Widespread reports in the media, supported by evidence from the National Audit Office, suggests that the defence budget is once again heading for a very large, multi-billion shortfall. The 2015 Strategic Defence and Security Review was praised by industry and within the Services for reversing some of the most damaging capability reduction decisions in the 2010 SDSR, and for pledging to increase defence spending in each of the next three years by £500 million, while allocating £10 billion as a defence contingency to allow for increases in current programmes and new requirements that may result from unexpected threats. However, a combination of factors is already consuming this contingency fund much faster than was envisaged, and either a significant further increase in the defence budget will be needed or additional cutbacks or postponements will be required in the coming years. Almost all the MOD’s biggest defence programmes have continued to increase in cost, and now the falling overseas value of the pound is causing considerable concern as such a high proportion of the largest future equipment programmes is to be procured in dollars from the USA, with many contracts yet to be signed off.

The short-falls in predicted recruiting and training targets have impacted on many highly specialised skill areas, with high-cost bounties having to be offered to retain or tempt back personnel. As demanding training and operating experience cannot be re-generated over the short term, greater dependence on overseas training, outsourced services and the use of seconded personnel from allied nations is increasingly being adopted to fill gaps, with expensive efforts required to reverse the “cycle of decline” that has emerged throughout all three Services. The Royal Navy has been hardest hit with the well-publicised technical problems of the six Type 45s (the only destroyers remaining in the service) and their resulting availability issues adding to the general lack of surface warships. The first of the new class of Type 26 frigates are only now being laid down in the shipyard after nearly a decade of planning, with numbers reduced to only eight and five supposedly cheaper Type 31 Frigates are still only at the design stage. Meanwhile the RAF has seen its old but still highly capable Tornado GR4 force reduced in size years ahead of a similar number of replacement F-35s and Typhoons becoming available with long-promised new weapons. So far, just 14 F-35Bs are on order to replace 100 withdrawn Harriers and Sea Harriers and some of the once 130 strong Tornado GR4 force. The extra two Typhoon squadrons promised in the 2015 SDSR to bolster air defence, and to release newer multi-role Mk3s to replace the Tornados, are yet to reform and the in-service dates for new and upgraded aircraft types are all under threat of more delays, to spread out costs, though planning for them is proceeding well. But as the RAF prepares to celebrate its Centenary next year, its manpower and combat strength is now at its smallest size since the early 1920s.

ANOTHER DEFENCE CRISIS LOOMING?

The RAF has disbanded the Tornado GR4 in its operational training role with No 15(Reserve)Sqn. (Crown copyright RAF photo)
The Air League
Appointment of a Development Director

The Air League (formed in 1909) is a not-for-profit organisation, currently with an office in Central London. The Trustees are looking for a Development Director to take the lead and proactively secure and manage the induction of new and retention of existing corporate members.

We anticipate that the new director will work closely with Trustees and the Council of the Air League in the task required.

Working with the CEO and for the Trustees, the successful candidate will be a key player in the growth and long-term development of the Air League. This will be achieved not only by improving membership and benefits, but also through input to and implementation of the charity’s strategic plan.

Background to the Air League

The Core Purpose of the Air League is to be “an influential champion for aviation and aerospace in a challenging global environment.”

• The Air League provides opportunities, through key events, that showcase British Aviation, Aerospace and their part in Security (AAS). These events involve the key players in AAS.

• The Air League promotes a broad understanding of the benefits and opportunities that AAS delivers to promote the UK on a Global basis. By doing so, we highlight the technical, innovative, entrepreneurial skills associated with AAS. We work to show how the sectors are politically astute and at the heart of wealth-creation for the UK.

• The Air League engages and works with the next generation. Promoting the significant career opportunities available in AAS industries through scholarships, bursaries and a thriving ‘Leading Edge’ section, we work hard to ensure we support all parts of the community in the UK.

What are we looking for:

The successful candidate will have a record of dynamic leadership and experience in working with and presenting to senior level managers, having contributed at a senior level within the military, industry, or both. Indeed, the successful candidate should have a deep understanding of the Aviation and Aerospace sectors. Candidates need to be confident as an ambassador and ‘face’ of The Air League, and have exceptional interpersonal skills, with the ability to work with multiple stakeholders at various levels.

The Air League requires candidates to show an entrepreneurial approach to the task and be innovative, self motivated and easily able to work well on their own.

Experience of Trusteeship of a Charity, with knowledge of 3rd sector governance, would be an advantage as well as demonstration of a network in the Air League’s business sectors.

The Development Director will be expected to contribute to strengthening the governance arrangements of The Air League.

