



The Air League Newsletter

Issue 5: September/October 2010

Chairman's Message

After just over six months as your Chairman I wanted to let everyone know a little more about our new initiatives. First of all, I am delighted at the progress made by The Leading Edge. For the first time since I joined the Air League in 1993 I really feel we are engaging properly with tomorrow's aviators. Apart from the visit programme being organised by Andy Perkins and his team, their presence at Futures Day at Farnborough was very successful and resulted in a number of new members being signed up. We are also indebted to Jenny Tye and Dan Marshall for their work to improve our website and our publicity material.

Our parliamentary activities have got off to a good start following the General Election with a briefing on Farnborough by the Chairman, Ian Godden, of ADS and the

CEO of Farnborough International, Shaun Ormrod. Our next event is the Slessor Lecture which will be given in Parliament by the Chief of the Air Staff in October. I am also in touch with both the Sec of State for Transport and the Sec of State for Defence to give briefings in the future.

Now that both Andy Brookes and I have read ourselves into our new positions we are keen to look at ways of bringing the Air League and the Air League Educational Trust together as one charitable organisation. This should allow us to run the whole organisation more efficiently.

Finally I have not forgotten about the idea I mentioned at our Reception to facilitate the formation of an Aerospace Academy for 11 to 18 year olds. In the next month or so I hope to firm up our plans.

Keith Mans



ABOVE – The “Best of British” - preserved Avro Vulcan XH558 accompanied by the Red Arrows seen at the opening of Farnborough International on 19 July. Both represent an inspirational image of air power and aerospace prowess that must find continuity in an uncertain age. (Vulcan to the Sky)

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Industry bounces back

The 2010 Farnborough International Air Show provided a timely reminder, if one were needed, of the vital importance of Britain's aerospace sector. It remains the national champion for advanced technological manufacturing, cascading value right through the supply chain, providing high quality jobs, promoting innovative designs and solutions and boosting exports at a time when few alternative manufacturing sectors offer anything like its scope for wealth creation. At long last, it appears that an export-led manufacturing revival is recognized by government as being a policy priority, and defence exports in particular now play a role that cannot be ignored in reducing the UK's import/export trade imbalance.

But looking at where the sector revenue is now being generated, and how this is to be sustained and hopefully increased, in future years, it is clear that investment in new programmes must be encouraged through more inter-linked government policies. It will not be enough simply to rely on medium term income from backlogs of legacy products which won't be around in a few years time. Market sectors where Britain no longer supplies complete aircraft, have seen other nations' aerospace industries stepping in to fill customer needs, earning

£billions in the process, but in many of these programmes the UK has built up valuable business supplying everything from fuselage and wing components, landing gear, onboard avionics and other systems and, of course, aero engines.

Today, the UK's economy has the benefit of significant export sales of Rolls-Royce civil aero engines, and in this market future prospects look very promising as the Trent family of high thrust by-pass engines goes from strength to strength, with the company developing a number of alternative demonstrator configurations ahead of the next generation of civil aircraft. Even though the A350 is still two years away from flying (see P8 Industry News), Rolls-Royce's Trent XWB family of advanced turbofan engines that will power all these aircraft have now started ground tests at Derby, and the company has already achieved over 1,000 engine orders.

Airbus sales are moving back into an upward trend once again, as airlines replace older and less economic fleets, and huge order backlogs guarantee future work for many years ahead. However, although UK content within Airbus production remains high at present, the new widebody A350 will see the UK's share of non-engine workshare drop from the traditional 20+% to around 14%, with a higher proportion of wing manufacturing overseas.

Working to retain a significant UK wing workshare in the next (150-seat) Airbus programme will be another challenge, underlining the industrial importance of the UK continuing to support the A400M as a customer as well as supplier.

In military export markets, sales of the latest Hawk versions continue to generate valuable income, such as the recent £700 million follow-up Indian licence-build order for 57 aircraft. The Typhoon is also generating extensive export revenue at the moment from sales of aircraft to Saudi Arabia, diverted from orders originally intended for RAF use, but prospects for delivering the Tranche 3B orders for the "home" customers, are looking doubtful. Major efforts are underway to increase overseas sales of Typhoon, especially to India and in the Middle East, but competition is extremely tough with enhanced versions of 1970s era fighters, including the F15, F-16 and F-18, offering advanced radar and mission system specifications and high performance at very competitive prices.

