



# The Air League Newsletter

Issue 6: November/December 2012



*ABOVE - Airbus has recently presented its Vision 2050 glimpse of how the world might be flying thirty years into the future. This includes such innovative ideas as ultra-efficient aircraft, assisted take-offs, steep gliding approaches, long-haul "flocks" of aircraft within highly automated air traffic management systems and sustainable synthetic fuels. (Airbus image).*

## AVIATION STAYS IN THE HEADLINES

**A**utumn brought aviation issues back into the news headlines once again, demonstrating the high profile that related policies and programmes now attract in the mainstream media, a reflection of their continuing importance to the economy and national sovereignty.

London's approaching airport capacity crisis remains at the forefront of political debate, with a growing body of opinion building to challenge the government's policy of delaying all runway decision-making to beyond the next general election. The Air League has responded in a timely fashion (see pages 2-3) to the present round of consultations, but there is now a widely shared belief, especially in the business community, that the hub capacity question cannot wait for three more years before initial conclusions are announced by a future administration after 2015. Senior management in Britain's largest airlines have become so frustrated by the present situation they have called for a speed-up in the process, claiming that a failure to address the problem threatens London's role as a global financial centre. London's colourful Mayor, Boris Johnson, is openly leading the call for an end to what he describes as political dithering. In the meantime, Gatwick Airport has announced a strategic study of new surface facility requirements

in advance of a possible second runway proposal for implementation after 2019.

The other recent headline generating aerospace story was the failed attempt to merge BAE Systems and EADS, vetoed by the German government. This could have had a massive impact on UK manufacturing capacity and capabilities, right through the industry supply chain, extending well beyond BAE Systems and EADS, yet national newspapers and broadcast media concentrated on the opportunity to create the world's largest aerospace company. Most national editorials also suggested this would enable the UK to regain a share in commercial aircraft revenues, although this prospect was far removed from reality, BAE Systems having taken the strategic decision some years ago to withdraw from its civil air programmes, including Airbus. Of particular interest to the Air League, in addition to the need to sustain UK design and manufacturing capabilities, has been the issue of UK defence sovereignty and the future of co-operation with the USA and Europe. The most important long-term Anglo-US programmes include the Joint Strike Fighter and the next-generation nuclear submarines and strategic missile developments, all of which would have caused extra complications if the BAE/EADS merger had gone ahead. (For an update on the F-35 *Lightning II* see Pages 4-5).

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**The Air League asked a group of independent experts from politics, the law, the City of London, air transport management and the airlines to examine the thorny issue of London airport capacity and to report on a sensible way forward. The full report, which has gone to Government, is on The Air League website. A summary of the findings is as follows.**

## The Issue

Aviation is one of the UK's great success stories. It provides more skilled jobs and contribution to the country's GDP than any other apart from the pharmaceutical industry. London, and in particular the City of London, is the foremost economic driver in the UK, with over 200,000 jobs reliant on Heathrow. The aviation industry and the jobs it has created should not be jeopardised but strongly supported by HMG.

The UK's competitive position, its economy and influence will all be eroded if a political consensus is not found on the provision of increased airport capacity in South East England.

The UK's current hub airport, Heathrow, is working at 99% capacity. It has no room to grow and no operational resilience. Furthermore, a resident of Newquay, Teesside, Prestwick, Liverpool or Inverness can no longer fly or travel directly by rail to Heathrow to connect to other flights.

The principal need is to provide adequate extra runway capacity in the right location at the right time to meet market and national requirements, incorporating legal and environmental considerations. Whatever decision is made by the Government concerning the long term and provision of additional airport capacity in the UK, including any new estuarial airport, significant additional capacity at Heathrow is required.

## Planning

The current regulated planning framework inhibits growth and development while denying certainty to the industry and investors. HMG should create a framework to establish a cross-party, long-term policy consensus as had previously been achieved with major infrastructure developments such as the Channel Tunnel. HMG should set out a clear, evidence-based vision for aviation whilst building on sensible changes to the planning system beyond those in the National Planning Policy Framework. The ability of the planning system to support aviation should be reviewed by government, including making changes to Planning Regulations to allow airport operators to carry out permitted development at relevant airports which does not cause any significant environmental effect.

