



56 Squadron – Home of the Firebirds

Fellow Firebirds

I am pleased to address you once more in what I plan to become a regular bi-annual newsletter letter from the Sqn, although it is sad that I must do so again within such challenging times. Since I last wrote to you, we have continued to face the unprecedented challenges of living and operating in a COVID environment. I offer my condolences and thoughts to anyone associated with our 56 Sqn family who may have been profoundly affected during this period, and I hope that we all find a way to remain safe and well until this challenging period comes to an end.

As I reflect on events since the last newsletter, I am delighted to report that our Sqn has remained extremely busy and at the forefront of some of the very latest capability development activities. Programmes such as E7, Protector and Airseeker have continued to mature and our Operational Assessment activities at RAF Lossiemouth played a significant part assuring the Royal Air Force in making a declaration of Initial Operating Capability for P-8 Poseidon. The sheer diversity and breadth of 56 Sqn activity never fails to astound me, and our personnel also continue to play a major part in thematic areas such as Space, Intelligence Exploitation, Windfarms, C2 Systems, Air Defence Radars and Remotely Piloted Air Systems.



It has also been a period of evolution and I am pleased to report the reformation of 216 Sqn which will temporarily sit alongside 56 Sqn as we conduct development work on revolutionary swarming drones. We are also expanding the remit of 56 Sqn to become a whole aircraft test and evaluation Sqn and our first Test Pilots have begun to arrive and assume their new role. It is an exciting time.



Figure 1: Westminster Abbey

In parallel, we are also seeing adjustments to our ways of working and every member of 56 Sqn has now received their own personal MoD laptop, allowing us increased flexibility to conduct our work away from the Headquarters. We have also embraced applications such as Skype and Microsoft teams, improving our connectivity and allowing us to enjoy the benefit and efficiencies of remote working.

Whilst test and evaluation remains the Sqn's core activity, as you would expect in a time of national crisis, we have also maintained our readiness to support the national effort throughout by keeping members of the Sqn at readiness to support Military Aid to Civil Authorities. We have deployed several Firebirds to various locations throughout the period in support of COVID tasks and we remain on high readiness to provide support as the situation dictates; particularly, as the requirement to support the immunisation programme becomes clearer.





As part of our last newsletter in July, I explained why we had to take steps to cancel the Sqn Association dinner in June. At that time, I hoped that in the New Year newsletter, I would be able to give you a firm commitment for the 2021 event. I am therefore pleased to confirm that we are planning for this year's event to occur on 11 June at the Assembly Rooms in Lincoln. Obviously, this occasion will be subject to the relaxation of existing restrictions, but I hope to see as many of you as possible later this summer.

As you are no doubt aware 2020 was the eightieth anniversary of the Battle of Britain, an event, which in normal times would have been the centre piece of the Air Force's ceremonial calendar. Whilst the events were certainly not of the scale of previous milestone anniversaries, The Standard, along with the Standards of the other frontline sqns of the Battle, were paraded in Westminster Abbey in a fitting act of remembrance.

Finally, to mark the pasting of the eightieth anniversary, retired Firebird Phillip Bonner has very kindly provided an excellent piece for the newsletter on the Battle and the Sqn's role throughout that period and wider involvement in the war. I would like to take this opportunity to invite all of you to write a short article relating to your time on 56 Sqn that we would be delighted to share in future editions of this newsletter.

A handwritten signature in black ink, appearing to read 'Dave Smathers'.

Dave Smathers
Wg Cdr
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Air & Space Warfare Centre

5 Feb 21





Intelligence and Space Exploitation Test & Evaluation Flight

Despite the considerable upheaval experienced over these last months, the ISX TEF has remained fully engaged delivering support to its Intelligence and Space customers. The pace of the adoption of new platforms and capabilities has not diminished, and the fight has managed to rise to the challenge. Underpinning this work is the growing emphasis on the RAF's 'ASTRA' vision, which places the exploitation of data and information at its very centre. This means an exciting future for the ISX TEF, as data exploitation is one of the core responsibilities. This ASTRA vision has already led to some promising developments.

