



The Air League Newsletter

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INDUSTRY AND THE STRATEGIC DEFENCE REVIEW



By Sir Brian Burridge President

There has been much political rhetoric from both sides of the House on the pivotal role of high-technology manufacturing in the recovery of the UK economy. The Defence sector represents 300,000 jobs and 10% of the UK's manufacturing output. With an annual turnover of £35 billion and a 21% share of the global market, Defence exports alone support 65,000 of these jobs. But these are economic facts and they are of strategic importance. Of more strategic importance is industry's role in equipping and supporting the UK's Armed Forces in Afghanistan, a most complex and dangerous theatre of war. And there will be other such challenging operations in the future.

So, the Strategic Defence Review (SDR) will need to recognise the role of the defence industry as both a driver of economic recovery and as one facet of our strategic defence and security capabilities. Previous reviews have rarely addressed this challenge but in 2010, the context is different for three reasons. Firstly, consolidation of the European defence industry means that the companies concerned are global players facing the full breadth of global markets, not least those represented by the emerging economies of nations like India and Brazil. Secondly, as far as aerospace is concerned we have reached a technological cliff-edge: we will not design and produce another indigenous or collaborative fast-jet combat aircraft in the UK. The technological leap into autonomous, uninhabited air systems is the vehicle by which we will need to maintain our excellence in military composite structures, novel power installations (both for thrust and the generation

of electricity), and advanced sensor packages. Thirdly, the UK Defence budget will be under severe pressure in the years to come with the prospect of reduced fleet sizes, fewer capability upgrades and less investment in vital research and development. The competitive base in the UK is thus fragile: the reducing number of programmes makes it increasingly difficult to sustain industrial capabilities in a diminishing market.

While industry may harbour hopes of the SDR providing clarity in some detail over the Government's future equipment acquisition plans and priorities, given the state of public sector finance and the necessary emphasis on the war in Afghanistan, there is little chance of it meeting this aspiration. But one aspect is pivotal. The UK Government must be clear about the Defence Industrial capabilities that need to be retained on-shore. This was an aspect that was acknowledged in the 2005 Defence Industrial Strategy but never adequately followed-through. With on-shore industrial capability reaching critical mass in some areas, a future Government must bite this particular bullet and deploy a strategy to preserve what they regard as the vital aspects of indigenous capability because, once these high-tech manufacturing capabilities migrate off-shore, they are very unlikely to return. Without this approach, industry has little on which to base investment plans.

The requirement for indigenous industrial capability needs to apply in five cases. First, as a matter of operational risk management, commanders need to be in a position to validate the performance of a weapon system so as to determine the degree of risk faced by personnel in combat. For example, the stealth signature of an aircraft or the pre-flight messages that arm an EW system need to be under national control so that commanders can deduce operational employment at an appropriate level of risk. This is true operational sovereignty.

Secondly, much Urgent Operational Requirement (UOR) activity relies on priority access to industrial capability plus the Testing and Evaluation process by which to provide operational employment clearances. In both these respects, off-the-shelf acquisition from foreign suppliers may include niche roles for UK companies but rarely to the extent necessary to enable UK industry to provide the level of system support required for operational sovereignty.

Thirdly, there is a value for money aspect in that, for some platforms, the maintenance of an on-shore Design Authorised Organisation (normally the prime contractor) represents the optimum approach to capability insertion, obsolescence mitigation

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Companies now have more choice than ever before about which markets to enter, which secure the best return for shareholders, and where to base their operations. If we do not make clear which industrial capabilities we need to have onshore (and this includes those maintained by foreign-owned defence companies), industry will make independent decisions and indigenous capability which is required to maintain our national security will disappear.

Defence Industrial Strategy 2005

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A Political View

The Chairman wrote to the three main political leaders asking for a short statement on their party's policies towards aerospace manufacturing and air transport operations. The Conservative Party was the only one that replied.

From Mr Julian Brazier

A future Conservative Government will improve Britain's transport system to strengthen the nation's economic competitiveness, provide better services for travellers and help fight climate change. Aviation is only one of many carbon emitters but it currently represents 5.5 per cent of the UK's CO2 emissions and is the fastest growing sector. I recognise that the industry has made real efforts to put its house in order. Investment in research on reducing pollution, noise and fuel consumption has meant that new aircraft entering today's fleets are 70% more fuel-efficient than they were 40 years ago. I have also been struck by the accelerated progress made on biofuels.

