it difficult to understand the severity of border restrictions imposed by some states. Internationally, a travel bubble has opened with New Zealand, for now mostly one-way, in the direction of Australia. Meanwhile, the international border remains closed to all other nationalities. Australian citizens are still finding it difficult to return home due to a cap on international arrivals, and all must quarantine in designated hotels for two weeks, at their own expense. Recently the Federal Government has stepped in to organise some charter flights, using Qantas aircraft, to try and reduce the backlog. During November we traditionally welcome the Master to our region and hold a number of events and functions, including formal dinners, where we recognise our local Trophy and Award winners. Despite the fact that the Master is unable to be with us this year, we are in the fortunate position to be able to hold functions in Adelaide, Brisbane and Sydney where award presentations will be made. With the aid of technology, we hope the Master will be able to join us for a short time by video link to support our award recipients and deliver his thoughts on this most unusual of years. Adelaide will also be hosting its annual 'Spot Landing Competition' at Aldinga airfield on the Saturday following their formal dinner. The competition is a lot of fun, held in a very informal atmosphere, followed by a barbecue lunch. The winners of the competition have included several past Masters and it is a shame that Master John will not be present this year to demonstrate his flying prowess. However the next few months pan out, I hope you are able to connect, in some manner, with family and loved ones over the Christmas period. □



North America Region

By Liveryman Alistair Beaton, Chairman, North America Region



Exactly one year ago, Past Master and Past Mistress, Malcolm and Vanessa White, joined Dr Steven Stewart, Bob and Valerie Leroux and yours truly on an interesting and enjoyable visit to Conair. Our informative guide was Jeff Oliver, Conair's Safety Director, who spent 33 years as an airline pilot, flight

instructor and Transport Canada Civil Aviation Inspector prior to joining Conair.

I had hoped to visit Conair at the end of a busy 2020 flying season for an update on its activities: however, due to the Covid 19 pandemic, Conair is understandably very protective of its staff. After a brief meeting with Jeff Berry, Director of Business Development, and with information provided through his assistant Shannon de Wit, I am able to give more detail on this fascinating company.

For over 50 years Conair has partnered with government agencies on forest fire missions across Canada and around the globe, operating the largest privately owned fixed-wing fire-fighting fleet in the world. It services and maintains 'Bird Dogs' (spotter/pathfinder aircraft), amphibious aircraft and air tankers, with highly trained teams prepared to respond at a moment's notice to battle flames posing a risk to communities and natural resources. Its head office is in Abbotsford, British Columbia, with a satellite office in France plus a subsidiary in the USA, Aero-Flite. It owns and operates over 70 aircraft and employs more than 300 staff including 100 pilots, with customers based in British Columbia, Alberta, the Yukon, USA, France and Australia.

Originally called Conair Aviation Ltd., the company was formed in 1969 as a subsidiary of Skyway Air Services of

Langley, British Columbia. It is now a world leader in specialty aircraft operations, delivering a comprehensive range of purpose-engineered, aerial firefighting, multi-role aircraft and services worldwide.

Chairman and CEO of Conair is Liveryman and pilot *par excellence*, Barry Marsden. In 2006 Barry was awarded the *Médaille De L'Aéronautique* by the Republic of France, in 2009 he was inducted into Canada's Aviation Hall of Fame and in 2014 received the Order of British Columbia and the Order of Canada.

Conair produces RJ85 and Q400AT aircraft (based respectively on the BAe RJ85 and De Havilland Q400) for use in aerial firefighting plus the Q400MR for both aerial firefighting and transporting people/cargo/medevac in support of emergency response operations, and operates its own fleet as well as providing aircraft for sale or under lease or contract in these tasks. The company holds hundreds of supplemental type certificates (STCs) for modification of aircraft into aerial firefighting aircraft as well as multi-role configurations suitable for passenger, cargo flight missions.

Current CEO, Barry Marsden, was one of the founding members of the company that began with 35 employees and 19 aircraft. While it initially doubled as both a budworm spraying and aerial firefighting business, the next two decades saw significant expansion of Conair's fleet, capabilities and services in the aerial firefighting sector. It now flies 8,000 to 12,000 aerial firefighting flight hours per year with operations in Canada, USA, France, and Australia. Conair France has supported France's *Sécurité Civile* for over 30 years, providing aerial firefighting and emergency response aircraft. □

Barry Marsden, CEO of Conair



BAe RJ85 undergoing conversion to fire-bomber



Conair Lockheed L-188 Electra fire-bomber in action



Hong Kong Region

By Regional Chairman, Assistant Captain Pat Voigt

As the world continues to struggle with lockdowns and varying rules and regulations of different governments, the Hong Kong Region has been committed to contributing to the long-term prosperity and mental wellbeing of our members. To that end, we have been hosting various events throughout the summer to help our members connect with one another and ensure that we all received additional support if needed.

From the Peer Support network to the organisation of various events, we have sought to work within the bounds of daily varying government regulations and have managed to hold some significant social gatherings within the 'windows of opportunity'. These events have proved invaluable to the support of our members, allowing some old-fashioned pilot banter, sadly missing due to the lack of cockpit interaction for most.

The first event of 2020 was a junk trip: however, having sent out the invitations, it was immediately clear that a further boat would be required to accommodate our members and their guests. As is evident from the photos, the weather was kind and an awesome day was had by all, with the bonus of several new memberships being received.

We subsequently held a 'Long Lunch' at the United Services Recreation Club, the venue where we held the Master's Formal Banquet for IPM Malcom White last year. A somewhat toned-down event compared to the formality of the Banquet, it was nonetheless well attended and extremely enjoyable for members and guests alike. The Club is colonial in style, and allowed guests to mingle in a relaxed setting and reminisce over their 'war stories'.

Early November saw our first foray into the world of Zoom communications at the 'Sundowners Virtual FlyBy', which proved popular with all attendees including Master John Towell and the Learned Clerk. This platform allows us to interact with our members, even if they are not currently in Hong Kong or able to attend events in person.

Our most recent social gathering was a Beer Call at The Globe in Soho, modelled on a traditional English pub with decent ale and pub grub. Our members and guests socialised in a normal and fun environment, allowing a brief respite from the tough times that we are jointly facing. All of our events are specifically designed to support one

another by providing the opportunity to revitalise our inherent aviation spirit and sense of comradeship. However most importantly, we aim to build a safe and resilient community ensuring that the Region will continue to flourish. □

Chairman Voigt (centre) hosts the Long Lunch



The junk trip proved extremely popular



Beer was taken at The Globe in Hong Kong's own Soho



RON W BRIDGE MBE AFC FRIN FRAES

Obituary by Past Master Clive Elton



To be told at the age of six that you are likely to be eliminated, as Ron Bridge was whilst living with his family in North China early in World War II, is something hard to imagine. This was Ron's experience as described in his recently published book, 'No Soap, Less School.'

Interned in 1941 with his family and held for nearly three years in most unpleasant conditions, memories of Weih sien Internment Camp in Shandong Province would live with him throughout his life. Not surprising therefore that when a group of ex internees were to be deprived of an ex-gratia payment of £10,000 Ron became deeply involved. He took on the Ministry of Defence and Prime Minister Tony Blair with the aid of four QCs and won. There followed the award of a MBE in 2007.

In 1946 a flight in a Dakota persuaded him that flying was the way to spend your life. He joined the RAF and was commissioned as a navigator in 1952. Twenty years service, flying a variety of military types, he took part in the Suez crisis, completing his RAF career as Command Navigation and Flight Services Officer at RAF Upavon.

In 1969 he had been awarded the AFC for improvement to navigation standards in Air Support Command.

He was briefly with Dan Air on the Boeing 707 and then joined BEA as Navigation Superintendent. The bulk of his airline time was with British Airtours based at Gatwick fulfilling various management roles before finally becoming Executive Director of GB Airways. Ron retired in 1993 thus enabling him amongst other things to become even more deeply involved in the activities of the then Guild.

Appointed to the Technical Committee in 1977, he served as Chairman from 1985 until 1989. In 1979 he was awarded a Master Air Navigator Certificate. He was the Guild representative on the UK Flight Safety Committee, also on the Guild Benevolent Fund as well as the longest serving member of the Trophies & Awards Committee,

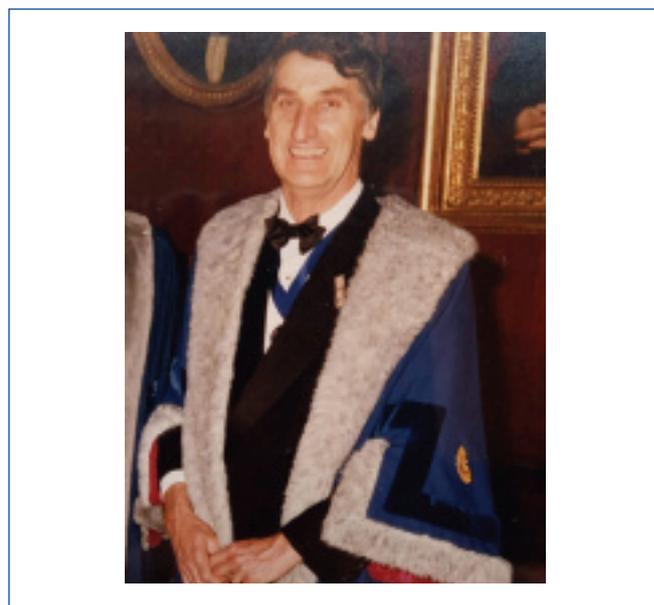
from which ill health forced him to retire in 2018 having joined in 1985, the same year in which he was invested with the Livery.

Elected to the Court, it was inevitable that he would move on to become a Warden and then Master in 1997. For the second time in 10 years there were problems in the company causing some turbulence which required sound leadership which Ron with his management experience was able to provide.

Ron was only the fourth navigator to become Master. He was elected a Fellow of the Royal Institute of Navigation in 1987, serving as Vice President from 1991 to 1993. On top of all this he served on the UK Satellite Navigation Group from 1994 to 1996.

One highlight of his Master's year was clothing Prince Michael of Kent with the Livery at the Trophies & Awards Banquet. Uniquely the ceremony was held in Great Hall during the banquet itself. On the Master's Tour of the Regions his knowledge of Mandarin came in very useful in discussions with the Hong Kong Civil Aviation Department.