One of these developments involves better use of information generated during each flying mission. In the era of 'big data', friendly-force information is just as critical as that of the enemy. In this spirit, specialist support has been given to the JFAC and 11 Gp to formulate a better understanding of a bespoke tool which will help the deployed Air Component Commander rapidly use data already available. Whilst still in its early stages, it is hoped that by harvesting this information faster and more accurately, detailed situation awareness can be generated to feed better predictive modelling. This support has been provided using the engineering and Intelligence subject matter expertise found within the TEF and has helped to showcase how our work can evolve and grow alongside the ambitions of the RAF.

The Space team has been similarly engaged, playing a central role in the delivery of the AURORA platform for the UK Space Operations Centre and UK Space Agency. Whilst still in its infancy, the ambitious new command and control platform will help the UK military and civilian organisations to better exploit existing Space capabilities, as well as underpin the



Figure 2: UK Space Operations Centre

capabilities of the future. Space is an exciting, dynamic and rapidly developing domain for the RAF and the UK in general. The Space team have and will undoubtedly continue to play a key role in shaping the present and future direction in this area.

These are just a couple of examples of work the ISX TEF has been engaged with. The breadth of our work encompasses numerous other exciting new developments and possible avenues to explore and I look forward to sharing some of these in future updates.





Airborne Electronic Surveillance Test & Evaluation Flight

The AIRSEEKER (AS) team all have a background operating the RC-135 Rivet Joint (RJ) aircraft, which replaced the Nimrod R1 in the UK's airborne Signals Intelligence (SIGINT) role after the R1 was retired from service in 2011. From this period, a close collaborative relationship with the USAF has developed, with UK aircrew regularly operating on US RJ aircraft on operations around the world. It was this cooperation that the AS team have been keen to capitalise on in our efforts to improve the way we do our core task of assuring the AS capability through our conduct of Test and Evaluation.



Figure 3: Nimrod R1 and USAF Rivet Joint

Using the personal and professional relationships developed through this joint operation of the RJ, the team has fostered an excellent working relationship with our USAF colleagues. This has recently resulted in the co-signing of a formal agreement between the 56 Sqn and the 55th Operations Group at Offutt AFB, whereby the RAF benefits from dedicated T&E flying on USAF jets, and the USAF gains the experience and mentorship of trained UK T&E personnel. A few notable successes from this symbiotic relationship has convinced the USAF that there is significant benefit to RJ aircrew carrying out independent assessments of

capabilities as they are integrated onto the platform. The Advanced Capabilities Mission Evaluation (ACME) team was formally stood up at Offutt in the late summer of 2020, with 56 Sqn AS personnel now firmly embedded in the organisation. Over the coming months, the ACME relationship will be further enhanced as the AS team prepare to deploy to the USA, (Feb to Apr 21), to conduct the mission system Baseline upgrade assessment of the AS capability. The team will also be afforded the opportunity to witness activity pertaining to several emerging capabilities, which downstream, will further bolster the operational effectiveness of the AS system, both in terms of ground mission exploitation and air platform capability.

The second element of the TEF, the Maritime team, have continued to progress the documentation set and trial planning for the next assessment of the Poseidon MRA Mk1 mission systems at Interim Capability Milestone (ICM). The focus for ICM will further examine and expand on the sensor assessment work that 56 Sqn conducted in early 2020 as the Poseidon Programme successfully achieved Initial Operating Capability. Sadly, the COVID pandemic has put paid to regular deployments to RAF Lossiemouth, but the team are planning to conduct a period of focused trial activity in early Spring 2021 which should satisfy several of the higher priority Acoustic and Radar trial objectives, providing further evidence to support ICM. From a Poseidon ground mission support perspective, at the end of 2020, the Maritime team distributed their trial report following their assessment of the ability of the Poseidon Tactical Operations Centre (TOC) to provide ground-based mission support and data exploitation for Poseidon missions. Several areas were identified that required closer examination; however, many new processes and procedures had been implemented which continue to enhance the mission support available to Poseidon crews in the execution of their mission. A further stage of this trial is expected to take place in Spring 21 after the TOC re-locates to their permanent accommodation in the recently completed Poseidon Strategic Facility at RAF Lossiemouth.