Undoubtedly, the recession has halted the exponential growth rates that characterised the early years of the 21st century; but the historic annual growth rate of around 5.5% a year far outstrips the 1.5% fuel efficiency savings. So while I can certainly envisage a scenario where keeping our promises on climate change could be consistent with accommodating aviation growth, it will be virtually impossible to keep those promises without a slower long term aviation growth rate to help tackle climate change.

As for the UK aerospace industry, we are proud that we are the largest sector in the world outside the USA and a major driver of regional and national economic growth and productivity. 120,000 skilled workers are employed by the industry. In 2008, half of UK aerospace industry turnover (around £10 billion) was from civil aerospace production and half from defence sales. UK aerospace manufacturing is a national success story.

However, like all manufacturing industries in the UK aerospace has been facing a big challenge. Employment declined by 11% and aerospace research and development investment decreased by 32% last year alone. The recession in the aviation industry, following 9/11, resulted in a cut in training across the industry. This is compounded by competition from overseas, driven by the availability of cheap qualified labour. As a result our demographic profile is not sustainable. Most UK qualified aviation maintenance engineers are over the age of 50. In the UK, the aspiring technician and his employer are handicapped by the fact that no accreditation for previous academic study is given towards professional licence qualification. Competitors such as Germany offer a range of accreditation for prior study, easing the route to professional licence qualification. This issue is vital for the long-term future of aviation maintenance in this country.

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and the stewardship of safety. In this latter respect, the Haddon-Cave report following the 2006 loss of a Nimrod in Afghanistan has recently shone a spotlight on the through-life risk management of combat aircraft. The first hurdle in the Safety Management System is the requirement to obtain a Military Airworthiness Release. As an element of a Safety Management System, the Design Organisation for a particular aircraft is deemed to fulfill the role of an 'approved organisation' which carries a burden of responsibility to the customer for the safety integrity of the aircraft concerned. This is based on the notion that the manufacturer has relevant design knowledge and

expertise; owns the intellectual property; in many cases has responsibility for maintenance support; and has the necessary skills and expertise. This is relatively straightforward where the original equipment manufacturer is a UK on-shore company but, even then, does require the ongoing maintenance of design and engineering capability in an environment where new orders are few and far between.

Fourthly, operational sovereignty over certain aspects of science and technology provides strategic resilience in the ability to recognise and anticipate emerging threats plus the ability to respond in an appropriate timescale. In other words, the recognition of what is happening in the scientific world in far-

There are some good private sector-led initiatives. For example, British Airways Maintenance Group teamed up with James Watt College and Loganair in 2004 to develop a first-class training partnership, the first of its kind in Scotland. In 2007 the first 12 apprentices were employed and all the students have completed the foundation element of their apprenticeship and are progressing in their advanced Modern Apprenticeship in aeronautical engineering. Such initiatives, led by commercial companies, point to the kind of framework which could be developed nationwide. More widely, I believe it is time to work with colleagues in BIS on the feasibility of the CAA and the Sector Skills Council for Science Engineering and Manufacturing Technologies (SEMTE) to build an accreditation framework allowing academic qualifications to count towards the requirements for professional aircraft engineering licences.

On air transport operations, my Party has consistently opposed runway expansion at Heathrow, Gatwick and Stansted airports. But, in general we encourage regional airports, where there is community support. Regional airports have the potential to reduce transit flights by increasing point to point, as well as reducing congestion around London's airports. Birmingham's plans to extend their runway and Manchester's successful second runway are both examples of this. It is also important to consider the security of UK air operations. The failed terrorist attack on Christmas Day 2009 has starkly demonstrated the constant and credible threat facing commercial flights. In response to this incident the Government has announced plans to increase security measures in the UK, the most high-profile of which has been the decision to give the go-ahead for full body scanners to be introduced at British airports.