## The market and protecting the hub

The UK can only sustain one hub airport, currently at Heathrow. HMG should recognise Heathrow's crucial importance to the UK and act to optimise its use, and not allow offshore airports in Europe such as at Paris and Amsterdam increasingly to

serve the UK Regions as their hub airport. This might include changes to fiscal policy such as application of differential APD and other measures to secure its network and connectivity.

## Reducing environmental impact opens the way for capacity increases

There are now a number of newly proven technological and procedural measures which can be introduced over the next 10-20 years to improve significantly the environmental case in favour of increased use of airports. Changes in engine and aircraft technology, improved operating procedures, greater and better use of satellite navigation systems, improved Air Traffic Management, descent profiles and track-keeping will continue to improve and minimise the environmental impacts from aviation. Assumptions made as recently as 2010 concerning aircraft noise and associated environmental impact around Heathrow are already out of date.

Assuming the improvements in noise levels as a result of technological and other measures which are reliably able to be predicted (at least 1-3dBA reduction over the next 10-15 years), recent work by leading noise consultants Bickerdike Allen Partners confirms that a third runway at Heathrow could take place with noise levels at 2030 significantly reduced in area and largely able to be contained within the existing noise contour levels. Introduction of the next generation of even quieter aircraft, together with operational innovations such as Continuous Descent Approaches and use of displaced landing thresholds, will further alleviate noise impacts.

## Options

The following options, either individually or in combination, are available to provide additional airport capacity in London and the South East:

- Maximise the best use of existing infrastructure
- A new runway at Heathrow, Gatwick or Stansted – medium and long term
- A new airport development on the Thames estuary or inland – long term

There are currently 480,000 Air Traffic Movements (ATMs) permitted annually at Heathrow and upwards of an extra 100,000 are required to meet demand. Consequently, other than in the short term, maximising the use of existing infrastructure would fail to meet projected demand. Stansted is currently half empty for a reason. There is no point in expanding any existing airport or developing a new facility if passengers and airlines are reluctant to go there. Use of the existing Northolt runway

# CAPACITY STUDY



ABOVE - Heathrow will soon have the benefit of a completely re-built Central Area terminal complex, initially replacing the former Terminal 2. In due course it is intended to also replace Terminals 1 and 3. This work will greatly enhance the passenger facilities and travel experience of airport users, but the lack of a third runway will seriously inhibit the business growth of the airport as demand for new services will have to be turned away. (Heathrow Airport image)

for short haul operations by quiet regional aircraft together with more efficient use of Heathrow's current capacity would help to meet short term demand at Heathrow whilst longer term policy is determined and implemented. The medium-term option of a Third Runway at Heathrow (LHR R3) is essential whatever decisions are made concerning the long term delivery of airport capacity elsewhere. LHR R3 can be delivered more easily than other options, it has the essential advantage of providing extra capacity at London's hub airport where it is urgently needed and it can be made sustainable. This is important as it is a statutory requirement to deliver sustainable development.

It is the considered view of the Air League and its panel of expert advisers that the length, design and use of LHR R3 can be controlled by the planning regime and laws so as to produce significantly less noise and pollution than has been previously assumed, as recently as mid-2010 when last assessed. The advice of one of the UK's leading planning counsel, with many years specialising in airport development, is that these requirements would be enforceable and could be incorporated in planning conditions and legal obligations attached to any planning permission granted for LHR R3. A new LHR R3 could be dedicated to short haul aircraft, such as the A320, B737, ATR, Bombardier and Embraer types, thereby releasing capacity for long haul aircraft to make best use of the longer existing Heathrow runways 09-27L/R. There could

be phasing of its use to ensure that noise levels are minimised and do not increase above those recognised by government policy as acceptable.

An additional runway at Gatwick or Stansted could be a longer term solution and although able to deliver significant additional capacity at one or both of the existing major London Airports, this would not of itself provide the essential requirement for additional capacity at the UK hub. Expansion of runway capacity at Heathrow is an urgent requirement.

