

FREE 787 POSTER



AVIATION
SMEN
Classic
Aircraft

AVIATION

NEWS
KEY

THE PRESENT AND FUTURE OF FLIGHT Incorporating

Classic Aircraft

UK £4.40 | June 2015 | www.aviation-news.co.uk



ADVANCED EAGLES

The Next Generation

IN THE NEWS

Battle of Britain Typhoon Unveiled
Pima Museum Receives 787
Piper Launches M600

HEINKEL He 111
Versatile Bomber

PARIS CHARLES DE GAULLE
Super Hub

FLYING TIGERS DC-8s



A Perfect Match

BRITISH AIRWAYS HS 748s



Regional Workhorse

TANKBUSTER TALES



Cold War Ops



Trident_ *redefined.*



THE NEW  TRIDENT

C60 TRIDENT PRO 600 – Swiss made dive watch with automatic mechanical movement, unidirectional rotating ceramic (ZrO₂) bezel and water resistance to 60 bar/600m. Available in 38mm and 42mm case sizes, five dial/bezel combinations and four strap styles.

SWISS MOVEMENT

CHR. WARD
LONDON

ENGLISH HEART

EXCLUSIVELY AVAILABLE AT christopherward.co.uk

Showroom at No.1 PARK STREET, Maidenhead. To arrange a personal appointment, call +44 (0)1628 763040

CONTENTS



p13

FEATURES

13 La Compagnie Launches London Luton-New York

French all-Business Class airline La Compagnie launched flights from London Luton Airport to New York in April, as Mark Nicholls, Brand Editor of sister magazine *Airliner World*, explains.

24 Paris Charles de Gaulle – European Super Hub

Aviation News Assistant Editor James Ronayne profiles the French capital's biggest airport.

30 Tankbuster Tales – A-10 Cold War Ops

Doug Gordon looks back at the A-10 Thunderbolt IIs and pilots attached to the 81st TFW at RAF Bentwaters and Woodbridge during the Cold War.

42 LOT Dreamliners

Marco Finelli details Boeing 787-8 Dreamliner in LOT Polish Airlines service.

48 Advanced Eagles

Tom Kaminski charts the latest developments in Boeing's F-15 Eagle programme.

56 British Airways and the Budgies

Bob O'Brien looks at the Hawker Siddeley HS 748 in British Airways service.

62 Flying Tigers DC-8s

Charles Kennedy examines the long and successful relationship between Flying Tiger Line and the Douglas DC-8.

79 Heinkel He 111 – The Luftwaffe's Workhorse

Chris Goss recounts the lengthy, varied and remarkable career of the Heinkel He 111.



p06



p14



p42



p79

Main image: A Republic of Singapore Air Force F-15SG of the 428th FS based at Mountain Home AFB, Idaho. Key-Jamie Hunter. Inset (left): Flying Tiger Line enjoyed a long relationship with the Douglas DC-8. Richard Vandervord. Inset (bottom left): G-BCOF was the second HS 748 to join British Airways. Bob O'Brien Collection. Inset (bottom right): An 81st TFW A-10 on final approach to RAF Mildenhall. Key Collection

REGULARS

04 Headlines

06 Civil News

11 Models Round-up 

14 Military News

20 Preservation News

36 Airshow News

37 Aviation Events Calendar

46 Air Mail

54 Flight Bag

68 Airport Movements

72 Air Base Movements

74 Register Review

FREE DVD

Claim your FREE Vulcan Cockpit or St Maarten Airport DVD worth £12.49 when you subscribe to *Aviation News*.

See pages 60 and 61 for details.



Copies of *Aviation News* incorporating *Classic Aircraft* can be obtained each month by placing a standing order with your newsagent. In case of difficulty, contact our Circulation Manager. Readers in the USA may place subscriptions by visiting www.aviation-news.co.uk or by calling toll free 800 676 4049 or fax 757 4286253 or by writing to *Aviation News* incorporating *Classic Aircraft*, 3330 Pacific Ave, Ste 500, Virginia Beach, VA, 23451-9828. **POSTMASTER:** Send address changes to *Aviation News* incorporating *Classic Aircraft*, Key Publishing Ltd, C/o Mail Right International Inc, 1637 Stelton Road B4 Piscataway NJ 08854. *Aviation News* incorporating *Classic Aircraft* (ISSN:2047-7198), is published monthly by Key Publishing Ltd, PO Box 100, Stamford, Lincs, PE9 1XG, UK and distributed in the USA by Mail Right Int., 1637 Stelton Road B4, Piscataway, NJ 08854. Periodicals Postage Paid at Piscataway, NJ and additional mailing offices.

Printed in England by Warners (Midland) plc, Bourne, Lincolnshire. (ISSN 2047-7198). The entire contents of AVIATION NEWS INCORPORATING CLASSIC AIRCRAFT is a copyright of Key Publishing Ltd, and can not be reproduced in any form without permission.



X-47B Aerial Refuelling Trials

Successful trials of fully autonomous aerial refuelling (AAR) with the X-47B Unmanned Combat Air System Demonstration (UCAS-D) aircraft have been carried out by Northrop Grumman and the US Navy.

The demonstration took place on April 22, marking the first time in history that an unmanned aircraft has refuelled in-flight. This is another historic aviation milestone for the X-47B, which in 2013 became the first unmanned aircraft to autonomously launch from and recover aboard an aircraft carrier.

Capt Beau Duarte, the navy's Unmanned Carrier Aviation Program Manager said: "AAR testing with the X-47B helps solidify the concept that future unmanned aircraft can perform

Northrop Grumman and the US Navy have carried out successful aerial refuelling trials with the X-47B. US Navy

standard missions, like aerial refuelling, and operate seamlessly with manned aircraft as part of the Carrier Air Wing."

During the probe and drogue AAR demonstration, the second X-47B prototype, 168064 'NG-502' (AV-2) 'Salty Dog 2', performed a close formation flight rendezvous with an Omega Air Boeing KC-707 tanker over Chesapeake Bay, Virginia. Upon gaining clearance from the tanker crew, the X-47B manoeuvred into position behind the KC-707 and successfully engaged the drogue. The X-47B then received 4,000lb (1,814kg) of fuel from the tanker and on completion of the refuelling, autonomously disengaged

the drogue and moved away from the tanker before returning to base.

During the test, the X-47B exchanged refuelling messages with a government-designed Refuelling Interface System aboard the tanker. The first dry contact between the X-47B and the KC-707 had been made on April 17.

"We are very pleased with the outcome of this first round of probe and drogue flights with the X-47B," said Pablo Gonzalez, UCAS-D Program Manager, Northrop Grumman Aerospace Systems. "The AAR system and X-47B both performed as expected. While we would certainly benefit from additional probe and drogue flight testing, we have reached a tipping point at which AAR is now feasible."

Rafale Success in Qatar and India

Dassault Aviation has signed a contract to supply 24 Rafales to the Qatar Emiri Air Force. The deal, worth an estimated €6.3bn, was signed in Doha on May 4.

French President François Hollande travelled to Qatar to witness signing of the contract, along with Minister of Defence Jean-Yves Le Drian and Foreign Minister Laurent Fabius, with Sheikh Tamim bin Hamad Al Thani, Emir of Qatar, also present. Industry chiefs included Dassault CEO Eric Trappier, MBDA CEO Antoine Bouvier and the head of engine provider Safran, Philippe Petitcolin.

The deal includes MBDA missiles and covers training for 36 Qatari pilots and 100 technicians by the French military. It also provides for the training of a number of Qatari intelligence officers.

The 24 aircraft are split between 18 single-seat and six two-seat Rafales, while there is an option in the contract

to purchase either 12 or 24 additional aircraft. The weapons included in the deal comprise SCALP/Storm Shadow cruise missiles, Meteor air-to-air missiles and Exocet anti-ship missiles.

Dassault CEO Trappier said that the Qatar sale was, "a good sign for all the countries of the region" because now they would see the capabilities of the aircraft. "It's a little bit the snowball effect – except it's in the desert," he said. The deal follows on the back of a contract with Egypt for 24 Rafales (see *Aviation News* April 2015).

In other Rafale news, Indian Prime Minister Narendra Modi has announced his country intends to purchase 36 of the type. The deal, estimated to be worth €4bn, was revealed during a news conference at the Elysée Palace on April 10 while Prime Minister Modi was on an official visit to France.

"I have asked President François Hollande to supply 36 ready-to-fly Rafale jets to India," he said. "Our civil servants will discuss terms and conditions in more detail and continue the negotiations." President Hollande confirmed French Defence Minister Le Drian would travel to India shortly to finalise the government-to-government contract. India's Defence Minister, Manohar Parrikar said the aircraft would be inducted into the IAF within two years.

India and France have been in exclusive negotiations for the last three years regarding the purchase of 126 Rafales for the IAF under the medium multi-role combat aircraft (MMRCA) programme. However, with a deal still not yet finalised, India has decided on an immediate off-the-shelf purchase of a smaller number to meet initial requirements.

UK Helps Nepal Aid Effort



Silk Way Airlines II-76TD-90 4K-AZ100 arrives at Robin Hood Doncaster Sheffield Airport on May 1. Charles Cunliffe



Aviacon Zitotrans II-76TD RA-76842 arrived at East Midlands Airport on April 30 to operate an aid flight. Stuart Lawson

Two Ilyushin II-76s visited the UK as part of the aid relief effort following the earthquake in Nepal.

Aviacon Zitotrans II-76TD RA-76842 flew into East Midlands Airport from Koltsovo International Airport in Russia on April 30 as ZR9005. The aircraft was operating on behalf of the Department for International Development and departed the following day. It received special dispensation to fly into the UK from the CAA which usually bans such aircraft on noise grounds. Robin Hood Airport Doncaster Sheffield welcomed Silk Way Airlines II-76TD-90 4K-AZ100 on May 1. The aircraft arrived from Baku as ZP4991 and

departed for Nepal later the same day.

International Development Secretary Justine Greening announced the UK government was sending three Chinook helicopters to Nepal to help the relief effort as well as providing funding for additional UN helicopters. The first Chinook departed from the UK on board an Antonov An-124 on May 1. The previous day, an RAF Boeing C-17A Globemaster III carrying a team of Gurkha engineers and crucial aid supplies, including shelter kits and solar lanterns, arrived in the Nepalese capital, Kathmandu. The UK has also deployed a C-130J to the area.

The US contribution includes one C-17A,

four V-22 Ospreys and one UH-1 and Canada has provided three CH-146 Griffon helicopters. India has deployed 13 transport aircraft and 12 helicopters, China three II-76s and three Mil Mi-17 helicopters and Russia two II-76s. Sri Lanka and Bangladesh have each sent a single C-130 Hercules.

The Airbus Foundation co-ordinated with the French Government's Crisis Centre to transport 50 humanitarian staff and 21 tonnes of food and medical aid from Paris to Kathmandu onboard an Airbus A350 XWB test aircraft while Norwegian flew a team of rescuers from Oslo onboard one of its Boeing 737-800s.

Poland Selects H225M Caracal

Poland's defence ministry has selected the Airbus Helicopters H225M Caracal as the preferred option to meet its requirement for new medium multi-purpose helicopters.

The decision in favour of the EC725 Caracal Polska consortium, comprising Airbus Helicopters and Heli Invest, was announced on April 21.

The ministry revealed in December that it had received three bids for the requirement, the other two coming from AgustaWestland's Polish subsidiary WSK PZL-Świdnik with the AW149, and Sikorsky's Polish subsidiary PZL Mielec, partnered with Sikorsky Aircraft and Sikorsky International Operations, which proposed the S-70i Black Hawk.

Further testing of the H225M will now be carried out during May and June in Poland to verify the declared technical parameters of the helicopter, prior to concluding a firm contract. It is hoped to begin deliveries in 2017.

The ministry also revealed that the original requirement for 70 helicopters has been reduced to 50. This follows a review of the needs of the Polish Armed Forces, which proposed using the transport capacity of its Mi-17s for a further decade.

The original requirement was for various versions of a common platform, with the 70 helicopters to be split between 48 tactical transports for the army; ten search and rescue (SAR) helicopters for the air force;

six ASW and six maritime SAR examples for the navy. Poland was seeking delivery of all 70 by 2022, enabling the phase-out of the elderly Soviet-era types currently used in these roles. It has not been explained how the reduced requirement affects the split between the variants.

The defence ministry also announced that, given the changing security situation in the region, it will accelerate the Kruk attack helicopter replacement programme. This was officially launched on July 8 last year in an effort to purchase 32 new helicopters to eventually replace the Mi-24 *Hind* fleet. A formal tender is expected to be issued this year.

An-178 Prototype Makes Maiden Flight

Antonov's An-178 military and cargo transport aircraft prototype, UR-EXP (c/n 178/01-01), made its maiden flight on May 7.

The aircraft, which was first rolled out during a ceremony at the Antonov factory in Kiev, Ukraine on April 16, spent an hour in the air before returning. The An-178 is a further development of the An-148 and An-158 family that is aimed primarily at the military and cargo aircraft markets, with a rear ramp for easy loading. Intended as



Antonov's An-178 made its maiden flight on May 7. AirTeamImages.com/Oleg Belyakov

an An-12 replacement, unlike the latter, it features a pressurised cargo compartment and an anticipated 40% higher cruising speed as well as a glass cockpit with digital

avionics. The An-178 will be able to carry up to 99 soldiers, 80 paratroops or 70 sick/injured personnel, while alternatively having the ability to transport 18 tons of cargo.

Al Maha Airways Receives First Four A320s



New Saudi-based airline Al Maha Airways has taken delivery of its first four Airbus A320s, all on the same day.

The aircraft were delivered on April 29 to Doha, home of Al Maha's parent company Qatar Airways Group and will fly for Qatar Airways prior to the new airline launching operations.

The aircraft were inaugurated at a signing

The first four A320s for new Saudi-based airline Al Maha Airways at the Airbus Delivery Centre in Toulouse, prior to delivery. Qatar Airways Group

ceremony between Qatar Airways Group Chief Executive and Chairman of Al Maha Airways, Akbar Al Baker and Airbus CEO, Fabrice Brégier at the Airbus Delivery Centre in Toulouse.

Al Baker said: "It is a moment of significant pride to be welcoming the first aircraft of the new Al Maha Airways fleet, let alone four such aircraft in the same day."

Al Maha Airways was awarded the right to operate in Saudi Arabia as part of a plan to meet rising domestic aviation demand in the kingdom. At present, Saudi Arabian Airlines and flynas offer domestic flights.

Worker Falls Asleep in Cargo Hold

An Alaska Airlines flight to Los Angeles was forced to return to Seattle after an airport worker was heard screaming and banging inside the aircraft's cargo hold.

The ramp agent was stuck in the pressurised hold of flight 448 on April 13 for 14mins before the captain heard his banging and the 'plane returned to the airport.

On arrival at Seattle the worker told authorities that he had fallen asleep. He

was taken to hospital and given a drugs test which he passed.

When the ramp agent's team leader had noticed the employee was missing, he called into the cargo hold and sent him a text message but received no response. Colleagues believed the worker had finished his shift and gone home. The ramp agent, who works for contractor Menzies Aviation, has since been banned from working on any Alaska Airlines flights.

Piper Announces New M600

The new top-of-the-range Piper M600 was announced at the AERO exhibition in Friedrichshafen in Germany held from April 15 to 18. Based on the Meridian, this new PA-46 variant has a new longer-span wing with winglets and a 600shp Pratt & Whitney PT6A-42A turboprop engine. With more fuel capacity, the M600 will have a 1,300nm (1,852km) range – 300nm (556km) more than the Meridian – and a higher maximum payload of 1,200lb (544kg). The cockpit has been upgraded to the Garmin G3000 system and other features include Electronic Stability Protection and Underspeed Protection which helps prevent the onset of stall/spin conditions and loss of control.

The Malibu Meridian and piston-engined Malibu Mirage have also been renamed as the M500 and M350 and fitted with many of the safety features of the M600. Both these types are now certificated and are being delivered to customers. The M600, which is now in flight test, is expected to be ready for first deliveries by the end of 2015. **Rod Simpson**



LOT Polish Airlines has applied a special livery to Embraer 175 SP-LIB to promote the Herbalife IRONMAN 70.3 triathlon in Gdynia, Poland's first ironman event. The aircraft was seen wearing the scheme at Düsseldorf on April 3. Marcus Steidele

Biman Welcomes Q400s



Biman Dash 8-Q400 S2-AGQ touches down at Dhaka airport. AirTeamImages.com/Rainan Ahmed

Biman Bangladesh Airlines has taken delivery of its first two Bombardier Dash 8-Q400s.

The aircraft have been leased from Egyptian lessor Smart Aviation Company and are registered S2-AGQ and S2-AGR.

“With Bangladesh’s aviation sector experiencing an 8% annual growth rate, the Q400 NextGen aircraft will provide reliable, comfortable and affordable air

connectivity to a number of destinations in Bangladesh,” said Kyle Haywood, Managing Director and Chief Executive Officer of Biman. “This agreement represents another important step in our growth journey and fleet modernisation programme, and we are confident that the Q400 NextGen turboprop will be a key asset in helping Biman offer a high level of service to Bangladesh nationals and visitors alike.”

Rolls-Royce Nets Huge Emirates Order

Emirates Airline has placed a \$9.2bn order with engine manufacturer Rolls-Royce to equip the 50 Airbus A380s the carrier ordered at the 2013 Dubai Air Show. Including the associated service package, the contract is the largest non-military contract ever won by a UK engineering company.

The deal marks an interesting change of policy by the Gulf carrier, which had selected the Engine Alliance GP7000 engine for its previous 90 A380s.

Emirates’ CEO Tim Clark said: “What impressed us with Rolls-Royce was its continued commitment to applying the technologies it was developing into its engines. Perhaps we couldn’t see that so much from [Engine Alliance].”

Ireland Chosen for ALERT Service

US global air traffic surveillance company Aireon has announced that its Aircraft Locating and Emergency Response Tracking (Aireon ALERT) service will be managed from Ireland. It will be based at the Irish Aviation Authority’s (IAA) North Atlantic Communications Centre in Ballygirreen on the west coast and will be provided as a public service to the aviation community, free-of-charge. The service will allow rescue

agencies, ATC providers or airlines to request the location and last flight track of any 1090 MHz Automatic Dependent Surveillance – Broadcast (ADS-B) equipped aircraft in distress. It is expected that approximately 90% of the world’s commercial fleet will be ADS-B equipped in the near future.

An IAA spokesman said: “Aireon ALERT is a crucial aircraft tracking service, which will greatly assist airlines, aviation

authorities, air navigation service providers and search and rescue agencies during emergency situations. At their request, on a 24/7 basis, we will be able to provide users with the immediate ‘last known’ location of aircraft with tremendous accuracy through Aireon’s global space-based air traffic surveillance system. This is something that’s clearly lacking today as we’ve witnessed in recent times.” **David J Smith**

Debut for British Bulldog Autogyro

Drawing crowds at the AERO exhibition held at Friedrichshafen was the new Bulldog tandem two-seat autogyro. The brainchild of Barry Jones, a former British Army helicopter pilot and leader of the Blue Eagles display team, the Bulldog is a unique design with a main fuselage reminiscent of a Cierva C.30 and a large forward-cantilever pylon mounting the main rotor.

The Bulldog, which is powered by a 150hp 9-cylinder Rotec radial engine mounted in the nose, has been built of carbon fibre by Derby-based EPM Technology which specialises in Formula One racing cars. The rotor design comes from Martin Deady who has a long history with AgustaWestland.

Bulldog Autogyros are based at Tatenhill Airfield in Staffordshire where flight testing will start this summer. According to Jones,



The new Bulldog tandem two-seat autogyro drew the crowds at the Aero exhibition in Friedrichshafen in April. Rod Simpson

“this is an elegant gentleman’s flying machine and, like the Ciervas, it will have exceptional take-off performance.” The

Bulldog will be priced at £135,000 and the company plans to build 50 a year once it achieves its approval. **Rod Simpson**

250th Airbus for easyJet



Immaculate Airbus A320-214, G-EZOL (c/n 6572) prior to its handover to easyJet at Hamburg Finkenwerder on April 22. Key-Mark Nicholls

The UK's largest low-cost carrier, easyJet, has taken delivery of its 250th Airbus A320 Family airliner A320-214, G-EZOL (c/n 6572). Following an official handover ceremony at Hamburg Finkenwerder on April 22, the aircraft was flown to the carrier's London Luton headquarters and then repositioned to its new home at Gatwick Airport.