More focus areas for the role

1. To develop, with Trustees, a detailed Corporate Membership capture and retention programme.

2. Raise the organisation’s profile by attracting and involving interested parties input to the Air League’s long term Strategic Plan.

3. To implement and manage a viable Customer Relationship Management Relationship (CRM) process.

4. Thereby, to deliver new members, particularly corporate members and continue to develop the Strategic Plan.

5. To attend, implement and build Air League outreach programmes.

6. Work with the Trustees to ensure current outputs continue to be delivered to our members and the wider community of new members.

7. To engage with and promote activities through social media platforms.

Terms and Conditions

The post, initially for one year, is part time. A competitive performance-related remuneration with expenses will be offered. It is anticipated that a flexible working arrangement will be agreed, but there will be a need to visit the London Office to engage with existing staff to progress projects. In addition the Development Director will be expected to report to the Chairman, and work with, Trustees and Council Members on the Campaign aspects of the job.

In the first instance please apply to:
Andrew Brookes, Chief Executive, The Air League, Broadway House, Tothill Street, London SW1H 9NS, or by email to andrew.brookes@airleague.co.uk.

www.airleague.co.uk
COMMENTARY by Aeronautica

WHO WANTS INNOVATION?

E veryone in the aerospace sector, civil or military, will read many articles on exciting aircraft projects featuring out-of-the-box innovative designs that could revolutionize how we might all be flying in the future. June traditionally throws a focus on what is happening at the Paris Air Show, which every other year hosts the largest gathering in one location of aviation and space companies. The scale of the largest industry exhibitions just keeps expanding, as can be seen around the world, with new exhibition centres and displays offering bigger and better facilities all the time. But with very few all-new aircraft emerging from one show to the next, interest among professional visitors inevitably turns to less obvious new developments, which are to be found in the specialist areas of the exhibition halls, or within company chalets. Here can often be seen the results of advanced studies carried out by start-up companies and University spin-offs, where original ideas have been turned into practical (and sometimes not-so-practical) design concepts. With the support of government technology grants, regional innovation incubators and corporate-supported advanced science and engineering centres, closely linked to academia, these generators of new technology are playing a vital role in ensuring that tomorrow’s aerospace industry remains internationally competitive and alert to the future needs of the customers.

In recent times the aerospace sector has truly transformed itself out of all recognition in terms of how it designs, manufactures and delivers new products. The coming of composite materials has changed forever the nature of aircraft structures and now 3D printing is allowing ever larger and more complex components to be made. Increasingly sensors and sub-systems can be embedded in these structures, reducing weight and allowing unorthodox construction methods to be adopted. In the years ahead these developments, linked to more digitization, with artificial intelligence, will not only speed up assembly time of complete aircraft, but also make flying safer by offering automated self-diagnosing problem-solving and built-in sense-and-avoid systems, which will no doubt become an essential building-block in the next generation of global air traffic management systems. The well-funded Primes within the industry will continue to invest in improved products, and this will cascade down to the multi-tier suppliers who will continue to be expected to pick up the challenge of responding to varying delivery rate demands with continuously improving product solutions. So long as there is competition at all the appropriate levels, then everyone in the manufacturing cycle will be motivated to keep coming up with more practical innovation that can help keep aviation affordable and safe.

So who actually wants innovation? The answer is probably that customers want the results of innovation but not innovation for its own sake. Certainly, both Boeing and Airbus are investing heavily in future technology while at the same time putting maximum effort into making sure their existing products continue to appeal to global airlines. For years there have been efforts to try and put together a sound technical design for a new supersonic civil aircraft, but so far the business case for it is unproven. This might emerge as a new executive jet, or even a 50-seat passenger SST, but the big stumbling blocks remain the sonic boom issue and the lack of a modern engine that can provide enough power for supersonic speed and also meet noise and emissions requirements – and an acceptable level of fuel efficiency. Even if this mix of performance challenges was overcome, only a relatively few individual customers would be able to afford to operate such an aircraft, and it is difficult to imagine any airline being willing to take such a gamble. Concorde style supersonic air travel is probably inevitable one day, (as who would want to take 14 hours for a long journey if they didn’t have to?) but a propulsion breakthrough will be needed first. In military markets highly innovative aircraft come with a high cost premium. The F-22 Raptor was supposed to be an F-15 replacement, but only the latter remains in production for export customers today and is due to remain in service until at least 2040. The F-35, on which so much depends in the UK, is proving to be a real problem child and funding nightmare, notwithstanding its potentially game-changing capabilities. As for futuristic supersonic, stealthy, unmanned, combat jets...are they likely to fulfill their science fiction promise?...or just be too expensive and complex? Time will tell, but aerospace innovation will remain key to whatever the future holds.
MOD announces £539 million investment in new missiles systems