I am deeply concerned about the issue of security. Clearly, more stringent methods are necessary to protect the safety of both our passengers and skies. But these must be done in a way which is consistent with passenger flows. Unfortunately, the Government's track record in this area has been poor. The very large queues which developed after the liquids ban were themselves targets as well as causing huge inconvenience to passengers. Similarly, the 'e-border' scheme is designed to monitor individuals entering the country and provide crucial intelligence that could prevent an attack. However, the scheme is significantly overdue, heavily over-budget and – despite having spent £1.2 billion – provides a lower level of capability than some systems already in use.

If we are going to properly protect our borders and our skies then we cannot go on like this. Instead, I believe that we need to take a comprehensive, intelligence-led approach to airport security if we are to keep people safe, and manage passenger flows effectively, whilst flying.

off places often gives an indication of the need to start the research ball rolling at home.

Finally, and this may seem truly arcane, there is a new EU Defence and Security Procurement Directive which mandates the requirement to compete defence contracts across Europe unless there are reasons of national security to do otherwise. In the past, some nations have played the 'national security' card relentlessly to the benefit of their own national industry. In this new era, Member States are to be required to justify (potentially in the European Court) why national security consideration are deemed to apply in particular cases by demonstrating a policy audit trail of

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IT'S A VISION THING

By The Director of the Air League, Andrew Brookes

Whenever I see Stephanie Flanders, the BBC Economics editor, I am reminded of her late, great father Michael and his observation that “If God had meant us to fly, He would never have given us the railways!” Railways and aviation have long been intertwined, and never more so than in 2010 as the political parties arm-wrestle over new high-speed rail links designed ostensibly to reduce emissions from wicked aeroplanes.

There is nothing new in a fast rail link from the Midlands sweeping through middle England. The Great Central Railway, on which work started in 1895, was the imaginative brain-child of Sir Edward Watkin who envisaged eight tracks running all the way to Europe through a Channel tunnel. Unlike any other railway line in Britain, the GCR line was built to the continental Berne Gauge which meant it could accommodate larger sized continental trains. The line was also engineered to very high standards and in order to get permission to build the line, GCR had to agree to put parts of it through tunnels to avoid upsetting local land owners. It was so expensive that the original plans for their Marylebone London terminus had to be scaled back drastically. Nonetheless the line was opened in 1899, four years after work started. Fast forward to today and we have competing proposals for a new Great Central Railway that might just be ready by 2032!

This is saddening on so many counts. Firstly, railway visionaries

like Watkin, and their aeronautical equivalents such as Frederick Handley Page, Geoffrey de Havilland, A V Roe, Tommy Sopwith and Alan Cobham, seem to have been replaced by bean counters and grey management wallahs who delight in process rather than outcome and who drag everything out rather than deliver on time and on budget. Secondly, departments of state are either fixated on short-termism or punting anything difficult into the long grass. There appears to be no overarching and workable UK transport, industrial or defence strategy that transcends party politics and delivers long-term value for money for the hard-pressed British taxpayer. Chopping and changing over enhancing desperately-needed airport capacity in the south-east is a self-indulgence that the nation cannot afford. Whatever the merits or otherwise of investing in two British 65,000 tonne aircraft carriers, to end up (as we may well do) by cancelling one or both after expending billions would not be clever. As for the notion that transport, industry and defence departments should dovetail the future wellbeing of general and commercial aviation, military aerospace and industrial sustainability into one seamless UK vision, dream on!

Future Britain should be a centre of excellence for aeronautics and high-end engineering as much as working in the City. In a time of recession it would be folly to cut back on science, vocational education and R & D when these are our launch pads for future success. Whatever you say about our French friends,

they have national strategies around major issues such as nuclear power or transport that keep rolling along irrespective of which party gets into office. This means that the UK will soon be very dependent on nuclear reactors built along the French Channel coast to keep our lights on. In like fashion, the UK has built one new runway since 1945 – at Manchester – whereas the French have built four outside Paris and six are planned for Dubai. It would add insult to injury if the next British government unilaterally loads an ‘emissions’ tax on long haul aircraft leaving UK while building a high speed rail link that runs past Heathrow to Charles de Gaulle where the French have imposed no such tax.