Present for the handover were: Carolyn McCall, easyJet CEO; Jean-Paul Ebanga, CFM International President and CEO; Didier Evrard, Airbus Executive Vice President and Head of Programmes; Christopher Buckley, Airbus Executive Vice President

Europe, Africa and Asia-Pacific and Frank Horsch, Minister of Economy, Transport and Innovation, Free and Hanseatic City of Hamburg.

The airline is due to take delivery of 23 180-seat A320s this year, with current hand-over rates running at one every 17 days, out of an outstanding order for 58 due to be finished in 2018. The carrier also placed orders for 100 A320neos in 2013 and these will begin joining the fleet in 2017, with the last expected to be delivered in 2022. The planned size of the fleet is 304 aircraft by 2019. **Mark Nicholls**

Eclipse and Kestrel Merge as ONE Aviation

It was announced on April 15 that Eclipse Aerospace and Kestrel Aircraft will merge under a new name, ONE Aviation. At the same time Sikorsky will withdraw its 42% investment in Eclipse, the company that manufactures the Eclipse 550 light business jet. The objective of the merger is to stimulate production and sales of the Eclipse 550, to progress development of the Kestrel K350 single-engined turboprop (derived from the original Farnborough F.1) and, according to company officials, bring new products to the market either through internal design or acquisition "in the not too distant future". The Eclipse 550, together with the Eclipse PLUS and Total Eclipse jets, will continue to be manufactured and supported from the Albuquerque, New Mexico factory. CEO of the new company will be Kestrel's Alan Klapmeier who originally founded Cirrus Aircraft. **Rod Simpson**

Norwegian Applies for UK and Spanish AOCs

Bjørn Kjos, CEO of Norwegian Air Shuttle, has revealed the low-cost carrier is in the process of applying for Air Operator Certificates (AOC) in both the UK and Spain. The airline already has a base at London Gatwick along with several in Spain, but local AOCs would enable Norwegian to tap into bilateral air service arrangements with other countries, enabling it to fly to destinations that would not otherwise be accessible.

The airline and its subsidiaries already hold two AOCs in Norway, while Dublin-based offshoot Norwegian Air International has an Irish AOC.

Southwest Reveals Missouri One



US low-cost carrier Southwest Airlines has painted Boeing 737-7H4 N280WN in a livery honouring the state of Missouri. The aircraft, known as Missouri One, was unveiled at a ceremony on April 15 in Kansas City, where the airline began its first service in the state in 1982. Ashlee Duncan, Southwest Airlines

AIRLINE ORDERS

Airline	Aircraft	Number	Order Placed	Notes
Air Côte d'Ivoire	Bombardier Dash 8-Q400	2	April 13	Converted from options
Air Tahiti Nui	Boeing 787-9 Dreamliner	2	April 30	
All Nippon Airways	Airbus A321ceo	4	April 2	With Sharklets
All Nippon Airways	Airbus A321neo	3	April 2	
Atlantic Airways	Airbus A320	1	May 5	MoU - Final agreement to be signed in June
Avianca	Airbus A320neo family	100	May 5	Order includes A319neo, A320neo and A321neo
CIT	Airbus A321ceo	5	April 2	
Copa Airlines	Boeing 737 MAX 8/9	61	April 10	
Swiss International Airlines	Boeing 777-300ER	3	May 4	

New Name for Flybe Finland

Flybe Finland is to be rebranded as Nordic Regional Airlines following a change of ownership at its parent company Flybe Nordic. At the end of March, Finnair acquired Flybe UK's 60% stake in the carrier on a temporary basis, while ownership discussions continue with two Finnish firms, StaffPoint Holding and G W Sohlberg.

THE AIR FORCE SHOP
OFFICIAL ROYAL AIR FORCE MERCHANDISE

Official Royal Air Force Gifts and Collectables

WWW.THEAIRFORCESHOP.CO.UK
T: 01279 833215

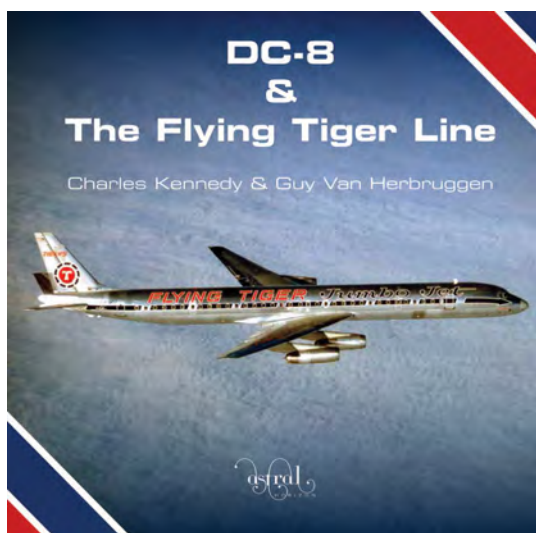
Shoreham-by-Sea Branch Royal Air Forces Association presents

SHOREHAM AIRSHOW

CELEBRATING 75TH ANNIVERSARY OF THE BATTLE OF BRITAIN
22nd-23rd August 2015
SHOREHAM AIRPORT • WEST SUSSEX

WIN A FLIGHT IN AN ICONIC SPITFIRE
To enter: www.shorehamairshow.co.uk/win

www.shorehamairshow.co.uk
@shorehamairshow Charity Number: 1071257



An essential book about an airline and an aircraft

This hardcover book tells the story of the Douglas DC-8 jetliner in the service of air cargo giant Flying Tiger Line, with a detailed individual airframe history of each of their forty-three DC-8s; pilots' recollections; a wealth of photographic, technical and promotional material; and two epic essays, covering the history of the airline, and the DC-8. This is the story of a pioneering airline and a historically significant aircraft; the combination changed the world of air commerce forever.

Order now from *The Airline Boutique!*



Farewell DC-10: Biman Bangladesh
This double DVD covers the retirement of the world's last passenger DC-10, including the farewell flights out of BHX, the return to Dhaka, plus extra content from the cockpit and ramp.



Air³ is the latest book from photo legend Sam Chui, featuring Miami, LAX, Sydney, and London Heathrow; and aviation safaris in North Korea, Iran, Bangladesh and Somalia, with detailed from Charles Kennedy.



Simulator Classics: DC-10
This DVD follows the crew through a simulator ride including normal procedures and emergencies, giving a deep insight into flying a first-generation, all-analogue widebody jet.

www.theairlineboutique.com

The Airline Boutique is a new online shop selling the products of Astral Horizon Aviation and other carefully chosen items, such as safety cards, stationery, DVDs, books.

Chinese Electric Trainer in Production

One of the most unusual exhibits at the recent AERO show in Friedrichshafen was the RX1E built by Liaoning Ruixiang General Aircraft Manufacture Co of Shenyang in China. This side-by-side two-seat light sport aircraft has been flying since June 2013. It recently gained Chinese CAAC certification with two flight test aircraft (B-988L, c/n 001 and B-755L c/n 002) and two static test airframes being used for the approval process. Seven or eight aircraft are now on the production line to meet orders from Chinese flying schools.

The carbon-composite RX1E is all electric and powered by six rechargeable battery packs fitted into a housing in the port fuselage. Endurance at present is



The Liaoning Ruixiang General Aircraft Manufacture Co exhibited its RX1E at Friedrichshafen in April. Rod Simpson

around 45 to 60mins but the manufacturer expects to raise that to 90mins and increase the gross weight from 1,100lb

(500kg) to 1,325lb (600kg) in the near future. There are currently no plans to sell the aircraft outside China. **Rod Simpson**

New Reconnaissance/Trainer From Diamond

Diamond Aircraft founder, Christian Dries has revealed that the company is developing a new multi-role turboprop aircraft. Speaking at the AERO exhibition in Friedrichshafen, Dries said the Dart 450 (Diamond Aircraft Reconnaissance Trainer) would be intended for both civil and military roles. It will compete with

aircraft such as the Grob G115T and will have a top speed in the 220-230kts range.

The trainer version is planned to have an endurance of 3hrs 20mins (with a range of 645nm/1,200km) but the reconnaissance variant, which will be fitted with belly and underwing hardpoints, will be able to fly missions of up to 8hrs

10mins. The Dart 450, which will be fully aerobatic and stressed to +6/-4g, will have a climb rate of 3,000ft/min and a service ceiling of 23,000ft (7,010m).

Dries says the company intends to exhibit the aircraft at the 2016 Farnborough International Airshow. **Rod Simpson**

FedEx to Buy TNT Express

FedEx has agreed a deal to acquire TNT Express, which may result in the latter's airline operations being sold. In a statement, FedEx said the European regional headquarters of the combined companies will be in Hoofddorp, Amsterdam, while Liège will be maintained as a "significant operation." It added: "TNT Express' operations as a European air carrier will be divested to address applicable airline ownership regulations. Where permitted by regulation, FedEx intends to transition TNT Express' intercontinental air operations into FedEx."

Wizz Air Ukraine Closes

Wizz Air subsidiary, Wizz Air Ukraine ceased operations on April 20 as a result of the civil war in the eastern part of the country. A company statement said continuing instability in Eastern Ukraine, the devaluation and volatility of the local currency and the impact of foreign exchange controls left it with no alternative but to close the operation. The carrier's ten international and 16 domestic rotations, operated by two Airbus A320s, were discontinued on April 20.

The parent company, Wizz Air Hungary, has also announced a restructuring of its operations in Ukraine. From April 20, it will operate eight routes into and out of Ukraine and this will be followed by it establishing a Kiev base in early June with a single Airbus A320. The company will also deploy an A320 to its new base in Kosice, Slovakia, which is due to start services to Milan Bergamo and Robin Hood Airport Doncaster Sheffield in early June.

Star Alliance Dreamliner



Air India has taken delivery of its 20th Boeing 787-8 Dreamliner. The aircraft, registered VT-ANU, is painted in the Star Alliance livery, the first of the type in the world to wear the scheme. It made its first appearance in the UK when it visited Birmingham on April 14. Karl Nixon

Anglia Airways

UK start-up Anglia Airways could begin operations by the end of the year if it can source a suitable aircraft.

Managing Director John Sturgeon said he originally planned to use Embraer ERJ 135/145 regional jets, but is now looking to secure the use of a Saab 340 or ATR 42 with the aim of establishing connections from Cambridge and Norwich airports on routes to several European destinations.

Business travellers and 'upscale' leisure passengers are the target market and Sturgeon hopes to gradually add more aircraft and broaden the airline's route network while keeping costs low.

Models Round-up

Aviation News incorporating *Classic Aircraft* reviews the latest models on the market.

Airbus A321-200 Thomas Cook Airlines G-TCDG 1:150 Item No SKR804 Price £36.00 Sky Marks

Thomas Cook Airlines will have 18 Airbus A321-200s in its fleet by the end of the summer. This particular aircraft, G-TCDG, joined the airline brand new from the Airbus plant at Hamburg Finkenwerder in May 2014. The model features Airbus' fuel-saving Sharklets, complete with Thomas Cook's 'heart' logo on both sides. The undercarriage is fixed in the down position on the model and a display stand is included. This will prove a fine addition to any collection.

www.isca-models.co.uk www.airspotters.com www.aviationretaildirect.com



Boeing B-17G Flying Fortress US Army Air Forces 1:155 Item No PS5402-2 Price £23.00 Postage Stamp Collection

The United States Army Air Forces and the Royal Air Force both used the Boeing B-17 Flying Fortress during World War Two. More than 12,000 were made by the time production ceased in May 1945. This model depicts B-17G 42-97849 *Liberty Belle*, a Flying Fortress forced to land in Belgium after sustaining heavy damage on February 12, 1945. It comes complete with nose art and guns in the turrets. A display stand is included.

www.isca-models.co.uk www.airspotters.com www.aviationretaildirect.com



Cessna 172 Skyhawk N403GF 1:87 Item No PS5603-2 Price £16.00 Postage Stamp Collection

The Cessna 172 has proved to be one of the most successful general aviation aircraft of all time. The 172 was first flown in 1955 and is a four-seat high-wing aircraft popular with training schools and private fliers alike. The Skyhawk is the deluxe model with a 640nm (1,185km) range and 124kts cruising speed. This model depicts a 2005-build Skyhawk registered to Sky Mates of Dover, Delaware. Stand included.

www.isca-models.co.uk www.airspotters.com www.aviationretaildirect.com



Fokker Dr.1 German Air Force 1:63 Item No PS5349 Price £16.00 Postage Stamp Collection

The Fokker Dr.1 served with the German Air Force during World War One and was made famous by fighter ace Manfred von Richthofen, better known as the 'Red Baron'. The tri-plane had great manoeuvrability and was fitted with a 110hp cylinder rotary engine and two Spandau MG 08 7.92mm synchronised machine guns. A display stand is included.

www.isca-models.co.uk www.airspotters.com www.aviationretaildirect.com



Lockheed SR-71 Blackbird US Air Force 61-7975 1:200 Item No PS5389 £16.00 Postage Stamp Collection

The SR-71 Blackbird is one of the most iconic aircraft ever built, boasting a top speed of more than 2,200mph at an altitude of 80,000ft. This particular SR-71 is on display at March Field Air Museum in California and is a veteran of the Vietnam War. A display stand is provided because the model comes with the undercarriage fixed in the up position.

www.isca-models.co.uk www.airspotters.com www.aviationretaildirect.com



RQ-1 Predator US Air Force 92-3034 1:87 Item No PS5567 £23.00 Postage Stamp Collection

Drones play an increasingly important role in modern conflicts as a platform for both reconnaissance and air strikes. The RQ-1 Predator is equipped with the AN/AAS-52 Multi-spectral Targeting System, a colour nose camera, a variable aperture day-TV camera and a forward looking infrared (FLIR) system. This model depicts the RQ-1 armed with AGM-114 Hellfire missiles and is the multi-role version used for armed reconnaissance and interdiction. A display stand is included.

www.isca-models.co.uk www.airspotters.com www.aviationretaildirect.com



Sponsored by

SRF Trading Ltd, Unit 1, Bexwell, Downham Market, Norfolk PE38 9LT

Tel: 44 (0)1366 380662 ukorders@geminijets.com Available from specialist model aviation outlets and stockists throughout the UK.

Turbo Dak at Shannon



Priority Air Charter Douglas DC-3C-65TP N467KS arrives at Shannon on April 1. Malcolm Nason

Priority Air Charter Douglas DC-3C-65TP N467KS visited Shannon in April while en route from the US to Africa.

The aircraft arrived on April 1 and carries Samaritan's Purse titles, a Christian international relief and development organisation. The Turbo Dak had set off from Akron-Canton Airport in Ohio the previous day, overnighing at St John's, Newfoundland before embarking on the 8hr

transatlantic crossing to Shannon. After an overnight stop the aircraft departed to Malta International Airport, the next port of call on its journey to the Samaritan's Purse base at Eldoret, Kenya. The organisation has a purpose-built hangar at Eldoret housing its fleet – a Cessna 208B, a Beech King Air 200 and another DC-3C-65TP, N467SP – that operates mainly in Kenya and South Sudan.

Malcolm Nason

IN BRIEF

ADRIA AIRWAYS will link Maribor in Slovenia and London Southend Airport from June 1. Flights will operate on Monday, Tuesday and Thursdays.

London Heathrow has been chosen as one of the European destinations FINNAIR will use for crew familiarisation flights of its new Airbus A350s. The type is currently scheduled on flights from Helsinki to Heathrow on October 6 (AY831/840), 15 and 16 (both AY995/996). The carrier will begin daily A350 flights from Helsinki to Shanghai on October 25. Finnair has 19 A350s on order and expects to receive the first four by the end of the year.

EASTERN AIR LINES has confirmed it will make its official debut, a charter flight from Miami carrying war veterans to Washington DC, on May 30.

ARUBA AIRLINES will launch services between its home hub of Queen Beatrix International Airport, Oranjestad and Miami from July 2. The carrier will operate a five-times weekly rotation using an Airbus A320.

Brazilian carrier TAM AIRLINES has confirmed it is to relocate its operations from London Heathrow's Terminal 1 to Terminal 3. The move will take place on May 27.

LAN Ends A340 Operations

Chilean carrier LAN Airlines has withdrawn its three remaining Airbus A340-300s from scheduled services. The Santiago-based operator had been using the aircraft on transpacific flights to Australia and New Zealand but has replaced them with Boeing 787-8 Dreamliners. The A340's final flight – LA800 from Sydney to Santiago via Auckland – was flown by CC-CQF (c/n 442) on April 17. The aircraft have now been placed into short-term storage but will continue to provide additional capacity as required until the type is finally retired in June.

United Fleet Update

United Airlines will acquire ten Boeing 777-300ERs as part of a wider fleet update.

The carrier has exchanged orders for ten 787s (variant/s undisclosed) for the 777s with deliveries beginning in 2016. A United statement said the 777-300ERs, "will provide attractive upgauge and range opportunities to the company at competitive economics".

The airline has also opted to extend the life of 21 of its 767-300ERs through investments in winglets, reliability improvements and interior modifications. It will reconfigure and transition ten 777-200s currently used on international routes into the domestic network, and position a number of its transatlantic 757-200s into the domestic and Latin American markets, which has been made possible with the extension of the 767-300ERs. United has also announced it will remove 130 50-seat aircraft

from its fleet by the end of 2015 and continue to dispose of such aircraft, "throughout 2016 and beyond" as leases come to an end.

The Chicago-based airline has also revealed it is in final negotiations regarding the lease of ten to 20 used narrowbodies for delivery over the "next few years" and says it will seek other opportunities to acquire second-hand aircraft to meet its needs.

"These changes are part of our strategy to improve operational reliability, grow capacity with demand, and enable us to achieve our long-term goal to improve margins and return on invested capital," said John Rainey, United Airlines' Executive Vice President and Chief Financial Officer. "Customers tell us they prefer larger aircraft, and these fleet modifications will provide more opportunity for our customers to travel on the type of aircraft they prefer."

New TUIfly Haribo 737 Unveiled



German carrier TUIfly has painted Boeing 737-8K5 D-ATUJ in a special scheme promoting Tropifrutti sweets made by Haribo. The aircraft was painted at Eindhoven and is pictured departing the Dutch airport on April 24. Rainer Bexten

British Plane Spotters Released in UAE

Three British aircraft enthusiasts held in the United Arab Emirates on suspicion of spying have been released.

Conrad Clitheroe and Gary Cooper, both from Stockport, and expat Neil Munro were arrested in February (see *Aviation News* April 2015) after an off-duty police officer spotted them taking down notes at Fujairah International Airport. The trio were released on April 20 and Mr Clitheroe and Mr Cooper arrived back in the UK four days later.

LA COMPAGNIE STARTS LUTON-NEW YORK



French airline La Compagnie launched its all-Business Class service from London Luton Airport to New York's Newark Liberty International Airport on April 24.

Flights from Luton will initially run three times a week, with frequencies progressively increasing up to six times per week from June.

"Savvy, cost-conscious travellers can now enjoy business class travel for less between London and New York," said CEO Frantz Yvelin at the ribbon-cutting ceremony at Luton prior to boarding the inaugural flight. "La Compagnie is proud and happy to be able to bring this unique proposition to the London transatlantic market."

The carrier is using a winglet-equipped Boeing 757-200 fitted with 74 flat-bed seats in a 2-2 configuration. The seats are 26in (66cm) wide with a pitch of 62in (157cm), and are equipped with a power outlet, USB port and a light. The cabin is fitted with individually controlled mood lighting and in-flight entertainment is via Samsung Galaxy Pro 12in (30.5cm) tablets stored in the seat backs and preloaded with movies, e-books and music.

Each passenger will receive an amenity kit containing cosmetic products from French skincare brand Caudalie. Passengers will be attended to by three cabin crew and seasonal menus will be devised by French chef Christophe Langrée.

The airline was founded in October 2013 by Yvelin, who also started L'Avion, the Business Class carrier acquired by British Airways in 2008. La Compagnie began flights on July 21 last year between

Paris-Charles de Gaulle and Newark and currently has two 757s – a third is expected later.

Yvelin told journalists at a press launch in London in February he had examined several airport options around London but chose Luton because, "it is just 50 minutes by train from St Pancras, it is a smaller facility and much easier to use by our passengers." He also acknowledged the airport's expansion plans, which include modifications to the runway and taxiway layout and a new executive lounge for which La Compagnie will be the first user.