Tactical ISR Test & Evaluation Flight

Over the past few months, the Protector team of the Tactical ISR Test and Evaluation Flight (TI TEF) have been focusing on commencing Protector OT&E, once the ac arrives in the UK (Early 2023). If everything remains on track and with a lot of hard work, there should be a Sky Guardian aircraft (General Atomics name for the ac without UK specifics) arriving in the UK this year. This activity is being conducted as a proof of concept with potential to take part in some UK exercises. It will offer an opportunity for the Sqn to have a first look at the aircraft and identify potential issues that will affect transition to IOC. Early Feb should see the release of the Protector Integrated Test, Evaluation and Acceptance Plan which will enable the team to start developing test plans and a schedule prior to them departing for OCU slots early next year.



Figure 4: UK Protector Armed with Brimstone



Figure 5: A Pair of Shadow during RAF100 rehearsals

The Shadow Team have had a highly dynamic 6 months with numerous work strands running concurrently, mainly in support of DE&S and Air Comd. There remains a rolling modification program to convert the Shadow R1 from a legacy Urgent Capability Requirement to a core program, with additional capability added to support an ever-widening mission

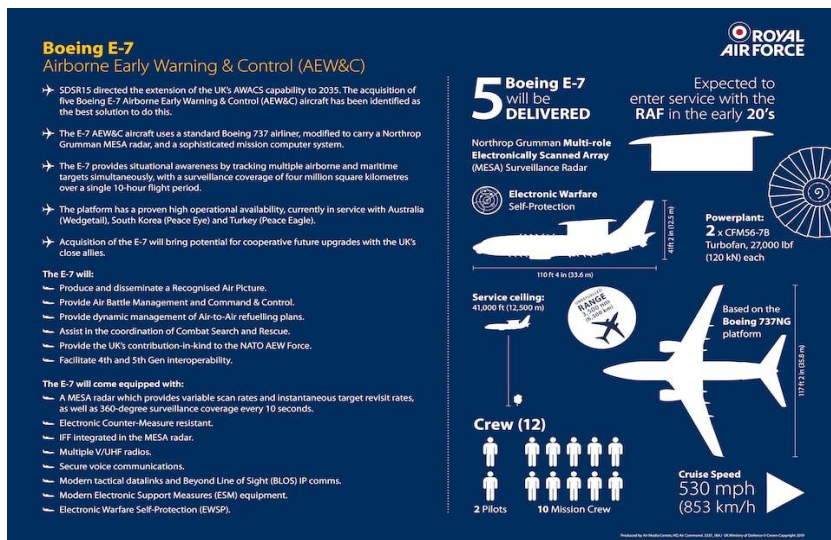
set. The program's main focus though, is to convert the existing R1 airframes to a R2 variant. The upgrade continues apace, with the team working hand in hand with DE&S, Air Comd and the prime contractor, RSL UK. The effects of COVID have obviously slowed progress and hampered the design process making the regular face to face design meetings difficult. However, the program is still moving ahead, thanks to the efforts of all involved. Whilst the design phase is progressing, the need for OT&E is still some years off, so we will temporarily say a short farewell to the team as our Sqn Shadow pilot departs to undertake the Class A test pilot course at ETPS and our mission specialist rear-crew is also briefly being detached from the Sqn to take a more direct role in supporting DE&S in the design phase and the creation of the Integrated Test & Evaluation Plan.

Whilst the team are currently employed elsewhere within the program, once the Combine Test Team is stood up, for which 56 Sqn is a key stakeholder, we'll be primed and ready to provide SEQP personal in the crucial area of T&E.



Wide Area Surveillance Test & Evaluation Flight

For the last few years, the Airborne C2 team within WAS TEF have been heavily involved, providing Subject Matter Expert (SME) advice and input to Air Cap, in the plans and requirements to upgrade and develop the RAFs Airborne Early Warning and Control (AEW&C) capability. Originally planned as the E-3D Capability Sustainment Programme, it was decided that significantly better value for money would be realised by investing in the procurement of a newer, modern aircraft rather than upgrading the ageing E-3D fleet. Following the decision to purchase the Boeing E-7 Wedgetail, 56 Sqn personnel have continued to be closely involved with the programme; as part of the Combined Test Team, currently developing the Integrated Test, Evaluation and Acceptance Plan and continuing to provide SME advice in key areas of development, such as Tactical CHAT Communications, Sensors and Electronic Support Measures. In announcing the decision, the Defence Secretary stated “The E-7 provides a technological edge in an increasingly complex battlespace, allowing our pilots to track and target adversaries more effectively than ever. This deal also strengthens our vital military partnership with Australia.”