To people of my generation, brought up on the stirring deeds of Peter Twiss and Neville Duke, we need a new generation of Frank Whittles, Harry Hawkens and Arthur Marshalls to lead the way on aviation in the 21st Century. This is more than just articulating a clear vision like Edward Watkin: it is also about pulling this country out of the economic doldrums. It was the aeronautical pioneers along with other stalwarts of the Industrial Revolution who made Britain great. We need to encourage and unleash that spirit again in our young people, and not make them jump through too many politically correct hoops to realise their dreams. UK plc needs to rediscover the aviation ‘vision’, and the Air League hopes that whoever wins the forthcoming election will encourage such a vision to flourish.

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published documents. In other words, Governments need to think ahead.

So, from industry’s perspective, there is a need for the Government to define its indigenous capability requirements. This, in turn, would allow adjustment of the UK’s defence industrial base so as to meet the overall need for a continuously available critical mass of core skills in the necessary disciplines to meet the varying requirements of both peace and war. In the latter circumstances off-shore access alone is insufficient in that it could be subject to political constraints or third-party export regulatory regimes which, together, undermine the guarantee of the necessary level of priority appropriate to a national emergency.



The outcome of the General Election may be in doubt, but the only uncertainty about the Ministry of Defence is exactly how many billions of pounds it lacks to meet current and forecast programmes and commitments. How to identify priorities?

Any new government is likely to confirm Britain's membership of NATO, cooperation with Europe and support of the UN. But the assumption that all Britain's future wars are likely to be counterinsurgencies in a far away land, involving the deployment of troops among civilian communities whose loyalties are suspect and whose government has proved incapable of governing, yet do not stimulate unqualified UN or NATO cooperation, is hardly a credible basis for long term defence procurement. Low intensity warfare may well recur but there are too many potential sources of international conflict which could affect British interests to assume that reversion to a larger scale of conflict is unthinkable, albeit the UK would enter such conflict with allies or partners.

In a world of budgetary pressure, industrial concerns, penalty clauses and vested interests a Government must measure the promise of major procurement programmes and force structures across a spectrum of prediction. For almost a decade, ground operations in Iraq and Afghanistan have dominated the headlines. Only occasionally has the indispensable contribution of the RAF been widely publicised, yet its roles there will be equally essential in any conflict environment.



ABOVE - IX(B) Sqn Tornado pilot carries out his walk round inspection before a mission in support of Op MOSHTARAK. (Crown Copyright - Cpl Dave Blackburn)

The security of the UK will remain paramount. The exact nature and location of future commitments elsewhere are indeed impossible to predict, but required "effects" can certainly be identified, whatever the scale, intensity and duration of the conflict. Armed force must be able to coerce or compel. In simple terms we will need information about the intentions, location, disposition and movement of the enemy. He may be mobile and concealed and he may have remote sanctuaries. We will need to locate, identify and attack him, preferably by surprise, at a time, place and manner of our choice,

not his. Rapid implementation from location to attack will frequently be essential and always advantageous. All weather precision attack will be operationally cost effective as well as reducing unwelcome collateral effects: media exposure will be pervasive. We must be able to influence events in many ways: by non-kinetic means as well as kinetic.

The Chief of the Air Staff has therefore identified "Combat ISTAR" as a core competence. We are already in an age demanding "netted" intelligence gathering, surveillance, target acquisition and reconnaissance, accompanied by swift decision making and action. Tornados, Harriers and Typhoons equipped with high resolution targeting pods can relay real time information to ground forces while at the same time carrying precision, all weather munitions to a target. The reconnaissance Reaper UAV also delivers munitions. The wide area surveillance of the Astor complements their narrower focus. Individual insurgents and their vehicles have been identified and attacked with little or no risk to their non-combatant surroundings. Beleaguered ground forces have been relieved by very close proximity air attack. The incidence of IED ambush has been reduced by timely reconnaissance. Overhead presence has encouraged civilian democratic participation and discouraged attacks on convoys. Air power has enabled



ABOVE - First production Nimrod MRA4 (BAe Systems)

Defence Priorities

Tony Mason, University of Birmingham



substitution and reinforcement: reducing the numbers of ground forces required for operations and saving countless army lives by the delivery of timely, precise heavy firepower. The impact of presence, reconnaissance, attack and real time information relay in the same platforms illustrates a flexibility which far transcends the environment of Afghanistan. The Joint Strike Fighter symbolises the future of Combat ISTAR

Rotary and fixed wing airlift has countered enemy mobility, sustained remote detachments, reduced ground force vulnerability to ambush, enabled surprise attacks and evacuated casualties. It is difficult to envisage a future conflict on any scale which would not demand similar tasks.