Above: **La Compagnie Boeing 757-200, F-HTAG, landing at London Luton Airport. This aircraft operated the first flight to New York.** AirTeamImages.com/DarrylMorrell

Below: **The cabin is configured with 74 lie-flat Business Class seats arranged in a 2-2 layout. In-flight entertainment is provided via Samsung Galaxy Pro 12in tablets stored in the seat backs and preloaded with movies, e-books and music.** La Compagnie



Westbound flights depart from Luton at 17:45hrs as flight B0006 and arrive at Newark at 21:00hrs. The eastbound return, flight B0007, will leave at 22:30hrs and arrive at Luton at 10:30hrs (local times). "We chose them to avoid the busiest times at US immigration which should guarantee a fast entry into the US for our passengers," explained Yvelin. "The 10:30 arrival back in London Luton should be similarly quiet." At Luton passengers will use the fast-track security lane and will be able to take two hold bags weighing up to 32kg (70lb) each at no extra cost – and there will be no charge for sports equipment of any kind.

Yvelin says the careful control of costs is behind the success of his Paris operation – effectively running the airline in a similar way to the low-cost model, but for Business Class travellers. A crew base will be established at Luton, with 20 new flight attendants. He added: "Forty-five percent of our current passengers are Americans and a fair amount of them are travelling socially and

not necessarily on business. We hope to replicate this at Luton.

"London is an important financial centre, home to a huge number of discerning and shrewd business and leisure travellers who wish to enjoy the freedom and comfort of Business Class travel, but who are not prepared to pay over the odds."

The standard return fare will be £1,549 – more than £3,000 cheaper than some Business Class fares offered by 'legacy' carriers flying from Heathrow. **AN**

Mark Nicholls

Battle of Britain Typhoon FGR4



Typhoon FGR4 ZK349 has been given a special scheme to commemorate the 75th anniversary of the Battle of Britain. Tom Houquet

The RAF has painted 29(R) Sqn Typhoon FGR4 ZK349 in a special scheme to commemorate the 75th anniversary of the Battle of Britain.

The jet has been given the same markings as the Hawker Hurricane flown by Flt Lt James Nicolson VC DFC AFC, Fighter Command's only Victoria Cross recipient during the Battle of Britain.

On August 16, 1940, while on patrol near Southampton, Nicolson engaged a Luftwaffe Messerschmitt Me 110. The German bomber was being escorted by Me 109s, one of which attacked Nicolson's Hurricane, setting the aircraft on fire. Despite being severely wounded and burned, Nicolson stayed with his aircraft long enough to shoot the aircraft down, before bailing out.

The RAF's Typhoon tribute will form one half of this summer's synchro pair display alongside one of the Battle of Britain Memorial Flight's Spitfires.

B-1Bs Switch to AFGSC

The US Air Force's fleet of Rockwell B-1B Lancer bombers is to be transferred from Air Combat Command (ACC) to Air Force Global Strike Command (AFGSC).

The transfer of the 63 aircraft, along with around 7,000 personnel, will become effective on October 1. Control of the Long-Range Strike Bomber programme will also be transferred from ACC to AFGSC, realigning the USAF's core mission of global strike and all of the service's B-1B, B-2A Spirit and B-52H Stratofortress bombers under a unified command.

"With a single command responsible for the air force's entire long-range strike fleet, the airmen in AFGSC will benefit from better co-ordination and increased sharing of expertise across the five bomber wings," said Air Force Chief of Staff Gen Mark A Welsh III.

The B-1B units affected by the transfer are the 7th Bomb Wing at Dyess AFB, Texas, and the 28th BW at Ellsworth AFB, South Dakota, which will continue to serve as the host wings and provide installation support and services to other units on the bases.

Japan Osprey Deal Edges Closer

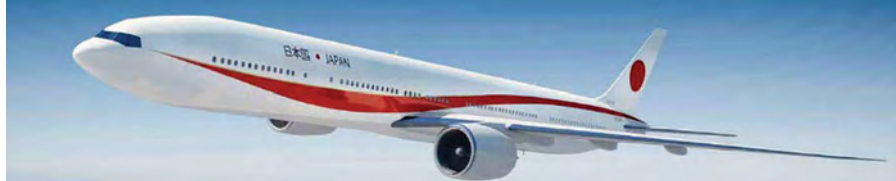
The US State Department has approved a possible Foreign Military Sale to Japan of 17 Bell-Boeing V-22B Osprey Block C tiltrotor aircraft. The planned deal was notified to Congress by the US Defense Security Cooperation Agency (DSCA) yesterday, May 5.

Including associated equipment, parts and logistical support, the estimated cost is \$3 billion. The contract will include six spare Rolls Royce AE1107C engines, various mission systems, publications and technical documentation, aircraft spares

and repair parts and a host of training and support packages.

The DSCA notes that the proposed sale will greatly enhance the Japan Ground Self-Defense Force's humanitarian and disaster relief capabilities and support amphibious operations. The acquisition has been under consideration for some time and Japan's Ministry of Defence had confirmed on November 21 last year when announcing its 2015 defence budget that the type had been selected to meet its operational requirements.

Japanese 777 Livery Unveiled



The Japanese Government has unveiled the planned livery for its two new Boeing 777-300ERs that will be operated as VIP transports for the Emperor, prime minister and members of the imperial family. The aircraft are due to enter service in Fiscal Year 2019. Japanese MOD

US Army Buys Six Counter-IED Dash 8s

Dynamic Aviation Group has been awarded a contract by the US Army for six Bombardier Dash 8-315s in the Desert Owl and Saturn Arch configuration.

The \$39,218,969 deal was awarded on April 7 and the estimated contract completion date is July 17. Dynamic currently has a fleet of 15 Dash 8s, largely operated on behalf of

the US Army.

Both Desert Owl and Saturn Arch are aircraft-mounted counter-improvised explosive device systems that have been employed on various platforms for operations in Afghanistan. They use several intelligence, surveillance and reconnaissance sensors, although precise details have not been made

public. Both programmes are controlled by the US Army's Task Force Observe Detect Identify Neutralise-Enhanced (TF ODIN-E) at Bagram Airfield, Afghanistan, along with a third counter-IED effort, Radiant Falcon. The aircraft and their sensor systems are all operated by civilian companies under contract to the US Army.

Coalition Continues Yemeni Air Strikes

Air strikes by the Saudi Arabian led coalition against Houthi rebels in Yemen have continued despite a statement from the Saudi Ministry of Defence announcing the end of Operation Decisive Storm.

The ministry had announced on April 21 that the operation's objectives had been met and that Operation Renewal of Hope would begin with the aim of protecting civilians and combating terrorism.

Despite the switch there have been continued reports of air strikes against the rebels.

Decisive Storm's objectives included the protection of Yemen from a takeover by Houthi militias and their allies, ensuring the security of the Kingdom of Saudi Arabia and neighbouring countries and the neutralisation of most of the military capabilities of the rebels.

A ministry statement said: "While the coalition will continue to protect the Yemeni people, counter any military moves by the Houthis or their allies and deal with any threat against the Kingdom of Saudi Arabia or its neighbours, a new mission, Operation

Renewal of Hope, will focus on the political process that will lead to a stable and secure future for Yemen."

Air strikes under Operation Decisive Storm began on March 26 and on that first day had reportedly neutralised all of the operational Yemen Air and Air Defence Force aircraft that had been seized by the Houthis. The Saudi MoD statement claimed that the air strikes gave the Saudi-led coalition complete control of Yemeni air space within 15 minutes of the operation beginning.

Oregon F-15s at Leeuwarden



Six Oregon Air National Guard (ANG) F-15Cs, including 84-0031, have been operating from Leeuwarden AB in the Netherlands alongside six Florida ANG F-15Cs. The aircraft are part of the latest US theatre security package (TSP) in Europe. USAF/Staff Sgt Ryan Crane

Pakistan AH-1Z Deal

US State Department approval has been granted for a possible Foreign Military Sale of 15 AH-1Z Viper attack helicopters and 1,000 AGM-114R Hellfire II missiles to the Government of Pakistan.

Announcing the potential deal on April 6, the US Defense Security Cooperation Agency (DSCA) said it had also now notified Congress of the proposed contract. Including associated equipment, parts, training and logistical support, the cost is estimated at \$952m.

The DSCA says that the proposed sale will benefit the United States by helping to improve the security of a country vital to US foreign policy and national security goals in South Asia, providing Pakistan with military capabilities in support of its counter-terrorism and counter-insurgency operations.

The Pakistan Army Aviation Corps has been considering a possible AH-1Z purchase for some years and if it goes ahead, this will be the first export order for the type, which is currently only flown by the US Marine Corps.

Three Cheetals for Afghanistan

Afghanistan has taken delivery of three HAL Cheetal multi-role helicopters from India. In a written reply to the Lok Sabha (Indian lower house of parliament) on April 24, Indian Minister of State for Defence Rao Inderjit Singh revealed that the helicopters were dispatched to Afghanistan on April 9. They were then test flown and accepted by Afghan pilots six days later.

The Cheetal is an upgraded version of the Cheetah light utility, multi-role helicopter, which is based on the French Alouette II. Powered by a Turbomeca TM 333-2M2 turboshaft engine, it has a longer range and increased payload capacity than the Cheetah, while being capable of high-altitude operations.

First Bangladesh Let L 410UVP

Bangladesh has received the first of four Let L 410UVP-E20s it has on order. The aircraft, 3011/OK-JPG, was delivered on April 21 and joins the Bangladesh Air Force (BAF) transport fleet which currently comprises three Antonov An-32s and four Lockheed C-130B Hercules.

The L 410s are part of a wider upgrade to the BAF fleet that includes five Mil Mi-171Sh helicopters and two AgustaWestland AW139s, both types due to be delivered this year.



The first Bangladesh Air Force Let L 410UVP-E20, 3011, prior to delivery. Aviation Industries

Australia Receives First Two CH-47Fs

Australia has taken delivery of the first two of seven Boeing CH-47F Chinooks it has on order. The helicopters, A15-301 and A15-302, were formally commissioned into service at a ceremony on May 5 at RAAF Base Townsville, Queensland.

The AUS\$631m project also includes two flight simulators and the remaining helicopters are due to be delivered by August.

The helicopters will be operated by the Australian Army's 5th Aviation Regiment from Townsville, providing a modern and improved cargo helicopter capability for the army. The first two had been delivered on schedule to

Townsville at the beginning of April.

In addition to this investment, following Parliamentary approval last year, AUS\$49.8m will be invested to support the introduction and sustainment of the new Chinook. Construction at RAAF Base Townsville is scheduled for completion in mid-2017.

Both simulators ordered under this project have already been delivered, one in April 2014 and the other in February. They are now being used for Army Chinook crews to safely undertake a wide range of training scenarios in support of the capability. The fleet of six outgoing CH-47D Chinooks have proven themselves as the army's operational

'workhorse' and the new Foxtrots will further enhance this capability for the Australian Defence Force, said Minister for Defence Kevin Andrews.

The aircraft and associated equipment are being purchased through the United States Foreign Military Sales programme under Project AIR9000 Phase 5C. A Letter of Offer and Acceptance for the helicopters had been signed on February 25, 2010. Maintenance support will be provided locally through partnerships with Boeing Defence Australia and BAE Systems. The defence minister said that the project remains on schedule and under budget.

Philippine Navy AW109E



One of the Philippine Navy's latest acquisitions, AgustaWestland AW109E Power 432, landed on US Navy amphibious transport dock ship USS Green Bay (LPD 20) on April 19 in the Philippine Sea during Exercise Balikatan 2015. US Navy/Mass Communication Specialist 3rd Class Edward Gutierrez

Japan Opts for Falcon 2000 MSA

The Japan Coast Guard (JCG) has selected the Dassault Aviation Falcon 2000 Maritime Surveillance Aircraft (MSA) to enhance its operational fleet.

Dassault Aviation announced the decision on April 22. The Falcon 2000 MSA is based on a Falcon 2000 LXS (with a range of 4,000nm/7,400km) and is designed for a broad range of missions, including maritime surveillance, piracy control, drug interdiction, fishery patrol, law enforcement, search and rescue, intelligence and reconnaissance.

"Japan has successfully operated Falcon jets for maritime surveillance and search and rescue around the Japanese archipelago since 1989 and we are extremely honoured that, once again, the Japan Coast Guard has chosen to renew its confidence in our aircraft," said Eric Trappier, Chairman and CEO of Dassault Aviation.

The Falcon 2000 MSA has been developed in conjunction with L-3 Platform Integration and Thales. Dassault Aviation will also provide the JCG with comprehensive maintenance support, enabling the JCG to achieve a high level of aircraft availability, says the company.

MILITARY AIRCRAFT ORDERS

Air Arm	Company	Number and Type	Contract Date	Delivery Date and Notes
Air Force of the Slovak Republic	Sikorsky	9 x UH-60M Black Hawks	May 4	Delivery anticipated between 2016 and 2019
Canadian Coast Guard	Bell	7 x 412EP1	April 10	First delivery due in June 2016
Qatar Emiri Air Force	Dassault	24 x Rafale	May 4	18 single-seat and six two-seat
Royal Australian Air Force	Boeing	2 x C-17A Globemaster III	April 10	First aircraft to be delivered within six months of the initial order with the second aircraft to follow ten months later
Royal Netherlands Air Force	Lockheed Martin	8 x F-35A Lightning II	March 25	Delivery due in 2019
Ugandan Police	PZL-Świdnik	1 x AW109SP GrandNew	April 27	2015
Ugandan Police	PZL-Świdnik	1 x W-3A Sokol	April 27	2015

70TH ANNIVERSARY OF THE GREAT VICTORY

WILL NEVER BE FORGOTTEN



FORGING TODAY'S DEFENCE



Rosoboronexport is the sole state company in Russia authorized to export the full range of defense and dual-use products, technologies and services. Rosoboronexport accounts for over 80% of Russia's annual arms sales and maintains military-technical cooperation with over 70 countries worldwide.



ROSOBORONEXPORT

27 Stromynka str., 107076, Moscow, Russian Federation

Phone: +7 (495) 534 61 83; Fax: +7 (495) 534 61 53

www.rusarm.ru

ADVERTISEMENT

Mexico Becomes Launch Customer for C295W



The Mexican Navy has become the launch customer for the Airbus C295W.

The aircraft is the latest variant of the popular C295 medium transport, fitted with winglets that will enable the aircraft to transport more payload over a longer distance with around a 4% fuel saving, even in hot and high conditions. The Mexican

Winglet-equipped Mexican Navy C295M ANX-1254 (c/n S-133) during a test flight. Airbus Defence and Space

Navy specified the winglets for two C295s it had already ordered and winglets will be standard for all new C295s procured from now on.

"The C295 has served us well for many

years," said Rear Admiral José María García Macedo of the Mexican Navy. "We had some concerns about operating a mixed fleet of aircraft with and without winglets, but when we studied the enhanced performance of this new version it was clear that it would bring very significant operating benefits for us that could not be ignored."

First Canadian Coast Guard Bell 429 Delivered



The Canadian Coast Guard has taken delivery of its first Bell 429 Global Ranger, 441/C-GCQG (c/n 57238). The helicopter was delivered in late March and is the first of 15 Bell 429s on order for the service, which has also just announced a deal for seven Bell 412EPis. Bell Helicopter

USAF F-16s Head to Afghanistan

Lockheed Martin F-16C Fighting Falcons from the US Air Force's 555th Fighter Sqn 'Triple Nickel' of the 31st Fighter Wing have deployed to Afghanistan in support of Operations Freedom's Sentinel and Resolute Support.

Under the control of the 455th Air Expeditionary Wing, they will remain at Bagram Airfield for six months, assuming responsibility for providing over-watch and close air support for ground units in Afghanistan.

The 555th FS's aircraft arrived at Bagram from their home at Aviano AB, Italy on April 27 replacing the F-16s of the 388th FW's 4th FS 'Fighting Fuujins'. Having now completed their six-month rotation to the US Central Command area of responsibility, the 4th FS will return home to Hill AFB, Utah.

Canadian Air Task Force Returns Home

A Canadian Air Task Force (ATF) has returned home after completing its deployment to Europe.

The final four CF-188 Hornets in Europe routed back to their base at 3 Wing Bagotville via Prestwick in early April having been part of a six-jet detachment that had deployed in April 2014 as part of Operation Reassurance, Canada's contribution to NATO efforts to bolster the security of its member states in response to Russia's actions in Ukraine.

The jets had initially been part of ATF Romania, which was stood up in May 2014

at Câmpia Turzii. The force conducted interoperability training with NATO allies, covering air defence, air superiority, aerospace testing and evaluation, and tactical support.

Four months later, the ATF relocated to Šiauliai, Lithuania, to augment the NATO-led Baltic Air Policing (BAP) mission. ATF Lithuania retained four CF-188 Hornet fighter jets, 135 personnel and a mission support element. During their time on the BAP mission, the four CF-188s worked alongside NATO allies to preserve the integrity of Estonian, Latvian and

Lithuanian airspace until Canada's portion of the BAP mission was formally handed over to Poland on December 31, 2014 after which most of the force returned to Canada.

The remaining aircraft and personnel continued to train in Europe, operating from Spangdahlem AB in Germany.

Hornets 188734 and 188795 arrived at Prestwick on April 8 departing for Canada the following day, while 188743 and 188788 arrived on April 10 for an overnight stop before continuing on their journey home.

ROSOBORONEXPORT RESTORES WWII BOMBERS



Left: DB-3 – the first Soviet long-range bomber developed under the direction of Sergey Ilyushin. Batch production started in 1936 and a total of 6,735 of all versions were built, including the DB-3F (Il-4). It was using the DB-3Fs that the Baltic Fleet’s 15 crews made the first bombing raid on Berlin on the night of August 8, 1941.

Below: SB (ANT-40) – the first Soviet front-line bomber developed by the Andrey Tupolev Design Bureau. Its production began in 1934 and a total of 6,831 aircraft of all versions were made. They were also involved in the Spanish Civil War, in fighting over Khalkhin-Gol and in the Soviet-Finnish war.

To commemorate the 70th anniversary of the victory in the Great Patriotic War, Russian arms exporter Rosoboronexport has restored six World War II bombers that are in the Central Museum of the Air Forces, located in the town of Monino, 38km from Moscow.

Four Soviet aircraft – the DB-3 long-range bomber, SB (ANT-40) high-speed front-line bomber, Pe-2 dive bomber, Tu-2 front-line bomber – as well as two US bombers, a B-25 and A-20, supplied to the USSR under Lend-Lease, were restored.

“There is a unique collection of aviation equipment in Monino, which clearly demonstrates all the milestones in the development of the Russian aircraft engineering school, which is justly considered one of the best in the world. Approximately 200 exhibits have been collected here, including experimental ones, as well as those that are one of a



kind. So we are pleased to contribute to the preservation of the heritage of global significance,” said Director General of Rosoboronexport Anatoly Isaykin.

Rosoboronexport will continue to assist the museum. In 2015, the following aircraft will be restored at the company’s expense: the ANT-2, the first Soviet all-

metal aircraft; the Li-2 military transport aircraft derived from the US Douglas DC-3, Yak-17 and MiG-21bis fighters, as well as the British Sopwith Triplane fighter handed over to Russia in May 1917 for testing and evaluation and is currently one of two surviving examples in the world (the other is in the Royal Air Force Museum in London).

Below left: Pe-2 – the most mass-produced Soviet front-line dive bomber of the World War II period. It was developed under the supervision of Vladimir Petlyakov. Its batch production started in 1940 and more than 11,400 aircraft were manufactured. Twice Hero of the Soviet Union Major General Ivan Polbin came up with an effective tactical manoeuvre for the Pe-2 nicknamed ‘Polbin’s Spinner’: The manoeuvre envisaged that a group of 9 Pe-2s run into a target, the bombers formed a circle and dived toward the target in turn, covering each other. This provided a continuous fire effect on pinpoint and well-protected targets.

Below right: Tu-2 – the best Soviet front-line bomber of World War II in terms of performance. Developed under the direction of Andrey Tupolev, the aircraft first flew in 1941. Due to wartime difficulties, a total of 800 bombers were built before the end of the conflict and another 2,527 in the postwar years. Later, the Tu-12, the first Soviet jet bomber, was built around the Tu-2.



Pima Welcomes Dreamliner



Boeing has donated one of the original 787-8 Dreamliner flight test aircraft to the Pima Air & Space Museum in Arizona.

The aircraft, N787EX (ZA002), was the second Dreamliner produced and its primary function was to test systems performance.

Boeing Commercial Airplanes President and CEO Ray Conner said: "The Pima Air & Space Museum is a world-class facility and has been a great partner throughout the

The Pima Air & Space Museum has received one of the original Boeing 787-8 Dreamliner test aircraft. John Bezosky

years. It's the perfect location to showcase this pioneering airplane."