A new airport development on the Thames estuary, or inland, is a potential but long term solution. It would require significant continuous political and fiscal support by government to underpin the considerable private investment required, plus economic as well as strong political cross-party support throughout the whole of the period it is being brought forward. A new estuarial airport has significant attractions, but it would be likely to require in addition to its social, economic, environmental and political challenges, a derogation from the EU Directives relating to the protection of both Habitats and Birds. If chosen and embarked upon, this option would require a considerable lead time (15-20 years) and should not preclude the delivery of a medium term solution at Heathrow in the form of R3 LHR. The same is true of any choice for a new inland airport. After half a century of procrastination, the Air League believes that it is now time for action.

## THE F-35 Lightning II

**O**n Wednesday 17 October, Steve O'Bryan, Vice President F-35 Programme Integration and Business Development at Lockheed Martin Aeronautics, addressed an audience of Air League members and guests in London. The previous afternoon, he also addressed an audience of MPs and industry guests at an Air League in Parliament meeting. This is an overview of his presentation.



*ABOVE - A recent image of test aircraft AF-1 dropping an AIM-120 AMRAAM in separation tests over the China Lake test range in the USA. The same aircraft has also dropped a 2,000lb GBU-31 bomb from its internal weapons bay. (LM photo)*

Steve O'Bryan is an ex-US Navy F/A-18 Hornet pilot, who served at the Top Gun Navy Fighter Weapons School and in the US Marine Corps before joining Lockheed Martin. He is now leading coordination across the F-35 *Lightning II* business activities, including working with the USAF, USN, USMC and the Department of Defence, as well as the international F-35 partners and customers. International industrial strategy as well as improvements and derivatives of the F-35 also come under his responsibilities, so he was ideally suited to brief the Air League on what is becoming the UK's most important new combat air programme. This is the world's largest programme of its kind, involving a market of up to 3,100 aircraft for the USA, UK, Australia, Canada, Turkey, Italy, Norway, Denmark and the Netherlands, plus recent commitments from Israel and Japan. South Korea is evaluating the aircraft in competition with other US fighters and Europe's Typhoon, while Singapore has stated its interest in acquiring F-35s. The UK is the only other Level 1 Partner in the F-35 programme and 130 British companies are involved, including BAE Systems, which supplies the rear fuselage and vertical and horizontal tail stabilizers, plus the flight control system. Rolls-Royce supplies the STOVL lift system on the F-35B model, while Martin-Baker supplies the crew escape systems. The value of UK work, which equates to 15% by value of each F-35 built, totals \$40 billion if the intended production run out to 2037 is fulfilled. In the address, the audience was told that, "The UK's F-35 is affordable. It gets 100% of the aircraft's outstanding capability for just 4% of the development cost".

The new aircraft is officially described as a fighter, but in fact it is a combat air platform which has attack as the primary function, while also providing



*ABOVE - An F-35B lands on the USS Wasp*

air defence and a unique stealthy intelligence, surveillance and command and control networking function that today requires several specialist types of aircraft. Steve O' Bryan said that stealth offers a huge operational capability advantage as it enables missions to be undertaken with confidence closer to the target than would be the case if dependent on accompanying large, vulnerable radar, ISTAR and electronic warfare aircraft. The unchallenged air supremacy that coalition forces have enjoyed in the last two decades of air operations around the world, will not last forever, and when air space is seriously contested, the F-35 will be a winning asset that no other combat aircraft can match, he said. He pointed out that while radar cross sections can be reduced, true stealth characteristics cannot be retro-fitted into aircraft. "It requires an integrated approach and has to be built into the design at the start, and so features such as masked engine intakes and integrated defensive aids and communications antennas and other sensors are key to success." He said that the F-35 could provide its own all-round electronic surveillance and jamming capability, with the ability to absorb, exchange and share information on a previously unheard of scale. "It carries an advanced AESA radar - with pin-point accuracy and resolution - and more EW kit than a specialised EF-18 Growler, and at the same time it can act as a mini-AWACS and Rivet Joint while undertaking a deep strike mission, while still retaining the ability to see a threat aircraft or missile approaching at great range and then destroy the

# MEMORIAL LECTURE

## – Today and Tomorrow



during STOVL carrier trials. (LM photo)

incoming air target.” Although the maximum speed was around Mach 1.6, the F-35 could carry all its weapons, sensors and fuel internally. The stealth war-load was 5,200 lbs carried in the fuselage bay. He commented that whereas some fighter platforms could fly faster, maybe Mach 2 in a clean state, by the time they were carrying external fuel tanks, sensor pods and pylon-mounted weapons, they were hardly transonic, let alone supersonic. “And they can be seen coming” he added. “Stealth also means silent emissions.” But where stealth was not a serious issue, the F-35 can be equipped with a wide range of wing-pylon mounted missiles and bombs in addition to the internal weapons bay and can carry a total ordnance of 18,000lbs.