Longer term, the UK's share on F-35 JSF contracts should be substantial, though this programme will remain firmly US controlled, which might reduce the scope for selling European missiles to JSF export customers, if a US competitor missile emerges. The UK wants to equip its F-35s with MBDA's Meteor, but will have to pay the full integration cost, which it might not be able to afford. So far, there is no US-built air-to-air missile with an equivalent long-range performance to match Meteor. The UK's commitment to a new family of multi-role missiles for the future should be a bright spot within the national defence portfolio, but again, although this could lead to valuable exports in the years ahead, there is presently a degree of industrial uncertainty that may or may not be fully resolved when the forthcoming Strategic Defence and Security Review appears.



ABOVE: The Typhoon performed at Farnborough with a representative war load of missiles, fuel tanks and laser-guided bombs.

COMMENTARY by Aeronautica

Defence policy – new direction, or déjà vu?

In mid July, BAE Systems at Warton unveiled its new Taranis stealthy UAS demonstrator. Call it what you will – remotely piloted, uninhabited or unmanned- it carries no pilot aboard and will be able to fly either fully autonomous missions, or under remote control by operators on the ground or in manned aircraft. As such, it is a highly futuristic pointer to what may become a next generation, high-speed deep-strike air platform. It is designed not as a prototype but as a technology demonstrator to evaluate performance and potential operational capabilities, and limitations, in order to better inform the UK air power decision-making process.

The highly classified Taranis programme, launched in 2006 and incorporating low observability features, advanced mission and flight controls, and a Rolls-Royce Adour engine, has made rapid progress in anticipation of a first flight in 2011, and has now emerged at a momentous period in British defence planning. Under the SDSR, every programme is being subjected to the closest analysis in the context of finding expenditure cuts of up to 20% from a budget that Defence Secretary Dr Liam Fox has described as "wholly unaffordable". While Dr Fox has said that the Strategic Defence and Security Review will be "Policy led and Treasury informed", the fact remains that savings of between 10%-20% are being sought by the Treasury from the MOD and a radical reappraisal of what Britain's armed forces are needed for, and what they are likely to be required to do over the next two-three decades, seem likely to lead to the biggest changes in defence policy since the decision to withdraw British forces from East of Suez. It may be recalled that this early 1970s policy switch led to the phasing out of the Royal Navy's Phantom and Buccaneer-equipped aircraft carrier capability and a significant reduction in the size and scope of what had been RAF Transport and Coastal Commands, as well as two complete overseas RAF Commands. This decision was

made because the threat priority was then seen as being in Europe. But as the Cold War drew to an end the threat became global once again, leaving British forces short on the very assets that would have been most useful.

Subsequently the Fleet Air Arm managed to re-gain a limited fixed-wing combat capability using Sea Harriers and "through-deck cruisers", but it took over thirty years for the RAF to regain a strategic airlift capability after it lost its Belfast fleet, and the once 40-strong fleet of Nimrods has now all but disappeared. Though nine MRA4s will offer a token MR capability, if they survive the SDSR, for a maritime nation reliant on sea trade for economic survival, such a minimal long range maritime force would have been unthinkable not so long ago.

One clear lesson from post-war British history is that whatever official assumptions are made concerning foreign policy needs and defence requirements, they are almost certainly going to be wrong at some unexpected juncture in the future, so taking "capability holidays" to save short-term expenditure should be recognized for what it really is – an official finger-crossing exercise and a dangerous gamble. The £2million annual cost savings predicted by not maintaining HMS Endurance on station in the Falklands directly led to an unexpected war costing many lives and several billion pounds, and an enduring increased defence commitment continuing to this day. It has also been reported that the Afghan campaign has already cost 25 times more than was anticipated when NATO forces first arrived to support nation rebuilding activities. With so much defence procurement currently aimed at providing equipment for counter-insurgency operations, how can nationally strategic capabilities be rebuilt if and when defence planners decide that future expeditionary involvement on the Afghan model must be avoided at all costs?

"Capability holidays" are all about managing risks and while

undoubtedly there is a good case for reducing certain commitments at a time when difficult choices have to be made, chopping out significant chunks of national defence capability could have disastrous consequences when the unexpected does happen, and in the meantime could undermine the renaissance of a strong UK industrial defence base. Once the UK forces fall below critical mass, the industrial consequences cannot be reversed. This has already happened to a large extent where inter-dependency on procurement has been replaced by dependency. British built UAVs could restore some lost procurement sovereignty before that design capability goes too. The development of an operational version of Taranis, when the concept is proven, could eventually become a partner system alongside a reduced fleet of F-35s and Typhoons, keeping real defence capability affordable. BAE Systems has invested over £100 million of its own money in advanced UAS technology, and in the case of Taranis, has extended the MOD partnership, in a programme totalling close to £150 million, with QinetiQ, Rolls-Royce and GE Aviation. Speaking at Warton, Minister for International Security Strategy, Gerald Howarth MP, said, "Taranis is a truly trailblazing project. The first of its kind in the UK, it reflects the best of our nation's advanced design and technology skills and is a leading programme on the global stage".