The aircraft was flown to the nearby Davis-Monthan AFB in March and towed across to its new home at the museum. Boeing officially handed over the jet at a ceremony at the museum on April 17.

Scott Marchand, Executive Director,

Pima Air & Space Museum said: "This is an extremely exciting and monumental time for the museum, the Tucson community and Arizona in general. We are honoured to be selected by Boeing to be the custodian of such a significant historic next-generation aircraft and to be able to display it to the public from the US and around the world."

Experimental M2-F1 on Display at Edwards

NASA's M2-F1 'Lifting Body' N86652 has joined the Air Force Flight Test Museum (AFFTM) at Edwards AFB, California.

The M2-F1 was an experimental aircraft designed to test the concept of wingless flight and was the first manned machine to generate lift without wings by using air flow over its fuselage. The concept evolved in the late 1950s as an alternative to ballistic re-entry of piloted space capsules. Its configuration

allowed it to be manoeuvred both in a lateral and a longitudinal direction. Unlike the capsules used in the Mercury, Gemini and Apollo programmes (which parachuted into the ocean) it could be landed on a runway.

Commencing on April 5, 1963, initial flight testing saw the M2-F1 towed aloft by a Pontiac Catalina car driven across Rogers Dry Lake in California. Air tows followed, the Lifting Body being released from a NASA

Douglas R4D Skytrain at 12,000ft (3,658m) to glide back to earth. More than 400 ground launches and 77 in-flight tows were carried out before the craft was retired.

The exhibit – which is on loan from the Smithsonian National Air and Space Museum – is now displayed in a section of the museum dedicated to the base's flight test heritage. **Dylan Eklund** www.aftcmuseum.org

Caproni Bomber Replica



The first full flight by Caproni Ca.3 reproduction I-ZANA took place on March 3 from Nervesa della Battaglia's grass strip near Treviso, Italy.

Giancarlo Zanardo, president of the Jonathan Collection, and co-pilot Carlo Zorzoli were at the controls. Sadly the flight only lasted six minutes due to a problem with

The reproduction of a Caproni Ca.3, I-ZANA, flying in Italy on March 3. Daniele Mattiuzzo

the left engine, but the pilots were able to return the World War One replica safely to the airfield. The powerplant issue has prompted a re-think, and it's now likely that all three of the Ford-built units will be substituted for other types in the near future. **Daniele Mattiuzzo**

South African Spitfire Rebuild

A Supermarine Spitfire belonging to the South African Air Force Museum is to be rebuilt 15 years after it was badly damaged during a forced landing.

The aircraft, Spitfire IXe 5518 (originally TE213), will be restored at the museum in Swartkop as part of a joint venture between the SAAF Museum and its Friends arm under the guidance of Ian Grace. The fighter suffered an engine failure during a display at Swartkop on April 15, 2000, and struck a wall as pilot Lt Col Neil Thomas attempted to reach the runway. Lt Col Thomas suffered minor injuries in the incident and the remains of the fighter were placed in storage. The project is likely to take between four and five years to complete, given the nature of the damage and financial requirements.

www.saafmuseum.org.za **Steve Mclean**

Super Constellation Prepared for Move

Lockheed C-121J Super Constellation N4247K has been disassembled in preparation for transport from Manila in the Philippines to its new home at the Qantas Founders Museum (QFOM) at Longreach, Queensland, Australia, where it will be restored.

The museum will move the Constellation in several segments by ship to Australia, and then by road to Longreach. QFOM successfully bid for N4247K at an auction held by the Manila International Airport Authority last September. The aircraft, which has been grounded for 25 years, had been used by World Fish and Agriculture to transport cargo, having previously served with the US Navy.

The 'Connie' has been successfully extracted from its mud-encrusted position, and made secure and towable by a Qantas Airways Engineering recovery team. Museum boss Tony Martin paid tribute to the many volunteers and local businesses that have supported the venture.

"Engineers from Manila and volunteers, including former Qantas employees, have worked tirelessly and efficiently on this stage



A recovery team disassembles Super Constellation N4247K in Manila prior to shipping the aircraft to Australia. QFOM

of the project," he said. "Within three weeks they have removed the major components, with plans to move the fuselage and other parts to a storage area in preparation for transportation to Australia.

"We are most grateful to have received

assistance and advice from industry partners including Qantas Airways, the Manila International Airport Authority, Lufthansa Technik Philippines, Heli Craft Aero Industries and the Australian Government." www.qfom.com.au

Albanian Halifax Follow-up

Since the story in the May issue about the discovery of a missing RAF Handley Page Halifax in Albania, more details have come to light. Chris Casey, one of the team of three who originally investigated the crash site after a lead from a local Albanian, wrote: "From the outset it was clear it was a heavy bomber, but all we found were pistons and drive shafts, propeller hubs and a few small shards of debris, the rest having been pillaged over the 70 years it had lain there. However, the pistons and driveshafts were enough for me to identify the only possible

engine as a Rolls-Royce Merlin, therefore suggesting, since there were four of them, that this was a Halifax. Wooden propellers helped seal the identification."

He added: "It took a few weeks, but I was able to research SOE [Special Operations Executive] losses and narrow down to four possible 'planes that this could be, but until I heard about the ring from the British Embassy staff here in Tirana, I could not get closer to exactly which 'plane we were dealing with. However, using the names of the ring I was then able to deduce the specific

aircraft and subsequently tracked down the family in Matlock, Yorkshire to confirm some of the details. Although I led the research effort and put the pieces together, I was assisted by a number of other people (author Rod Bailey, Terry Maker of the Operation Dark of the Moon forum and Ron Tebbutt at the Harrington Museum in Northamptonshire, to name but a few) who have far more knowledge about these affairs than I do."

After the story surfaced the serial of the Halifax as JP244 has been confirmed by another reliable source independently.

Hawker Siddeley Harrier T.4 XW175 arrived at RAF Cosford in Shropshire in March having previously been in storage at MoD Boscombe Down.

The Harrier, originally built as a T.2 in 1969, was used as a Vectored-thrust Aircraft Advanced Control (VAAC) test machine by defence contractor QinetiQ, and wears a distinctive red, white and blue livery. In 2007 it demonstrated the feasibility of the VAAC landing technique aboard the French aircraft carrier *Charles de Gaulle*, and also flew a series of landing approach trials with the Royal Navy's HMS *Illustrious* the following year.

QinetiQ's Harrier team received a Team Gold Medal from the Royal Aeronautical Society in 2010, awarded in recognition of its contribution to the development of guidance, control and automatic landing systems intended for use on the Lockheed Martin



Harrier T.4 XW175 at Cosford on March 25. Steve Bridgewater

F-35B Lightning II.

The Harrier was the star attraction at a media launch for the base's forthcoming

airshow, which will be held on June 14 and feature the aircraft on static display. www.cosfordairshow.co.uk

Another Mosquito to be Restored

Avspecs of Ardmore and woodwork expert Glyn Powell are teaming up to restore de Havilland Mosquito B.IV DZ542 in New Zealand.

This B.IV Series II type is an example of the original Mosquito bomber variant, and will be fitted with a pair of two-speed single-stage Rolls-Royce Merlin 25 engines.

Originally built at Hatfield in 1943, DZ542 was allocated to the RAF's 618 Sqn and shipped to Australia the following year for use in tests to develop the Highball bomb, which was never used in action.

Although auctioned off as scrap from Narromine in New South Wales after the war,



The fuselage of Mosquito B.IV DZ542 arriving at Avspecs in Ardmore recently. Courtesy Avspecs

sections of the badly deteriorated airframe and other key components survived. These were acquired by Glyn in the late 1980s and

will form the basis for the restoration. www.warbirdrestoration.co.nz With thanks to Warren Denholm

Pacific Corsair Investigation

A small American wreck recovery team has found the remains of a US Navy F4U Corsair in jungle on the Pacific island of Vanuatu. After spending an hour cutting away the vegetation using machetes, the team found the aircraft's wings inverted on the forest floor with the undercarriage doors still closed, and the .50 calibre machine guns still mounted in the wings.

A team member said: "The wings were in remarkably good shape. It was incredible

opening the undercarriage doors to reveal the oleos and the magnesium wheel rims still in place. The pistons for the doors were just as highly polished as they were when they left the factory."

After establishing the location of the cockpit, the team carefully moved pieces of the aircraft to investigate it, mindful of the possibility of discovering of human remains.

They found some instruments and controls, the pilot's seat and the thick but

broken bullet-proof windscreen. Contact has been made with the US Defense POW/MIA Accounting Agency (DPAA) to advise them of the find. They are currently searching their databases to confirm the circumstances of the crash and whether the pilot bailed out. Given that the cockpit canopy was slid back on its rails, it appears the pilot did escape. Video and still photography shot at the site has been uploaded to www.brokenwings.com.au **David J Smith**

F-16 on Display at Hatzerim

Israeli Air Force (IAF) Lockheed Martin F-16 Fighting Falcon 107 (F-16A 78-0311) has been retired and put on display at Hatzerim air base's IAF Museum.

Fighting Falcon 107 is believed to have had seven air-to-air victories, a record unmatched by any other F-16. Its first success came on April 21, 1982 when Col

Zeev Raz successfully downed a Syrian Mikoyan-Gurevich MiG-23 with a missile.

On June 9 that year during the First Lebanon War, it shot down two more Syrian MiG-23s, and two days later brought down another two, plus a Sukhoi Su-17, and an Aérospatiale Gazelle helicopter. Col Eitan Sativa made three of the shoot-downs within

just 45 seconds.

The jet was retired at the end of 2014 and can now be seen at the museum. The remainder of the F-16A fleet is scheduled to be withdrawn from Israeli service later this year – a small number are currently in service with 115 Sqn at Ovda. **Peter R Foster**

Stratofreighter Undergoes Engine Trials

Three of the four engines on Boeing C-97G Stratofreighter 52-2718 (N117GA) have recently been run as the Berlin Airlift Historical Foundation looks to get the aircraft back in the air.

The 1952-built aircraft has been with the Farmingdale, New Jersey-based organisation since 1996. A former KC-97 tanker, 52-2718 has not flown since 2002, and is one of only two potentially airworthy C-97s in the world, the other being 52-2698, which served for many years as a fire-bomber with Hawkins & Powers Aviation.

The Foundation plans to operate the machine, named *Angel of Deliverance*, as a flying museum and classroom, in the same manner that it currently uses its Douglas C-54E Skymaster *Spirit of Freedom*. It will tell



Boeing C-97G Stratofreighter 52-2718 *Angel of Deliverance* at Farmingdale, New Jersey, recently. Courtesy BAHF

the story of the Cold War, from the Berlin Airlift of 1948 to the fall of the Berlin Wall in 1989. More engine runs are scheduled to take place

shortly, and a fundraising campaign is afoot to help pay for the fuel and oil needed for its first post-restoration flight. www.spiritoffreedom.org



300 Aircraft - 5 Indoor Hangars - Exclusive Tours Of The "Boneyard"

Come explore under our wings!



PIMA AIR & SPACE MUSEUM

www.pimaair.org

I-10 to Exit 267 - 6000 East Valencia Road, Tucson, Arizona USA - +1 520 574 0462

PARIS CHARLES DE GAULLE

EUROPEAN SUPER HUB

Aviation News
Assistant Editor
James Ronayne
profiles the French
capital's main airport.

As the major gateway to one of the biggest tourist destinations in the world, Paris Charles de Gaulle Airport is truly one of the crossroads of the world.

Located 16 miles (25km) north of the capital, Charles de Gaulle (CDG) welcomes the majority of long-haul flights into Paris. The airport celebrated its 40th anniversary





in style last year achieving a record 63.8m passengers, a rise of 2.8% on 2013. There is plenty of room to build on that success, with the airport capable of handling 80m passengers per annum – a 70% increase on its capacity in 2006.

It was crowned the 'World's Most Improved

Airport' by voters in a poll conducted by leading travel consultancy Skytrax earlier this year. The award is given to the airport that has made the most progress in the quality of its service and customer satisfaction. A poll of 11,600 passengers, conducted on ADP's behalf at the end of last year, showed that

Main photo: **CDG's Terminal 2E has a distinctive curved design and is one of nine modules that make up Terminal 2.** Also visible in the picture is Terminal 2C and Terminal 2A. ADP/Cambon

Left: **HOP! Bombardier CRJ700 F-GRZC awaits its next flight at Terminal 2G.** AirTeamImages.com/Timo Breidenstein

89.9% of all passengers were satisfied. In addition, Skytrax ranked Hall M of Terminal 2E sixth among the world's best terminals.

Augustin de Romanet, Chairman and CEO of the airport's operator Aéroports de Paris (ADP) said the prize was "well-deserved reward" for his teams' commitment to customer satisfaction. Charles de Gaulle Airport moved up 47 places in the Skytrax rating, from 95th to 48th position. "This result proves that our policy to promote service quality is bearing fruit," said Romanet. "We must continue in this direction."

Franck Goldnadel, Managing Director of CDG, said: "This is a very positive message that, far from letting us rest on our laurels, will further push us to do everything we can to make hospitality and service quality our priority. We owe it to our passengers as well as our customer airlines."

TERMINALS

Covering 12.7sq miles (33km²) Charles de Gaulle is Europe's largest airport. Construction began in 1965 after it was deemed necessary to build another airport to relieve the pressure on the two other Paris airports; Orly and Le Bourget.

The original structure, Terminal 1, was designed by architect Paul Andreu and comprises a round central element with seven satellites. It opened to commercial traffic on March 8, 1974 and today is home to the Star Alliance carriers.

In a bid to modernise Terminal 1, ADP has been gradually renovating each of the seven satellites. Following 18 months of work, Satellite 5 was reopened in June 2013, with the three older departure lounges transformed into a single area, incorporating 40 additional seats. New toilet blocks were installed, and a video games area and a music lounge have also been provided. A new airbridge was created to accommodate Airbus A380s operated by Thai Airways International, taking the total number at Satellite 5 to eight. The next stage of Terminal 1's redevelopment will see the three international (non-Schengen) satellites joined together, enabling it to handle an additional 1.2m passengers per annum. This should be completed in the 2016-2020 timeframe.

Terminal 2 was built around a modular concept with the first two sections – 2B and then 2A – opening between 1981 and 1982. Today the terminal has six modules – 2A through to 2G – and handles flights by Air France, members of the SkyTeam and oneworld alliances, as well as some other airlines.

Disaster struck the airport on May 23, 2004 when a section of the then brand-new ▶





Air France's schedule is based around six waves of arrivals and departures across the day to maximise the number of connections in the shortest timeframe. ADP/Cambon

Terminal 2E collapsed killing four people and badly injuring another three. Aéroports de Paris decided to demolish and rebuild the affected section.

In April 2012, the newly renovated AC building connecting Terminals 2A and 2C was unveiled. The ground floor of the 178,681sq ft (16,600m²) building is dedicated to security and screening operations with 14 security checkpoints and 14 immigration control rooms. On Level 1 there are shops, bars, restaurants and Parisian boutiques, while on Level 2, VIP customers have 35,521sq ft (3,300m²) of lounge space with a view over the runways.

Terminal 2E's Hall M, covering 1,076,391sq ft (100,000m²), was opened in June 2012 and can accommodate 7.8m passengers per year. It contains 64,583sq ft (6,000m²) of boutiques, bars and restaurants and has 269,098sq ft (25,000m²) dedicated to the boarding lounges. It also includes Air France's largest Business Class lounge,

set over 32,292sq ft (3,000m²) which offers computers, free Wi-Fi, ten showers and lounge seating.

As part of ADP's 2016-2020 Economic Regulation Agreement (ERA) the plans for Charles de Gaulle include the creation of a 374,584sq ft (34,800m²) building between Terminals 2B and 2D, providing the capacity for an additional 1.2m passengers per annum.

Terminal 2B will be renovated while work on Terminal 2D will start once 2B has been completed. Other changes include the creation of new aircraft parking stands.

Aéroports de Paris says these investments are aimed at, "the optimisation of facilities to reconnect fragmented terminals"

Terminal 3 is the smallest. Originally known as Terminal 9, it handles a lot of the airport's low-cost and charter traffic.

The airport has two sets of parallel runways all adapted to handle widebody aircraft. Runway 08L/26R is the longest at 13,829 x 148ft (4,215 x 45m), with 08R/26L

measuring 8,858 x 197ft (2,700 x 60m). Runway 09R/27L is 13,780 x 148ft (4,200 x 45m) and 09L/27R 8,858 x 197ft (2,700 x 60m). As part of the airport's upgrade programme, the runway safety areas will be redeveloped to reduce damage when aircraft overrun the runway or landings are too short.

CONNECTIONS

One third of all passengers at CDG are connecting to others flight and the airport is one of the best performing hubs in Europe offering up to 20,900 weekly connects within two hours between long- and medium-haul flights. With thousands of passengers transiting through CDG, navigating the airport's myriad terminals can prove complicated and the airport has come under fire for the length of time it took travellers to connect between them. Since 2012, passengers arriving from a Schengen country who are travelling to an international destination no longer need to pass through security during their stopover. A new connecting channel between terminals 2E and 2F has also been opened which saves 10mins on the connection time. The airport originally provided shuttle buses running at ten-minute intervals but in April 2007 ADP unveiled CDGVal, an automated light rail shuttle to connect the terminals. The partially underground line links five stations – Terminal 1, car park PR, Terminal 3-Roissypole, car park PX and Terminal 2 – in 8mins compared with the 25mins it used to take via shuttle bus. Trains run every 4mins (every 20mins between 0130 and 0430) seven days a week.

With a daily capacity of up to 30,000 passengers, CDGVal has replaced 20 buses helping to reduce annual emissions of nitrogen oxides by nearly 15 tonnes and carbon dioxide by 2,500 tonnes, as well as



MEA Airbus A330 OD-MEB departs back to Beirut. AirTeamImages.com/
Anthony Guerra



Left: **Paris CDG's Terminal 2F.** ADP/Luider, Emile-La Company

Above: **Hall M in CDG's Terminal 2E has been ranked the sixth best terminal in the world by Skytrax.** ADP/Seignette, Lafontan

saving 750 tonnes of diesel. The 2016-2020 ERA includes the acquisition of two new trains which will transport an additional 1.2m passengers per year.

Another of the airport's green initiatives has been installing a solar farm composed of 792 panels. The plant will ultimately produce 157MWh of electricity into the ADP network resulting in savings of seven tonnes of CO² per year.

The airport also benefits from a number of railway links. In 1976 the Réseau Express Régional (RER) station at Roissypole was opened connecting the airport to the Paris metro network and providing passengers with direct access to the city centre. The TGV railway station in the Terminal 2 complex connects to cities all over France, including Bordeaux, Marseille and Toulouse, as well as the Belgian capital Brussels.

Below: **Terminal 2 has six modules – 2A to 2G. It handles flights from Air France, members of the SkyTeam and oneworld alliances and a handful of other airlines.** ADP/Jouanneaux

In January 2014, the idea of a 'CDG Express' non-stop rail service between the airport and the city centre was revived. On the table for 20 years, the CDG Express has been beset by issues, the last coming in 2011 when plans for a public-private partnership to operate the line were abandoned. However a research company has been created that will bring together SNCF Réseau (the owner and manager of the French railway infrastructure network), ADP and the French state. The firm has been charged with ensuring the feasibility and the technical, legal and financial viability of the link, which is planned to start operating in 2023. ADP says the CDG Express is a "strategic priority" for the group and that it will provide a 20mins non-stop service between Gare de l'Est and the airport. Preparatory work for the CDG Express, including the construction of a tunnel under

Runway 08R/26L and the development of the multimodal train station is covered by the 2016-2020 ERA.

Along with the development of its rail links, the roads leading to Charles de Gaulle will also be widened and developed.

RIVALS

In its 2016-2020 ERA, Aéroports de Paris estimates that between 2007 and 2013 Charles de Gaulle lost around, "3,000 connecting flight opportunities to the benefit of other European hubs". With a growing number of connections offered by airlines via airports in the Gulf as well, ADP is putting a plan together to ensure it remains competitive. The group says it intends to prioritise the development of long-haul and connecting flight traffic through incentives and investment in its facilities. Aéroports ▶



Right: **Air France Airbus A380 F-HPJC arrives at Paris Charles de Gaulle. The airline is the dominant carrier at the airport.** AirTeamImages.com/Ralf Meyermann

Below right: **Kenya Airways chose CDG as the first destination for its new fleet of Boeing 787-8 Dreamliners.** AirTeamImages.com/Serge Bailleul

de Paris is proposing to change the pricing strategy to “foster the development of long-haul and connecting flight traffic, to reward companies that use its facilities more by way of incentive measure and to provide greater clarity for airlines”

To help improve the hub’s competitiveness the airport is deploying automatic docking systems, automatic check-in desks and self-boarding counters which should help airlines automate their ground process improving their operational efficiency and reducing costs. The airport is also creating remote widebody aircraft parking areas and optimising the baggage sorting capacity in Terminals 2E and 2F.