At the Q&A session the speaker was asked about the relative merits of the conventional versus STOVL



ABOVE – The second UK F-35B aircraft, ZM136, arrived at Eglin AFB in Florida on 19 October after a 90 minute ferry flight with Sqn Ldr Jim Schofield at the controls. (LM photo)

versions of the F-35 as Britain had now reverted to the STOVL F-35B, two years after the Prime Minister had announced that the C model offered better value and performance. The C model carries 20,000lbs of fuel internally, whereas the B carries 14,000lbs. Steve O’ Bryan said that the audience had to appreciate that with an available engine thrust of up to 45,000lbs, each variant offered considerable operational advantages over what has gone before. He said that the UK was satisfied now that the F-35B, operating in the STOVL mode, could generate the required sortie rate from the future carriers at lower operating cost than the conventional versions, which required a far more extensive support infrastructure. Added flexibility was provided by STOVL. He also added that conventional naval aircraft needed to carry more fuel for contingencies when returning to the carrier, while the STOVL aircraft simply stopped and landed, Harrier style, and didn’t need to go back around the circuit if it missed a deck wire. “It’s all a trade off” he said, “You need 2,000-3,000lbs less fuel to bring back on a B model compared to a C. Another advantage of the B model is that it accelerates faster and has a slightly higher Mach number”.



ABOVE- BAE Systems at Samlesbury is responsible for building and equipping the rear fuselage and tail assemblies for every F-35. (BAE Systems photo)

Test flying is now making rapid progress, with total flights by the F-35B running at 40% above the schedule and deliveries underway to the US Marine Corps and the UK, which now has two aircraft at Eglin AFB, Florida. The 112<sup>th</sup> F-35 is in the construction stream and so far 60 completed aircraft have been rolled off the Fort Worth production line, with 45 flying to date. Weapon release tests are progressing well and initial missiles cleared for use will include ASRAAM and AMRAAM, and AIM-9X (for US forces). The UK intends to carry Meteor, Storm Shadow and Spear in due course, in addition to other weapons. The audience was left in no doubt that the F-35 Lightning II remains at the core of future UK defence planning, and it is crucial for the many UK companies and organisations seeking to safeguard their capabilities and grow future business at a time when there are few programmes emerging to replace legacy production activity.

# COMMENTARY *by Aeronautica*

## LET'S BE DECISIVE - BUT NOT JUST YET

**W**e have all got used to representatives of the UK's airlines, airports and business organisations adding their voices to the call for more runway capacity for London and the South East, but when the chief executive of a major overseas airline describes the issue as, "a catastrophic situation", perhaps our government ought to take note. After all, Qatar Airways CEO, Akbar al Baker, knows what he is talking about, as his airline, which has recently joined the Oneworld group alongside British Airways, is one of the newest and fastest growing international airlines, and the Middle East has seen unprecedented aviation expansion over the last decade, as Gulf States rush to establish new global hubs. But Mr al Baker does not want to sit back and watch as the UK's premier hub slips into decline. He wants it to continue to offer new business opportunities that his airline can serve, as does British Airways and Virgin Atlantic. So far, however, the Coalition government seems unmoved by the deluge of informed criticism heading its way. The latest incoming Transport Secretary (average stay in post 12 months), Patrick McLoughlin MP, had a real window of opportunity to change policy direction, and indeed many saw the removal of the previous SofS as a deliberate gesture to prepare for a political U-turn on this issue, but instead he has done nothing to enhance the glacial progress of the consultation procedure, and has made matters even worse by confirming that the findings will not be announced until after the next General Election. The reality is that the entire five year lifetime of this administration will now pass without any decision on what to do about London's runway crisis. It is a lamentable record.