Change is coming to the size and shape of Britain's armed forces, and it could be a change for the better, but only if the opportunity is really seized to re-focus UK defence on where our national needs lie for the future. In this context a re-examination of Trident makes sense, especially if funding has to come from the defence budget. Retaining an independent deterrent will remain essential, but not at the expense of losing every other major programme in the defence budget. Nuclear delivery technology has moved on since the first Polaris submarines took to sea in the 1960s.

SUMMER SHOW TIME

(Editor's photos)

July 2010 brought together two of the most memorable air shows of the year- first the Royal International Air Tattoo at Fairford, and then immediately afterwards, the Farnborough International Air Show. The fickle British summer weather brought a few heavy showers at both events, but on the whole there was plenty of sunshine with photogenic clouds providing a suitable backdrop against which to enjoy the sights and sounds of some of the world's most impressive aircraft. This year's Farnborough International saw a transformation of the show site with best ever visitor facilities and much improved traffic flows in and out of the site. Record-breaking exhibitor participation indicated a healthy bounce-back for the sector at a time when economies are still struggling.



ABOVE: The F-22 was undoubtedly the military star in the flying-displays at both shows, looking every bit as impressive as the Sukhoi Su-30, and 40 years before that, the English Electric Lightning!

LEFT: The Airbus Military A400M impressed everyone at RIAT and Farnborough with its outstanding agility, short-field performance and quietness in flight.

BELOW: An unusual first time appearance at FI was provided by a modern Chinese combat aircraft, the JF-17. Jointly produced by China and Pakistan, this aircraft features a modern glass cockpit and is a multi-role equivalent to the F-16.



The trade days at FI produced more all-new aircraft than had been seen for a long time, including such important types as the Boeing 787, Airbus A400M and Sukhoi Superjet, though other newcomers included the Antonov An-158, Airbus A330-200F and the Chinese/Pakistani JF-17. The outstanding F-22 also appeared for the first few days of the show, but most of these "star attractions" were absent on the public days when historic aircraft and aerobatic teams worked hard to help fill the flying programme. Once again, the static aircraft displays at Farnborough were comprehensive and dominated by visiting USAF types, the RAF being represented by a Typhoon and a Hawk.



ABOVE: The graceful new Boeing 787 touched down outside the USA for the first time at Farnborough on July 18. It remained on static display until Tuesday July 20.

BELOW: The Lockheed Martin F-16 is still a highly capable product, after more than 30 years, and is still selling well in its latest Block 60 incarnation, providing real competition for newer but more expensive rivals.



Right; The mighty A380 was on hand at FI to wow the crowds again with its incredible flying displays.



ABOVE: The new Sukhoi Superjet flew in to Farnborough before the start of the air show and remained for most of the week. It features many Western supplied systems and equipment with a jointly developed French/Russian powerplant, the Powerjet Sa M146

BELOW: The revival of the COIN attack aircraft? This Air Tractor AT-802U looks like something from a Mad Max movie but is a heavily armoured and armed modification of an agricultural crop duster. It has been evaluated by US Special Forces, and has at least one customer. It might offer an affordable alternative close air support asset in limited wars to today's high performance multi-role jets and armed UAVs. It can remain aloft for 10 hours and a second crew member can monitor a range of surveillance and targeting sensors from the roomy rear cockpit.



The Air League – Leading Edge, Going from Strength to Strength

Scott Pendry reports:

Having hitherto been called a ‘young member’, an Air League member under the age of 35 is now part of the Air League – Leading Edge. The term ‘young’ had certain preconceptions which often turned away the very people we are aiming to involve! To establish a career within aerospace can take some time and the new name aims to capture the enthusiasm and involvement of all those individuals taking their first steps within aerospace and defence. The rebranding has been well received and is redefining the look and contact we have with the up and coming generation regarding their involvement in aviation.

With the re-branding, a new vitality and enthusiasm amongst the next generation has emerged, something which could not come sooner in these uncertain economic and politically-charged times. This enthusiasm has manifested itself in numerous ways and in this brief article, we look at some events that members of the Leading Edge Panel have organised and all members of the Leading Edge have been involved in.