The Ministry of Defence has announced three new missile contracts worth a combined £539 million for state-of-the-art Meteor, Common Anti-air Modular Missile (CAMM) and Sea Viper missile systems. The deal has been described as ensuring our Armed Forces have the best equipment available to protect the new Queen Elizabeth Class Carriers and the extended fleet from current and future threats. The half a billion-pound contracts will sustain over 130 jobs with MBDA in the UK, with missile modification and service support being carried out in Stevenage, Henlow, Bristol and Bolton.

Secretary of State, Sir Michael Fallon, said: “This substantial investment in missile systems is vital in protecting our ships and planes from the most complex global threats as our Armed Forces keep the UK safe.” As part of a £41 million contract, the Meteor air-to-air missiles will arm the UK’s F-35B Lightning II squadrons. It will provide the Royal Air Force and Royal Navy with a world beating missile that can engage with targets moving at speed and at a very long range. The weapon will enter service on Typhoon with the RAF in 2018 and the F-35B from 2024, and will be used on a range of missions including protecting the Queen Elizabeth Class Carriers.

Meanwhile, a £175 million in-service support contract for the anti-air Sea Viper weapon system will ensure that the Royal Navy’s Type 45 Destroyers can continue to provide protection from air attack to the extended fleet. Under the contract, the missiles will be maintained, repaired and overhauled as and when required to ensure continued capability. The Sea Viper missile defends ships against multiple threats, including missiles and fighter aircraft.

The final contract is a £323 million deal to purchase the next batch of air defence missiles for the British Army and Royal Navy, offering increased capability at a lower cost. Designed and manufactured by MBDA UK at sites in Bolton, Stevenage and Henlow, the next-generation CAMM missile will provide the Armed Forces with missiles for use on sea and on land. CAMM has the capability to defend against anti-ship cruise missiles, aircraft and other highly sophisticated threats. Signalling continued investment in the Type 26 programme, CAMM will provide the anti-air defence capability on the new Type 26 Frigates for the Royal Navy and will also form part of the Sea Ceptor weapon system on the Type 23 Frigate and will also enhance the British Army’s Ground Based Air Defence capability by replacing the in-service Rapier system.

Tony Douglas, Chief Executive Officer of Defence Equipment and Support, the MOD’s procurement organisation, said: “Work on these cutting-edge missiles, which will help to protect the UK at home and abroad and secure jobs across the country, demonstrates the importance of Defence investment. That is why, working closely with our industry partners, we continue to drive innovation and value into everything we do; securing next generation equipment for our Armed Forces at the best possible value for the taxpayer.” Dave Armstrong, Managing Director of MBDA UK, added: “MBDA is delighted by the continued trust placed in us by the Ministry of Defence and the British military. The contracts announced today for Meteor, CAMM and Sea Viper will help protect all three UK Armed Services, providing them with new cutting-edge capabilities and ensuring their current systems remain relevant for the future. They will also help to secure hundreds of high-skilled people at MBDA UK and in the UK supply chain, maintaining the UK’s manufacturing base and providing us with a platform for exports.”

Dassault’s New Falcon 8X Approved for London City

Dassault’s flagship, the Falcon 8X ultra-long range trijet, received approval in April to operate at London City Airport (LCY), one of the world’s most challenging airfields. The 6,450 nm / 11,945 km Falcon 8X has the longest range of any Falcon and can fly from Los Angeles or Hong Kong to London City, nonstop. Dassault Aviation is the only business jet manufacturer whose entire in-production fleet is certified to operate at London City (LCY). This includes the Falcon 7X and 900LX trijets and 2000S/LXS twins. Located in the heart of London’s financial district, London City features some of the most restrictive steep approach and noise abatement regulations in business aviation. “The ability to fly in and out of London City, and other hard-to-reach airports, affords a measure of flexibility and a significant operating benefit to our customers,” said Eric Trappier, Chairman and CEO of Dassault Aviation. “Airport performance is among the top design priorities for every Falcon that Dassault has produced.” In addition to its superior short field capability, the Falcon 8X features the most advanced digital flight control system, the quietest cabin and the largest selection of standard cabin configurations in business aviation. It is also available with Dassault’s new FalconEye Combined Vision System, the first head-up display to combine synthetic and enhanced vision capabilities.
**Around and About**