From a passenger perspective ADP’s plan is based on “a passenger experience founded on service excellence”. Improvements to facilities will aim to provide clear directions and make connections easier. New airbridges that provide travel information in the passenger’s language and interactive orientation and information systems are also to be introduced to make the passenger route “more fluid”. ADP is also creating a centre for long connections which is set to open in 2016 and will include hotel and restaurant services, as well as relaxation areas.

AIRLINES

Charles de Gaulle has services from 157 different airlines, with Air France the dominant carrier. Air France’s schedule is based around six waves of arrivals and departures across the day to maximise the number of connections in the shortest timeframe. The airline opened a Hub Control Centre in March 2007 which is responsible for optimising flight punctuality and the successful co-ordination



of connections. There are 12 daily flights at regular intervals between the airport and Amsterdam Airport Schiphol, the Air France-KLM Group’s other hub, providing customers with the choice of 232 destinations throughout its network. Air France’s operations are concentrated to the east of the airport in Terminals 2E, 2F and 2G, with the latter hosting the carrier’s regional flights.

Low-cost carrier easyJet has a hub here linking Charles de Gaulle with 40 destinations across Europe and North Africa, including connections to Gatwick, Luton, Bristol, Liverpool, Edinburgh, Glasgow and Belfast International in the UK.

Delta Air Lines, another of the key players, has increased its offering. It has reintroduced

non-stop flights to Philadelphia and Pittsburgh, and added a third daily rotation to Boston, giving Delta 13 departures between CDG and the US during the summer.

From July, Air Seychelles will resume non-stop services three times a week to Charles de Gaulle from Mahé using an Airbus A330-200. This will replace the current twice-weekly service via Abu Dhabi. Hainan Airlines added a third weekly rotation to its Hangzhou-Xi’an-CDG service in March, operated using Airbus A330-200s, and Korean Air has added an eighth weekly flight from Seoul’s Incheon International Airport for the summer season. A new carrier at the airport is Air Astana which launched a three-times a week service to Astana, the capital of Kazakhstan, in March.

Charles de Gaulle is also Europe’s leading cargo hub, handling 2.2m tonnes of freight and mail in 2014 and the capacity to deal with 3.5m tonnes. It boasts six freight terminals and 80 parking stands spread over two large zones. It is the European hub for FedEx Express and the main base for Air France Cargo and La Poste. Emirates SkyCargo launched a new weekly service to Paris in February and Qatar Airways Cargo has doubled its capacity.

Charles de Gaulle finds itself competing with hubs both in Europe and the Middle East. While its large sprawling site means expansion is possible, the fragmented nature of the terminals is an issue and one that ADP is keen to rectify. With ongoing investment in the infrastructure and efforts to improve customer service, ADP is hopeful that Charles de Gaulle will be in a prime position to take on its rivals in Europe and the Gulf. **AN**



US cargo giant FedEx Express has its European hub at the airport. AirTeamImages.com/Olivier Corneloup

 **AirwaySim**
ONLINE AIRLINE SIMULATION

START YOUR OWN AIRLINE

- Build your own aviation empire as the Airline CEO
- Compete globally against other airline managers in this highly realistic multiplayer simulation
- Advanced economy model with detailed data
- Run a worldwide mega-carrier or a small regional airline.

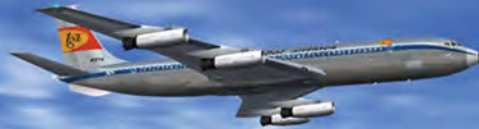
Can you handle the challenges?

**TRY IT
FOR FREE**



Play online at www.airwaysim.com

Not happy with the airlines of today? Convinced you could build an aviation empire if you had control over aircraft, schedules, pricing, meal service, frequent flyer, seating & advertising?



airlinesimulation.com



AIRLINE 7 Scenario
Editor now available!



AIRLINE includes 7000+ airports & 700 aircraft variants with historical data, charter & cargo contracts, alliances with hotels & car rental companies, create a frequent flyer program, set ground and inflight service levels, schedule flights and set airfares.



This is a detailed PC based management simulation for the serious enthusiast. All the decisions relating to the operation or your airline are in your control. The simulation can be set to start anytime from the late 1940's, you can transition from prop aircraft to the dawn of the jetage, modernise your fleet or start in the present day.

Now also play online against players from around the world!
www.theairlinegame.com



www.airlinesimulation.com

ONLY
500
AVAILABLE!

SR-71 BLACKBIRD FIRST FLIGHT GOLDEN ANNIVERSARY COLLECTION

SPECIAL EDITION TWO BOOK SET WITH 24K GOLD PLATED BOOKCLIP & COMMEMORATIVE COIN

The top secret Lockheed SR-71 Blackbird was the fastest, highest flying jet in the world, crucial to winning the Cold War. For 25 years, this magnificent aircraft performed vital reconnaissance missions of the highest national importance. SR-71 pilot Brian Shul was the first man to write about what it was like to fly this exotic aircraft. Illustrated with the author's own photography, his two books now reign worldwide as the most popular on the jet ever written, and are an enduring and passionate tribute to the most remarkable aircraft of the 20th Century.

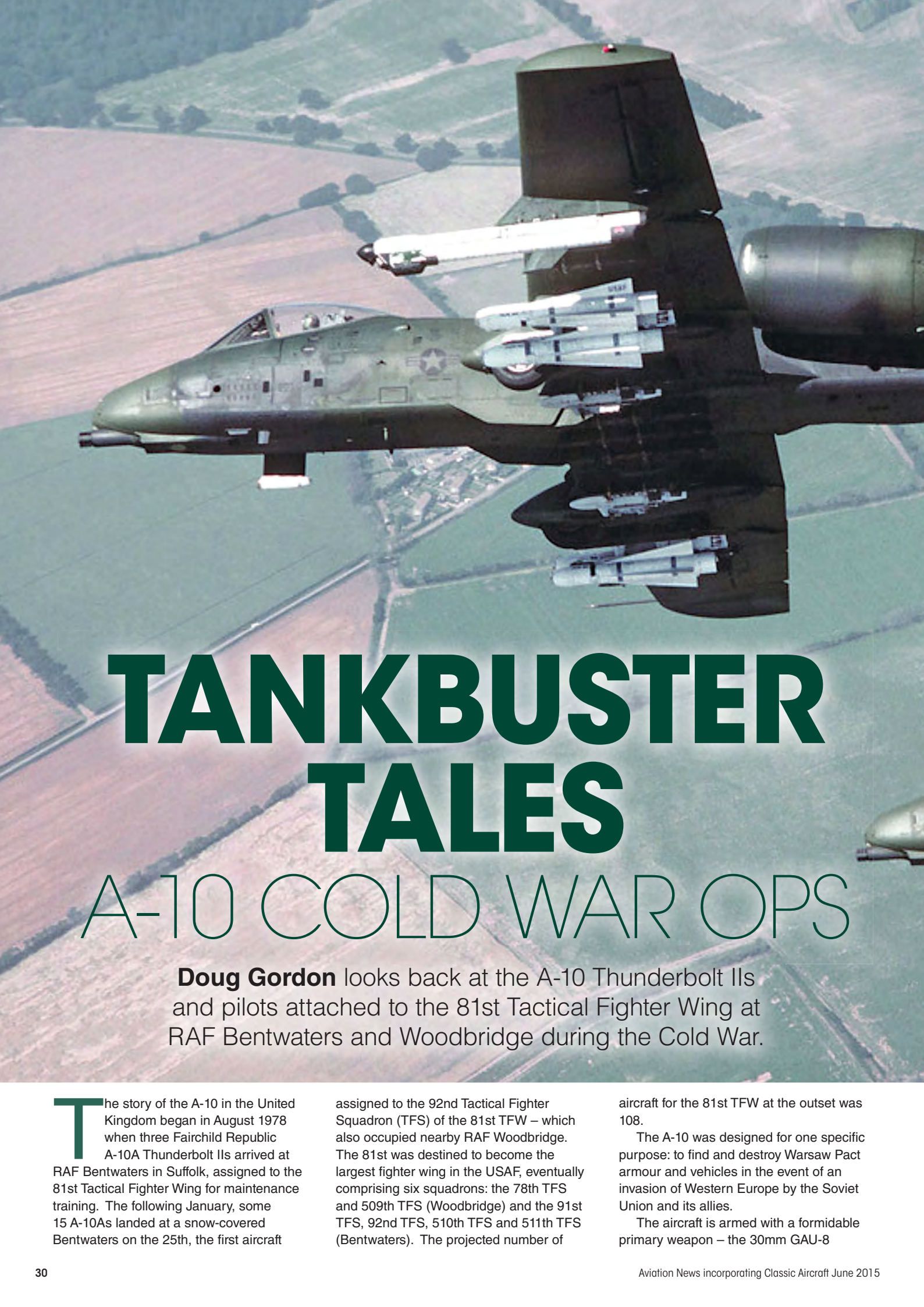
This special SR-71 Blackbird First Flight Golden Anniversary Collection includes signed copies of the Gold Editions of these classics, *Sled Driver* and *The Untouchables*, along with an etched Blackbird bookclip exquisitely detailed and plated in fine 24K gold. Included with this collection is the premier official coin celebrating the 50th Golden Anniversary of the first flight of the SR-71 Blackbird. This exclusive, polished gold finish commemorative coin features a three-dimensional planform of the jet, set in gold against a night sky enameled in the same USAF Federal Standard dark indigo blue paint shade that secretly cloaked the actual aircraft itself. On the reverse, the coin commemorates the 50-year anniversary of the first SR-71 flight in 1964, along with an enameled rendition of the official Mach 3+ shoulder patch earned by crewmembers. An impressive two inches in diameter and an eighth of an inch thick, each 50th Anniversary coin comes in a velvet presentation box.

Individually valued at \$627, only 500 Golden Anniversary sets are available – order yours now online or call **1-866-SR71 JET** to secure this extremely limited collectible for posterity.

\$550 SR-71 BLACKBIRD GOLDEN
ANNIVERSARY COLLECTION

[WWW.SLEDDRIVER.COM](http://www.SLEDDRIVER.COM)





TANKBUSTER TALES

A-10 COLD WAR OPS

Doug Gordon looks back at the A-10 Thunderbolt IIs and pilots attached to the 81st Tactical Fighter Wing at RAF Bentwaters and Woodbridge during the Cold War.

The story of the A-10 in the United Kingdom began in August 1978 when three Fairchild Republic A-10A Thunderbolt IIs arrived at RAF Bentwaters in Suffolk, assigned to the 81st Tactical Fighter Wing for maintenance training. The following January, some 15 A-10As landed at a snow-covered Bentwaters on the 25th, the first aircraft

assigned to the 92nd Tactical Fighter Squadron (TFS) of the 81st TFW – which also occupied nearby RAF Woodbridge. The 81st was destined to become the largest fighter wing in the USAF, eventually comprising six squadrons: the 78th TFS and 509th TFS (Woodbridge) and the 91st TFS, 92nd TFS, 510th TFS and 511th TFS (Bentwaters). The projected number of

aircraft for the 81st TFW at the outset was 108.

The A-10 was designed for one specific purpose: to find and destroy Warsaw Pact armour and vehicles in the event of an invasion of Western Europe by the Soviet Union and its allies.

The aircraft is armed with a formidable primary weapon – the 30mm GAU-8



Above: **Early A-10s were delivered to the 81st TFW in the two-tone 'ghost' grey camouflage.** USAF

Main photo: **Two A-10s armed with three Maverick missiles. They are also carrying an AN/ALQ-119 jamming pod.** USAF

Training Wing (TTW), which had been set up as the A-10 training wing in 1976. The first pilots converting to the A-10 at Davis-Monthan came mainly from the McDonnell Douglas F-4 Phantom II and the Ling-Temco-Vought A-7 Corsair II community. Later trainees came from a wider field of experience.

Low-altitude tactical navigation (LATN) was one aspect of training in the A-10 directly related to its mission. Attack profiles practised and developed included terrain masking approaches to targets and live firing of the GAU-8 at derelict tanks on bombing ranges. "Dropping bombs and shooting the 30mm gun were always fun, but very challenging for new pilots," explained 1st Lieutenant Jim Preston, who began his A-10 training in June 1980.

"The gun made a lot of noise, but it was simple to employ. Put the gun cross on the target, allowing for the wind, especially at the longer ranges, and pull the trigger. Our bursts were no more than a second, firing 50 to 80 rounds per burst. We had to cease fire by 2,000ft [610m] from the target [to preclude ricochet damage] and misjudging that range meant a foul – and two of those meant you went home."

IN SUFFOLK SKIES

It was in Europe that training for their wartime mission began in earnest for the pilots of the 81st TFW. The first few weeks were spent on local orientation flights and getting used to the very different air traffic control procedures used in the UK and the rest of Europe.

"There was a very structured syllabus to introduce all the nuances of flying in the UK," recalled 1st Lt Matt Modleski. "After completing a mission-ready check ride in the jet there was a graduation exercise. It was to plan a simulated wartime mission with a certified flight lead, present that plan to the entire squadron and then answer any and all questions about contingencies that might come up in exercising that mission. It was stressful and yet once complete, you were considered a mission-ready member of the squadron." ▶

Avenger Gatling gun which can fire up to 4,200 armour piercing rounds per minute. It can also carry up to six AGM-65 Maverick anti-tank missiles on LAU-88/A triple rail launchers fitted to stations 3 and 9. The A-10 can also carry a variety of other underwing stores on eight (originally 11) weapons carriage stations. The aircraft is highly manoeuvrable at low speed and low altitude

and is designed to withstand a considerable amount of hostile fire, the pilot's 'office' being protected by an armoured titanium 'bathtub'. Early on, the A-10 earned the nickname 'Warthog', often abbreviated to just 'Hog'.

For the initial cadre of A-10 pilots of the 81st, training for the close air support (CAS) mission began at Davis-Monthan AFB in Tucson, Arizona, with the 355th Tactical

The first of the 81st TFW squadrons to receive the A-10A was the 92nd Tactical Fighter Squadron; 77-248 was one of the early arrivals. USAF



There was a good deal of low-level flying. In specially designated areas the permitted low-level altitude was 250ft (76m) but generally, outside these areas, the A-10s operated at a minimum of 500ft (152m).

One aspect of flying in Northern Europe that could have a significant effect on mission capability is the weather. Regular

rain and mist, with accompanying low ceilings, are commonplace, particularly from December to February. The original USAF specifications for the close air support aircraft required the capability of operating under a ceiling of 1,000ft (305m) with one mile visibility. The A-10 essentially achieved this goal even though the visibility

requirement was not fully met with the aircraft demonstrating a capability to perform the visual ground attack mission in reduced visibilities down to one-and-a-half miles.

The 81st TFW utilised a number of ranges, in the UK they included RAF Holbeach, RAF Donna Nook and RAF Wainfleet in Lincolnshire and RAF Cowden in East Yorkshire. The BDU-33, a blue 25lb (11kg) practice bomb, was regularly used which could simulate the flight characteristics of the Mark 82, the widely available 500lb (227kg) bomb most likely to be carried in combat. The A-10s would go to the ranges with six or more BDU-33s, which had smoke charges at their aft ends to help score their accuracy. The RAE Aberporth range in Wales was made available by the Ministry of Defence for live missile firing. The opportunity to fire the formidable GAU-8 Avenger, however, was available at all the ranges. However, only RAF Holbeach was equipped with acoustical scoring, using the Del Mar Acoustiscore system. The other ranges relied on the controllers calling the scores to the pilots. The A-10s also used the ranges at Salisbury Plain in Wiltshire and Otterburn in Northumberland for live firings of the GAU-8.



Above: Ground crew load a GAU-8 Avenger at Ahlhorn in West Germany. The detached flights conducted live fire exercises at the Grafenwöhr or Hohenfels ranges in Bavaria. USAF

Below: All A-10s were delivered in the 'European One' camouflage scheme from May 1979 – when individual squadrons began to apply their insignia and colours. This Hog was with the 92nd TFS. USAF



THE FEBA

"Some joked that the forward edge of the battle area [FEBA] would be identified by A-10 wreckage," said 1st Lt Preston.

In the late 1970s it was estimated there were 48 Warsaw Pact armoured divisions in Eastern Europe and 16,200 main battle tanks in operational service in Poland, Czechoslovakia and East Germany. Facing this force in the west were 6,500 NATO main battle tanks.

To be effective, it could not, of course, operate from the UK and it was vital the aircraft and crews were on the ground to deal quickly and efficiently with any incursion. Four forward operating locations (FOLs) were established in West Germany: Detachment 1 at Sembach AB in the central region; Detachment 2 at Leipheim AB in



Above: **Four A-10s taxi at Sembach AB, near Kaiserslautern in Rhineland-Palatinate, during Exercise Reforger in 1986. The base was one of the FOLs for the 81st TFW in West Germany.** USAF

Below: **An A-10 awaits the mounting of four Maverick missiles at RAF Bentwaters.** USAF



the south; Detachment 3 at Ahlhorn AB in the north; and Detachment 4 at Nörvenich AB in the north central region. Nörvenich and Ahlhorn were attached to the 2nd Allied Tactical Air Force (ATAF) and Sembach and Leipheim to the 4th ATAF.

Each of the 81st TFW's six squadrons was divided into three flights – A, B and C – with each deploying to a forward operating base for a period of two weeks at a time. The number of aircraft that deployed to a FOL was a minimum of six with an extra jet sometimes sent as a spare. The number could vary depending on the taskings assigned for a particular deployment. Detachments to the FOLs were welcomed by the pilots. "We were able to focus on wartime training,"

explained 1st Lt Preston. "We spent a lot of time getting familiar with our wartime target areas. Each squadron had an area where they'd be tasked, so they could spend lots of time figuring out the terrain, looking for good attack avenues, discerning possible enemy approach routes etc.

"We'd arrive on a Monday and generally fly one sortie that afternoon, then fly twice each day thereafter until the Friday almost two weeks later. The exercises were as close to real war as we could make them. We did real go-to-war tasking orders. [During exercises] we sat cockpit alert, where we'd have to launch within five minutes of receiving the order. We'd get our target assignments after launch, so you had to be prepared for any target area."

One of the crucial aspects of the A-10's mission in Europe was collaboration with the armies of the NATO allies. In the CAS role, its importance cannot be over-emphasised – and the A-10 flights based at the FOLs spent a lot of their time working in concert with ground-based forward air controllers (FACs) and the Bell AH-1 Cobra helicopter gunships of the US Army.

Such manoeuvres were designed to develop joint air attack tactics (JAATs) and were also invaluable in cementing relationships between the troops on the ground and the A-10 aircrews. One of the units the 81st TFW A-10s trained with extensively was the 7th Cavalry Regiment based at Giebelstadt in Bavaria.

"Sometimes the army would let us ride in their Hueys [Bell UH-1s] as they flew along the border," revealed 1st Lt Preston. "It was invaluable to work with them on that level. We got to know them as people, and I hope they came to respect what we brought to the fight.

"We also did what we called 'terrain walks' where we'd drive to our wartime target sectors and see what they looked like from the ground. We'd get right up to the East German border and watch the guards in the towers take pictures of us. We removed our squadron insignia and name tags, but if we'd been taken prisoner, they'd have had those pictures."

For the A-10 to perform its mission it was important the allies had air superiority. The altitude at which the A-10 plied its trade was not in itself a guarantee of immunity from attack from enemy interceptors, which was brought home dramatically to 1st Lt Modleski while on exercise.

"While in Germany conducting LATN at 250ft [76m] I was surprised to be attacked by a Tornado from below," he said. "He made his intercept at 100ft [30m] and I never forgot the lesson that just because I was low, an air threat couldn't be lower."

The Thunderbolt pilots took part in dissimilar air combat training (DACT) with other units and with the specialist unit in USAFE (United States Air Forces in Europe), the 527th Aggressor Squadron (AS) based at RAF Alconbury, Cambridgeshire, whose F-5E Tiger IIs usually deployed to Bentwaters when working with the A-10s for what they referred to as defensive reaction training.