Ron had a presence both physically and vocally. He was a source of considerable wisdom and a very active participant whether it be on the Court or on the various committees on which he served. Always prepared to take on an extra duty as when he took on the organisation of the Past Master's lunches and a tower of strength in so many ways, he is greatly missed. □





FROM THE DESK OF THE DIRECTOR AVIATION AFFAIRS

By Liveryman John Turner

TECHNICAL COMMITTEE

Topics at our Technical Committee meeting on 24th September included Airspace Modernisation, Aviation & the Environment and a round-up of Working Group activity. Also, Committee members agreed to revised terms of reference for the committee, Working Groups and Coordination Panel, including renaming the Technical Committee as the International Technical Forum, pending endorsement by the Court.

TECHNICAL GROUPS

In addition to producing the article elsewhere in this issue, our Space Technical Group has participated in a government consultation on new regulations proposed for UK space operations; a further consultation on legal liabilities and insurance follows. More excitingly, they are now arranging for a European Space Agency astronaut to give a presentation at one of their future meetings.

Initial meetings of the new Environment and Airspace Technical Groups are planned in early November. Both are quite small groups at present, so feel free to join in if you have an interest. 'Environment' already has members from Canada and UK and, it is hoped, will take an important education and advocacy role so people can understand not only how far down aviation really sits in the hierarchy of human activities with environmental impact but also the scale of historic and continuing improvements to further reducing our impact. Airspace is currently an all-UK affair so it would benefit from some members with wider experience and views.

COVID-19 – ADVOCATING, MEDIA & RESEARCH

As the impact of Covid-19 became apparent, we tried to keep people, government and media aware of the predicament facing the aviation world and its people. Two letters to the UK Secretary of State for Transport, the first in May calling for financial support for the airlines and the second in June focusing on the need to support pilot skill levels and aviation safety, are published on our website Press Pages. ^[1]

Unfortunately, our message was often competing with other stories that more captured the media agenda. As an example, on the weekend of 4th/5th June, two UK broadsheets accepted our articles and letters and BBC Radio 4 *Today* offered us an interview slot, only for all their

attention to shift to - and stay on for some time - US (and then UK) demonstrations and the Black Lives Matter movement. Aviation was not the only topic to fall off their agenda! It was apparent that we needed to be quick off the mark on any media initiative; ideally, we would have a press release prepared before anything/everything happened. In early July we identified the people in the UK government Policy Development Team looking at the post-Covid-19 recovery phase in all transport sectors. This helped our Aviation Careers and Education Committee to link into the government aviation skills, diversity and development activities; no doubt those contacts will be useful again in future.

Meanwhile, the House of Commons Transport Select Committee was running a call for written evidence on where more help was needed, "...to enable UK Members of Parliament to maintain scrutiny of the Department for Transport and key bodies as the [Covid-19] crisis continues". In response, we made full use of all the material previously prepared for the media (including a bullet point *aide memoire* of principal messages prepared and rehearsed over two days for the BBC Radio 4 interview).

The response was also informed by the results of several days spent researching academic papers on Covid-19 testing. This revealed that testing for the presence of SARS-Cov-2 (Covid-19) genetic material is not as straightforward as you might have imagined. The most accurate (and most commonly used) test is the *polymerase chain reaction* (PCR) test. However, for this to be effective, swab sampling of the nose and throat needs to be done correctly *and at the appropriate time after infection* to collect enough of the virus on the swab. The test gives a false negative result if no viral genetic material is collected

Full-scale air traffic control will have to be re-established (Heathrow Airport)



by, and then detected on, the swabs taken from an infected subject. According to The British Society for Immunology^[2] false negatives can occur between 2% and 29% of the time, leaving patients confident they do not have Covid-19 but able to infect others. Testing subjects before the fifth day after infection, when usually they are still asymptomatic, is even more likely to produce a negative result.

Fortunately, the trawl of academic papers also revealed some cause for optimism. In the early days of the pandemic, there had been evidence suggesting the virus could spread between airline passengers.^[3] More importantly, recent studies show that transmission within the airliner was positively stopped by the multi-layer of precautions, including face coverings, that ICAO and almost all regulators subsequently recommended.

Our submission to the Select Committee, which obviously has a UK focus, will become public once the Select Committee has concluded its review. However, in describing a sector that operates across national borders, the principal messages it contains have global relevance so, in advance of any other publication, those principal points are repeated here:

- Modern-day economies rely on a thriving aviation sector to transport goods and people by air, so the welfare and wellbeing of pilots and others working in the aviation sector is vital;
- Aviation has experienced the same (if not worse) catastrophic reduction in demand as other travel sectors. The United States and some European governments have allocated billions of Dollars and Euros specifically to sustain their airlines^[4] but many have not. Sometimes, aviation has received much less national government support than road and rail. This leaves aviation employees seriously demoralised by redundancies or forced downgraded terms of employment with poor future prospects. The future of many airports and airlines also remains in jeopardy. We do not seek 'special' treatment for aviation, but we implore governments to give their aviation sector as much help and understanding as they afford the surface-transport sectors, ensuring that all organisations that do receive financial aid then support and manage their employees fairly;
- Public safety is crucial and air travel has long operated with stringent check-in, scanning, boarding and disembarkation controls. Modern airliners provide higher air purity than do other forms of transport and air passengers are confined for a shorter time than road, rail or water transport passengers travelling the same route;
- Although in-flight transmission of communicable illness often triggers an academic paper, very few have been published. As of 28th September 2020, peer-reviewed case studies showed Covid-19 transmission on only



Returning aircrew will need re-training (British Airways)

seven commercial flights and five evacuation/repatriation flights, all of which were in January, February or March of 2020, when mask wearing and other precautions such as increased surface disinfection and improved hand hygiene were not commonly employed. Subsequent studies, when face coverings and other countermeasures were adopted, confirm that in-flight transmission did not take place from known Covid-19 infected passengers;^[5]

- Nonetheless, the layered interventions currently available to air transport^[6] would be significantly boosted, as would public confidence, by an accurate (i.e. low false-positive/low false-negative rates) pre-flight test of travellers to further minimise the likelihood of Covid-19 infections at the airport or in the air. In addition to financial considerations, commercial aviation should be considered for early deployment of any emerging effective 'rapid result' Covid-19 test capability;
- Aviation has always been demand-led and will remain so in future. The 'new normal' may include a travelling public that increasingly considers the environment before booking flights. Even so, airline aerospace has a long history of responding effectively to environmental concerns, with ever more efficient engines^[7] and quieter aircraft. That will continue with new fuels and other innovations leading the drive towards zero-carbon transportation.
- The industry must be able to emerge capable of satisfying whatever 'new normal' demand arises and maximum danger for the sector will occur when airlines re-commence full scale flying. That will mean incurring all the costs of fuel, maintenance, support and spares, whether or not passengers return in the numbers expected. Re-start will also entail re-establishing at full scale the crucial safety-critical functions of air traffic control, aircraft maintenance and flight crews. This will depend on people retraining to regain the levels of experience and skill needed to operate safely after a long period of low demand and limited practice;
- Pilots operate complex integrated systems in today's airliners and must have the skills to manage those systems effectively as well as the manual flying skills that might be needed for any unforeseen event. Aviation has incredibly high safety standards and, to maintain them, pilots must be supported with the facilities and time to



hone their skills regularly. Safety-critical features are not cheap, but this is not an area for cost-saving short-cuts. Airlines and their support organisations will need sufficiently robust finances to meet these challenges. When flying re-starts in earnest, it will be essential that there are pilots who can react effectively to any flying situation and has all the safety-critical support functions in place. To ensure this is the case, we implore governments to:

- Give the aviation sector at least as much help and understanding as they afford the surface-transport sectors;
- Ensure that all aviation organisations which receive government financial aid then support and manage their employees fairly;
- Consider the needs of commercial aviation in any early deployment of any emerging effective 'rapid result' covid-19 test capability. □

- 1 <https://www.airpilots.org/press-pages/>
- 2 <https://www.immunology.org/news/covid-19-testing-what-does-it-mean-for-me>
- 3 Potential Transmission of SARS-Cov-2 on a Flight from Singapore to Hangzhou, China:(Chen et al, 2020) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7336905/>
- 4 US: New York Times, "Crippled Airline Industry to Get US\$25 billion bailout" <https://www.nytimes.com/2020/04/14/business/coronavirus-airlines-bailout-treasury-department.html>
Germany: DW Berlin and Lufthansa agree a €9billion rescue package; <https://www.dw.com/en/lufthansa-and-german-government-agree-bailout/a-53557680>
France:The Local Fr: French government €15billion plan to shore up Airbus and Air France; <https://www.rfi.fr/en/france/20200731-french-government-vows-to-continue-support-for-air-france-despite-£2-6-billion-loss-in-2nd-quarter>
- 5 Lack of COVID-19 Transmission on an International Flight (Schwartz et al, 2020) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7162437/>; Absence of In-flight Transmission of SARS-CoV-2 likely due to use of Face Masks on Board (Nir-Paz et al, 2020) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7454758/>
- 6 <https://npli.sph.harvard.edu/crisis-research/aviation-public-health-initiative-aphil>
- 7 Aviation was responsible for only 1.9% of global greenhouse gas emissions in 2016



SPACE TECHNICAL GROUP REPORT

ARE WE THERE YET?

'Space is big. Really big.' But where does it start?

The Space Technical Group is a recent development for the Company and its ambitions were described in the August issue of *Air Pilot*. But where does the remit of the STG start? *Freeman Donagh McCullagh* explores the matter with a Curious Member of the Company...

Curious Member (CM): Where is Space? It's obvious. Up there. Up with the planets, comets, satellites and Simon Cowell's ego.

STG: That's good enough for most people most of the time. But with recent aerospace developments, nailing it down is gaining urgency. We are familiar with two concepts that don't blend easily into each other. Airspace over countries is sovereign; yet orbital traffic isn't subject to national sovereignty. The interface between the two concepts is where the friction is. That's why some folks want to nail down just what is what and where it is.

CM: If you can have a spaceship there, that's where space is. Job done, yes?