56 Sqn have forged links with, and received outstanding support from, our counterparts in the RAAF and currently have personnel on exchange in Australia, working on RAAF Wedgetail trials activity, who will bring valuable knowledge and experience back to the UK to support the introduction of Wedgetail into RAF service. One of the key enablers for E-7, and all ISTAR platforms, is the

Figure 6: E-7 Wedgetail Mission Concept

emergence of Tactical CHAT as the primary means of C2 communications. As an operational theatre entry requirement, Internet Relay CHAT protocol provides commanders with the ability to deliver near real time, secure communications throughout their area of responsibility, thus enabling them to manage the battlespace and ensuring that assets have the correct information in a timely manner. The lack of an indigenous CHAT capability within UK Defence has been a capability gap widely known about within Air and Strategic Command for a significant period. Our Airborne C2 Team Comms SME saw this gap and, under his own initiative, developed a prototype Deployable CHAT Ground Entry Point (GEP), predominantly from surplus or discarded components. Over the last few years, he has continued to develop this capability to the point where we now have a fully functioning ISTAR CHAT GEP located at RAF Waddington. This is a significant capability that has utility not just for all ISTAR platforms, but across Defence.

This is a busy and exciting time for WAS TEF as we continue to support the E-3D up to its Out of Service Date, whilst increasing support to the E-7 Wedgetail programme and planning for the Operational Assessment of the full capability when delivered over the next few years.





Aerospace Battle Managers Test & Evaluation Flight

56 Sqn have been involved with Counter-small Unmanned Air System (C-sUAS) trials for the last three years. If you think back to the problems and disruption caused by these air systems at Gatwick and Heathrow around Christmas 2018, you can understand the importance of developing effective protection and counter measures to them.

The ABM TEF have successfully completed 13 C-sUAS trials, but in that time the size a scope has changed markedly. Initial trials were conducted with the sponsor contracting in (expensive) civilian pilots to fly serials under our control. However, after being gifted our own Unmanned Air Systems (UAS), 56 Sqn are now capable of planning and running these trials, but also providing platforms and pilots to support the activity, making the Sqn completely self-sufficient. The drones owned by the Sqn are reflective of worldwide commercial market sales and have been named after 56 Sqn Fighter Aces from WWI. This approach provides significant cost savings to trial sponsors but does come with additional burden on the Sqn.



Figure 7: Sqn UAS



Figure 8: Sqn UAS Operators

The Sqn must adhere to guidelines laid down by the Military Aviation Authority regarding the operation of our UAS as well as ensuring our pilots are correctly trained and remain current on the systems. Any new platform, either purchased or are given to the Sqn, must come from an approved list of UAS manufacturers, cleared for use and added to our standing Letter of Endorsed Categorisation. Details of the new system, including its specifications and operation parameters, are recorded as an entry in the 56 Sqn Safety Check List (SCL). This document is effectively our operating manual, laying down the rules and procedures we are to adhere to for us to remain current and compliant.

A key requirement, and often a potential pinch point, is pilot training and currency. UAS operator training although not difficult, needs to be conducted by suitably qualified personnel. This can be done by either securing a place on a 700X Naval Air Sqn course or paying a private company. Once qualified the SCL lays down the minimum flying an individual is required to complete to maintain currency, although finding time and space to conduct the flying isn't always straightforward. Whilst we have a standing agreement with ATC at RAF Waddington to allow flying to occur on the station, airfield constraints can often prove to be quite limiting. A better solution is to use Beckingham Ranges which allows a greater variety of flying and provides the assurance of permanent NOTAMs and good availability when it is not being used for live firings.

The ABM TEF will continue to face new challenges as we move into the new year and another national lockdown, but we are in a good place and look forward to continuing support to C-sUAS capability development across the wider Defence community.