Cont from p4

The Farnborough Air Sciences Trust Museum has long enjoyed exploiting its aviation heritage with the slogan “From Cody to Concorde” highlighting Farnborough’s unique century of continuous aviation research and development. Now it can also claim to represent an A to Z of such activity, “From Airships to Zephyr”, with the arrival of a prototype world-breaking aircraft design, the locally designed and built Zephyr solar-powered unmanned High Altitude Pseudo-Satellite. This massive, lightweight aircraft was developed by QinetiQ at Farnborough and has subsequently been developed further for Ministry of Defence operational use by Airbus Defence and Space, and the latest versions are currently in production in a facility on the opposite side of the airfield from where the Zephyr 6 prototype is now on display at the FAST Museum.

The new exhibit presented a major challenge for FAST volunteers at the museum as its enormous, but highly delicate, structure had to be assembled and raised into position in the only space large enough to house it – within the curved roof area of the Cody Pavilion. After much careful study of the components, which had arrived from Germany by road within a huge covered transport structure, and preparation in consultation with local Airbus staff, the FAST team built a carrying frame to help distribute the aircraft weight to avoid damaging the very thin wings. But this was not the only difficulty. Special supports and pulley wheels, together with multiple guide wires and ropes, had to be positioned on the roof structure to be able to very slowly pull the aircraft into position above the precious Cody Flyer replica aircraft which was not easily moved from its usual position in the pavilion. With just inches to spare from the pavilion structure walls and the replica’s upper wing and foreplane, the Zephyr was eased up over several hours until it was safely secured. The Museum can now boast another heritage and educational attraction that cannot be seen anywhere else - the first successful British-built aeroplane and the latest British-built aircraft, displayed together.

Continues on page 6

**Fighters in Bulgaria, the Anglicisation of defense, theater, familiarization, program and globalization**

Two U.S. F-35 Lightning II aircraft and about 20 supporting airmen arrived in Bulgaria from RAF Lakenheath, as part of a deployment that enhances the region’s ability to host the aircraft for future deployments and operations. “This deployment clearly demonstrates our nation’s contribution to the security and collective defense here in Europe,” said Army Gen. Curtiss M Scappariti, the commander of US European Command and NATO’s supreme allied commander for Europe. “It shows we are serious about territorial integrity and will defend our interests with the most advanced capabilities our nation has to offer.” These movements were planned in advance and in close coordination with the Bulgarian government, Eucom officials said. The deployment allows the F-35A pilots and supporting airmen the opportunity to engage in familiarization training within the European theater while reassuring allies and partners of U.S. dedication to the enduring peace and stability of the region, according to US officials. The F-35A’s were joined by an Air Force KC-135 Stratotanker, which departed from RAF Mildenhall. The air refueler is an Air Force Reserve aircraft forward-deployed from the 459th Air Reserve Wing at Andrews Air Force Base, Maryland, and showcases the command’s ability to employ active and reserve airmen across the globe, Eucom officials said. As the first European flying training deployment for the F-5A, these movements signify an important milestone and natural progression of the joint strike fighter program throughout Europe, the officials said. The aircraft and airmen began arriving in Europe April 15 and will remain for several weeks.

The F-35A forward deployments throughout Europe maximize opportunities for training while also strengthening the NATO alliance. The introduction of the premier fifth-generation fighter to Europe brings state-of-the-art sensors, interoperability and a vast array of advanced air-to-air and air-to-surface munitions that will help maintain the fundamental territorial and air sovereignty rights of all nations, Eucom officials said. The fighter provides unprecedented precision-attack capability against current and emerging threats with unmatched lethality, survivability and interoperability, they said.

Two US Air Force F-35A Lightning IIs from the 388th Fighter Squadron and three F-15C Eagles from the 493rd Fighter Squadron fly in formation during a training sortie over the United Kingdom, on April 27, 2017. The F-35As first arrived at Royal Air Force Lakenheath, on April 15, from Hill Air Force Base, Utah, marking the aircraft’s first flying training deployment to Europe.

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Continues on page 6
Dr Michael Smith, a member of the Council, has been invited by the League to take the lead in establishing an Air League Scholarship Winners’ Alumni. Consequently, he has written to all the winners for whom we have contact details, plus enrolling the help of the RAeS and the Honourable Company of Air Pilots to establish who amongst their members were also winners. However, there will undoubtedly be many more amongst the readers of this Newsletter that we are not aware of. With that in mind, if you were a winner, do please contact Michael on email address: msmith@experiencetells.com. He will then be in touch with full details.
On March 25th 2017 The Air League and the Honourable Company of Air Pilots together via their respective youth sections, the Leading Edge and Air Pilots – Young Members, hosted their joint annual Young Aviators’ Dinner at The Royal Air Force Club.

