



UK CHAPTER NEWSLETTER

April 2023

New Financial Year - New Editor

April sees the start of a New Financial Year and the start of the Term of Office for the President of the UK Chapter - this is therefore the first Newsletter to be produced since I was elected to the post. Having spoken to Chris Howe MBE and 'Swaz' Bramley, I decided that I would take over the duties of Editor of the Newsletter, at least for most of this year (I haven't decided if that is the Calendar year or the Financial Year).

I intend to follow the successful format of the Newsletter that Chris created for us, introducing some new features and web links as and when it seems useful or requested by the Chapter members.

The impact of the Pandemic on ways of working and communicating was dramatic. Personally, I am not sure of the long-term effects since we are already seeing some reversion to pre-pandemic behaviours. However, I have also noticed that some people and organisations have moved their debates and dialogues to on-line (and more interactive) platforms including Twitter, LinkedIn and WhatsApp. These have their place and may form part of our communications in future, but there are also risks (as seen by some of our politicians!). Consequently, I sincerely support the view expressed by Chris in the last Newsletter when he said "I hope that 2023 will allow many more of our members to resume our frequent gatherings, events, and of course friendships once again". I hope to be able to provide details about forthcoming visits soon.

Personal Message from the President - Steve Roberts

I was delighted to be elected as President of the UK Chapter of the AOC at the recent AGM ([Link to AGM Minutes](#)). I was surprised to be asked by Phil Davies to stand for election and then to be nominated by a group of people I have known and respected for some years. I worked with most of them. I have learnt from them. I think some of them learnt something from me. Above everything, they are all (like me) passionate enthusiasts about this thing we call EW... or is it EMSO now? - or is it CEMA? Whatever it is called, I know that all of the membership have played a part in its development. I am determined that I will use my term as President to preserve all the good things about the Chapter and help it to develop and grow into the future.

As part of the election process, I produced a manifesto in which I outlined 5 main aims:

1. **Build the Chapter's standing and influence** by using our experiences and understanding of EW, EMSO and CEMA.
2. **Maintain the Chapter's roles** in preserving and applying the knowledge and experience gained through real operations.
3. **Secure recognition of the Chapter** and its members within the wider community by attending conferences and through awards.
4. **Develop a Strategic Plan for the Chapter** to build on our present position while supporting and influencing the wider AOC aims.
5. **Support the new generation of EW professionals** working on strategic programmes such as Tempest, MEWP and Cornerstone and encourage them to take an active role in the AOC.

Under each of these aims, I put some comments to explain my experience of working in our field, why I had chosen the aims and why I wanted to be President.

Heritage played its part - I am the 5th generation of my family to work in what we now call Information Operations. My father was in the Royal Signals before he worked at Marconi on the Skyshadow ECM pod. My grandfather had been in the Royal Engineers Signals Service and was one of the first Foreman of Signals in the newly formed Royal Corps of Signals. What I didn't know until recently was how many of my direct relatives going back at least 5 previous generations had served in the Engineers or Signals from the mid-19th century. It now explains why I grew up surrounded by technical stories and pieces of electronics.

My career was inevitably heading towards the Signals when I did some work experience at Marconi before going to university. This convinced me that I wanted to be a scientist or engineer (aka 'Boffin'). I worked with Marconi/GEC/BAE Systems/Selex/Leonardo (all just name changes of the same organisation) for 45 years, of which 35 were directly associated with EW. My 10 years as Strategy Director for Leonardo Electronics included EW but also covered other forms of defence & security electronics. During my career, various members of the AOC provided me with guidance, advice, & information. The clinching factor in accepting the nomination to be President was remembering this support and the people who had given it to me. So it's really important to me that we are able to provide similar support to the next generation of EW professionals.