Flying Test & Evaluation Flight

A new addition to 56 Sqn since the last newsletter has been the creation of a 'Flying TEF' alongside the existing elements. As part of the Air & Space Warfare Centre's vision for how future testing of the ISTAR fleet of aircraft will be carried out, 56 Sqn will shift from being solely responsible for Mission System trials on the aircraft, to take on a wider remit. ISTAR aircraft work that is currently done by 206 Sqn at RAF Brize Norton, such as flight deck upgrades, flight envelope expansion, weapons carriage or performance data gathering, will be carried out by 56 Sqn. The aim of this is to integrate all of the aircraft testing in a single unit, to improve focus and give the ability to carry out complex, whole aircraft trials on platforms such as the P-8 Poseidon, or E-7 Wedgetail where pilots and mission crew tasks need to be assessed in unison. Having all the Test and Evaluation elements based alongside the Force Headquarters at RAF Waddington will also ease communications and help when it comes to working with the Front-Line Sqn.



Figure 9: E-7 Wedgetail over the Skies of Lincoln

Delivery of this change, which will see 56 Sqn return to flying aircraft in its own name again after a significant hiatus, is substantial and will not happen overnight. Initial work has seen a Test Pilot Flight Commander added to the Sqn strength in order to plan and oversee the transition. The TEF will then grow to add Test Pilots and Flight Test Engineers to specialise in the various ISTAR Platforms and integrate with the wider trials teams on the Sqn. Flying, both for testing and currency, will become a small but significant activity in the day-to-day business of 56 Sqn, supported by an operations staff team and working closely with those Front-Line personnel who have considerable experience on the platforms. As a result, it should not be too long before a 'Firebird' callsign will be heard again in the skies of Lincolnshire.

Reflections on the Battle of Britain

It is unfortunate that the restrictions imposed by the COVID 19 pandemic curtailed the commemorations for the 80th Anniversary of the Battle of Britain, a battle in which 56 Squadron played such a vital part. As the year draws to a close it is therefore perhaps appropriate that we take time reflect on those men who flew for our freedom back in the summer of 1940.

At the outbreak of war 56 Squadron was based at North Weald within 11 Group. At that time the AOC of 11 Group was Air Vice Marshal Leslie Gossage. The AOC was no stranger to 56 Squadron, having been its first Commanding Officer back in 1916. The Squadron took part in the Battle of France and then spent a brief spell at Digby before returning to North Weald in time for the start of the Battle of Britain in the July. On 1st September 56 Squadron moved to Boscombe Down in 10 Group. Sir Quintin Brand was AOC 10 Group and was also familiar with the Squadron, as he had commanded 56 Squadron in the 1920s.



Figure 10: 56 Sqn - 9 May 1940

Forty five pilots are listed as having flown with the Squadron over the period of the Battle, a full list can be found on the Association website at www.56sqnfirebirds.org.uk. Included in the list is Wing Commander Victor Beamish, the Station Commander at North Weald, who flew regularly with the Squadron. One of four brothers from Ireland who served with distinction in the RAF, Victor was awarded the DSO in July 1940. A Cranwell Flight Cadet, he died on operations in March 1942 and is commemorated on the Runnymede Memorial.

Fourteen of the pilots were SNCOs, some of whom had joined the RAF Volunteer Reserve as trainee pilots under the scheme established by Tedder in the late 1930s. Other SNCO pilots had joined the RAF under the Apprentice Scheme and subsequently applied for pilot training. The most notable of these former Apprentices was 'Taffy' Higginson who became an 'Ace' and was one of three SNCOs on 56 Squadron to be awarded the Distinguished Flying Medal during the Battle.



Figure 11: 56 Sqn Hawker Typhoons

He was subsequently commissioned and remained on 56 Squadron, taking part in fighter sweeps over France post the Battle. He was shot down in 1941 and became a prisoner of war but escaped and remarkably got back to England where he re-joined 56 Squadron, by then flying the Hawker Typhoon. Another Firebird who was shot down over France in 1941 was not so fortunate. Thomas Guest flew

with the Squadron in the Battle when it was based at Boscombe Down. He was subsequently shot down over France in April 1941 and captured. Whilst he was not able to escape like Taffy, during captivity he became a camp tailor, making civilian clothes for various escapees, including the participants in the Great Escape.

One of Trenchard's initiatives was the establishment of University Air Squadrons (UASs) which encouraged undergraduates to become air minded. At the outbreak of war graduates

from the UASs provided a pool of semi-trained pilots who were called up for advanced training. Two such pilots found themselves posted to 56 Squadron. Michael Constable Maxwell had been a member of Oxford UAS and on graduation he applied for a commission in the RAF. His brother Gerald had served on 56 Squadron in World War One. Michael joined the Squadron in April 1940 at North Weald and subsequently saw action in the Battle for France as well as the Battle of Britain. Geoffrey Page, the nephew of Sir Frederick Handley Page, studied engineering at Imperial College and had been a member of London UAS. Called up at the outbreak of war, he joined the Squadron when it was briefly at Digby at the start of June 1940.