"I do remember deploying for a week to RAF Bentwaters to fly with the A-10 guys," said Capt Jeff Brown, who flew with the 527th. "We tried to teach them a basic move to ▶

Some A-10 flights detached to Ahlhorn used the nearby A-29 autobahn during operations for Exercise Highway 84. Refuelling facilities were on site for a fast turnaround. USAF





Above: Thunderbolt II, 75-0262, wore this camouflage as part of Joint Air Weapons Systems (JAWS) trials with US Army helicopters in mainland Europe. It visited RAF Bentwaters in February 1978. The USAF eventually adopted the European One scheme. Trevor Hall

Below: A-10A 80-0208 was named *Annabelle II*. Key Collection



escape the air-to-air guys – they didn't have AIM-9s like they have now; all they had was their 30mm cannon. Our focus was to be able to get them to intimidate us with their gun [which] inside 6-7,000ft, had very little bullet drop, so it was very intimidating."

Defensive reaction training could also be a dangerous business. Captain Paul Taylor, who detached to Bentwaters from Alconbury on December 12, 1983, explained: "I was the DETCO [detachment commander] of our three pilot, eight maintenance technician, three jet detachment. On the very first mission of the two-week deployment the two A-10s I was flying against ran into each other right in front of me. One of the A-10 pilots was killed and the other was rescued from the North Sea by an RAF helicopter out of RAF Coltishall."

When the 527th AS converted to the F-16 it was based at Bentwaters alongside the A-10s, providing ample opportunity for the two aircraft to fly DACT missions together.

"They were truly dissimilar air combat sorties," said Col Jim Wisdom, the CO of the 527th at Bentwaters. "In spite of the A-10's lack of speed and power, it could turn very well and always stayed in the low block, optimising their performance. The key for their success was visual look-out and situational awareness gathered from their radar warning system – and ability to visually acquire that fast-moving F-16 soon enough before weapons were employed."

It was evident that, within reasonable limits, the A-10 could survive in a hostile

Below: A-10A 81-0955 of the 511th TFS, 81st TFW – flanked by an F-4G of the 81st TFS, 52nd TFW and an RF-4C of the 1st TRS, 10th TRW. USAF



Carrying an AN/ALQ-119 jamming pod, this A-10 also has a modified GAU-8 muzzle in the form of the Battelle gun gas diverter. This was designed to divert the gases expelled when the GAU-8 was fired and stop them being ingested by the engines. Some 81st TFW A-10s carried the modification but it was not particularly effective and its use was short-lived. USAF



air-to-air environment. However, it was also apparent that NATO air superiority over the battlefield was essential in ensuring the close support role of the aircraft could proceed without too much hindrance.

ENHANCING THE HOG

Throughout its years of service the A-10 has undergone modifications to enhance its role and survivability on the battlefield; the emphasis in these developments being on protection against hostile aircraft and missiles and the intergration of more precision weapons. Among the changes was the ability to carry the AIM-9L Sidewinder air-to-air missile for defence; and a series of electronic countermeasures including the Westinghouse AN/ALQ-119 jammer pod

Of all the aircraft in the NATO inventory the A-10 was uniquely suited to the close support role because its ability to fly at low speed could be a distinct advantage in target acquisition and destruction. Unlike its faster contemporaries it rarely overflew the target when searching for it – and having acquired it, one short burst with the GAU-8 usually negated the necessity to try again, when the enemy might be waiting.

The A-10 was a large aircraft with a large radar signature and in tight turns it would bleed a lot of speed, increasing its vulnerability.

Thankfully the Cold War with the Warsaw Pact never turned hot but it did take part in a number of conflicts including Kosovo, Desert Storm and Afghanistan, where it acquitted itself well. Capt Todd Sheehy of the 511th TFS made history when he used his GAU-8 to shoot down an Iraqi Mil Mi-8 *Hip* helicopter on February 15, 1991, during Desert Storm. The end of the Cold War led to the drawdown of the A-10 at Bentwaters and Woodbridge which started in the late 1980s. Between

“Our bursts were no more than a second, firing 50 to 80 rounds per burst.”

1988 – when two squadrons left to join the newly activated 10th TFW at Alconbury – and 1992, when the last squadron, the 92nd TFS, returned to the United States, the 81st TFW relinquished its A-10s and its mission. The

wing was deactivated on July 1, 1993, its mission in Europe complete after 40 years.

The 510th FS (later becoming the 81st Fighter Squadron) and its A-10s moved to Spangdahlem AB in Germany and the type remained in Europe until June 18, 2013 when the 81st FS inactivated.

It is somewhat ironic then that less than two years later the A-10s are back on the continent as a result of increased tensions with Russia.

The USAF A-10 wants to retire the A-10 as it looks to use funds elsewhere. In June last year, the US House of Representatives voted to block the USAF’s plans to retire the A-10 so for now, the Hog lives to fight another day. **AN**



Above: An 81st TFW A-10 on final approach. Key Collection

Below: A-10 81-0966 of the 81st TFW at RAF Mildenhall. Key Collection



AIRSHOW NEWS



Canadian Hornet Honours Battle of Britain

The Royal Canadian Air Force has painted this year's CF-188 Demonstration Hornet, 188761, in a special scheme to mark the 75th anniversary of the Battle of Britain. It is pictured flying over the Saguenay River, Quebec. Royal Canadian Air Force/Leading Seaman Alex Roy

F-35 for Oshkosh

Lockheed Martin's F-35 Lightning II will make its Oshkosh debut at EAA AirVenture 2015.

The event will also mark the jet's first civilian US airshow appearance. "EAA AirVenture attendees have often seen the latest military aircraft make appearances at Oshkosh over the past 30 years, a list that has included such cutting-edge types as the F-117 stealth fighter and the F-22 Raptor," said Rick Larsen, EAA's vice president

of communities and member services, who co-ordinates AirVenture features and attractions. "The addition of the F-35 as a highlight further fortifies AirVenture as an unmatched event to see a group of aircraft in one place that you can see nowhere else in the world."

The aircraft, an F-35A model, is based with the USAF's 33rd Fighter Wing at Eglin AFB in Florida. It is scheduled to arrive midway through AirVenture week and remain

on display for the remainder of the fly-in. Exact arrival and departure times will be announced when they are finalised. The F-35 joins the list of current military aircraft scheduled for EAA AirVenture 2015 that already includes the B-52 Stratofortress and F-22 Raptor. The 63rd annual edition of the Experimental Aircraft Association's fly-in convention will take place between July 20 and 26 at Wittman Regional Airport in Oshkosh, Wisconsin.

Overseas Additions for Cosford

June's RAF Cosford Air Show has been boosted by a number of overseas participants.

The Italian Air Force and German Navy will both feature in the SAR Zone with an AgustaWestland HH-139A and Sea King respectively. The German Navy will also provide a short maritime patrol demonstration with a P-3C from MFG3. The RAF's contribution includes the Red Arrows and the Typhoon and Spitfire synchro pair while the Belgian Air Force is sending its F-16 Demo Team and the Swiss Hornet Solo Display is making its Cosford debut. RAF Museum Cosford's TSR2 will also be displayed outside in the static area.

The event takes place on Sunday, June 14 and tickets are only available in advance.

New Scheme for Belgian F-16 Demo



The Belgian Defence - Air Component F-16 Demo Team has unveiled a new livery for the 2015 season. The aircraft in question, FA-123, was unveiled at Kleine-Brogel AB in April. Mick Balter/ MBAviationImages

AVIATION EVENTS CALENDAR



The Blue Angels performed at the Pensacola Beach Airshow in 2014 and will return again this year on July 11. US Navy/Mass Communication Specialist 2nd Class Andrea Perez.

UNITED KINGDOM

MAY

- 16-17 OAKLEY AIRFIELD, OXFORDSHIRE:** BMAA Microlight Competition – www.microlightcomps.org/index.php/events/details/20-electioneering-in-oxford-2015
- 16-17 NEWARK AIR MUSEUM, NEWARK, NOTTS:** Training Aircraft Tribute Event – www.newarkairmuseum.org/Tribute-to-Training_2015
- 17 KEMPTON PARK RACECOURSE, MIDDLESEX:** Heathrow Aircraft Enthusiasts Fair – www.aircraftenthusiastfair.co.uk
- 20-24 SALTBY, GRANTHAM, LINCS:** British Glider Aerobatic Championships – www.aerobatics.org.uk/contest/view/36
- 22-24 FENLAND, SPALDING, LINCS:** BAeA Aerobatic Competition – www.fenlandairfield.co.uk
- 22-25 BATH, SOMERSET:** Bath Balloon Fiesta 2015 – 07792 483196
- 22-25 KIRKBY LONSDALE, CUMBRIA:** Balloon Meet – meets@nwbac.com
- 23 LLANDUDNO SEAFRONT, CONWY:** Llandudno Air Show – www.llandudno-air-show.org.uk
- 23 OLD WARDEN, BEDS:** Shuttleworth Collection Classic Evening Airshow – 01767 627927 www.shuttleworth.org
- 23-24 IWM DUXFORD, CAMBS:** VE Day Anniversary Air Show – 01223 835000 www.iwm.org.uk
- 23-24 NORTH COATES AIRFIELD, GRIMSBY, LINCS:** Spring Fly-In – 01472 388850 www.northcoatesflyingclub.co.uk
- 23-25 EAST KIRKBY, LINCS:** Lanc, Tank and Military Machines – 01790 763207 www.lincsaviation.co.uk NOTE: Flying display on May 25 only
- 23-31 HUSBANDS BOSWORTH AIRFIELD, LUTTERWORTH, LEICS:** BGA Glider 15m and Standard Nationals – old.glidering.co.uk/bgainfo/competitions/calendar.htm
- 23-31 LONG MYND, SHROPSHIRE:** VGC Vintage Glider National Rally – www.vintagegliderclub.org/rallies-events/upcoming-events
- 24 BRUNTINGTHORPE, LEICS:** Cold War Jets Open Day – 0116 279 9300 www.bruntingthorpeaviation.com/open-days
- 25 POPHAM AIRFIELD, HANTS:** Bank Holiday Fly-In – www.popham-airfield.co.uk
- 29-31 LAKESIDE LODGE, PIDLEY, CAMBS:** Solo Balloon Meet

- 29-31 SYWELL, NORTHANTS:** AeroExpo UK and Heli UK Expo – 020 8391 6770 www.aeroexpo.co.uk
- 29-JUN 01 SHOBDON AIRFIELD, HEREFORDSHIRE:** Anglo-Irish Fly-In

JUNE

- 04-07 SYWELL, NORTHANTS:** Advanced & Unlimited British National Aerobatic Championships – www.aerobatics.org.uk
- 06 SUTTON MEADOWS AIRFIELD, CAMBS:** Cambs MC Microlight Charity Fly-In – www.cambsmicrolightclub.co.uk
- 06 THROCKMORTON, WORCS:** Throckmorton Air Show – www.throckmortonairshow.com
- 06-07 HAVERFORDWEST AIRPORT, PEMBROKESHIRE:** RRRRA Handicap Air Race – www.britishairracing.com/the-2015-season.html
- 07 BRIGHTON AERODROME, SELBY, NORTH YORKS:** Radial Engine Fly-In – www.realaero.com – membership required to access airfield, see the website for details.
- 07 OLD SARUM AIRFIELD, SALISBURY, WILTS:** Vintage Sunday Fly-In – www.oldsarumairfield.co.uk
- 07 OLD WARDEN, BEDS:** Shuttleworth Airshow featuring the Light Aircraft Association – 01767 627927 www.shuttleworth.org
- 07 STURGATE AIRFIELD, GAINSBOROUGH, LINCS:** Lincoln Aero Club Summer Fly-In lincolnaeroclub.wix.com/site
- 07 YORKSHIRE AIR MUSEUM, ELVINGTON, N YORKS:** Thunder Day – 01904 608595 www.yorkshireairmuseum.org
- 12-14 BERKELEY, GLOUCESTERSHIRE:** Exclusive Cup – www.exclusivecup.com
- 12-14 CHOLMONDELEY CASTLE, CHESHIRE:** Pageant of Power – 01829 772432 www.cpop.co.uk
- 12-14 KIRKLINGTON NORTH YORKSHIRE:** PRBA Hengehoppers Meet – meets@prba.org.uk
- 13 BIGGIN HILL AIRPORT, KENT:** Festival of Flight – 01959 578571 www.bhfof.com – Advance tickets only.
- 13 RAF NORTHOLT, MIDDLESEX:** RAF Northolt Centenary Open Day – www.raf.mod.uk/rafnortholt/events/rafnortholtopenaday2015.cfm – Advance tickets only.
- 13-14 NEWARK AIR MUSEUM, NEWARK, NOTTS:** Cockpit Fest and Aeroboot/Aerójumble Sale – www.newarkairmuseum.org/Museum-Events_Cockpit-Fest-2015
- 13-14 SHERBURN AIRFIELD, SHERBURN IN ELMET,**

- NORTH YORKS:** Sherburn Aero Club Annual Fly-In – www.sherburnaeroclub.com
- 14 OLD BUCKENHAM AIRFIELD, NORFOLK:** American Aircraft Fly-In – www.oldbuck.com
- 14 RAF COSFORD, SHROPSHIRE:** RAF Cosford Air Show – 01902 377922 www.cosfordairshow.co.uk
- 14 WELSHPOOL, POWYS:** Bob Jones Memorial Air Show – www.welshpoolairshow.co.uk
- 19-21 GUERNSEY AIRPORT, GUERNSEY:** Guernsey Air Rally – guernseyaeroclub.com/air-rally
- 19-27 CAMPHILL, GREAT HUCKLOW, DERBYSHIRE:** VGC Vintage Glider Rally – www.vintagegliderclub.org/rallies-events/upcoming-events
- 20 OLD WARDEN, BEDS:** Shuttleworth Edwardian Picnic and Evening Airshow – 01767 627927 www.shuttleworth.org
- 20-21 NORTH WEALD, ESSEX:** Air-Britain Vintage and Classic Fly-in – www.air-britain.com/flyin-about.html
- 20-21 WESTON-SUPER-MARE SEAFRONT, SOMERSET:** Weston Air Festival and Armed Forces Day – 01934 427225 www.n-somerset.gov.uk
- 21 POPHAM AIRFIELD, HANTS:** Mid-Summer Day Fly-In – www.popham-airfield.co.uk
- 21 PRIORY FARM AIRFIELD, TIBBENHAM, NORFOLK:** Annual Father's Day Fly-In and BBQ – www.flypfa.co.uk
- 21 WELLESBOURNE MOUNTFORD, WARKS:** Wings and Wheels – 07595 191576 www.xm655.com/events.php
- 25-28 GOODWOOD, W SUSSEX:** Goodwood Festival of Speed – grrc.goodwood.com
- 26-27 COMPTON ABBAS AIRFIELD, SALISBURY, WILTS:** BAeA Aerobatic Competition – www.aerobatics.org.uk/contest/view/39
- 26-28 ALDERNEY AIRPORT, ALDERNEY:** Alderney Fly-In – www.flyalderney.com
- 27 STOKE PARK, GUILDFORD, SURREY:** Armed Forces Day National Event – www.armedforcesday.org.uk/events
- 27 ROYAL GREEN, LOWESTOFT, SUFFOLK:** Lowestoft Armed Forces Day
- 27 PLYMOUTH HOE, DEVON:** Armed Forces Day – 01752 306330 www.visitplymouth.co.uk/events/armed-forces-day-2015-p1306823
- 27-28 EBBESBOURNE WAKE, WILTS:** Chalke Valley History Festival Air Show – cvhf.org.uk
- 27-28 SHOBDON AIRFIELD, HEREFORDSHIRE:** Food and Flying Festival – shobdonairfield.co.uk

EUROPE

MAY

- 19-21 GENEVA INTERNATIONAL AIRPORT, SWITZERLAND:** EBACE – 2015 European Business Aviation Convention and Exhibition – ebace.aero
- 21-23 CROCUS EXPO, MOSCOW, RUSSIA:** HeliRussia – www.helirusia.ru/en
- 22-23 PUSHKIN AERODROM, ST PETERSBURG, RUSSIA:** Pushkin Military-Historical Festival – www.aviasalonpushkin.com
- 23-24 AÉRODROME DE CERNY, LA FERTÉ ALAIS, FRANCE:** Meeting Aérien – www.ajbs.fr
- 23-24 OSTRÓW WIELKOPOLSKI, POLAND:** Festyn Lotniczy – www.festynostrow.pl **CANCELLED**
- 24-25 FLUGPLATZ AILERTCHEN, WESTERBURG, GERMANY:** Tag der Offenen Tür FSV Ailertchen – www.fsv-ailertchen.de
- 24-25 OOSTWOLD, THE NETHERLANDS:** Oostwold Airshow – www.oostwold-airshow.nl
- 25 AÉRODROME DE ROGÉ, VILLENEUVE SUR LOT, FRANCE:** Villeneuve Air Show – www.aeroclub-villeneuve.com
- 25 VÄSTERÅS, SWEDEN:** RollOut Airshow 2015 – www.flygmuseum.com/evenemang
- 29-30 BYDGOSZCZ, POLAND:** Air Fair – www.airfair.pl
- 29-31 BÉKÉS AIRPORT, BÉKÉSCSABA, HUNGARY:** Legendák a Levegőben Repülőnap – www.facebook.com/pages/Legendák-a-Levegőben-Repülőnap/493677717419523
- 30 MURET-LHERM, FRANCE:** Airexpo – www.airexpo.org
- 30-31 AERODRÒM IGUALADA-ÒDENA, BARCELONA, SPAIN:** Aerosport 2015 – aerosport.es
- 30-31 BA126 SOLENZARA, FRANCE:** Meeting de l'Air
- 30-31 ROVINJ, CROATIA:** Red Bull Air Race – www.redbullairrace.com/en_INT/event/rovinj-2015
- 30-31 SIEGERLAND AIRPORT, GERMANY:** Oldtimer Festival – www.oldtimer-festival-siegerland.de

30-31 SOCHI, RUSSIA: Red Bull Air Race – www.redbullairrace.com **CANCELLED**
31 KJELLER, NORWAY: Airshow Kjeller – flydagen.no
31 VOLKEL VILLAGE, THE NETHERLANDS: Volkel in de Wolken – www.volkelindewolken.nl