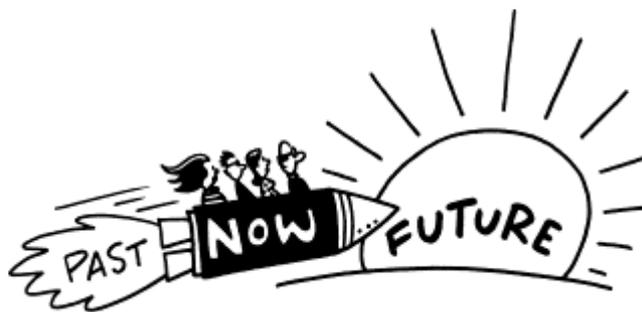
Alongside my 'normal' employment, I did other roles in the EW community. These included trials of EW equipment, evaluation of various systems, supporting operational deployments, and serving as chairman of the UK's EW Tower of Excellence. I spoke at conferences, sometimes for my employer and sometimes as a representative of British or European Industry (usually when put forward by AOC Board members). The UK has a strong capability in our field with a small number of big players and a large number of highly talented SME (in both senses of the acronym). We have a role in showcasing these capabilities and getting them recognised. (*See later section on Awards*)

UK Chapter of the AOC - Past, present and Future?

At the end of the AGM, I was given the opportunity to address the attendees. I reflected on why I was pleased to be in post (as noted above) and mentioned an approach we could use to assess various options for how we might achieve the aims I set out. A video of the address is available (for a few months at least) through this link: [Address to AGM by Steve Roberts](#)

The UK Chapter celebrated its 50th anniversary last year. Looking back over those 50 years reminded us of the people we knew, the events we experienced and the technologies we used. We probably also recalled some of the things we worked on in the past that were predicted to be the game-changers of the future; some of them didn't live up to their promise (Bragg cell receivers being one I remember), while others are now commonplace (such as DRFM). Some members may have been thinking about the future of EW and the ongoing discussions about its convergence or divergence with cyber and directed energy technology (my own simplistic opinion is that Information Operations and electromagnetism have always co-existed, whether the system in use is wired or wireless and whether it uses light, current or fields).

The things happening 'now' are the result of the things that happened in the past and the things that will happen in the future are often the result of what is happening in the present. This concept that we are sitting at the nexus of the past and future is illustrated by this cartoon.



We are riding on a journey. We should have a pretty good idea of where we are (assuming that we have alternative methods to cater for the case where our GPS has been jammed). We have a lot of knowledge about how we got to where we are (although there are probably multiple views on that trajectory from different observers and participants). We also know that we are heading to the future - we don't know if that is a melt-down, or a journey to a brighter place, or somewhere between these two extremes. But, informed by the past, we can try to control our path into the future; we may not have complete control but we probably shouldn't just follow an inertial trajectory. This is why my aims included the creation of a Strategic Plan for the journey; I want to use my term in office to start the process of thinking about the future to ensure that the 75th and 100th Anniversaries of the UK Chapter are events that current and future members will plan and remember.



My proposal to the Board is that we should spend the rest of the 2023 calendar year considering options for the future. We will need to consider all aspects that are covered by our Constitution and look at how these have operated in the past and present and then imagine how we hope they will operate in the future. From this we should be able to identify a small number of short-term actions that we can achieve in the next year or two and some longer-term ones that can be aspirations for future years. Ideally, we could repeat this process every few years, modifying things as the future reveals itself.

My intention is that we will engage with the members of the chapter over the course of the year and that we will present the findings and recommendations of the process at the AGM in 2024. As the first stage of this engagement, I should be interested to hear from members who would be interested in helping with the process.

Awards

AOC Annual Awards

Many members of the UK Chapter have been honoured to receive awards from the AOC, recognising their contributions to the development and support of what we do. The awards are usually made at the main AOC conference in the USA, or at our Chapter's Christmas Dinner. A full list of previous winners of the AOC Awards can be found by following this [Link to UK Chapter Hall of Fame](#).

Time is running out to submit nominations for this year's Awards. The closing date is April 30. Details can be found on the main AOC website [Link to AOC Annual Awards](#)

The UK Chapter has successfully submitted nominations and can provide advice to those who are planning to submit them this year. It would be really useful if you could keep our Awards team informed on any nominations that you make (we will keep these confidential). Please contact [Jon \('Swaz'\) Bramley](mailto:jonathan.bramley@jd2e-isr.com) (jonathan.bramley@jd2e-isr.com).

UK Chapter Awards

The UK Chapter makes a number of awards on an annual basis to units or individuals; most of these are associated with identified military activities or courses related to EW. We have a good and established process for managing these awards.