As the Battle of Britain progressed, Fighter Command was in desperate need of replacement pilots and volunteers from Bomber Command were quickly given conversion courses onto Hurricanes. In early September three such volunteers joined 56 Squadron. Ronald Ray, Victor Heslop and Donald MacKenzie had flown Fairey Battles with 142 Squadron and had seen action in France earlier in the year. Donald was a New Zealander who transferred back to Bomber Command and subsequently lost his life whilst on operations with 467 (RAAF) Squadron flying over Germany.



Figure 12: 56 'Punjab' Sqn - 2 Jan 1942

He was not the only overseas pilot to serve with 56 Squadron. Leslie Graham was South African whilst Robert Edwards was Irish. Two Czechoslovakian pilots flew with the Firebirds, both joining the Squadron on 8th October 1940. Joroslav Himr survived the Battle but died on operations with 313 Squadron in 1942. Jaroslave Hlavac had escaped from his homeland and joined the French Air Force before eventually reaching England. On only first operational sortie with 56 Squadron he was shot down and killed. Of the four Poles who served with the Squadron during the Battle both Zbigniew Nosowicz and Gustav Radwanski survived the war, whilst Maurice Chelmecki was only on the Squadron for eleven days before being posted to 17 Squadron. Unfortunately, Wilhelm Szafraniec died in a flying accident in November 1940.



Figure 13: Maurice Mounsdon

Five of the Squadron's pilots were badly burnt during the Battle. Fraser Sutton spent a year in hospital recovering from his burns but returned to operations and finally retired from the RAF in 1961. Innes Westmacott was also able to return to flying duties. Peter Davies recovered from his injuries but was only cleared fit for non-operational flying only. Maurice Mounsdon, like Geoffrey Page, joined 56 Squadron

at Digby in June 1940. He was shot down in the August over the skies of Kent and suffered burns to his legs and hands. He spent almost a year recovering from his wounds and spent a period at the Queen Victoria Hospital at East Grinstead, which qualified him as a 'Guinea Pig'. He returned to flying duties as an instructor and subsequently retired to Menorca. Maurice was the last surviving member of 56 Squadron who flew in the Battle and died on 6th December 2019, aged 101. Geoffrey Page was the most seriously burnt pilot on the



Squadron. In early August he was shot down over the English Channel and spent two years in hospital. He was a founding committee member of the 'Guinea Pig Club'. Initially cleared for non-operational flying duties he eventually returned to operations. He had vowed that he would destroy an enemy aircraft for each of the 15 operations he had to undergo, a vow which he fulfilled gaining a DSO and DFC and Bar in the process. His biography 'The Tale of a Guinea Pig' was published in 1981 and was reprinted as 'Shot Down in Flames' in 1999.



Figure 14: 56 Sqn, Probably late 1940

It would be remiss not to pay tribute to the Squadron's ground-crew, who worked long hours in maintaining the Hurricanes. They quickly carried out operational turn-rounds, did battle damage repairs, helped the wounded pilots out of the aircraft and felt the losses when aircraft failed to return. They also played their part.

However, the Squadron's heritage is more than a Roll of Honour and a Battle Honour on its Standard. It was a Firebird, Geoffrey Page who was the inspiration behind the National Memorial to the Few. He founded the Battle of Britain Memorial Trust which led to the monument at Capel-le-Ferne which was unveiled in July 1993. Geoffrey subsequently received the OBE. He died in August 2000, 60 years after he was so badly burnt.

Those Association members who flew the Phantom F-4 might be interested in reading Air Marshal 'Black' Robertson's autobiography **Fighters in the Blood**. The Air Marshal initially flew the F-4 in the ground attack role but was posted to 56 Squadron as a Flight Commander when the Squadron transitioned from the Lightning to the Phantom in the air defence role. He subsequently commanded RAF Wattisham when the Squadron was one of the resident squadrons. An interesting read, it is published by Pen & Sword.

Phillip Bonner Nov 2020