The 2017 Dinner was generously supported by the Aviation Skills Partnership and had a continued interest to inspire and support younger members from any background in the UK to pursue a career as a professional pilot both military and civil. Teams from RAF Recruitment, Royal Navy - Captain Naval Recruiting. Training and Recruitment representatives from; Virgin Atlantic, British Airways & easyJet were on hand to support budding youth members from both organisations.

Richard Pillans, Boeing Defence UK Chief Test Pilot, former British Army Helicopter Pilot and Flight Commander was guest speaker at the Young Aviators’ Dinner. Richard works with his team to gather information about everything from engine performance to mission systems, ensuring the aircraft is safe to fly on the front line. His story is as unique as the skills and experience he brings to Boeing. He told his audience, “As a boy, I had to pick up an extra paper round in Petersfield to save for flying lessons. I started lessons at the age of sixteen and got my pilot’s license at seventeen. That was even before I could drive a car!”

Richard is living a childhood dream. He usually flies two to three hours a day and described his story to our aspiring pilots. Richard studied avionic systems engineering with Bristol University before joining the Army. Initially flying the Apache with 663 Squadron, Army Air Corps. After 10 years in the Army he joined Boeing.

Of his time serving in the Army Air Corps and becoming a test pilot he said “We had some great times around the world. I liked the feeling of doing something useful, contributing to the nation’s security. My role then became to help improve the helicopter and check it was safe for others to fly. I created a technique to land Apaches safely when the rotors cause a...”

Continues on page 8
dust cloud, which can reduce visibility to zero. It was about getting the best out of both pilot and autopilot, working together. I like thinking about how many crashes it may have prevented since then, and in the future.”

Richard spoke of his time in the Army, his journey to where he is today, gave sound advice and was a real inspiration to young members of The Air League and The Honourable Company of Air Pilots. Speaking at the event Air League Trustee Samuel Gervais commented - “In its fourth year the Young Aviators’ Dinner is professional, informative yet relaxed event specifically designed to inspire, develop and encourage young members from the UK to pursue a career in aviation. Special thanks to Richard Pillans from Boeing UK for being our guest speaker and the Aviation Skills Partnership for generously supporting the dinner.”

For Tsungi Maruta, an aspiring pilot and Air League Leading Edge Member, the evening was very memorable: ‘I was my first time attending the Young Aviators’ Dinner. I wasn’t sure what to expect but I was filled with confidence that the dinner would achieve what it set out to do - provide a platform for aviators and aspiring aviators to meet and network. I’m really glad I attended because I left the dinner having made new friends, gained knowledge about different career prospects in aviation and how best to pursue them and also learned from many peoples’ experiences. As I currently work in civil aviation, meeting the military representatives and hearing all about their experiences and stories was of interest to me as it’s not something I get to do all the time. The enthusiasm, dedication and passion towards aviation was echoed in every person I spoke with. I certainly felt that the night brought people from all walks of life together. For this reason I hope lasting friendships were built. I’m personally grateful for the exposure to the organisations that were in attendance and the opportunity to network in a much more relaxed environment. As an aspiring commercial pilot, I found it very beneficial to meet current airline pilots and the airline representatives as it gave me the chance to find out more about what they seek in potential applicants. Right from the beginning I felt welcome, people were friendly and keen to socialise and advise. Overall a brilliant night with good food, wine and superb company.”

Photos All Saints School

“Throughout March and April, the Gliding scholarship scheme for inner city students delivered by The Air League on behalf of Boeing UK has started. Running for the 5th year in 2017 up to nine students from London will be selected to participate in the gliding scholarships programme after passing a rigorous selection process.

60 students from three schools have experienced a taster day over the past few weeks. Selection for the intensive two-week gliding course at the London Gliding Club in Dunstable will take place on 9th May at British Airways HQ Waterside. Over the two-week course, Scholars will be trained by expert pilots and mentored by experienced professionals from the Air League with the ultimate goal of flying solo.

Gaining experience through competitions and applications... a student’s view

Jonathan Rawson, design and technology student

I have learnt a vast amount through my design and technology GCSE and A Level projects, including the importance of persistence, determination, and precision. The range of technical skills I have gained while studying Electronics at GCSE and Systems and controls at A Level has proved to be very beneficial in the career that I will pursue. In the past year, I have tried to further my career opportunities through applying for a scholarship and entering a design competition. Both have been very useful experiences.

Read the full article on the website