The Board can make additional awards for specific actions associated with EW, or long-term contributions to the field. These awards are made to members of the Military, Government Employees, Industry or Academia. The process will be managed by [Swaz](#) and [Bill Preece](#), who will be the primary contacts for nominations. However, you can also make suggestions or discuss possible nominations with any member of the Board. [Link to UK Chapter Awards](#)

The Journal of the Royal Corps of Signals

Since the 1930s the Royal Signals has published a professional periodical to encourage debate and to foster the professional well-being of the Corps and to contribute to the development of the delivery of CIS. More recently this remit has (rightly) widened to more formally include cyber and electromagnetic operations. Together with the activities of its Institution, the Journal contributes to thought leadership of the Army's digital profession. Articles, reports and reviews are varied – something for everyone – and contributions are welcome from serving, retired and industry members. Anyone wishing to submit an article is welcome to discuss their subject with the Editor, [Col Andy Percival](#) (see page 1 of the Winter 2022 issue).

Any AOC Member who would like to receive a personal hard copy of the twice yearly Journal should also enquire to the Editor. [Link to Col. Andy Percival](#)

(The current issue of The Journal is Volume 41 Issue 2 for the Winter of 2022. It can be found by following the link below. It includes many interesting articles about the current and future activities of the Corps, along with an article originally published in 1995. This article covers a lot of ground about the 'Fifth Dimension of Warfare' - essentially Information Warfare including what we now call CEMA and EMSO.)



{Just in case the picture link doesn't work for you, the full address is below; which is also a hyperlink!}

<https://royalsignals.org/royal-signals/wire-and-journal/95>

Latest EW News Roundup

(Kindly supplied by Dr Thomas Withington – Writer and analyst, editor of the Armada International EW webpage and newsletter)

New Electronic Warfare Suite Top Feature Of F-35 Block 4, Air Combat Boss Says

Few details reach the public domain regarding the capabilities of the Lockheed Martin F-35 series combat aircraft's electronic warfare suite. This recent article in The Warzone is the exception. It provides some fascinating insight into the ever-expanding capabilities of this enigmatic aircraft.

<https://www.thedrive.com/the-war-zone/new-electronic-warfare-suite-top-feature-of-f-35-block-4-air-combat-boss-says>

Three rules for peace in orbit in the new space era

Space continues to grow in importance in the civilian and military domains alike. This poses growing challenges to space-fairing nations regarding 'rules of the road' to ensure all can use the heavens safely and responsibly. This article in the Space Review sets out some useful guidelines on how this could be achieved.

<https://www.thespacereview.com/article/4538/1>

'The Frequency Hopping System Really Works' The Ukrainian Military From Bakhmut

It has been around for a while, but it still delivers the goods. Frequency hopping is proving its worth in the Ukraine theatre of operations, particularly regarding Uninhabited Aerial Vehicle (UAV) operations. The war is now highly characterised by UAV use, but Ukraine's employment of frequency-agile radios is helping frustrate Russian jamming.

<https://www.suasnews.com/2023/02/the-frequency-hopping-system-really-works-the-ukrainian-military-from-bakhmut/>

Futuristic Chinese military unit most likely behind balloon campaign

Recent sorties of intelligence-gathering balloons and other 'unidentified flying objects' underline the great power rivalry between the People's Republic of China and the United States. As well as bringing the work of the Canadian-US North Warning System and North American Air Defence Command to the fore, the incidents highlighted the activities of China's secretive Strategic Support Force (SSF). The SSF is tasked with performing operational- and strategic-level information warfare.

<https://asia.nikkei.com/Editor-s-Picks/China-up-close/Analysis-Futuristic-Chinese-military-unit-most-likely-behind-balloon-campaign>

Protecting America's Power Grids From EMP Attacks

The revival of great power competition has meant the revival of other Cold War hallmarks like the Electro-Magnetic Pulse (EMP) threat. There is a renewed interest in the United States, the UK and elsewhere in protecting critical national infrastructure against the EMP threat. Several innovative technologies are coming to the fore with this threat in mind.