STG: Well, that's getting us closer to the problem. But you don't need much time to see there's a tautology there. We know that when ballistic missiles like the V-2 started to be

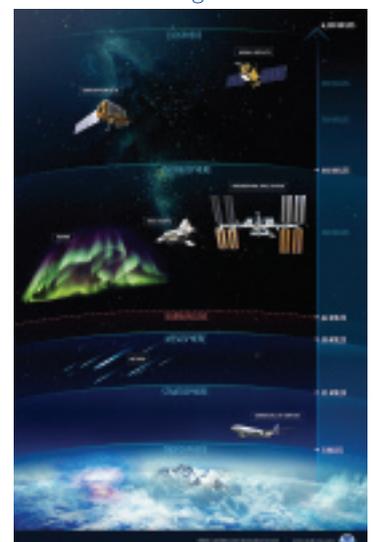
fired past all but the thinnest wisp of Earth's atmosphere, space had been entered.

Note it's a lot easier to shoot something into what we'd recognise as space than it is to keep it there. A lob versus an orbit. It's why high altitude-sounding rockets like the old Skylark don't look anything like the Redstone or the Electron we looked at in the last issue but one.

Rockets with orbital payloads need to go way faster than sounding rockets. It's not just a matter of payload size. They need to go much faster to enter orbit, with peak velocities closer to 10km/s than the smaller 2km/s of a sounding rocket.

There is a 20-30km zone where the discussion of the 'edge of space'

A zoom out from our usual met training. Source: NOAA



confuses more than clarifies. This is where you might hear about innovative concepts like high altitude pseudo-satellites roaming such as the Qinetiq/Airbus Zephyr concept.

CM: I feel like we are tying ourselves up in knots here. We're in limbo.

STG: This is why 70-odd years ago, Theodore von Kármán (TvK), someone with one foot planted in aeronautics and the other in astronautics, decided to noodle on this. With US plans to put a satellite into space for International Geophysical Year (bridging 1956 & 1957), this was becoming a live issue. Especially with the Soviets super-sensitive on overflights. He had the smart idea of outlining that **space travel starts where aeronautical flight stops**.

The definition from the Wiki Kármán article is as concise as one we've seen:

"The Kármán line is the altitude where the speed necessary to aerodynamically support the airplane's full weight equals orbital velocity (assuming typical wing loading and lift coefficient for an airplane)."

TvK publicly stated that this tipping point occurred at 91km (but some documentary archaeology later suggested he thought it should be lower on technical points alone). Let's round up for ease of description and politicians and you see we get to the well-known 100km iteration of the Kármán limit. And that's the number that has been used by most of the world since then - the Heavens above 100km, our world below.

CM: Nice to get that sorted...hold on, most of the world?

STG: er...there's a dispute. The US uses 50 miles.

CM: I know they hate metric but this matter seems above just a user preference on GPS Nav settings?

STG: We're not saying that has zero impact on the idea for some. But there's reason to this also. Or a nice objective reason and then a big fat advantageous result of that reasoning.

TvK used the concept of finding out where a high-altitude hypersonic aircraft could no longer fly using aeronautical lift. The alternative concept is one of looking where a satellite would burn up like a meteor if it ventured below; the flip side of TvK's perspective - where atmospheric friction overwhelms celestial mechanics. In a highly elliptical orbit, shooting as low as 80km and then back out tens of thousands of kilometres is sufficient to maintain orbit according to work undertaken by astrophysicist Jonathan McDowell (who also went through the TvK archives). McDowell's work is "compelling" enough that the FAI has asked for joint work with the International Astronautical

Federation to revisit the 100km line. That effort at progressing with a new standard appears to be still in the works as of this discussion; Covid-19 is obviously not helping progress.

CM: The US must be happy. Feeling pretty vindicated, eh?

STG: er. To be frank, they'd like the whole effort to go away.

CM: I give up! What's the beef? USA wins the argument against the entire world? U-S-A! U-S-A!

STG: The 'beef', as you put it, is that the US is the pre-eminent space power today. If we have the IAF, the FAI and the US government all using the same limit, backed up by 'compelling' science, you are getting in a place close to where the 80km limit would be the international law. At the very least, international convention.

Remember that bit earlier about 'freedom to orbit' rubbing up against sovereign airspace. Start flying one of these super-secret X-37 unmanned aerospace vehicles, overflying at about 80-100km, perhaps overhead some certain countries on the Eurasian landmass, with someone taking a pop at your craft as they argue they were quite within their right to "...eliminate an incursion of sovereign airspace." Not a great day at the office that day. As it stands at the minute, you can't break a law that doesn't exist.

CM: OK. Plausible deniability. Let sleeping dogs lie. We'll get some agreement in civilian space but don't expect one hymn sheet for a while. Understood.

STG: That's right. Buuuut...it may not stay sleepy. With the Chinese launching something which seems to have come from the same floor of John Lewis as the X-37 in September this year, the US may not be so happy about, say, reconnaissance from much lower latitudes than they were used to in the Cold War and after from other countries.

CM: It sounds like plenty is going on here.

STG: Certainly enough to keep us busy for the foreseeable future...

Boeing's X-37B re-usable spacecraft is designed to operate at altitudes of 110 - 150miles (NASA)



YOUNG AIR PILOT UPDATE

By Freeman William Wright – YAP Committee Chair



In my last update, I alluded to a period of time towards the end of summer in which we were able to taste some semblance of normal life. We were hopeful in the recovery of the airline industry as well as to events and visits planned for the remainder of the Air Pilots calendar.

Unfortunately, that was not to turn out as we had planned it. The introduction of new restrictive 'tiers' meant that large swathes of the country began closing up, making it incredibly difficult to plan events even weeks in advance. That being said, I don't want this piece to be another Covid-centric spiel, and there is much good to talk about in its place.

I have been incredibly encouraged by the mindset of all those in the company who support young member activity as well as those who sit on the YAP Committee. The resilience and grit within the group is remarkable and exemplifies everything the Air Pilots community stands for. Within a week of the 'Rule of 6' being introduced, we had moved the *Level Up* training day from an in-person event to a 100% Zoom delivered programme – a feat for which I commend all involved. Furthermore, we took the lessons learned from our July training day *A New Normal* and ran fewer, more defined sessions covering:

- A Job Application Workshop
- Sim Anxiety Deep Dive
- Human Factors Myths Debunking

Attendance was good, with 30 people attending either in part or in full. All sessions were recorded and can be found within the Training & Career Development pages of the Young Air Pilots pages on the website.

Within the Young Air Pilots section, you will also find the newly-updated Virtual Coffee Morning (VCM) pages. Following the small update to the website back-end we are now able to embed the full-length video of the full suite of VCMs. This has coincided with a renewed focus on the programme of events in order to deliver an exceptional speaker once a month to mitigate against 'Zoom Fatigue'. The most recent was an incredibly inspirational stroll

through the trials and tribulations of Young Member Sam Worthington-Leese in his journey to flying the iconic Spitfire. Together with September's VCM delivered by Cunard Captain and ex-BA pilot Aseem Hashmi, you won't be short of motivational tales to help you through this challenging time.

On the subject of motivation and reaching the younger generation of the aviation community, we have been more active on our social media platforms. By the time this reaches you we will have begun featuring regular 'Air Pilot Profiles'. In conjunction with the Honourable Editors' Member Profile and Flying Starts Profiles, we are looking for those in the company who wish to share their story with a wider audience in order to help to spread the aviation 'bug'. If you are interested, then please do send us an email at: youngmembers@airpilots.org.

We are also due to attend our first online careers event and have been supporting Court Assistant Steve Durrell with the Company's promotional activity. The RAeS was kind enough to extend an invitation to its early-November *Careers in Aerospace & Aviation LIVE 2020* webinar. Attendees will have the opportunity to drop-in to our virtual booth and glean from the wealth of experience in our volunteer team. By the time this reaches print, it will have been and gone but we are hoping to reach an engaged group of young people with free advice and support as they need it. I am really excited about this event and hope that it leads to further opportunities for the company to engage with prospective aviators of all ages and backgrounds. If you'd like to help us out in the future or have any feedback for improvement, then please do get in touch through the aforementioned email address. Finally, I would like to end with a short word to how proud I am of all those that have helped the Young Air Pilots thus far with our growth. It is truly fantastic to hear so many encouraging words come my way and it would not be possible without the work of a few people. Until the next issue of *Air Pilot*, blue skies and tailwinds. □



TROPHIES AND AWARDS 2020



The Company's 2020 Trophies and Awards should have been presented at the annual T&A Banquet at The Guildhall in London on 22nd October, but that event was not able to be held. Here we reproduce edited versions of the citations which would have been read out during the presentations on that evening: the full citations can be seen on the Company website.

The Award of Honour

GREG McDOUGALL



Greg McDougall founded Harbour Air 37 years ago, building it from two de Havilland Canada Beavers, to over 40 aircraft today including DHC-2 Beaver, DHC-3T Turbine Single Otter, DHC-6 Twin Otter and Cessna Grand Caravan EX flying over 30,000 flights per year.

Always an innovator and with his eyes set on taking aviation into a world where environmental and economic goals mattered, he committed to making the first carbon-neutral airline in North America, which he achieved in 2007. As electric engines were proven viable, McDougall teamed with magniX, a Washington State company, and retrofitted a DHC-2 Beaver with a 750hp (560kW) all-electric motor. In less than ten months, the team created the blueprint, built the ePlane and successfully flew it on 10th December 2019, with McDougall at the controls. The aircraft is currently undergoing the 12-24-month certification and approval process with the FAA and Transport Canada. Because of the smaller size of its single-engine aircraft and the short length of its routes, averaging 30 minutes or less, Harbour Air can actually utilise today's technology. The same motor is suitable to be retrofitted on all the aircraft types it uses, and once all the aircraft are converted Harbour Air hopes to be the first carbon zero airline in the world.

A Canadian Aviation Hall of Fame member, and a former Cumberbatch Trophy winner, McDougall was never content to buy eAeroplanes; he committed to develop his

own fleet to achieve the aim he set to be a world leader in carbon-zero operations. He says: "If we sit here looking out the window, one day there's going to be something flying out there that's going to rock your world, I want to be the one flying it, not the one watching it."

The Master's Commendation

MASTER AIRCREW TUDOR HAINES



Master Aircrew Tudor Haines is an exceptionally experienced crewman who has amassed over 5,000 flying hours, notably across all three Royal Air Force frontline Chinook Sqns. With his superb performance as Senior Crewman on two recent deployments of the Chinook to Mali, he has proven himself to be a central pillar of the Chinook Force.

Haines joined the Chinook Force at the beginning of 2000 and was initially posted to 27 Sqn where he deployed to Bosnia, Norway, Northern Ireland, the Falkland Islands and Oman within his first two years. Following a tour on Op JACANA and Op TELIC, he was selected to join 7 Sqn and fly in support of Special Forces (SF) operations in 2004.