In sum, air power in Afghanistan provides the coalition's own asymmetric advantage, which must be maximised elsewhere. Its foundation on air control however, or in old fashioned language, "command of the air", can too easily be taken for granted. It is now seventy years since the army last experienced the discomfort of air attack, although the navy was reminded in the Falklands. Command of the air will continue to enable or constrain operations on land and sea at any level of warfare. That fact, not an assumption, is well understood by those countries now embarked on the procurement of new generations of air superiority fighters. Typhoon may have been conceived in the Cold War, but its multi-role adaptability will be needed in 21st century conflicts.

In recent years the three British armed services have learned to

fight cooperatively: epitomised by the Joint Helicopter Command and Joint Force Harrier. Each however can operate independently when circumstances demand. In Afghanistan the RAF has worked closely with the army. There may well be occasions however, such as Kosovo less than a decade ago, when air power may be the only useable military instrument. All the combat ISTAR would then be available, together with the extended range demonstrated by in-flight refuelled Tornados from Bruggen in 1999. Required effects might have no association with army or naval operations.

Much closer to home, recent Russian bomber activity and errant civil airliners in the context of a terrorist threat, have prompted the frequent precautionary scrambling of Typhoons; reminders that it was the need to provide for the air defence of the UK in 1917 which prompted the creation of the RAF in the first place.

In a future which holds many uncertainties, the agility and adaptability of the RAF will be much in demand. Hopefully, the Defence Review will identify the probabilities which will determine resource allocation, rather than the other way round. One can but hope, and seek to persuade.



ABOVE - IX(B) Sqn groundcrew remove wings from a Tornado aircraft at Kandahar Airfield so it can be transported back to the UK in a C-17. (Crown Copyright - Cpl Dave Blackburn)

IT'S NEVER TOO LATE

So, after all the speculation concerning the future of the UK's defence policy, the electorate is facing a choice between more of the same or a more thoughtful defence policy that may nevertheless result in even more cuts than we are experiencing now. For those who believe in the unfashionable view that in an uncertain world national defence should be any government's top priority, the prospects post May 6 are somewhat gloomy. Just before the shutters on MOD announcements came down (all government departments are banned from proactive publicity activity in a pre-election period) a flood of contracts and official press releases appeared on editors' computer screens. "Clearing the decks" seemed to have been the motive, but this tidal wave of information which obviously concentrated on positive measures such as new orders for equipment and awards for outstanding bravery in Afghanistan, also contained less welcome news, such as the disbanding of four RAF jet aircraft squadrons on just one day. In many ways it seems the forthcoming comprehensive Defence Review, agreed to by all major political parties, is being pre-empted so the new start-line for future cuts will begin at an unprecedented low threshold – not a good omen. And this comes on top of a decade and a half of cuts that have seen defence as a proportion of GDP halved from 4.4% to 2.2%. All this has happened during a period where the government has sent our forces into two major overseas wars and while all government departments, with the exception of MOD, have

enjoyed massively bloated budgets. What our campaigning politicians seem to have forgotten is that while profligacy has become rampant throughout Whitehall, and has to be tackled, our defence forces have already been downsized and ought now to be helped back to good health rather than being denied essential life support.