<https://www.forbes.com/sites/arielcohen/2023/03/20/deflating-the-emp-danger-to-americas-power-grids/>

Russian IADS Redux Part-1: Resonating with Resonance

A new series of articles has been launched examining Russia's strategic integrated air defence system. Part one looks at the Russian Air and Space Force's Resonance-N/NE early warning radar. This is being deployed across the Russian arctic, and is also winning orders on the export market.

<https://www.armadainternational.com/2023/03/russian-air-defence-systems-part-1-resonance-radar/>

Opportunities for Members

Background

The Chapter has played an influential role in the careers of its members and has acted as a focus for maintaining our collective history. More recently, we have provided a mechanism for businesses to publicise career opportunities. During the election for the role of Chapter President, Jonathan Farrington made the case that we could also provide ways to encourage Academia and SME to grow their contribution. This, along with helping Early Career activities, will be something that the Board will be investigating and reporting on in future newsletters.

Leonardo Combat Air AI Challenge

In the period 2016-2020, I was leading some of the Future Combat Air activities for Leonardo, working alongside colleagues from BAE Systems, Rolls Royce and MBDA. The concepts we developed were launched at Farnborough 2018 as the Tempest programme, which has recently expanded to become GCAP. I received this message from Leonardo through my LinkedIn page:

"Leonardo UK is inviting UK-based Small Medium Enterprises (SMEs), start-ups and academia to participate in the Combat Air AI Challenge to harness disruptive technologies, such as Artificial Intelligence (AI), for the Global Combat Air Programme (GCAP): the mission to build the next generation combat air platform for the UK, Italy and Japan by 2035.

The Combat Air AI Challenge is a joint endeavour with Ministry of Defence (MOD) Defence Science and Technology Laboratory (Dstl) and is closely related to Leonardo UK's work within GCAP, which is to develop and deploy Integrated Sensing And Non-Kinetic Effects (ISANKE) and Integrated Communication Systems (ICS). The ISANKE super-system is a complex network of capabilities that sits across the combat air domain and, whilst co-ordinating numerous sensors, assimilates information into a common situational awareness picture as part of an integrated offering."

[\(Link to Leonardo Combat Air AI Challenge\)](#)

Input from Members

As the new Editor of the Newsletter, I would be really happy to accept articles written by members or links to interesting items on the web. I am also sure that some of you have favourite websites for news and information - if so, let me know and I'll share them in future newsletters, or put some links onto the website.

{As an example, Ian Fish sent me this link to an interesting article on Cyber support to Ukraine: [Link to Aspen Institute article on Cyber Support](#) }

My alter-ego (the incoming President) would like to hear comments, opinions and questions about the newsletter, website, the Chapter or AOC. I will answer, or find answers to, any inputs that I receive.

Future Events/Visits

- **AOC Europe 2023** – Bonn, 15 - 17 May 2023
 - <https://www.aoceurope.org/>
- **EW Technology Conference 2023**- Shrivenham, 6 - 8 June 2023
 - <https://www.cranfield.ac.uk/events/symposia/ewtc>
- **UK Chapter Xmas Dinner** - RAF Club, London - 8 December
 - **Save the date! More details to follow.**

Bottom-line message

I have enjoyed writing this newsletter and hope you find something of interest in it. I have benefitted from being an AOC member, but had never got involved in the management of the Chapter. I can now see how much is down to the enthusiasm, knowledge and skills of the Board members. I am looking forward to working with them all. I will be relying on 'Swaz' Bramley, who stepped in to lead the Chapter this year, to manage me through the introduction to my new roles.

Above all, I am really grateful to Chris Howe MBE for all that he has done for the AOC and the UK Chapter over so many years. Chris unexpectedly took over the Presidency from John Clifford OBE and led us through the difficult times of the past three years; this was definitely over and above the normal duties of our Vice President. We all owe Chris a huge 'thank you' for his work and we wish him well as he continues to manage the journeys of his other ships. I hope that he will find time to dock and have a run ashore with us at many future Chapter events.

Steve Roberts

AOC UK Chapter - President - Email: steve.vespasian@gmail.com

Keep Checking out the UK Chapter website at: www.ukaoc.org