FLYER Professional Flight Training Show

Kicking off the summer season was the FLYER flight training show, held at Heathrow in April. At this year’s event, members from the Air League Leading Edge joined up with GAPAN to share a stand. As Europe’s premier event for anyone interested in becoming a professional pilot, the show was a great opportunity to showcase what the Air League Educational Trust has to offer. Many were surprised to learn that ALET offers over £100,000 worth of scholarships and bursaries each year. Importantly, the Air League –



ABOVE - Andy Perkins (right) with one of tomorrow's pilots at the Air League Flying Day

Leading Edge presence was not to ‘sell’ flying training programmes or sign people up to the flying branches of the RAF, RN or Army but to offer unbiased and informed advice concerning flying as a career.

Air League Flying Day

This year’s annual Air League Flying Day at Bicester proved to be a great success with a massive improvement in numbers from previous years. Over 40 glider launches were carried out, allowing every Leading Edge member of the Air League to have at least one flight with some even having two. With glorious weather and an abundance of thermals, average flight times were in the region of thirty minutes, allowing Leading-Edge members to really get some hands-on time. The event was made possible thanks to the generous support of Windrushers Gliding Club who facilitated the day. Also on hand were instructors from the Upward Bound Trust and together they provided over six instructors which ensured the day ran smoothly. A range of gliders were flown during the day, including the legendary Slingsby T21 Sedbergh, a glider which

was a lot older than the average age in attendance!

Towards the end of the day, the Twister Duo made an appearance. One of the newest air display acts on the airshow circuit, the two single seat composite kit aircraft provided a fantastic aerial finale to a fantastic day. The weather stayed strong throughout the whole day, and on into the evening, providing a glorious backdrop to the legendary Bicester barbeque where young members had the chance to exchange flying stories in a relaxed atmosphere, whatever their level of experience. The flying day was a great way to show Leading Edge members that the Air League is so much more than a provider of scholarships and bursaries. The friendships, contacts made and social aspect of the day will no doubt prove to be very important in years to come.

Leading Edge presence at the Royal International Air Tattoo

The Air Tattoo at Fairford proved to be an excellent event for Air League Leading Edge members. Thanks to Marshalls, 30 Leading Edge members were given free tickets to this excellent airshow. The USAF F-22A Raptor was the aircraft everyone wanted to see, and they weren’t disappointed as it was put through an awe-inspiring display. Other high points included the rare sight of a Spitfire and Typhoon combination, and the first UK public appearance of the A400M.

Farnborough 2010

On Friday 23rd July, the Farnborough International Airshow opened its doors to over 3,000 young people. The day, entitled ‘Futures Day’ was an initiative by the organisers designed to encourage young people to consider careers within the aerospace, defence and security industries. The Air League – Leading Edge presence was extensive

with Leading Edge members manning the stand on both Futures Day and the public days over the weekend. The Air League – Leading Edge stand was a hive of activity throughout the three days. Thanks to Thales, who generously sponsored the t-shirts, Leading Edge members certainly stood out in bright blue and acted as a beacon for youngsters to head to for advice and information on what the Air League has to offer. Many of those attending on the Friday had little prior knowledge of the Air League and so the event proved to be very successful in raising the profile amongst the target audience. Thanks must be extended to Foyles for providing the Air League bookmarks and TAG Aviation for supplying the incredibly popular Air League paper aeroplanes!

Saturday and Sunday proved to be excellent days too, not least because Red Arrows pilots including former Air League flying scholarship winner Kirsty Moore came along to wow the crowd. “Why do you get the Red Arrows?” lamented an adjacent stand. With over 160,000 people



ABOVE - Red Arrows pilots including previous Air League flying scholarship winner Kirsty Moore at the Leading Edge Futures Day stand.

in attendance over the weekend, a diverse range of people came up to the stand seeking information. Whilst most of those were of the younger generation, primarily interested in the scholarships, bursaries and activities associated with the Leading Edge, many were interested in the League as a whole and its broader objectives. This presented an excellent opportunity for Leading Edge members to inform them of the valuable work that the Air League does, notably the meaningful conversations that the Air League is engaged in with parliamentarians, policy-makers and decision-makers.

Future events

The momentum the Leading Edge has built up continues in the coming months. Indeed, by the time this article has been published, 20 Leading Edge members will have experienced



ABOVE - Leading Edge team with the US C-17 crew at Farnborough

an ‘Engineering Taster Day’ kindly hosted by Marshalls and the Imperial War Museum, Duxford. In addition, September 15th/16th will see Leading Edge members attend a two day tour

on ‘The Future of Aviation’ followed by a discussion on ‘Aviation and the Environment’ on 19 November in the Waterside Theatre at British Airway’s Head Office. Particular emphasis will be placed on the involvement of young people from the locality.