Speaking recently to an industry breakfast briefing organized by ADS (formerly SBAC and DMA), Shadow Defence Secretary Liam Fox MP provided an outline of what he thought a Conservative defence policy should do to improve the tottering procurement process. He said that the structural and management problems in the MOD needed a radical shake up. He claimed a future Conservative government will have four explicit objectives: First, the Armed Forces should be provided with the best possible equipment when they need it, where they need it and at a reasonable cost to the taxpayer. Second- defence procurement should be used to underpin Britain's strategic relationships. This means closer cooperation with the US and France and maximizing our unique relationship with Commonwealth countries around the world. Third, to provide better stability to the forces and better predictability to industry, regular defence reviews will play an important role, along with a review of the Defence Industrial Strategy and relations within the EU. Finally, defence jobs should be preserved by maximizing exports. The Conservative Party will use defence exports as a foreign policy tool and will seek to increase the UK's share of the global defence market. To meet these objectives

any future equipment programme will be tested against five criteria- capability, affordability, adaptability, interoperability and exportability. The concept of "spend to save" is stated as his preferred default position replacing the current "delay to spend" policy. Mr Fox clearly understands that speedy procurement saves money.

Lord Drayson, who has been particularly active in recent months increasing support for Britain's space sector, visited the BAE Warton facility in March and said that Labour wanted to encourage more young people to seek careers in the high tech aerospace sector to generate future wealth for the UK. He praised the Mantis UAS demonstrator programme and said that he believed that unmanned air systems offered a huge potential for future leadership and a way of sustaining defence exports. In fact Lord Drayson has been one of the relatively few members of the government (even though appointed rather than being an elected Member of Parliament) with a background in science and business and across Westminster there are now very few parliamentary candidates with hands-on experience of business management, high-tech industry or service in the armed forces. In this respect, the UK pattern of recruiting new MPs is following a very American style- with professional politicians, who have known little else, dominating the scene. With this in mind, the struggle to educate and inform future MPs on all aspects of defence and aerospace is likely to be just as challenging in the future as it is today.

Is it too late to reverse the spiral of decline in UK defence and aerospace? The party leaders may be saying sensible things today, before the general election; however the political reality is that cutting defence is likely to be seized upon yet again as an "easy way" to achieve significant spending cuts. As Gordon Brown's government has come to realize (the hard way), relentless over-pruning of defence can come back to bite if it results in extra lives lost due to false economies, over-stretched resources and ignored capability gaps. If the incoming government will not fund what is needed they must cease using our forces as world policeman, and the Foreign Office will have to get used to the UK being as influential as Belgium or Portugal on the global stage. And we'll all have to live with the consequences.



RAF groundcrew in the Gulf brings a Sentinel R1 to a stop as it taxis in from a mission over Afghanistan (Crown Copyright - Cpl Dave Blackburn)

INDUSTRY NEWS

- Boeing announced on 7 April that all test requirements were successfully met during the 787 Dreamliner's ultimate load wing and fuselage bending test. This follows a thorough analysis of the results from a test on the 787 static test airframe. "Successfully completing this test is a critical step in the certification of the 787. This is further validation that the 787 performs as expected, even in the most extreme circumstances," said Scott Fancher, vice president and general manager of the 787 programme for Boeing Commercial Airplanes. On March 28, loads were applied to the test unit to replicate 150 percent of the most extreme forces the airplane is ever expected to experience while in service. The wings were flexed upward by approximately 25 feet (7.6 meters) during the test and the fuselage was pressurized to 150 percent of its maximum normal operating condition. In evaluating the success criteria for the test, Boeing specialists have been pouring over the thousands of data points collected during the test to ensure that all parts of the airplane performed as expected.

- Also on 7 April, in a special ceremony, Hawker Beechcraft Corporation (HBC) celebrated the delivery of the 600th Beechcraft T-6. The U.S. Navy took delivery of the milestone aircraft, a T-6B, which will be based at Naval Air Station Whiting Field in Milton, Fla. The T-6 is versatile, safe and effective for basic and advanced flight training tasks. Deliveries of the T-6 began in 2000 after the aircraft was initially selected to fill the Joint Primary Aircraft Training System role for the U.S. Air Force and the U.S. Navy. Since then, additional military programs worldwide, including NATO Flying Training in Canada, the Hellenic Air Force of Greece, the Israeli Air Force, the Iraqi Air Force and the Royal Moroccan Air Force, have chosen the T-6 and its derivatives as their primary trainers. With a top speed of 316 knots, a +7.0G to -3.5G airframe and an advanced digital cockpit, it is equally adept at teaching the most advanced aerobic maneuvers and simulated combat training tasks. To date, the T-6 has been used to train pilots and navigators from approximately 20 different countries. In addition to the T-6, Hawker Beechcraft is rolling out a light attack version of the aircraft, the AT-6, in order to meet rapidly emerging needs for irregular warfare capabilities around the world.