During a relentless 13 years on 7 Sqn he has deployed to the Middle East on no less than six distinct and highly challenging tours of duties with the Special Forces. Haines' list of operational achievements is almost matched by his impressive list of airborne qualifications. He is a Crewman Trainer, an Air Gunnery Instructor, a Qualified Helicopter Tactics Instructor and is presently one of the very few Crew Served Weapons Assessors within the Joint

Helicopter Command. He has been 7 (SF) Sqn Crewman Standards Officer; a Fast Rope Instructor; an Abseil Instructor; a VIP qualified crewman and a Flight Duty Authoriser.

Haines was promoted to MAcr in 2017 and posted to 18 (B) Sqn in February 2018. Within his first year he was one of the first aircrew to deploy on Op NEWCOMBE alongside French Allies within the Central Sahel, Africa and April 2020 saw Haines deploy again to this challenging theatre. This most recent deployment was especially challenging, as the UK witnessed the onset of Covid-19. His breadth of operational experience has been a key factor in the continued integration of the UK Force into a French Battle Group. Working with unfamiliar aircraft types across a language barrier and with the extra challenge of strict Covid-19 restrictions, Haines' leadership was essential.

He has inspired a whole generation of aircrew and has consistently set an example of excellence and dedication to all. He is the very epitome of the dependable, capable SNCO that the squadron looks to in troubled times.

The Master's Medal

FLIGHT LIEUTENANT RICHARD DAVOREN RAF



On 10th December 2019, Flight Lieutenant (Flt Lt) Davoren was conducting an operational Close Air Support sortie in support of Coalition forces in a Eurofighter Typhoon when his aircraft suffered a serious fuel leak. The cockpit indications were ambiguous, and the leak could easily have been misdiagnosed. Working under

intense time pressure over potentially hostile territory, Davoren acted decisively and diverted safely to an airfield in a neighbouring country. There is no doubt that the fuel leak could have been catastrophic and Davoren's swift and decisive actions averted the realistic possibility of losing the aircraft as it ran out of fuel.

The first indications were an aircraft Fuel Transfer caution which normally indicates a minor valve failure in the fuel system. However, when he deployed the in-flight refuelling probe the aircraft displayed a Fuel Valve caution which meant he was unable to take on any more fuel. Now running low on reserves, an aircraft centre-of-gravity warning initiated. Davoren noted that his overall fuel

contents were depleting much faster than normal and that there was a significant lateral imbalance developing between his wing fuel tanks. A visual inspection from his wingman confirmed that a large amount of fuel was gushing from between the engine jet pipes. The severity of the situation was now fully apparent.

Davoren had precious few minutes before an engine failed, or the aircraft potentially ran out of fuel. Despite the intense pressure, he remained decisive and calm. He declared an in-flight emergency and executed an extremely expeditious recovery to the nearest suitable airfield. The recovery was complicated by an overcast cloud layer yet Davoren positioned himself perfectly to break cloud on the extended centreline and execute a text-book landing.

The Hugh Gordon-Burge Memorial Award

FLIGHT LIEUTENANT PAUL MEDFORD RAF



On the night of 10th February 2019, Flt Lt Medford was the captain of a Chinook conducting overseas operations. Atrocious weather across the mission area was encountered, with a complex combination of torrential rain, low cloud with embedded thunderstorms and zero

ambient light. The electro-optical devices, used for low flying, were barely functioning due to the moisture in the air and the task had to be adapted to ensure safe delivery of the mission-critical passengers. As the formation continued towards a remote landing site, both Medford and the rear crewman noted the strong and distinctive smell of hydraulic fluid.

The crewman immediately investigated and quickly became covered in vaporising fluid from an uncontrollable leak. Medford immediately reduced speed to assess the severity of the situation and simultaneously ordered the isolation of the hydraulic sub-systems. The situation in the cabin was deteriorating rapidly due to a constant spray of highly-flammable fluid and the rear of the cabin became saturated. Within minutes, the mist reached the cockpit and covered the flying instruments just as the cockpit warning panel illuminated.

Medford immediately ventilated the cockpit to clear the hydraulic mist and regain his already poor visual references with the ground, no more than 100ft below. The vaporised

fluid had contaminated the entire internal body of the aircraft, with map displays near impossible to read and even the inner lenses of the night vision goggles being coated in a hazy film, reducing visibility further. With the emergency now contained, the formation continued to battle through the adverse weather to the nearest landing site. Medford carefully balanced the risks of continuing versus the risk of setting the aircraft down in potentially hostile territory. With senses already heightened, the aircraft warning panel indicated a further loss of a flying hydraulic control system, resulting in two of the three systems now indicating inoperable. This emergency usually requires an immediate landing, as a loss of the final system would render the aircraft completely uncontrollable. However, given the hostile location, Medford decided to continue flight and ensure the aircraft, crew and passengers were not exposed to the significant ground threat. With a clear mind and recognising the operational requirement to keep the main landing site open, Medford negotiated an alternate site and conducted an alternative shutdown procedure to avoid ignition danger. Throughout the mission, Flt Lt Medford demonstrated an outstanding and essential clarity of thought and exceptional leadership, judgement, skill and aviation awareness.

The Eric 'Winkle' Brown Memorial Trophy

BEN LEWIS



Ben Lewis has provided exceptional leadership of the RAF Chinook upgrade programmes over 10 years, first as a Royal Navy pilot and latterly as the Deputy Chief Test Pilot for Boeing in the UK.

From 2010, Ben Lewis has been a consistent and leading experimental test pilot on the RAF's Boeing Chinooks, starting with the JULIUS glass cockpit upgrade to the original 1980s-era Mk2s. He led the UK Combined Test Team from the UK's Air Test & Evaluation Centre at MoD Boscombe Down for the latest new Mk6s and was the lead test pilot on the later Mk4-to-Mk6A and Mk3-to-Mk5 Digital Automatic Flight Control System (DAFCS) upgrades. From 2015 to 2019 Ben led the test team conducting production flying of the remaining aircraft in the fleet, while simultaneously conducting ship-aircraft flight envelope testing, plus additional avionics and defensive aid suite upgrades to enhance the aircraft capability.

In 2019 and 2020, Ben continued to play a leadership role

in the test and evaluation of Chinook helicopter upgrades, providing his extensive "hot & high" experience to the Boeing team testing the next generation of Chinooks in Phoenix, Arizona - the Block II upgrade for the US military. This upgrade involves a new rotor system, transmission and avionics upgrades which are expected to be part of the next UK purchase of Chinooks in the 2020s.

The Prince Philip Helicopter Rescue Award

CREW OF RAFO RESCUE 01



Lieutenant Commander Thompson RN; Mulazim 1 Tay Mahmood; Wakeel 2 Jaw Yaqoob; Raqeeb Jaw Ibrahim

On 18 October 2019, Royal Air Force of Oman (RAFO) Super Lynx helicopter; callsign 'Rescue 01' was tasked to recover five trapped mountaineers, one of whom was unconscious, from an Omani mountain ridge-line that was in excess of 5,000ft. A rescue mission flown by a Royal Omani Police helicopter had already proved unsuccessful in extracting the mountaineers from the challenging location before sunset, leading to the night-capable RAFO Search and Rescue helicopter being assigned the task.

The crew launched on night vision goggles (NVG) and transited to the Search Area. This was a ridge-line within a bowl of mountains which made even the reconnaissance a demanding task. After a comprehensive discussion amongst the crew, a non-standard, contour-hugging approach was identified as the only viable way in which a rescue could be attempted. Because of the operating height, wind direction, turbulence and power limitations, the helicopter was positioned facing into the mountainside in order to maintain sufficient visual cues, rather than keeping a more standard, and preferential, flyaway option to deal with any sudden engine failure.

With the rotor blades maintaining a minimum of 10ft away

from the mountain side during the 40-minute winching phase, a crewman was deployed to assess the casualty and situation of the mountaineers. The casualty was regularly dropping in and out of consciousness, so a stretcher-lift was initially required, before the remaining mountaineers were recovered. Throughout the rescue and during the critical winching phase, the crew repeatedly encountered significant turbulence and changes in wind direction whilst having to operate a helicopter close to its operating limits in terms of height, weight and temperature with the additional consideration of approaching a critical fuel state. Working superbly well as a crew and with exemplary leadership and aircraft handling being shown by the Captain, all the mountaineers were rescued from their precarious location and returned to Musana Airbase where they were handed over for further medical attention.

The fact this happened at night, whilst operating throughout on NVG, at heights in excess of 5,000ft in high temperatures, with limited aircraft power settings and turbulent wind makes it all the more noteworthy.

The Sir Barnes Wallis Medal

F-16 CRUISE MISSILE DEFENCE TACTICS TEAM USAF



Lieutenant Colonel (Lt Col) Jay Baer, Lt Col Michael May, Lt Col Patrick McGarry, Major Daniel Wynn, Maj Jeffrey Entine, and Maj Robbie Glenn together have over 90 years of USAF fighter aviation experience and more than 10,000 flying hours in various F-16 models. In 2019, this team devised and successfully tested a revolutionary tactic using an air-to-ground laser-guided rocket, the AGR-20A Advanced Precision Kill Weapons System, for cruise missile defence. In a matter of 11 months, less than half the typical test schedule, they moved from an idea to an executed test. They demonstrated the effectiveness of air-to-ground rockets against aerial targets simulating cruise missiles, requiring only four rockets to score three hits and destroy the two targets. This novel use of an existing weapon has three important benefits: it radically eases operational planning for cruise missile defence; it radically increases adversaries' requirements to counter this unique deterrent;

and is fiscally efficient as each rocket costs just five percent of that of a traditional air-to-air weapon.

The team recognised the potential of using the AGR-20A against a cruise missile after receiving a capabilities briefing on new hardware destined for installation on US F-16s in response to an existing threat to the National Capital Region. They postulated that operational planners using existing laser-guided rockets for this role could preserve their precious supply of more capable air-to-air missiles to use against other targets such as adversary attack aircraft. Moreover, each F-16 can carry 42 AGR-20s with four air-to-air missiles, enhancing its standard air-to-air configuration of only six missiles. With this expanded weapons carriage, a single formation of F-16s can destroy a significantly-sized volley of adversary cruise missiles.