Looking ahead, the Air League - Leading Edge can only go from strength to strength and the dedication and enthusiasm shown by members of the Leading Edge steering panel will ensure this is the case. At the heart of the Leading Edge is an intention to make aerospace accessible. So many careers continue to attract a stereo-typed caricature of previous generations. The Air League – Leading Edge is committed to making aerospace available to all members of society, not just the privileged few. As most of you reading this will know, being involved with what is arguably one of the UK’s most important industries is immensely rewarding and opens up huge opportunities. The Leading Edge aims to ensure the next generation face no barriers to experiencing aviation at first hand and enjoying the benefits that it brings in terms of personal development.



ABOVE - 2010 flying scholarship winner Rebecca Rose with three QFIs at South Warwickshire Flying School



ABOVE - Twister Duo display at Bicester

Membership Subscriptions

Revised subscriptions with effect from 1 January 2011 were approved at the Policy and General Purposes Committee Meeting held on 30 June 2010. The new rates will be:

| Corporate Membership Category | Rate (Direct Debit) | Rate (Cash) |
|---------------------------------|---------------------|----------------|
| RED | £4,000 & above | £4,000 & above |
| WHITE | £1,250-£4,000 | £1,250-£4,000 |
| BLUE | £650-£1,250 | £660-£1,250 |
| GREEN | £180 | £190 |
| Individual Membership Category | Rate (Direct Debit) | Rate (Cash) |
| Full (over age 22) | £56 | £59 |
| Retired (over age 65) | £38 | £41 |
| Intermediate (age 22-27) | £38 | £41 |
| Student (under age 22) | £30 | £33 |

1. Subscriptions are revised annually. 2. Individual Life membership £900.00.

MEMBERS' NEWS

Thomas Dean (AgustaWestland Flying Bursary 2009) thank you very much for the certificate and badge I received through the post for completing my Air League flying bursary last summer. The Annual; Reception looked like a very enjoyable evening, judging by the photos in the latest newsletter, and I was very disappointed that I could not attend due to conflicts with my university exam timetable.

I am very grateful for the wonderful opportunities the Air League Education Trust has given me and other scholarship winners over the years, and would like to take this opportunity to thank you for this once again. It has given me valuable practical experience and taught me essential skills which will greatly help my career in aviation.

Jonathan Jones (Shell Aircraft Flying Scholarship 2010) I am writing to express my gratitude in being awarded an Air League scholarship, which I completed on the 30th July 2010.

During the course, I stayed with friendly scholars in an extremely nice hotel and met very inspirational instructors who have given me a better insight into my future career choices. I managed

Diary Reminders

- 2 September: Engineering Taster Day, Marshalls Aerospace of Cambridge
- 15-16 September: Visit to RAF Valley
- 19 November: 'The Future of Aviation' forum and 'Aviation and the Environment' discussion at Waterside Theatre
- 23 November: Andrew Humphrey Memorial Lecture at 4 Hamilton Place

For up-to-date information on all our activities please visit our website at www.airleague.co.uk where you can register for changes to be sent to you by email as they are announced.

INDUSTRY NEWS

- Cathay Pacific has ordered 30 Airbus A350-900s configured to carry 300 passengers. This brings A350 orders to 535, two years before the new aircraft is due to fly. The airline also increased its order for Boeing 777-300ERs by six, to total 36.

- Emirates has ordered another 30 Boeing 777-300ERs.

- Both Airbus and Boeing are increasing their monthly production rates for narrow body 150 seat airliners, after holding down rates for the last two years. A320 monthly production will rise to 40, while the 737 will rise to 35. The ramp ups in production will increase in stages over the next 18 months and reach the new peaks in 2012. These represent record levels of civil airliner production for this category of aircraft and both types currently

enjoy order backlogs of more than 2,000 aircraft.

- Canada has allocated within its defence procurement budget, funds to acquire 65 Lockheed Martin F-35 Joint Strike Fighters, while Israel has decided to buy an initial batch of 20.

- India is ordering 10 Boeing C-17 heavy lift freighters.

- At Farnborough International, Boeing unveiled its full range of Unmanned Air Systems in mock-up and model form, including the new Phantom Eye demonstrator, fuelled by liquid hydrogen and powered by two piston engines. On station endurance for a production aircraft will be up to ten days. Persistent surveillance using high resolution sensors will offer an option to satellite coverage.

New Members

Full Members: Mr A King, Mr S Pooley.

Student Members: Mr C Chidumije, Mr P Fennessy, Miss R Huckstep, Mr R Maqbool, Mr J Pearson, Miss H Richards, Mr J Rowland, Miss R Sadtler, Miss N Shoebridge



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