JUNE

04-06 LYON-BRON, FRANCE: France AirExpo Lyon – Salon de l'Aviation Générale – www.franceairexpo.com
04-07 KEHL-SUNDHEIM, GERMANY: Kehler Flugtage – www.kehler-flugtage.de
05-07 SZOLNOK-SZANDASZŐLŐS, HUNGARY: Legendák a Levegőben Repülőnap – www.facebook.com/pages/Legendák-a-Levegőben-Repülőnap/493677717419523
06 AERODROMUL BOBOC, BUZĂU, ROMANIA: BOBAS 2015: Miting Aerian Școlii de Aplicație pentru Forțele Aeriene – www.roaf.ro/en/index_en.htm
06 SODANKYLÄ, FINLAND: Arctic Airshow 2015 – airshow2015.sodik.fi
06 SMÅLAND AIRPORT, VÄXJÖ, SWEDEN: Växjö Airshow 2015 – smalandairport.se/airshow/vaxjo-smaland-airport-show-flygkalaset/?lang=en
06-07 COMPIÈGNE-MARGNY, FRANCE: Meeting Aérien – Compiègne Aéro Classic 2015 – www.cercledesmachinesvolantes.com/compiègne-aero-classic-2015
06-07 PARDUBICE, CZECH REPUBLIC: Aviation Fair – aviatickاپout.cz
06-07 INTERNATIONAL AIRPORT, TURKU, FINLAND: Turku Airshow – www.turkuairshow.fi
07 CUATRO VIENTOS, SPAIN: Fundación Infante de Orleans Flight Demonstration Day – fio.es/Exhibiciones.html
07 BA705 TOURS, FRANCE: Meeting de l'Air
11 KATWIJK SEAFRONT, THE NETHERLANDS: SAR Katwijk – www.sarkatwijk.nl
11-13 PRAGUE-KBELY, CZECH REPUBLIC: EFA Prague 2015 – Europe's Helicopter and General Aviation Expo – www.efaprague.com
12-14 FRIEDRICHSHAFEN, GERMANY: Klassikwelt Bodensee – www.klassikwelt-bodensee.de
13 FRITZLAR AB, GERMANY: Tag der Bundeswehr
13 INGOLSTADT-MANCHING AB, GERMANY: Tag der Bundeswehr
13 SAINT-YAN, FRANCE: Fly-In Air France: Meeting Aérien – flyin.lfbk.free.fr/
13 AEROPORTUL SATU MARE, ROMANIA: Satu Mare Miting Aviatic 2015
13-14 BERGNEUSTADT – AUF DEM DÜMPEL, GERMANY: Flugplatzfest Bergneustadt – lsc-duempel.de/service/termine.html
13-14 POZNAŃ-ŁAWICA, POLAND: Aerofestival 2015 – aerofestival.pl
15-21 PARIS-LE BOURGET, FRANCE: International Paris Air Show – www.siae.fr NOTE: Public days June 19-21
19-21 MORGARTEN, SWITZERLAND: Jubiläumsfest/Armeeausstellung Morgarten 2015 – www.morgarten2015.ch/de/morgarten_2015/veranstaltungen/19_21_juni_2015_armeeausstellung/
19-21 TEUGE AIRPORT, DEVENTER, NETHERLANDS: Wings, Wheels and Goggles – www.wingswheelsgoggles.nl
20 AUREL VLAICU INTERNATIONAL AIRPORT, BUCHAREST-BANEASA, ROMANIA: Bucharest International Air Show – bias.aero/
20-21 RYBNIK, POLAND: Piknik Lotniczy Dni Aeroklubu – dniaeroklubu.pl/
21 CHOTĚBOŘ AIRFIELD, CZECH REPUBLIC: Chotěboř Airshow – www.airshowchotebor.cz/
21 PLAYA GRANADA, MOTRIL, GRANADA, SPAIN: Festival Aéreo de Motril – www.aaao.es
27 ESLÖV, SWEDEN: Eslöv Airshow – www.flyin.se
27-28 AMBRI AERODROME, AMBRI, SWITZERLAND: Oris Ambri Fly-In 2015 – www.orisambri-flyin.ch
27-28 BA116 LUXEUIL, FRANCE: Meeting de l'Air
27-28 FLUGHAFEN ERFURT-WEIMAR, GERMANY: Flughafenfest 2015 Erfurt – www.flughafen-erfurt-weimar.de/unternehmen/aktuelles/news/article/endlich-wieder-ein-flughafenfest-2015.html
27-28 KRAKÓW-RAKOWICE-CZYŻNY, POLAND: Małopolski Piknik Lotniczy
27-28 LESZNO-STRZYŻEWICE, LESZNO, POLAND: Piknik Szybowcowy Leszno Rozwinię Skrzydła – piknikszybowcowy.pl
27-28 MONTAGNANA, PADUA, ITALY: Fly Party 2015 – Aviosuperficie di Montagnana – www.hag-italy.it/

events/212-FLYPARTY2015.htm
27-28 MOORSELE AIRFIELD, BELGIUM: Fly-In Moorsele – www.facebook.com/flyinmoorsele
27-28 URSEL AIRFIELD, KNESSELARE, BELGIUM: Ursel Avia – www.ebul.be
28 ÉPERNAY-PIVOT AÉRODROME, PIVOT, FRANCE: Portes Ouvertes 70 Ans Aéroclub Epervain – www.aeroclub-epervain.com/pivot51
28 LLEIDA-ALGUAIRE AIRPORT, LLEIDA, SPAIN: Air Race 1 World Cup – airrace1.com

NORTH AMERICAN DATES

MAY

20 US NAVAL ACADEMY, ANNAPOLIS, MARYLAND: US Naval Academy Airshow
23-24 REGIONAL AIRPORT, COLUMBIA, MISSOURI: Salute to Veterans Airshow – www.salute.org
23-24 INTERNATIONAL AIRPORT, ROCHESTER, NEW YORK: Airshow – www.rocairshow.info
23-24 JONES BEACH STATE PARK, WANTAGH, NEW YORK: Bethpage Airshow – bethpageairshow.com
24 SUNDANCE AIRPORT, OKLAHOMA CITY, OKLAHOMA: Discover Aviation Airshow Spectacular – sundanceairport.com/node/3
27 ANDERSON REGIONAL AIRPORT, ANDERSON, SOUTH CAROLINA: Snowbirds Over Anderson
29-30 ST LOUIS DOWNTOWN PARKS AIRPORT, CAHOKIA, ILLINOIS: Midwest Aviation Fun Days
29-31 AURORA RESERVOIR, AURORA, COLORADO: Rocky Mountain Airshow – www.cosportaviation.org
30 DEKALB-PEACHTREE AIRPORT, ATLANTA, GEORGIA: Good Neighbor Day PDK Airshow – www.pdkairshow.com
30 GREENWOOD LEFLORE AIRPORT, GREENWOOD, MISSISSIPPI: Greenwood Leflore Airport Airshow – www.facebook.com/GreenwoodAirshow
30-31 ANOKA COUNTY AIRPORT, BLAINE, MINNESOTA: Discover Aviation Days – www.discoveraviationdays.org
30-31 QUONSET STATE AIRPORT, RHODE ISLAND: National Guard Open House Airshow – www.riairshow.org
30-31 EXECUTIVE AIRPORT, SUFFOLK, VIRGINIA: Festival of Flight – www.virginiaflyin.org **CANCELLED**

JUNE

03 NORTH BAY WATERFRONT, ONTARIO, CANADA: Armed Forces Day – www.cityofnorthbay.ca/living/events/armed-forces-day
05-07 REGIONAL AIRPORT, READING, PENNSYLVANIA: Mid-Atlantic Air Museum World War II Weekend – www.maam.org/maamwwii.html
05-06 ADA MUNICIPAL AIRPORT, ADA, OKLAHOMA:

Ada Air Expo 2015 and Warbird Fly-In – www.facebook.com/AdaAirExpo
06 INDIANAPOLIS METROPOLITAN AIRPORT, FISHERS, INDIANA: Warbird Expo – www.warbirdexpo.com
06 RUSK COUNTY AIRPORT, HENDERSON, TEXAS: Rusk County Fly-In and Airshow – visithendersontx.com/events/rusk-county-fly-in
06 SKYPARK AIRPORT, SALT LAKE CITY, UTAH: Skypark Aviation Festival – www.skyparkutah.com/skypark-aviation-festival
06-07 CHICAGO AIRPORT, ROCKFORD, ILLINOIS: AirFest – www.rockfordairfest.com
06-07 TSTC CAMPUS AIRPORT, WACO, TEXAS: Heart of Texas Airshow – www.heartoftexasairshow.com
10 FORT FRANCES MUNICIPAL AIRPORT, FORT FRANCES, ONTARIO, CANADA: Fort Frances Snowbirds Display
13 DILLON MARINA, DILLON, COLORADO: Highest Show on Earth – www.highestshowonearth.com
13 MCNARY FIELD, SALEM, OREGON: Warbirds Over The West Fly-In – www.b17alliancegroup.com
13 MILITARY AVIATION MUSEUM, VIRGINIA BEACH, VIRGINIA: Flying Proms – www.militaryaviationmuseum.org/flying-proms.html
13-14 OCEAN CITY SEAFRONT, MARYLAND: Airshow – www.oceairshow.com
13-14 RIMOUSKI AIRPORT, RIMOUSKI, QUEBEC, CANADA: Spectacle Aérien de Rimouski – tbaviation.ca
13-14 WHITEMAN AFB, MISSOURI: Wings over Whiteman
20 CARSON CITY AIRPORT, CARSON CITY, NEVADA: Carson City Airport Open House – flycarsoncity.com/open-house
20 ENTERPRISE AIRPORT, DENTON, TEXAS: Airshow – www.denton.schultzairshows.com
20 GRANITE FALLS MUNICIPAL AIRPORT, GRANITE FALLS, MINNESOTA: Ray Fagen Memorial Airshow – www.facebook.com/FagenFightersWwiiMuseum
20 HANSEN DAM, LAKEVIEW TERRACE, LOS ANGELES, CALIFORNIA: American Heroes Air Show – www.heroes-airshow.com/events/los-angeles
20 LEE'S SUMMIT MUNICIPAL AIRPORT, LEE'S SUMMIT, MISSOURI: Lee's Summit Airport Open House – cityofls.net/Public-Works/Airport/General-Information.aspx
20 PAINE FIELD, SNOHOMISH COUNTY AIRPORT, EVERETT, WASHINGTON: Pacific Legends Day – www.flyingheritage.com
20 PEKIN MUNICIPAL AIRPORT, PEKIN, ILLINOIS: Wing and Wheels Fly In and Drive In – pekinmunicipalairport.com/wings-and-wheels
20-21 ARNOLD PALMER AIRPORT, LATROBE, PENNSYLVANIA: Westmoreland County Airshow
20-21 CFB BAGOTVILLE, QUEBEC, CANADA: Spectacle Aérien International de Bagotville – www.saibagotville.com



Heli UK Expo will take place alongside AeroExpo UK at Sywell between May 29 and 31. Tecnam P2008 G-TNDR was one of the aircraft displayed at last year's AeroExpo. AirTeamImages.com/ Steve Flint



JUNE ISSUE AVAILABLE NOW!



FREE SUPPLEMENT WHERE ARE THE CARRIERS?

Many US Presidents have uttered these words when military force looks like the only option to solve a crisis. Rick Burgess reviews the status of the US Navy's 'flat-tops'.

TORNADO TRAINERS AT 100

As XV (Reserve) Squadron celebrates its 100th anniversary, Neil Pearson visits the squadron at RAF Lossiemouth to examine how the RAF trains its Tornado GR4 aircrew.

YEMEN – ON THE EDGE

Jon Lake investigates the origins and recent military operations conducted in Yemen, as it heads towards becoming the next terrorist battleground in Southwest Asia.

AND MUCH MORE!

June Issue available now from [WHSmith](#) and all other leading newsagents

ALTERNATIVELY, ORDER DIRECT:

*** FREE APP**

With sample issue.
In app issues \$5.99/£3.99.

Order online at
www.keypublishing.com/shop

*Free 2nd class P&P. UK & BFPO only.
Postage charges may vary depending on total order value.



OR



Call **+44 1780 480404**
or (UK) **01780 480404**
Lines open 9.00am - 5.30pm



also available for PC,
MAC & Kindle Fire from



Search:
Airforces Monthly



Airliner World

THE GLOBAL AIRLINE SCENE

June Issue OUT NOW:

FREE 24 Page World Airliners Guide and Poster

A snapshot of programme progress for each of the major commercial aircraft types.



East Midlands Airport

Celebrating half a century of operations at one of Britain's leading regional facilities.

Losing an Airliner

More than a year since the loss of Malaysia Airlines' flight MH370, what lessons have been learnt?

New Eurowings

Will Lufthansa's new-look subsidiary deliver genuinely low-cost, long-haul travel?

TWA – Gone but not Forgotten

Profiling one of the original 'Big Four' domestic carriers of the US.

AND MUCH, MUCH MORE!

Available every 2nd Wednesday of the month from [WHSmith](#) and other leading newsagents

Requirements for app: registered iTunes account on Apple iPhone 3G, 3GS, 4S, 5, 6, iPod Touch or iPad 1, 2 or 3. Internet connection required for initial download. Published by Key Publishing Ltd. The entire contents of these titles are © copyright 2015. All rights reserved. App prices subject to change. Prices correct at time of going to press.



DOWNLOAD NOW

FREE APP
with sample issue

IN APP ISSUES £3.99

SEARCH AIRLINER WORLD



AVAILABLE ON:



AVAILABLE FROM pocketmags.com

- 20-21 GAYLORD REGIONAL AIRPORT, GAYLORD, MICHIGAN:** Wings Over Gaylord Air Show – www.wingsovergaylord.org
- 20-21 GILLESPIE FIELD, EL CAJON, CALIFORNIA:** AirShow San Diego – ag1caf.org/airshow-sandiego
- 20-21 HAMILTON, ONTARIO, CANADA:** Canadian Warplane Heritage Museum SkyFest – www.warplane.com
- 20-21 HOLLISTER AIRPORT, CALIFORNIA:** Hollister Airshow – www.hollisterairshow.com
- 20-21 INTERNATIONAL AIRPORT, DAYTON, OHIO:** Dayton Airshow – www.daytonairshow.com
- 20-21 TETERBORO AIRPORT, NEW JERSEY:** Wings and Wheels Expo 2015 – www.njahof.org/ww
- 21 MYERS FIELD, CANBY, MINNESOTA:** Canby Father's Day Air Show – www.canbyairshow.com
- 24 GODERICH WATERFRONT, GODERICH, ONTARIO, CANADA:** Goderich Air Show
- 27 GREENWOOD COUNTY AIRPORT, GREENWOOD, SOUTH CAROLINA:** Greenwood Aviation Expo 2015 – www.aviationexpo.net
- 27 GOSHEN MUNICIPAL AIRPORT, GOSHEN, INDIANA:** Rotors 'n Rib Helicopter Fly-In – www.indianahelicopters.com/rotors-ribs.php
- 27-28 CAMERON MEMORIAL AIRPORT, CAMERON, MISSOURI:** Cameron Air Show
- 27-28 EVANSVILLE RIVERFRONT, INDIANA:** ShrinersFest Airshow – www.newtech.com/airshow
- 27-28 NEOSHO HUGH ROBINSON AIRPORT, NEOSHO, MISSOURI:** Celebrate Neosho Airshow
- 27-28 OLYMPIA REGIONAL AIRPORT, TUMWATER, WASHINGTON:** Olympic Air Show – olympicairshow.com
- 27-28 REGIONAL AIRPORT, MANKATO, MINNESOTA:** Air Spectacular – www.mnairspectacular.com
- 27-28 INTERNATIONAL AIRPORT, WATERLOO, ONTARIO, CANADA:** Airshow – www.waterlooirshow.com **CANCELLED**

JULY

- 01-05 KELLOGG AIRPORT, BATTLE CREEK, MICHIGAN:** Airshow and Balloon Festival – www.bcballoons.com
- 03 ADDISON AIRPORT, ADDISON, TEXAS:** Kaboom Town: Addison Airport Air Show
- 03 DUBUQUE, IOWA:** Fireworks and Airshow Spectacular – radiodubuque.com/fireworks/index.cfm
- 03-05 WASAGA BEACH, ONTARIO, CANADA:** Wings over Wasaga – www.wingsoverwasaga.com
- 04 CEDAR CREEK LAKE, TYLER, TEXAS:** Thunder Over Cedar Creek Lake Air Show – tocclairshow.com
- 04 COMMENCEMENT BAY, TACOMA, WASHINGTON:** Tacoma Freedom Fair Air Show – www.freedomfair.com
- 04 MANSFIELD LAHM REGIONAL, MANSFIELD, OHIO:** Mansfield Airport Day – www.mansfieldairportday.com
- 04-05 CHIPPEWA VALLEY AIRPORT, EAU CLAIRE, WISCONSIN:** Airshow – www.chippewavalleyairshow.com
- 04-05 WEST GRAND TRAVERSE BAY, TRAVERSE CITY, MICHIGAN:** National Cherry Festival Airshow – www.cherryfestival.org/air-show
- 05 TACOMA NARROWS AIRPORT, GIG HARBOUR, WASHINGTON:** Tacoma Freedom Fair Wings and Wheels – www.freedomfair.com/wings-wheels.php
- 09-11 ARLINGTON MUNICIPAL AIRPORT, ARLINGTON, WASHINGTON:** Arlington Fly-In – www.arlingtonflyin.org
- 10-12 GENESEO AIRPORT, NEW YORK:** Airshow – www.1941hag.org/Geneseo-Airshow
- 11 GOULD PETERSON MUNICIPAL AIRPORT, TARKIO, MISSOURI:** Tarkio Greatest Little Air Show – www.wingnutsflyingcircus.com
- 11 PENSACOLA BEACH, FLORIDA:** Airshow – www.visitpensacolabeach.com/events/pensacola-beach-air-show.php
- 11 QUALICUM BEACH AIRPORT, PARKSVILLE, BRITISH COLUMBIA, CANADA:** Qualicum Beach Airport Day and Airshow
- 11 TRUCKEE TAHOE AIRPORT, TRUCKEE, CALIFORNIA:** Air and Family Festival – www.truckeetahoearfair.com
- 11-12 FLYING CLOUD AIRPORT, EDEN PRAIRIE, MINNESOTA:** AirExpo – www.airexpo-mn.org
- 11-12 MARQUETTE PARK, GARY, INDIANA:** Gary Airshow



The Red Bull Air Race returns to Rovinj in Croatia in May. Nigel Lamb performs in MXS N540XS during the 2014 event. AirTeamImages.com/MichaelPriesch

- 11-12 LOST NATION AIRPORT, WILLOUGHBY, OHIO:** Gathering of Eagles XIX Airshow – usam.us/Air%20Show.htm
- 15 PRINCE ALBERT GLASS FIELD, PRINCE ALBERT, SASKATCHEWAN, CANADA:** Prince Albert Celebration of Flight Air Show – www.facebook.com/pages/Celebration-of-Flight-Air-Show/104764032962506
- 16-19 KINSMAN BEACH, RED LAKE, ONTARIO, CANADA:** Norseman Festival – www.norsemanfestival.on.ca
- 17-19 HILLSBORO AIRPORT, HILLSBORO, OREGON:** Airshow – www.oregonairshow.com
- 18 INGALLS FIELD AIRPORT, HOT SPRINGS, VIRGINIA:** Wings and Wheels Bath County – wingsandwheelsbathcountyva.com
- 18 KOKOMO MUNICIPAL AIRPORT, KOKOMO, INDIANA:** Kokomo Wings and Wheels – www.facebook.com/KokomoWingsWheels
- 18-19 CALGARY SPRINGBANK AIRPORT, SPRINGBANK, ALBERTA, CANADA:** Wings Over Springbank Airshow
- 18-19 NIAGARA FALLS ARS, NEW YORK:** Thunder of Niagara Airshow – thunderofniagara.com
- 19 HAMILTON, ONTARIO, CANADA:** Vintage Wings and Wheels – www.warplane.com/upcoming-events/event-details.aspx?eventid=5
- 19 TEXADA AIRPORT, GILLIES BAY, TEXADA ISLAND, BRITISH COLUMBIA, CANADA:** Texada Annual Fly-In 2015
- 20-26 OSHKOSH, WISCONSIN:** EAA AirVenture 2015 – www.airventure.org
- 22 ROCKY MOUNTAIN HOUSE AIRPORT, ROCKY MOUNTAIN HOUSE, ALBERTA, CANADA:** Airshow – rockymtnhouseairshow.com
- 24-25 LETHBRIDGE COUNTY AIRPORT, LETHBRIDGE, ALBERTA, CANADA:** Alberta International Air Show – www.albertairshow.com
- 24-26 KENNEWICK, PASCO, WASHINGTON – TRI-CITY WATER FOLLIES:** Over the River Airshow – www.waterfollies.com/water-follies-experience/airshow
- 25 PAINE FIELD, SNOHOMISH COUNTY AIRPORT, EVERETT, WASHINGTON:** Flying Heritage Collection SkyFair – www.flyingheritage.com
- 25 BOUNDARY BAY AIRPORT, DELTA, BRITISH COLUMBIA, CANADA:** Boundary Bay Airshow '15 – www.czb.com/news-and-events/airshow-2015
- 25-26 HECTOR INTERNATIONAL AIRPORT, FARGO, NORTH DAKOTA:** Fargo Airshow – fargoairshow.com

- 25-26 MUNICIPAL AIRPORT, MASON CITY, IOWA:** Fly Iowa 2015 – flyiowa.org/fly-iowa-2015
- 25-26 MILWAUKEE LAKEFRONT, WISCONSIN:** Air and Water Show – www.milwaukeeairshow.com
- 26 PITT MEADOWS AIRPORT, PITT MEADOWS, BRITISH COLUMBIA, CANADA:** North Fraser Airshow – northfraserairshow.ca **CANCELLED**
- 29 NORTH PEARCE REGIONAL AIRPORT, FORT ST JOHN, BRITISH COLUMBIA, CANADA:** Fort St John International Air Show – www.facebook.com/FSJAirshow
- 31-AUG 02 GENESEE PARK, SEATTLE, WASHINGTON:** Boeing Seafair Airshow – www.seafair.com

REST OF THE WORLD

MAY

- 23 NELSAPRUIT AIRPORT, NELSAPRUIT, SOUTH AFRICA:** Lowveld Air Show – www.facebook.com/lowveldairshow
- 23-24 THE OLD STATION, RAGLAN, QUEENSLAND, AUSTRALIA:** The Old Station Fly-In & Heritage Show
- 30 WATTS BRIDGE AIRFIELD, TOOGOLAWAH, QUEENSLAND, AUSTRALIA:** Watts Bridge All-in Fly In – www.wattsbridge.com.au/calendar.php

JUNE

- 07 MONASTIR HABIB BOURGUIBA INTERNATIONAL AIRPORT, MONASTIR, TUNISIA:** Air Race 1 World Cup – airrace1.com

JULY

- 04-05 MAITLAND AIRPORT, MAITLAND, NEW SOUTH WALES, AUSTRALIA:** Hunter Valley Airshow 2015 – www.facebook.com/hvairshow
- 09-12 AEROPORTO REGIONAL DE MARINGÁ, PARANÁ, BRAZIL:** Expo Aero Brasil – EAB Air Show 2015 – eabairshow.com.br
- 09-12 JOSÉ MARÍA CORDOVA INTERNATIONAL AIRPORT, RIONEGRO, COLOMBIA:** F-AIR Colombia 2015 – f-aircolombia.com.co
- 19 CHITOSE AB, JAPAN:** Japanese Air Self-Defense Force Open Day
- 25-26 ARENA JARAGUÁ, JARAGUÁ DO SUL, SANTA CATARINA, BRAZIL:** Anjo da Guarda Fest – www.anjodaguardafest.com.br

Readers are strongly urged to seek confirmation that shows are definitely taking place before travelling – displays can move location, date or be cancelled, and this guide should only be used as an outline. For more information, check out individual websites, all of which are listed here where possible.