To prove the concept of using these low-cost weapons in a manner their designers never imagined, the team had to navigate a test approval process which generally requires 24-36 months. However, the team was able to garner an approved test plan in less than eight months. The innovative use of this weapon has a worldwide impact that affects coalition operational planners.

The Grand Master's Medal

TECHNICAL SERGEANT ZANE ROMICK USAF



Technical Sergeant Zane Romick is a Special Mission Systems Technician, Quality Assurance Inspector, and a Lockheed Martin EC-130H Scanner, serving at Detachment 1, 645th Aeronautical Systems Squadron, Waco, Texas. He

led teams of military, civilian, and contractor personnel in sustainment and modification efforts for the EC-130H Compass Call electronic attack aircraft. Throughout this past year, he made profound contributions to the unit's assigned programmes by providing a fresh and warfighter-based perspective. Earlier in the year, as a Special Mission Systems Technician, he led a 90-member team to analyse the wavelengths of the EC-130H's Radio Frequency spectrum. Based off changes to the newly-modified equipment and material, the EC-130H required signal optimization. Sergeant Romick leveraged his experience to work with Mission System engineers to analyse and devise new baseline standards for the upgraded systems. Once the standards were defined, he led a Depot Field Team to retrofit the remaining fleet of aircraft at their home station,

under tight time constraints, with many of them poised to deploy around the globe.

Furthermore, as a Quality Assurance Inspector, Sergeant Romick frequently reviewed maintenance manuals for accuracy and efficiency. When analysing an Electronic Warfare Pod upload procedure, utilising a new equipment stand, he noticed inaccuracies in the processes required for the task. Sergeant Romick drafted new procedures and coordinated them with all required officials, resulting in enhanced safety of maintenance technicians and a more efficient process for rapid pod maintenance. His process saved more than 152 maintenance man-hours each year. Additionally, Sergeant Romick's experience was also highly valued as an instructor. Realising that the newly modified EC-130H systems would require practical operations knowledge and troubleshooting, he was dispatched to instruct 12 maintenance technician cadres over 24 hours of hands-on experience. The exemplary instruction was then imparted to more than 100 technicians throughout the unit who were continually deploying in support of Operation Freedom's Sentinel.

Finally, Sergeant Romick expanded his resourcefulness by becoming an EC-130H Non-Rated Aircrew Scanner. As a Scanner, he ensures the safety and effectiveness of the aircraft during test and training flights. Most recently, Sergeant Romick was able to augment the Airborne Maintenance Technician position during the newly-integrated Automatic Dependent Surveillance – Broadcast system ground and flight test.

The Brackley Memorial Trophy

NUMBER 32 (THE ROYAL) SQUADRON RAF



Number 32 (The Royal) Squadron of RAF Northolt delivers Command Support Air Transport (CSAT) to members of the Royal Family, Government Ministers and senior military leaders, and has done so for the last 50 years. The Squadron and its industry partners - British Aerospace, SERCO and Sloane Helicopters - have been

nominated for their invaluable contribution to UK Government activity, most notably their support during the last year of EU withdrawal negotiations, all while having to operate their aircraft from RAF Benson during RAF Northolt's runway resurfacing operations.

The unit provides four BAe 146 aircraft and one Agusta 109SP in support of Key Leadership Engagement activity and a wide range of military transport tasks. Given the unrelenting pace of EU withdrawal negotiations and concomitant tempo of Governmental activity, 32 (The Royal) Sqn has often been called upon at extremely short notice and has not failed to deliver.

Providing this level of complex and dynamic tasking has been even more impressive because it has been delivered away from the unit's logistical support base at RAF Northolt, a deployment known as Operation Bolthole, operating from RAF Benson. Operational support was required not only for the BAe 146 aircraft at RAF Benson, but concurrently for the A109 helicopter operating from RAF Northolt, bringing added complexity to operations given the need to co-ordinate personnel, logistics and engineering between the two sites. Moreover, the addition of an 'airbridge'-dedicated A109 to facilitate transport for London-based VVIPs necessitated a substantial increase in tasking. During the entire deployment not a single task was lost and over 80 VVIP tasks were seamlessly delivered.

With limited manpower, ageing aircraft and difficult circumstances, 32 (The Royal) Sqn has delivered everything that has been asked of it. Moreover, it has done so with a professional, good-humoured and 'can-do' attitude.

The Hanna Trophy

AIR MARSHAL CLIFF SPINK CB CBE RAF (RETD)



Cliff Spink, who retired from display flying in 2019, is believed to be the only living pilot to have flown all the airworthy marks of Supermarine Spitfire – Mk I through to PR.XIX – with Rolls-Royce engines ranging from Merlin III to Griffon 65. It took 27 years from his first Spitfire flight in summer 1991 to being invited to take his tenth and final mark aloft, a feat that is unlikely ever to be achieved again.

Cliff's illustrious RAF career saw training on the Jet Provost, Gnat and Hunter before he joined 111 Sqn on the English Electric Lightning. He was posted to the Falkland Islands on the F-4 Phantom detachment, returning to the UK to command RAF Coningsby and its Tornado F3 fighter force.

This was his introduction to warbirds, with the station commander customarily invited to fly the resident Battle of Britain Memorial Flight Hurricanes and Spitfires. When Saddam Hussein's Iraqi forces invaded Kuwait in 1990, Spink rapidly deployed to Saudi Arabia, as Tornado Detachment Commander, remaining in post until the conclusion of the Gulf War in spring 1991.

While flying a desk, Spink had maintained his hours flying the de Havilland Chipmunk and so was well placed to make the transition to the tailwheel fighters via the Harvard trainer. He began his piston warbird flying on the BBMF's Hurricane Mk.IIc, displaying the aircraft for around 15 hours before moving on to the Spitfire.

Towards the end of his BBMF flying, Cliff was invited by legendary display pilot Ray Hanna (whose name adorns this award) to fly for his Duxford-based Old Flying Machine Company. It was the start of a long association, which only ended with Ray's death. OFMC put Cliff into the cockpit of its famous Spitfire Mk.IXb MH434. He was later invited to fly restored Messerschmitt Bf 109G-2 'Black 6' – another machine in which he became well known for his stirring displays – along with types such as the Kittyhawk, Mustang and Fury. He also flew for The Fighter Collection, logging time in aircraft like the Wildcat, Corsair and Thunderbolt.

In recent years Cliff has enjoyed the rewarding experience of flying the Duxford-based two-seat Spitfires on pleasure flights with paying customers, including veterans. The arrival of new restored Mk.I Spitfires at Duxford gave him an insight into the original Spitfire experience, displaying both examples at various air displays. In 2018 Cliff completed 'the set' of Spitfires when he was invited to fly Maxi Gainza's Mk.VIII MV154.

It was apt then, that his display flying career was to reach its conclusion at Duxford for 2019's September Air Show. Flying Spitfire Mk.XVIII SM845, Cliff led the Spitfire formation, bringing the curtain down on his airshow career with a solo display followed by a final low flypast.

The Sword of Honour

GENERAL AVIATION SAFETY COUNCIL REGIONAL SAFETY OFFICERS



*John Steel, Michael Benson,
Jon Cooke, Caroline Gough-Cooper,
Keith Thomas, Penny Gould,
Geoff Connolly*



In 2010 the Civil Aviation Authority (CAA) invited the General Aviation Safety Council (GASCo), a registered charity, to take on responsibility for delivering safety events to the general aviation community. GASCo willingly agreed and recruited a team of experienced pilots as Regional Safety Officers (RSOs). All are unpaid volunteers with a wide-ranging experience of General Aviation (GA) and most of them hold additional qualifications such as flying instructor, examiner, test pilot and flight information services officer. Over the past ten years the team has delivered or taken part in some 500 GA events across the United Kingdom and Northern Ireland, the Channel Islands, the Isle of Man and Ireland.

Each year the RSOs gather material, write the script, design the audio-visual content and produce the supporting material for a new presentation. The team is constantly on the lookout for new content and original ways in which to put it across, an example of which is the introduction of audience polling to increase their engagement.

In addition to their work in delivering safety evenings, team members support a wide range of other GA events during the remainder of the year, from manning the GASCo stand at shows and running safety activities such as pre-flight inspection challenges, to other ingenious activities designed to stimulate safety-related conversations. Members of the team give bespoke safety presentations to flying groups in their regions and Airspace Infringements Awareness

presentations to flying instructors, examiners and flying clubs as well as delivering Airspace Infringements Awareness courses approved by the CAA. None of this would be possible without the unstinting administrative support provided by Mrs Penny Gould's work behind the scenes in arranging the programme and taking expert care of the team's administrative needs. It is a hallmark that apart from the recent Covid-19 emergency, the team has never cancelled a safety engagement.

The Sir James Martin Award

814 NAS SURVIVAL EQUIPMENT SECTION



The four-strong Survival Equipment (SE) section of 814 Naval Air Squadron (NAS) has worked tirelessly over the last 12 months to support a busy and fragmented operational programme whilst showing further capacity for initiative, resourcefulness and efficiency.

In addition to the ongoing routine maintenance of all 814 NAS survival equipment, in the last year the team has: re-written the 814 Squadron Management System to improve efficiency, effectiveness and availability; improved training and oversight of TEM23 qualified personnel (aircraft engineers who are given limited SE maintenance training in order to conduct maintenance when embarked in small ships); and inspired changes to the TEM23 course. The team improved its communications with aircrew, obtained approval for delegating authorisations to Leading Hands, drafted new terms of reference for its own personnel, and undertook a relocation. It also pre-empted a potential shortage of aircrew life preservers during the introduction of a new emergency beacon.

The small team has directly and significantly contributed to the overall effectiveness of 814 NAS with its positive attitude and continuous drive for improvement. During a recent independent assurance visit by Naval Flying Standards Flight the Section was seen as having best practice and assessed as outstanding.

The Cumberbatch Trophy

MASTER ENGINEER STEPHEN HAMMOND



Master Air Engineer Hammond transferred from 1st the Queen's Dragoons to the RAF and commenced training as an Air Engineer in 1987. After completing his initial training he was posted to Nimrods at RAF St Mawgan where his high personal and professional standards were noted from the outset. By the end of this tour he was awarded an above-

average assessment and assigned to ground instruction duties at 6 Flying Training School.