- The UK Ministry of Defence has awarded Thales UK the initial three-year support contract for the Watchkeeper unmanned air system (UAS) programme, for which Thales UK is also prime systems integrator. The Watchkeeper support solution will be a performance-based contractor logistics support (CLS) service, providing spares and repairs, technical support and the availability of the Watchkeeper training facility. Thales will deliver this service with the support of its key partners and supply chain, established during the Watchkeeper development and production programme. The contract further secures Thales's role as an expert provider of innovation and support surrounding UASs and other intelligence and surveillance systems. The contract covers the whole Watchkeeper system, comprised of over 160 entities (including unmanned air vehicles, ground control stations and support vehicles), and includes operator / user training. It is the first step in the provision of cost-effective, through-life

support to Watchkeeper. This is Europe's largest UAS programme, and will provide enhanced all-weather, dual-sensor multi-mission and image-exploitation, and dissemination capability for the UK armed forces. The programme will contribute significantly to information gathering and force protection by providing the MoD with remote, unmanned intelligence and surveillance monitoring during deployed operations. Watchkeeper will initially operate in parallel with the Thales-led Hermes-450 UAS programme, an innovative, service-provision programme that since June 2007 has provided battle-winning ISTAR (intelligence, surveillance, target acquisition and reconnaissance) capability for the UK Armed Forces. Hermes-450 has now flown more than 30,000 operational hours in support of current operations. The Watchkeeper Service Management Team will be based in the UK, with Joint MoD/Thales Service Delivery and Training teams based in Abbey Wood, Bristol and Larkhill, Salisbury, assisted by service support organisations at Thales facilities in Leicester and Crawley.

- The bow sections of one of the UK's two new aircraft carriers, HMS Queen Elizabeth, are now completed and ready to set sail from Babcock's Appledore shipyard in Devon. They will make a six day journey by barge to Rosyth in Scotland, where the ships will be assembled. Shipyards throughout the UK are contributing their skills to the project - Glasgow, Rosyth, Newcastle, Portsmouth, Devon and Birkenhead - as well as a further 100 contracts throughout the supply chain. The two sections will make up the bow of the ship, and together weigh about 400 tonnes. The larger of the two sections - called the bulbous bow - is similar in size and shape to a conventional submarine, yet only a tenth of the full length of the ship. It is designed to increase speed, fuel efficiency and stability - sitting just below the waterline to help the ship to cut cleanly through the water, reducing drag. The second section sits above, making up decks seven to five below the aircraft hangar. Chief of Material Fleet Vice Admiral Andrew Mathews said: "Seeing these sections, which are only a small part of the ship, makes the overall scale of the carriers clear. The transportation of the bow sections to Rosyth will be a key step in the construction of these hugely important ships. The two Aircraft Carriers of QE Class will provide the UK with a large, deployable airfield capable of projecting airpower globally - including fast jets, helicopters and Unmanned Aerial Vehicles - to support Joint Operations for up to 50 years. "It was important from the start of the project to achieve maximum efficiency using new construction techniques. For example, the 'block integration' method has allowed us to build the ship in many locations simultaneously, reducing the time it takes to construct. It has the added advantage of spreading the economic benefits widely across the country." Babcock's role in the Carrier build programme is worth around £1 BN, currently employing 292 at the Appledore shipyard and another 432 at Rosyth, including around 140 apprentices. Significant progress has been made since manufacture began at Appledore shipyard in December 2008, and with major sections of the bow completed the Queen Elizabeth is visibly taking shape. Work now continues on the forward section of the ship, from the keel up to the flight deck.