Further examples of chronic official indecision on major projects can be seen in the MoD, where much is being postponed until after the next SDSR. By then, many more serious capability gaps will have appeared, including at sea when the RN Sea King Mk 7s are withdrawn in the airborne early warning role in 2016, and if the RAF Sentinel and Shadow surveillance platforms are withdrawn after use in Afghanistan as planned. By then the new A330 Voyagers will not all be available in the tanking role, but all the VC10 and TriStar tankers will be gone. It has been stated that all the GR4 Tornados will depart by 2019, which is around five years earlier than previously stated. HMS *Ark Royal* is being disposed of for scrap five years early, to save £100 million, according to the MOD, yet this is a similar figure to that spent over the two years attempting to switch the UK's procurement of F-35Bs to F-35Cs, only to find that the "future-proofed" Queen Elizabeth class aircraft carriers had not in fact been future-proofed at the build stage and

over 250 ship compartments would have to be gutted and re-fitted to take equipment needed for assisted and arrested carrier operations. Earlier this year this was deemed unaffordable. This SDSR decision, announced by the Prime Minister himself in 2010, cost between £60-100 million with nothing to show for the expenditure. Since the decision to scrap the Nimrod Mk4s, the UK has had no long-range maritime air capability whatsoever. A vestige of MPA operational experience is being kept alive in the RAF by overseas exchange postings to the USA, Canada, Australia and New Zealand for a few former Nimrod air crews, but there is still no sign of a replacement in the long-term costings, and even if this re-emerges, the most that can be expected is probably a twin-turboprop aircraft with a limited anti-submarine performance - a huge capability downgrading after operating the world's most effective ASW/MPA fleet for the last 40 years. Many also question the wisdom of withdrawing all the modern C-130J workhorses in favour

of the much larger, and less tactically agile, A400Ms. Some C-130Js could be modified for maritime air patrol duties, and the type is just the right size for Special Forces support missions. And the -Js are all paid for and supported in service. No doubt all these "surplus assets" will be disposed of at "give away" prices, as in the case of the Harriers. It is hard to see the logic in discarding so many valuable air power and naval assets, long before they are time expired, when there is said to be insufficient money to fully replace them. By contrast, the Indian Navy still operates the former HMS *Hermes* and its Sea Harriers, and is extensively modernizing its 100-strong fleet of Jaguars for another 25 years service. (It is also embarking on a major expansion programme involving Rafale and Su T50 5<sup>th</sup> generation fighters). So who is being smart about procurement value for money? What is disappearing in UK air power is in-depth critical mass, and now we are more dependent than ever on other nations to fill the capability gaps. Dangerous stuff.

# THE AIR LEAGUE

Keeping Britain at the Forefront of Aviation



The Air League Trust is offering the following opportunities in aviation and aerospace to young men and women permanently resident in the UK. The competition for flying scholarships opens on-line in November 2012 and all other competitions on 1 December 2012.

## Fly helicopters?

Bristow flying scholarships offer four UK nationals the chance to gain an NPPL (A) before learning to fly helicopters in Florida. Those who progress satisfactorily will be offered a career in Bristows. *Applicants must be 18 but under 26 on 1 April 2013.*

**Closing date Thursday 31 January 2013**

## Fly solo in 10 days?

Flying scholarships offer the chance to learn to fly through the award of 12 flying hours in light aeroplanes towards the achievement of a National Private Pilot's Licence or completion of a PPL(A). The majority of scholarships will be flown on a residential basis at selected UK flying schools. *Applicants must be 18 but under 26 on 1 April 2013.*

**Closing date Thursday 31 January 2013**

## Gain a Balloon scholarship?

The Balloon scholarship enables a young person to qualify for a Balloon Private Pilot's Licence. *Applicants must be 18 but under 26 on 1 April 2013.*

**Closing date Friday, 22 February 2013**

## Experience aerospace engineering?

Engineering scholarships provide placements in the UK aerospace industry for one or two weeks for young people considering careers as aerospace engineers. The scholarship covers all reasonable travel and accommodation costs. *Applicants must be 18 but under 26 on 1 April 2013.*

**Closing date Friday, 22 February 2013**

## Improve your gliding skills?

Gliding scholarships offer cross-country gliding, aerobatic gliding or SLMG flying to gain flying experience and new qualifications. *Applicants must be 16 but under 26 on 1 April 2013.*

**Closing date Friday, 22 February 2013**

## Improve your licences?

Flying bursaries provide 3-5 hours advanced flying training in single-engine piston aeroplanes, to assist licensed pilots gain additional flying qualifications or to renew a rating. *There are no age limits.*