Following promotion he was posted to 216 Sqn flying TriStars in the air transport and AAR roles. Again, his strong work ethic was noted and within 18 months he was again assessed as operating to an above-average standard, a notable achievement given the complexity of the air engineer's role on the TriStar. He flew on all the unit's operational AAR deployments and was notably the operating air engineer when his captain was awarded the DFC during Kosovo. He also gained additional qualifications as an air test engineer and flight instructor and co-authored the re-write of the TriStar Air Test Schedule. Undaunted by the command chain, he engaged with staff at the highest levels to develop the airman aircrew role and was promoted shortly thereafter to Master Air Engineer.

His professionalism, drive and commitment to the Air Force were rewarded with a posting to the NATO Boeing 707 at Geilenkirchen where his extraordinary skills received comment from the NATO command chain. On completion of this assignment he was posted back to the TriStar to fill a manning shortfall. He quickly re-established his credentials and despite a year-long injury which precluded him from flying, he was again selected for instructional duties and graded Combat Ready (Select). Finding that 216 Squadron's Flight Data Monitoring (FDM) Office had become defunct, he relaunched it and, after the TriStar's retirement and noting that the BAe146 CMk3 is capable of producing flight data, he convinced the Command Chain of the benefits of providing the same service to 32 (The Royal) Sqn.

In order to enhance the use of FDM throughout the Services, he developed and assumed a Requirements Manager role for FDM, teaching himself the Crown

Commercial Procurement Process, staffing the Concept of Use, Concept of Employment and the initial 2 Group FDM Policy, subsequently the basis for the RAF's FDM Policy.

He has also championed the safety, training and financial benefits of FDM to influential military and industry partners. He is rightly acknowledged as the UK Military's FDM Subject Matter Expert in this field and his advice has been sought by 1 Group, the F-35 Force Commander and 1710 Naval Air Squadron as well as the Poseidon Delivery Team for information on how to best utilise FDM data gained from the UK's fifth-generation fighter, Joint Helicopter Command's aircraft and the latest Maritime Patrol Aircraft. Additionally, through his initiative and foresight he has ensured that the military has retained essential personnel with expertise in aviation digital data exploitation to ensure a core capability and understanding of FDM use is available to advise senior leadership.

The Central Flying School Trophy

LIEUTENANT COMMANDER DAVID WESTLEY RN



In an operational flying career spanning 31 years, Lt Cdr Westley has qualified on five different front-line aircraft types, serving with both the Commando Helicopter Force and on exchange with the Army Air Corps. He has extensive operational experience, having deployed to Bosnia, Northern

Ireland, Iraq, Afghanistan and Libya. He has amassed nearly 7,000 flying hours including over 1,000 using night vision devices, most of them in instructional roles as a Qualified Helicopter Instructor (QHI).

Westley's dedication to training aviators is a constant theme throughout his impressive career. After serving in a multitude of influential instructional roles, including the Chief Instructor and 'keeper of standards' on the Commando Sea King as Training Officer Sea King, he returned to his light utility helicopter roots in 2013, taking up the role of Training Officer for 847 Naval Air Squadron (NAS) for the second time. As a vastly experienced 'A' category QHI, he played a pivotal part in the effort to field the new-to-service Wildcat AH1, helping to generate the military-applicable training material and deliver the initial instruction on a significantly modernised and vastly more complex air system than its Lynx predecessor. His subsequent role in transitioning 847 NAS into the Wildcat era cannot be overstated, and he also rewrote Arctic and

desert syllabi for all commando platforms.

On two separate occasions during 2016 and 2019, Westley pioneered the delivery of the franchised 'In-House' Conversion-to-Type and Conversion-to-Role training on 847 NAS. This highly unusual training on squadron was deemed necessary to address the divergence between demand for front line aircrew on 847 and the capacity of the Army Operational Conversion Unit to supply them.

The Sir Alan Cobham Memorial Award

WILL WRIGHT and REBECCA KWO



The ambition of the Master during his year in office has been to re-energise and bring the company together through the process of encouraging the development of young members who in turn help others. Before his term in office plans were agreed with Will Wright and Becky Kwo but immediately after the installation the Covid-19 crisis prevented face-to-face meetings. However, the team turned a negative into a positive with the use of Zoom and other IT systems. The result is that many members have now become actively involved and made valuable contributions. It



has been a real team effort but in the eyes of the Master, Will Wright and Becky Kwo deserve special recognition for their leadership, determination and vision.

- Will and Becky shared the Master's vision and played a significant part in the development of the young members group bringing together an impressive team with a wide range of skills;
- They were very effective helping the Master to communicate the aims of the year to the Assistants, Past Masters and other groups using Zoom. This directly led to the successful adoption of Zoom by many who were previously unfamiliar with the platform, for Court business and social meetings;
- An improved mentoring scheme and a wide range of training opportunities have been developed which will be delivered online and, later, will also be held in Air Pilots House;
- Several improvements to, and increased use of, the young members section of the website and various other communication means have developed an

increased sense of 'belonging' for many young members;

- Virtual Coffee Meetings have opened-up communications with Air Pilots of all ages from all Regions. Company members from aspiring aviators to Court members are taking part and with the introduction of online bookings, excellent hosting and facilitation, these events have very positive feedback and have made a real impact.

From the first concept meeting through every stage of the development process both Will Wright and Becky Kwo have made a significant and positive contribution.

The Grand Master's Australian Medal

CAPTAIN SUSAN McHAFFIE



Captain Susan (Sue) McHaffie commenced her aviation career in 1989 as a flight instructor, rising to become a Chief Flight Instructor and Examiner. In 1998 she commenced her relationship with the Bombardier (now de Havilland) products by joining Flight Safety International (FSI) initially as a flight

simulator and ground instructor. By 2005 she was seconded for two years to Tyrolean Airlines for assistance with the Dash 8 Q400, and then for another two years assisting with and flying the Bombardier CRJ for Air Canada Jazz before returning to FSI.

By 2010, she became Director of Programs, responsible for courseware and material development for the Bombardier commercial product line, including the Twin Otter, Dash 7, Dash 8, Q400 and CRJ. She developed training manuals, presentations and exams as well as being responsible for the regulatory approvals of training materials. She was FSI's liaison with Bombardier Flight Operations.

In the same year, she was appointed to the US Congress Committee and Industry Panel into the Colgan Air 3407 Dash 8 Q400 accident at Buffalo, New York. Following this she was appointed by the FAA to the UPRT (Upset Prevention & Recovery Training) development and training committee to formulate and develop UPRT training for industry which issued the first Advisory Circular (AC).

After 15 years with FSI she accepted a role as Manager Fleet Technical and Development with QantasLink in Australia. For the next seven years, her skill set from technical knowledge, training and development shone through in numerous achievements at QantasLink. In 2014, combining her love of aviation with a family

connection to breast cancer, she established what became a worldwide movement – FlyPink. Today, around the world, pilots, engineers and ground teams don pink epaulettes (and cabin crew adopt pink wings) for the Breast Cancer Awareness Month of October, raising money for breast cancer organisations.

Ironically, in 2017, after raising so much money for breast cancer, the founder of FlyPink was diagnosed with the disease herself. She faced the challenge with grace and wonderful tenacity resulting last year with a clear diagnosis.

After 30 years associated with flying operations, she was appointed to the Airworthiness and Engineering team as the Manager for Continuing Airworthiness Organisation Services late last year, the first time a pilot has been appointed to such a position.

The Australian Bi-Centennial Award

GREGORY JAMES HOOD



Gregory (Greg) James Hood has spent his entire career in aviation and risen to become one of the most respected aviation administrators in Australia and internationally. Greg joined the Royal Australian Air Force (RAAF) in 1980 as an Air Traffic Controller, serving for the next ten years at various location

around Australia as well as a deployment to the Sinai.

Upon leaving the RAAF Greg joined Australia's Air Navigation Services provider, initially the Civil Aviation Authority and later, Airservices Australia (AsA). Over the next 12 years Greg worked in a number of ATC centres and as an ATC instructor at the University of Tasmania.

In 2002 Greg was promoted to the Manager of the Melbourne ATC centre within AsA and then in 2006 as the Manager, National Towers and Regional Services. During his time with AsA Greg was integrally involved in the implementation of major air traffic management and technology projects, such as the Australia Advanced Air Traffic System (TAAATS), the evolution of safety management systems and the introduction of user-preferred routes and flex-tracks.

After his 18 years with AsA Greg moved to the Civil Aviation Safety Authority (CASA) for a period of five years, initially as the Group General Manager Personnel, Licensing, Education and Training and then as the Executive Manager, Operations. He returned to AsA as the General Manager, Demand and Capacity Management and then Executive General Manager, Air Traffic Control. In 2016

Greg moved to the Australian Transport Safety Bureau as its Chief Executive Officer and Chief Commissioner, a role that he holds to the present day.

During his career Greg has served on a number of national and international committees and boards including as a board member of AsA and Vice-Chair of the steering committee for the Civil Air Navigation Services Organisation's Operations Standing Committee. In 2019 Greg was elected as the Chair of the International Transportation Safety Association (ITSA).

Greg is a recipient of the Australian Defence Medal, the Australian Service Medal - Sinai Clasp, and the Multinational Force and Observers Medal. He is a Freeman of the Honourable Company of Air Pilots and a Fellow of the Royal Aeronautical Society. Greg holds a PPL, owns his own light aircraft and also flies gliders.

The Captain John Ashton Memorial Award

CAPTAIN GRAHAM STOKES



Captain Graham Stokes FRAeS currently holds the position of Head of Training and Standards for Virgin Australia Group which includes Chief Executive Officer – Virgin Australia Part 142 Training Organisation, accountable for flight crew and cabin crew training and checking. He is also a Boeing 737-800 Captain.

Graham was born in the UK and by 1983 he had become a flying instructor at Wycombe Air Centre. His career then moved to the airlines with British Midland, Britannia Airways (B757/767), Cathay Pacific (B747-400) and British Airways (B747-400/B737). He then joined the Civil Aviation Authority in 2006 as a Training Inspector and became Regional Manager (Flight Operations) for the Southern, Stirling & Stansted Regional Offices. He returned to the airlines in 2011, becoming Head of Flight Operations Training & Standards at Virgin Atlantic Airways, a role in which he had overall responsibility for flight crew, cabin crew and engineer training, was Senior Examiner on all Virgin types, and was a Captain/TRI/TRE on the B747-400. In 2016 he moved to his current role with Virgin Australia. During his career he has been responsible for designing and introducing pilot development and cadet pilot schemes and AOC training programmes, participated in and chaired a number of industry working groups working with regulators in the UK, Europe and Australia. He has been involved in introducing Alternative Training &

Qualification Programmes (ATQP) for a number of airlines. Away from his airline work, Graham is a Board member of the Royal Queensland Aero Club. While he was still in the UK he was a Chief Flying Instructor - RAF Lyneham Flying Club Charity. This is a registered charity that promotes flying for young airmen at heavily discounted rates.