MEMBERS' NEWS

Christopher Hindle (Emirates 2009 Flying Bursaries), I would like to thank the Air League for awarding me a flying bursary. As previously planned, I used the flying time to achieve a basic AOPA aerobatics certificate at Blackpool Airport. The new certificate has given me much valuable confidence in aircraft handling, particularly with unusual attitudes. The flying was both useful and fantastic fun. I learned a great deal on the ground about the effects of aerobatic flying on the aircraft and the pilot. I learned how to construct an aerobatic sequence and use techniques such as axial direction and drift consideration to ensure the display looks good from the ground. Once again thank you for selecting me for the Emirates Bursary

Lara Small (The British Women Pilots' Association 2009 Flying Scholarship), the BWPA funded my first twelve hours in a Cessna 152 in August, 2009. I was selected to receive this fantastic opportunity through the Air League and I was awarded my certificate at the BWPA annual dinner in December, 2009. I flew solo in the first eight hours, leaving the remainder to practice consolidations and leaving the circuit. I intend to continue this success and work towards my PPL in the near future. Thank you so much for this brilliant opportunity.

Youth Matters

The Younger Generation and the UK Aerospace Industry

Scott Pendry and Jenny Tye, Air League Youth Panel

It's no secret that the UK has been a world leader in aerospace since the pioneering days of aviation over 100 years ago. Yet, in this short piece, we argue that the UK's standing as a leading player in aerospace is by no means guaranteed and that to ensure future competitiveness, investment must remain high in training and there must be real incentives for aerospace companies to operate in the UK.

The proven demand for UASs, innovative flight management systems, future space technology and stealth aircraft will ensure that the technology involved in aerospace continues to develop at a rapid pace. As this technology evolves and indeed new technologies emerge, aerospace companies will need a larger proportion of their workforce to have a more diverse skill set. When it comes to the development of aerospace, the government has indicated (through the Defence Industrial Strategy) that the focus

should be on skills for innovation and new product delivery. Yet, in order to really achieve innovation in the UK aerospace industry, the next government must improve education, research and training in newly emerged technology areas such as composite materials, propulsion and low carbon, which is, at present, limited. These are all areas which should be actively promoted to young students and apprentices thinking of entering the industry.

In addition, and on a more generalist note, for aerospace/defence companies to maintain their significant contribution to the UK economy, they must have confidence that future national defence requirements from the UK Government will require their contribution on a consistent basis over an extended period of time. Without the probability of a commercial opportunity, industry cannot justify a UK presence or indeed the continued development of technology in the UK. It is essential that continued investment is made with contracts being awarded to companies based in the UK in order to underpin the supply of highly motivated young people enthused by the excitement of flight, willing to enter the industry as aircrew, engineers and commercial/managerial specialists.

As we reemerge from recession and the economy begins to balance, now is the time for politicians, whatever their colour, to take stock of the UK aviation industry's steadfast contribution to UK plc. Once the dust has settled following the election, it is vital that time, money and experience is invested in young people, who, whatever their role in the aerospace industry, will rise to the challenges in the decades ahead and ensure the UK remains at the leading edge.

Congratulations

Our Hon Treasurer, Jane Middleton, has been appointed to the Board of Women in Aviation International which is a non-profit organisation dedicated to the encouragement and advancement of women in all aviation career fields and interests. The 8,000+ membership includes astronauts, corporate pilots, maintenance technicians, air traffic controllers, business owners, educators, journalists, flight attendants, high school and university students, air show performers, airport managers and many others. Jane is the first non-American to be appointed to the Board.



New Members

Corporate Members: Goodwood Road Racing Company Ltd,

Full Members: Mr C Anthony, Mr W Bruce, Mr A Comerford, Miss J Cooke, Mr J Romain, Mr R Saunders, Mr K Mc Taggart.

Student Members: Mr J Amin, Mr N Barber, Mr A Bray, Mr A Jamil, Mr R Lockwood, Miss E Nicholls, Mr N Parish, Miss D Pitts, Mr M Reeve, Mr T Roberts, Miss A Rushton, Mr S Woodgate.

Diary Reminders

8 June 2010	Annual Reception, St James's Palace
17 June 2010	Council Meeting and AGM, RAF Club
30 June 2010	First APAG meeting of the new parliament
3 July 2010	Annual Young Members Flying Day, Bicester
23-25 July 2010	Futures Day, Farnborough

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.



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