**Closing date Friday, 22 February 2013**

Please visit: [www.airleague.co.uk](http://www.airleague.co.uk) for further details/to download application forms for all competitions and to join **The Air League** online

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# MEMBERS' NEWS

**Thomas Batchelor, D G Marshall Flying Scholarship 2012**, I cannot thank the Air League enough for giving me twelve more hours' flying. I had an incredible time in Dundee at Tayside Aviation and very much hope to return one day. I learnt a huge amount, not just about the flying of the Piper Warrior, but also in navigating and planning of flights etc. which allowed me to finish my time with a solo navigation flight, one of the most scary yet rewarding hour and ten minutes of my life. The combination of good weather and great instructors meant that I was typically flying twice a day and so finished in just one week. I was constantly busy, even when not flying because of briefings, planning, revising or back-seating someone else's flight. I was surprised by just how much I benefitted from being a passenger in another person's flight and just how much is to be gained by observing someone else fly. One of the best things about this scholarship though, is the fact that it has put me within striking distance of achieving a national private pilot's licence, a lifelong dream that would not be achievable without the Air League, so thank you.

**Beth Redpath, Darren McQuoid (Cross-Country) Gliding Scholarship Winner 2011**, I would like to thank you for your generosity in awarding me a cross-country scholarship. I am extremely grateful and it has provided me with some vital cross-country experience, and accelerated my progress in the

### 2013 Subscriptions

Revised subscriptions with effect from 1 January 2013 were approved at the Air League Trustees Meeting held on 14 March 2012. The new rates will be:

| Corporate Membership Category   | Rate (Direct Debit) | Rate (Cash)    |
|---------------------------------|---------------------|----------------|
| <b>RED</b>                      | £4,000 & above      | £4,000 & above |
| <b>WHITE</b>                    | £1,250-£4,000       | £1,250-£4,000  |
| <b>BLUE</b>                     | £650-£1,250         | £660-£1,250    |
| <b>GREEN</b>                    | £190                | £200           |
| Individual Membership Category  | Rate (Direct Debit) | Rate (Cash)    |
| <b>Full</b> (over age 22)       | £62                 | £65            |
| <b>Retired</b> (over age 65)    | £43                 | £47            |
| <b>Intermediate</b> (age 22-27) | £43                 | £47            |
| <b>Student</b> (under age 22)   | £35                 | £38            |

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

sport. By enabling me to achieve my bronze badge and cross-country endorsement at the beginning of the soaring season last summer, it allowed me to be able to make good use of the weather and have some excellent flights. Throughout the winter, and up to the present, I continue to fly regularly and build upon my experience; hopefully, making me ready to compete in the junior nationals this August.

**Robert Ross, HQ Air Cadets (The Air Cadets Scarman) Flying Scholarship 2012**, I am writing to express sincere gratitude for the award of my recent flying scholarship. Having just completed two weeks at South Warwickshire Flying School at Wellesbourne, I have now successfully taken three exams (Air Law - 100%, Human

Factors - 100% and Meteorology - 90%) and went solo nine hours into the programme. The level of training and instruction was excellent and allowed me to further graduate to navigation exercises, practiced force landings and radiotelephony. One of the unique aspects of the two week period was the ability to experience first hand the dramatic change in weather conditions and the opportunity to fly sorties under these varying circumstances.

It is now my intention to pursue my initial goal of a PPL, eventually leading to a career in aviation upon graduation from university. There is no doubt in my mind that this scholarship has been the best possible foundation upon which to build my aviation career.

**New Members**  
**Full Members:** James Brown, Matthew Lane, Joseph Langer  
**Student Members:** Lewis Alderson, Madeleine Brownlow, Andrew Collings, James Craggs, Alison Davies, Adam Deacon, Ryan Gibson, Daniel Grundy, Peter Kirkwood, Joshua Stiller, Lucy Varman

**Diary Reminders**  
 30 November: Aviation Forum and Environment Day, BA Waterside  
 3 December: Council Meeting and EGM, RAF Club  
 8-9 December: Air League at British Military Tournament, Earls Court  
 For up-to-date information on all our activities please visit our website at [www.airleague.co.uk](http://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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