The Award for Aviation Journalism

TIM ROBINSON



Like many people in aviation, Tim Robinson became hooked at an early age when he was given balsa gliders and plastic model kits. Unfortunately reading about Biggles under the covers at night strained his eyesight so he couldn't follow in his childhood heroes' footsteps (possibly due to other factors as well!).

Despite never making it into the cockpit professionally, today Tim believes he has got the next best job as an aviation journalist – where he gets to talk to pilots, engineers, airline CEOs, heads of industry and even astronauts across the whole spectrum of aviation, aerospace and space, and to learn more about this fascinating industry.

Since 2001 Tim has worked in the publications department at the Royal Aeronautical Society, the world's oldest professional membership organisation for the global aerospace community. In his role as Deputy Editor and now Editor on *Aerospace International* he covers civil and military aviation, general aviation and space.

Tim's insights and analysis are widely followed throughout the aviation sector globally and he is as comfortable breaking news as he is rapidly blogging or tweeting incisive commentary on the topics of the day, wherever he is working in the world.

As well as his role on *Aerospace International* magazine, Tim also created and writes the Aerospace Insight blog on the Royal Aeronautical Society website. In addition, he has also been quoted as an aerospace expert on CNN, BBC and other international media organisations.

His aviation claim to fame is, though he never got to fly on the iconic Concorde, he did go Mach 1.5 in the back seat of a MiG-29 over Russia – a flying experience he is still looking to top. Other machines he has flown in include the F/A-18 Hornet with the US Navy. □

MEMBER PROFILE

UPPER FREEMAN SIMON ROLFE



I was born in Kowloon, Hong Kong, in 1973. My maternal Granddad had been a bomber pilot with the RAF in World War Two, having started out as a navigator. After time spent fighting the Japanese in Malaya, and a period spent target

towing for the anti-aircraft gunners of the Royal Indian Air Force based in Karachi, he ended up back in the UK, flying the Short Stirling heavy bomber. At some point the RAF asked him to retrain as an air traffic controller. He was involved with the towing of paratroop-carrying Airspeed Horsa gliders during Operation *Market Garden*, the Arnhem landings.

In September 1947, Granddad and my young Mum and Granny boarded a BOAC Short Sandringham flying boat and flew to Hong Kong, where he was to become SATCO at Kai Tak until his retirement. He was also an air accident investigator and was involved in investigating the accident to *Miss Macao*, a Cathay Pacific Catalina whose hijacking and subsequent crash into the Pearl River Delta was the first known act of air piracy in South-East Asia.

I grew up with airliners flying past our block of flats every few minutes as they took off from, or made their approach to, Kai Tak. Airliners would also stream low and slow over my school and my first words weren't "mama" or "dada", but "feigei", which is the Cantonese word for "aeroplane".

In October 1979, my sixth birthday present was a trial lesson in a Beechcraft Sundowner, from Kai Tak, with a Chinese flying instructor showing me the ropes and my Mum and Auntie sat screaming in the back.

My family moved to the UK in October 1981, where we lived with my maternal grandparents. When my hyperactive bounciness needed replenishing I'd go into their kitchen and get Granddad to talk about aeroplanes. He was always keen to talk about flying, and he told me about air accident investigation, especially the saga of the de Havilland DH.106 Comet 1.

Fast forward and it was perhaps inevitable that I fly myself would fly. In 1999 I passed the British Armed Forces' pilot aptitude tests at RAF Cranwell, and then – by a miracle – passed the Royal Navy's Admiralty Interview Board at

HMS. Sultan in Gosport. Bad luck conspired against me becoming a Sea Harrier pilot; as a result, I found myself entering frozen ATPL training at the end of 1999.

The early hours of 1st September 2001 saw me walk out of a Tristar simulator with my training completed. Ten days later the world was turned upside down by the 9/11 terrorist attacks, and the worst downturn in civil aviation history up to that point ensued. This led to me attending my flying instructor course at Manston, Kent and I was soon instructing full-time.

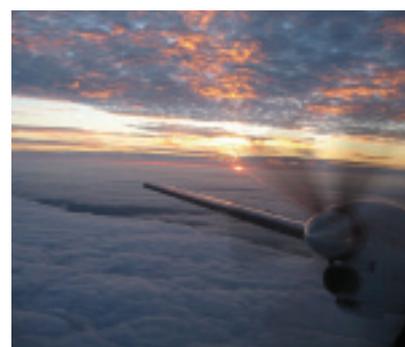
After three-and-a-half years, I found myself starting a Jetstream 41 type-rating course with Eastern Airways at Humberside Airport and in Washington DC. A few months later, I was thundering down the runway at East Midlands Airport on my first day of line training; "a novitiate, stumbling in the robes of his order," to quote Ernest Gann's classic *Fate Is The Hunter*.

A year later, I found myself in Basle/Bâle, starting my type rating for the mighty SAAB 2000, which I spent 13 years flying on scheduled, charter, ACMI and OGP routes around the UK, Western Europe, Scandinavia, and the Northern Mediterranean.

I've never stopped my GA activities, continuing to instruct and becoming an examiner. I'm on the list for the next CAA/LAA Light Aircraft Flight Test Course and (once Covid permits) I'll be attending the CAA/HCAP pilot peer supporter course, which will qualify me to be the first port of call for pilots with mental health issues. I also volunteer as an aviation skills ambassador/mentor with HCAP and three other organisations.

I hold an MBA in Aviation Management, Saïd Business School's Oxford Executive Leadership Programme certificate, and started an MSc (Human Factors in Aviation) in September 2020.

Like so many others, I'll be laid off thanks to Covid-19, with my last day at Eastern coming in November 2020. Job hunting awaits; however, let me know if I can help at any time! □





ENCOUNTERS OF AN AVIATION KIND PART ONE: THE SUPERMARINE SPITFIRE

By Past Master Dr Ian Perry

photos courtesy of Adrian M Balch

Around 50 years ago, PM Ian Perry got to know John Fairey, co-owner of Spitfire T.8 G-AIDN/MT818, which was regularly serviced at Middle Wallop, where Dr Perry (the first soldier to attend the Flight Medical Officers Course, and a pilot) was running the Medical Centre. In the first part of what is hoped will be an occasional series, he reports on the day in May 1970 when a childhood dream came true.

I drove down to the flight line, parked my duty Mini, and there she was, the beautiful all-blue Spitfire. I walked up to her, helmet in hand. John Fairey was there up by the cockpit, and he saw me, waved, and motioned for me to get in the back seat. I was helped by an army technician. It was a tight squeeze but I managed to strap myself in. John was talking quite animatedly to the person in the front seat.

"You remember where this is, and you know not to do this and that." I thought: "Who is this person with whom I am about to embark on my flight of a lifetime?" John explained some more things to the person in front, which made me even more curious. Surely he would not let a relative stranger fly his most precious plane. He then turned to me, checked that I was strapped in correctly and said to the person in front: "OK, off you go". With that he got off with another cheery wave.

Everyone stood back, as whoever it was in front gave a thumbs-up and fired up that magnificent Merlin engine. A

cloud of exhaust fumes and a voice said: "Let's go, we cannot hang about with the cockpit open." As everyone knows, the engine will overheat if you hang about.

We taxied quite quickly, out to the threshold of what was known as the 'Wallop short runway. He stopped and turned the plane through 90 degrees, and the voice said: "Now you are going to learn about torque". With that he fully opened the throttle and put his foot very hard down on the right rudder pedal. "If you do not do that you will ground loop: follow me through and then do it yourself." We repeated the exercise, not once, but four times, until he said: "I think you have got it - never forget it, as it can save your life, or kill you." I was amazed at the power of that engine, and my leg ached.

We then straightened up, and he asked the Tower for clearance to take off. "Follow me through," said the voice. As the Merlin roared into life, right foot hard on the rudder, we accelerated very quickly and were airborne in no time at all. We were in a right-hand climbing turn back towards the hangars when, as we climbed, we suddenly went through two right-hand rolls - and this was a man who needed a briefing from John about how to fly the 'plane.

As we climbed the voice said: "You have control, level off at 5,000ft." I have control. I was actually flying a Spitfire IX - or at least I thought I was. I was sure whoever he was had his hands very close to the controls, but I never once felt them.



We did turns, climbing and descending, to the left and to the right. I did everything he told me to. It was all a mixture of throttle, pedal and stick. There was, of course, more use of the throttle than I had been used to in my 100 or so hours in a Chipmunk, but the basics were the same.

After 20 minutes or so, I was rolling this superb machine around the Hampshire skies as though it were part of me. No wonder that all those who flew it and the few who still do, loved it.

I was living my dream and loving every moment. The basic lessons continued, and we flew around for another 20 minutes of sheer flying ecstasy. The voice suddenly said: "That's it, Andover Airfield please, line up to land on the westerly runway (that is the one I did my first Chipmunk solo on, only he did not know that), descend to 1,000ft, put the wheels down, report at 500ft." I did exactly as he said, throttling back, descending, putting the wheels down and lining up as he had instructed.

Then he said: "I have control, follow me through, flaps down, speed down, but never ever below 80 knots, as she will stall". We landed, very nicely I have to say. I still never felt his hands on the controls, but we all know that they were there. We taxied back to the Andover dispersal. As always, a crowd appeared. We stopped, opened the canopy, turned off that engine and we both got out.

He was a smallish grey-haired man, and as I thanked him, and warmly shook his hand, he said: "Well flown, that was a good effort". I felt elated. I felt I had been to heaven and made it back. "John said you were to have some more lessons to solo stage." That was a surprise. I will never forget those words. I am going to fly this magnificent aeroplane again.

A car came for him, and my car appeared. We said "goodbye" and went our separate ways home. I had still no idea who he was, so when I got home, still somewhere on cloud nine, I rang John Fairey.



First, I thanked him for my unique aviation experience. We then had a friendly conversation about how I had flown, which he seemed to know all about. But who, John, was the pilot I had I just flown with? "Oh", he said: "I forgot to introduce you, you have just been flying with (Ex-Fleet Air Arm and Vickers-Supermarine pilot) David Morgan". I was flying with DM and you did not tell me! What was all that pre-flight chat about, not doing this or that, and remembering what was where? "Oh, that was just for fun to unnerve you a bit." Unnerve me? I had just flown for 50 minutes with an aviation legend. He of the 10,000 hours plus on every sort of Spitfire. He of test pilot fame. No wonder I never felt his hands on the controls. He must have flown with so many novices like me. He could have made that plane do anything, but no, he took me through all the basics. How unselfish is that? "David said you flew well, and it will not take long to get you to solo." So that really was the plan.

Sadly it was never to be. I did have more lessons. Every flight was an adventure, but an offer was made for G-AIDN which John and Tim Davis (the other co-owner) could not refuse. It was very expensive to fund and run the plane. There was not the sponsorship and funds as there are today, and even today it is very difficult.

We all waved goodbye that day she left John's airstrip at Bossington and with a roar from that Merlin she was gone - bound for new owners in the USA. In more recent years she came back to England and is now plying her trade at Biggin Hill, giving rides and making other people's dreams come true.

I am very privileged to have flown all sorts of aircraft, which you might read about, but nothing can compare with doing two climbing barrel rolls, in a Spitfire, at 500ft, over the hangars at Middle Wallop, flying with the legendary David Morgan, sitting behind a Merlin engine at full chat. □

COMMAND AND CONTROL: LESSONS LEARNED FROM THE BATTLE OF BRITAIN



Messerschmitt Bf 110 (Awyer Collection)

By Timothy Wetzel and Corey Washburn

Following on from PM Michael Fopp's Tymms Lecture and article in October's *Air Pilot*, this piece is written by two cadets in the USAF Reserve Officer Training Corps. They are working towards their degrees in Aerospace Engineering at Embry-Riddle Aeronautical University, where their work was spotted by Liveryman Mike Zaytsoff, who felt it deserved a wider audience.

The Battle of Britain was a defining moment of the World War II, as well as being the first major military campaign to be fought entirely by air forces. This article is based on a research project seeking to find how information from this battle can aid modern military command and control to fight more effectively.

COMMAND AND CONTROL

So, what is command and control? The Army Field Manual 3-0 defines command and control as: "The exercise of authority and direction by a properly designated commanding officer over assigned and attached forces in the accomplishment of a mission." Command and control during the Battle of Britain consisted of a commander, radio operators, and pilots. Located at an RAF base the commander gives a directive. The directive is then distributed to radio operators who communicate the mission to the pilots that are airborne. The pilots execute the mission with the given information.

HISTORY

It is important to understand the state of air forces at the time. While under the Treaty of Versailles, Germany was forbidden an air force. When Hitler began massive rearmament efforts, the Luftwaffe was rapidly stood up. It had combat experience in the Spanish Civil war, as well as in German *blitzkrieg* invasions of numerous countries. In all these campaigns, the Luftwaffe was able to quickly ensure air supremacy, and pivot to an infantry support role, thus immortalising the role of the Stuka dive bomber.

The RAF on the other hand, had since the end of the World War I, subscribed to a doctrine of "Peace through fear of bomber retaliation." Top officials firmly believed that

the sheer might of the British bomber force would be a deterrent. After numerous demonstrations and exercises, RAF realised that its current fighter arsenal, largely made up of biplanes, was grossly incapable of intercepting and destroying modern bombers. In 1936, the RAF was restructured into the three commands of Fighter Command, Bomber Command, and Coastal Command (the latter focused on maritime aviation and played an important role in the battle for the Atlantic and convoy protection).

LESSONS LEARNED

Three major lessons learned from the Battle of Britain include centralising command while maintaining decentralised execution, the issue with multipurpose aircraft, and that air supremacy wins wars.

The idea of centralising command and decentralising execution is something that has become commonplace in the 21st century, but it was executed near flawlessly in the Battle of Britain. In the classic 1969 movie *Battle of Britain*, we see the Command Centre and how smoothly everything seems to run, but this process was pioneered and refined by one man, Air Chief Marshall Sir Hugh Dowding.

Dowding was in his fourth year as Commanding Officer of Fighter Command, and executed complete control over its entirety. RAF Fighter Command consisted of aircraft and anti-aircraft guns, as well as the Observer and Signal Corps. The combination of all these assets were responsible for the aerial defence of Britain. The Observer Corps and the Signal Corps were made up of civilian volunteers and helped to spot and communicate threats with the use of radios and the emerging technology of radar.

There were six groups under Dowding's command, each responsible for between two and seven sectors (the areas of land they were responsible for covering). Each group was made up of 12 to 27 fighter squadrons. Fighter Command would receive information from radar stations and decide which group would be responsible for tasking a



Battle of Britain plotting room, IWM Duxford (S Bridgewater)

response force. The squadrons assigned would carry out the mission without further input from Fighter Command. This allowed the squadrons and pilots to pass information up and down the chain of command quickly and unencumbered. Dowding had all the power to command appropriate assets but was never responsible for the details of the execution of the mission. This idea is critical to modern warfighting. Modern commanders need to have complete control over all the relevant assets to their mission, regardless of branch, squadrons, or any other group affiliation. In conflict, commanders should be able to confidently lead with absolute authority, knowing they have trained their subordinates to execute the mission without further instruction.

THE MULTIPURPOSE PROBLEM

The basic idea of the multipurpose problem is that the more functions you require a single weapon system (in this case an aircraft) to be able to do, the worse it does at each of those functions. The German Messerschmitt Bf110 was a heavy fighter, ground attack aircraft, fighter-bomber, and night fighter. That is a long list of missions for one aircraft. The Supermarine Spitfire was designed for one mission: to dogfight enemy fighters and maintain air supremacy. The Bf-110 was successful in Poland, Norway, and France prior to the Battle of Britain. In each of those cases there was not a well-structured air force to stop the German Luftwaffe. When fighting over the skies of Britain the Bf-110 became a liability, requiring a fighter escort of its own.

AIR SUPREMACY WINS WARS

At the outbreak of World War II airpower was still underdeveloped and most senior officers were entrenched in the dogma of previous conflicts and the doctrine they produced. Most of the 'top brass' in the British Military had

been junior officers during World War I, where air supremacy played a minor role in the overall static war; and officers who believed in the importance of airpower had to fight an uphill battle. It quickly became important for the RAF to control the skies above Britain to prevent the bombing of the country's cities and military bases. The effective command and control by Fighter Command led to RAF air supremacy, preventing Germany's launch of Operation *Sea Lion*, its planned seaborne invasion of Britain. The British victory in the Battle of Britain helped lead to victory in the war for the allied powers. Eighty years after the Battle of Britain we know the importance of air supremacy for winning wars. As Dwight D Eisenhower said: "If I didn't have air supremacy, I wouldn't be here." The importance of air supremacy can never be understated. Most major world powers put incredible amounts of resources into their Air Forces to be able to gain and maintain air supremacy. It is a key component in every battle and every war. Without air supremacy any military force is going to be in a lot of trouble.

CONCLUSION

By studying the Battle of Britain and learning from the successes and failures of the RAF and the German Luftwaffe we hope to educate on the importance of air superiority in combat. In a modern era that has been largely marked by coalition forces fighting counter insurgency operations with little to no resistance to air supremacy, it is important to be prepared for a time when air supremacy has to be fought for.

SOURCES

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Spitfire was a specialist dog-fighter - lead aircraft here is PM Spink at Duxford, 2019 (S Bridgewater)



INTO THE OVERSHOOT

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

TROPHIES AND AWARDS BANQUET IN COVID-AFFECTED SUFFOLK

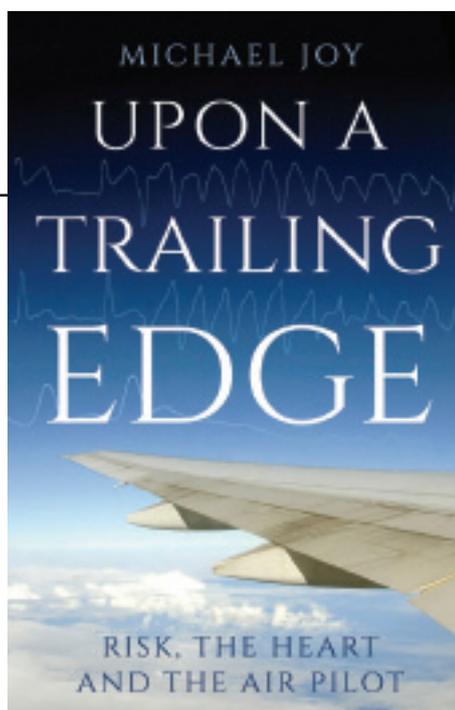
As the traditional Trophies and Awards Banquet in Guildhall was unable to take place this year on 22nd October because of Covid restrictions, Past Master Chris Ford and Liveryman Tom Eeles, accompanied by their partners, held a socially distanced T&A Banquet in Suffolk. The evening started with champagne cocktails in the conservatory, followed by a four-course banquet. Background music was provided by a variety of artists on long playing records. Toasts were drunk to Her Majesty Queen Elizabeth and the Royal Family, the Honourable Company and to all the Trophy and Award winners of 2020. After the Post Horn Gallop was played (by iPad) the Loving Cup was passed round. Liveryman Tom Eeles, a member of the T&A Committee, then read out a selection of citations of this year's winners.



Sue Jones, Julia Eeles and Chris Ford take the Loving Cup. Photo: Tom Eeles

SPECIAL BOOK OFFER

Liveryman Professor Michael Joy has generously offered to make the remaining copies of his excellent book *Upon a Trailing Edge* available to members in return for a donation to the Air Pilots Trust, through which the Company funds its scholarships. Michael's book, first published in 2015, not only takes the reader through his personal experiences as a pilot and his career as an aviation-specialist cardiologist, but also deals in great depth with the 1972 crash at Staines of the BEA Trident G-ARPI which brought him into that specialisation and his subsequent work with the CAA over 38 years. For any members who have had cause to consult Michael over the years, or are interested in how the current approach to cardiology in aviation was developed, this is essential reading.



Copies of the book can be ordered via the Editor: payment or the relevant donation (we suggest a minimum of £10.00 including postage) should be made direct to the Air Pilots Trust, Account No 53217574, Sort Code 20-41-41, quoting "book" and your surname to help reconciliation by the Office.