YOUR COMPLETE GUIDE TO THE 2015 SEASON

NEW!



Airshow 2015 is Key Publishing's indispensable guide to the forthcoming event season, with a month-by-month rundown of all the important airshows and major fly-ins from around the world. This exciting 84-page special magazine features the stories behind the events, focusing in on the world's best loved aircraft and admired pilots and crews.

Features include:

SPITFIRE SUMMER

An exclusive interview with Duxford-based Old Flying Machine Company on its plans for Spitfire MH434 in 2015

THE OSHKOSH EXPERIENCE

Welcome to aviation's Mecca

FORTIES FAVOURITE

Fortress 'Sally B' - four decades of airshows

FRENCH FANCY

La Ferté Alais 2015 in focus

VAMPIRES, MIGS AND STARS

Norwegian classic jets in action

PLUS

All the latest airshow news and dates from around the globe!



JUST £4.99*

Available NOW from **WHSmith** and all other leading newsagents
Alternatively, Order Direct

JUST £4.99 FREE P&P*

*Free 2nd class P&P on all UK & BFPO orders. Overseas charges apply.

356/15

Free P&P* when you order online at www.keypublishing.com/shop



Call UK: 01780 480404
Overseas: +44 1780 480404

Monday to Friday 9am-5:30pm

SUBSCRIBERS CALL FOR YOUR £1.00 DISCOUNT!

LOT DREAM



LOT Polish Airlines' Dreamliners had a bumpy start when they entered service: after the inaugural long-haul flight the aircraft was grounded due to problems with lithium-ion batteries on the type. The issues encountered in 2013 have been resolved and the type is now firmly embedded in the airline's operations.

LOT Polish Airlines placed an order for eight 787-8 Dreamliners on September 7, 2005. The first example, SP-LRA, arrived in Warsaw on November 15, 2012 and on the 14th of the

following month the first revenue service was flown from Warsaw to Prague.

As part of the 787's entry into service with the airline, the new aircraft was used initially on some of its European routes to help crews build experience and iron out any operational teething troubles in a more forgiving environment (compared with the long-haul routes).

Flights were also flown to London Heathrow, Hanover, Brussels, Budapest, Frankfurt, Kiev, Munich, Prague and Vienna. They were

Above: **LOT currently has a fleet of six Dreamliners.** AirTeamImages.com/HAMFive

rostered with more crew than usual, with three or four pilots on board, to facilitate with training.

The inaugural long-haul LOT 787 service took place on January 16, 2013 from Warsaw to Chicago, however the aircraft could not be flown back. The type was grounded due to issues with lithium-ion batteries and aircraft SP-LRA was stuck in Chicago until May 14.

To cover for the grounding of the type, the



LINERS

Marco Finelli sampled the Boeing 787-8 Dreamliner with LOT Polish Airlines, which was the first European operator of the new airliner.



Below left: **There are 18 LOT Business Class seats in a 2-2-2 layout with a 78in seat pitch. Seats can be reclined into flat beds. The electronic light filter controls, which replace conventional blinds on each window in the passenger cabin, can be seen below the windows.** LOT Polish Airlines

Below: **LOT offers 213 LOT Economy Class seats on the Dreamliner, in a 3-3-3 layout with a 32in seat pitch.** LOT Polish Airlines

Below right: **The airline's 787s have 21 LOT Premium Economy Class seats in a 2-3-2 layout.** LOT Polish Airlines

airline's three remaining Boeing 767s that were due to be returned to lessors were retained and the launch of new routes postponed. In April that year an Airbus A330-200 was leased from Portuguese operator Hi Fly until the end of May to fly the Chicago and New York services. A euroAtlantic Airways 767-300ER and 777-200ER were hired in from May 1 until June 9 to fly the Toronto and New York route.

With improvements to the battery system clearing the way for 787s to take to the air again on June 1, 2013 Dreamliner flights

resumed to Chicago and New York. Six days later the 787 was placed back on the Toronto service. From October 13 the new type was used on the Beijing route. LOT reached an agreement with Boeing on December 11 to compensate the airline for the cost incurred due to the 787's grounding.

The airline currently has six Dreamliners in service having received two in 2012, three in 2013 and one last year. LOT 787s are also used for long-haul charter routes for Polish tour operators. ▶





The first such flight was to Colombo, Sri Lanka on November 6, 2013. Other holiday destinations served by the type are Bangkok and Krabi (Thailand), Cancún (Mexico), Ho Chi Minh City (Vietnam), Zanzibar (Tanzania), Durban (South Africa), La Romana (Dominican Republic) and Santa Clara and Varadero (Cuba).

LOT has maximised its 787 utilisation with short-term wet leases to some

Above: **The flight deck of the Dreamliner is dominated by four large multi-function LCD screens. Each pilot also has a head-up display, which can be seen in the stowed position just above each window.** Marco Finelli

Below: **LOT uses its 787s for scheduled services from Warsaw Chopin Airport (where this photo was taken) to Chicago, New York, Toronto and Beijing as well as on long-haul charter flights.** AirTeamImages.com/Jan Ostrowski

airlines including Finnair and Norwegian. A deal has also been struck for one aircraft to be leased for 12 months to Air Europa from April 8 of this year and is being used at present for a Madrid to Miami service.

FLYING ON THE DREAMLINER

The author experienced two flights from Frankfurt to Warsaw and back. On the inside, the 787 is awash with new

LOT POLISH AIRLINES BOEING 787-8 DREAMLINER FLEET

Registration	msn/l/n	First Flight	Delivery Date
SP-LRA	35938/61	18/10/2012	14/11/2012
SP-LRB	37894/78	01/12/2012	20/12/2012
SP-LRC	35940/86	13/01/2013	16/05/2013
SP-LRD	35941/87	04/06/2013	21/06/2013
SP-LRE	35939/88	15/07/2013	29/07/2013
SP-LRF	35942/161	10/03/2014	30/04/2014





Above: **The first Dreamliner for LOT arrived in Warsaw on November 15, 2012.**
AirTeamImages.com/Jan Ostrowski

Right: **LOT's Dreamliners are powered by two Rolls-Royce Trent 1000 turbofans.**
Marco Finelli

features, such as electronically operated light filters on each window in place of conventional window blinds, improved pressurisation to give a lower cabin altitude, and LED lighting.

The cabin is configured with the Boeing Sky interior design first introduced on the 747-8 Intercontinental and 737NG. The overall impression is one of a light, airy space. The large overhead luggage bins have a capacity of 111lb (50kg), and the LED spotlights above each seat and air-conditioning vents blend seamlessly into the overall styling.

The airline's 787-8s are laid out in three classes: LOT Economy Class, LOT Premium

Economy Class and LOT Business Class with the same configuration used on charter flights. There are 213 Economy seats in a 3-3-3 layout with a seat pitch of 32in (81cm).

Each passenger has a seat-back touchscreen in-flight entertainment (IFE) monitor with remote control and a power socket and USB port are provided. There are 21 LOT Premium Economy Class seats in a more spacious 2-3-2 layout at 38in (97cm) pitch. Noise-cancelling headphones and wash kits are also offered.

The 18 LOT Business Class seats are laid out in a 2-2-2 arrangement with a 78in (198cm) pitch. They can be reclined to a fully horizontal position so passengers can sleep comfortably, and have 15in (38cm) seat-back monitors and individual LED reading lights.

The 787 has three galleys and crew bunks are provided at the front and rear of the aircraft. New food menus have also been introduced.

The LOT crews were pleasant and professional and the quietness of the cabin in flight was impressive. The IFE system is by Thales and the March 2015 in-flight magazine listed 31 films in English, four each in Russian, Chinese and Polish, a range of television programmes plus 50 music CDs.

The delivery of the final two 787s to LOT was planned for this year but this has been postponed because the airline cannot launch new routes under the terms of its state aid agreement.

Despite the Dreamliner's rocky start, the aircraft is set to play an important role in LOT Polish Airlines' future. [AN](#)



AIR MAIL

Write to *Aviation News* incorporating *Classic Aircraft*, Key Publishing, PO Box 100, Stamford, Lincs, PE9 1XQ, UK

or e-mail dino.carrara@keypublishing.com, giving your full name and address.

The Editor reserves the right to edit all letters.



LETTER OF THE MONTH

Welcome to the *Aviation News* incorporating *Classic Aircraft* letters page. The writer of the Letter of the Month, Rick Fansler, will receive three DVDs: *Vulcan: Spirit of Great Britain*, *Air Canada Airbus A330-300* and *Mirage 2000-5*.



David Spooner's impressive Carvair model. David Spooner

Following on from the article featuring the *Aviation Traders* ATL-98 in the March edition, I am sending photos of a recently completed model that has taken three winters to build.

This was based on the J & L 1/72 scale vacuum form kit which had been in my loft for some 20 years. Many of the components were built from scratch including wheels, propellers,

main undercarriage, doors, internal structure, flight deck and aerals, etc. The livery is based on British Air Ferries (BAF) which was based at Southend Airport.

David Spooner
Witham
Essex

Starlifter Flashback

I enjoyed reading the article on the C-141 Starlifter as it was an aircraft that I never tired of seeing. The aircraft really suited the white scheme, especially the two used by the commander of Military Aircraft Command that had a gold tail band and cheatline of the same colour. However, the European One camouflage did have a purposeful look to it. Seeing photos of the Starlifter in the dark green European One camouflage always makes me think of the Cold War period I grew up in when I first got into aviation. I have fond memories of a visit to Frankfurt Airport when the C-141Bs in this scheme filled the ramp of the US Rhein-Main Air Base which was on the other side of the airfield.

Knowing the type was on its 'last legs' in 2003 I made several visits to Mildenhall to

see the numerous examples that were using the base for resupply flights to the Middle East for the second Gulf War with Iraq. It was an impressive sight to see so many of these big four-engined heavy-lifters scattered all around the base.

I was interested to read in the article about the variety of tasks the aircraft was used for during its lifetime. The use of the aircraft for night low-level to assist special forces must have been a challenging mission for the pilots flying such a big aircraft down in the weeds. I would have loved to have seen such a big aircraft landing on an ice runway in Antarctica. Thanks for covering one of my favourite aircraft.

James Maxwell
by e-mail

Mildenhall Memories

Your article in the March issue about the planned closure of RAF Mildenhall was both enlightening and saddening. I was stationed at the base from July 1976 to July 1978 and have many great memories from my time working there. As a security specialist I worked the flight line and got to observe many of the aircraft featured in your article. I spent many hours guarding EC-135s, RC-135s, U-2Rs and SR-71s.

One of my brothers was also there. He came over on TDY as a boomer on the KC-135 tanker. It worked out so that I was able to go on a refuelling mission while he was there. On the flight he transferred over 50,000lb of fuel to RC-135 64-14841. He ended up working as a boomer for 35 years in the Air Force Reserve.

I left Mildenhall shortly before the Air Fete in 1978, but we did have a very large airshow there in June 1977. It was for the Queen's Silver Jubilee and included several military demonstration teams from all over Europe and Canada. There were also flights by prototypes and various new aircraft. Included were the YC-14, YC-15, F-16, F-15 and the A-10.

Thanks for the article and the memories.

Rick Fansler
by e-mail



Reader Norman Brice has sent in this photo he took of former RAF Jaguar GR.3, XZ396 at the Pima Air & Space Museum on April 13 wearing a desert scheme. We had mentioned in the April issue that the museum was in the process of putting the aircraft into the scheme it wore while taking part in the 1991 Gulf War.



COSFORD
AIR SHOW
2015

**ADVANCE
TICKET
ONLY**

Sunday 14th June



Witness thrilling flying displays from jet aircraft such as the Eurofighter Typhoon, F/A-18C Hornet and F-16AM Fighting Falcon .

Get up close and personal with a diverse range of Search and Rescue aircraft in the unique SAR Zone, including the Sea King HAR3, Whirlwind HAR10 and Bell 412.



Marvel at experimental aircraft in the static displays, including the VAAC Harrier T4 and the RAF Museum's TSR2.



www.cosfordairshow.co.uk

ADVANCE



Tom Kaminski charts the latest developments in Boeing's F-15 Eagle programme.

D EAGLES



Originally developed by McDonnell Douglas as an air superiority fighter, the F-15 Eagle (now a Boeing product) was later adapted as a strike aircraft. Since the first F-15A took to the air in 1972, 1,468 Eagles and Strike Eagles have been delivered to the USAF and five international customers.

Intended to replace the USAF's fleet of General Dynamics F-111 strike aircraft, the F-15E was first flown in December 1986. Although the air force took delivery of the last of 236 Strike Eagles in 2004, development continued and several variants have been sold to friendly air arms, including the F-15S for Saudi Arabia and F-15I (Ra'am or Thunder) for Israel. Whereas the former was essentially a Strike Eagle with minor modifications, the latter was equipped with additional Israeli specified systems.

Although Boeing is currently scheduled to hand over the last of 84 F-15SA models to Saudi Arabia in 2019, the contractor continues to develop new technologies for the aircraft.

SILENT EAGLE

In March 2009, Boeing unveiled a new variant of the F-15 – dubbed the 'Silent Eagle'. Utilising the F-15E airframe, engineers created a stealthier version of the fighter that featured redesigned conformal fuel tanks (CFTs) and internal weapon bays. The forward section of each of the new conformal weapons bays (CWBs) had a side weapons bay capable of carrying a rail launcher for AIM-9 Sidewinder or AIM-120 Advanced Medium-Range Air-to-Air Missile (AMRAAM) missiles, or a hard point for a single 500lb (227kg) GBU-38 Joint Direct Attack Munition (JDAM) or two 250lb (113kg) GBU-39 small diameter bombs (SDBs). In the lower bay was a trapeze-style ejector mount capable of alternately mounting an AIM-9 or AIM-120, a 500lb GBU-38 JDAM or 1,000lb (454kg) GBU-32 JDAM or two SDBs. The CWB shares the same interfaces as the standard CFT and both are interchangeable.

Additionally, the Silent Eagle's vertical tails were canted outward 15°, improving aerodynamic efficiency and lift, and reducing radar cross-section (RCS) and airframe weight by removing ballast. Fifth-generation fighter technologies were also used to minimise the aircraft's RCS. Besides incorporating radar absorbent material (RAM), a frangible cover was developed ▶

Strike Eagles from the 366th FW at Mountain Home AFB, Idaho, were the first USAF F-15Es to be equipped with the AN/APG-82(v)1 in June 2014.

Key-Jamie Hunter

The latest variant of the Eagle is the F-15SE which features canted vertical tails to help improve aerodynamic efficiency. Boeing



for the gun muzzle. When equipped with the new CWBs however, the Silent Eagle exchanges range for stealth, with much of the fuel storage being displaced by the weapon bays. As a result, the Silent Eagle's range is reduced by 180-200nm (290-322km) over the standard F-15E with traditional CFTs. The aircraft's mission systems include a BAE Systems Digital Electronic Warfare System (DEWS), and Raytheon Active Electronically Scanned Array (AESA) radar.

Rather than the USAF, the Silent Eagle was aimed at international customers including those that already operated the Eagle and/or Strike Eagle. Whereas the cost of a new Silent Eagle was estimated to be around \$100m per aircraft, Boeing claimed that existing Strike Eagles could be modernised by retrofitting the CWBs, DEWS and other modifications to the aircraft.

Initially debuted in mock-up form, flight testing of the design changes began when F-15E serial 86-0183, which was modified to become the Silent Eagle demonstrator,

completed a successful first flight on July 8, 2010 at Lambert St Louis International Airport, Missouri. During the test flight, the aircraft's left-side CWB, which contained an AIM-120 Instrumented Test Vehicle (ITV) missile, was opened and closed. Just six days later the demonstration cleared the flight envelope required to carry out the next phase of testing, which involved an actual AIM-120 launch. That event occurred when the aircraft, which was operating from Naval Base Ventura County, California, launched an inert AMRAAM over the US Navy's Pacific Sea Range.

SLAM EAGLES

Ordered in April 2002, the Republic of Korea initially received 40 F-15Ks powered by 29,000lb st (129kN) General Electric F110-GE-129 engines. They were followed by a second batch of 21 aircraft, ordered in April 2008 and featuring 29,000lb st Pratt & Whitney F100-PW-229 EEP (Engine Enhancement Package) turbofans. The F-15Ks are also equipped with the

Raytheon AN/APG-63(v)1 radar that retained all of the F-15E's AN/APG-70 air-to-air and air-to-ground modes. In addition it has sea surface search and track modes and ground moving target track capabilities, Link 16 Fighter Data Link (FDL), the AN/ALQ-135M Tactical Electronic Warfare System (TEWS), is Joint Helmet Mounted Cueing System (JHMCS) compatible and the capability to deliver J-series precision guided weapons as well as the AGM-84D Harpoon and AGM-84E SLAM-ER missiles. Furthermore, the aircraft are equipped with improved Lockheed Martin Sniper pods that incorporate the third-generation 'Tiger Eyes' FLIR sensor, which provides the aircraft with infrared search and track (IRST) capabilities which means it can



A close-up view of the new conformal weapons bays on the F-15SE. Boeing





The Boeing F-15SE demonstrator successfully completes its first weapons launch on July 14, 2010. Boeing

detect and track the heat generated by an airborne target without being susceptible to electronic attack (EA) during air-to-air engagements. Deliveries to the Republic of Korea Air Force (ROKAF) were completed in April 2012.

F-15SG

In December 2005, the Republic of Singapore ordered 12 F-15SG aircraft. Based on the USAF's F-15E, the new model shares many of the F-15K's features, including its F110-GE-129 engines, cockpit and JHMCS capability, however, the aircraft was equipped with the newer AN/APG-63(v)3 AESA radar. Additionally the F-15SG has the Sniper XR targeting pod as well as the third-generation Tiger Eyes FLIR

sensor. The first of 12 aircraft was delivered in 2009 but Singapore exercised an option for 12 additional F-15SGs in 2007. Although the last examples were handed over by late 2011, according to recent unconfirmed reports, Singapore may have purchased as many as 16 additional examples.

ADVANCED F-15

The latest Strike Eagle variants were offered to Israel and Japan in response to planned fighter procurements, however both chose the fifth-generation Lockheed Martin F-35A Lightning II over the Eagle. Saudi Arabia had reportedly expressed interest in the Silent Eagle but ultimately ordered the F-15SA, which is based on the Advanced F-15 variant. Although the Republic of Korea, which had already purchased 61 F-15Ks, initially selected the Silent Eagle, it announced plans to purchase the F-35A for its F-X III fighter programme in late 2013.

According to Boeing, much of the technology developed for the Silent Eagle remains on the table, but the contractor's international marketing efforts

are now focused on the Advanced F-15. Development of this variant, which is also based on the Strike Eagle airframe, began in 2009. The aircraft features a fly-by-wire (FBW) flight control system, two additional weapons stations, the latest AN/APG-82(v)1 AESA radar, Link 16 Fighter Data Link (FDL), DEWS, navigation and targeting pods, forward looking infrared (FLIR) andIRST systems. Additionally, an advanced cockpit includes an 11x19in (27.9x48.2cm) large area colour touchscreen display and JHMCS capability. The updated Digital Joint Helmet Mounted Cueing System (DJHMCS) has also recently been tested on the F-15.

According to Mike Gibbons, Boeing's Vice President, F-15 Programs, although the FBW system may not provide any expansion of the aircraft's flight envelope, it does improve the Advanced F-15's agility and reduces maintenance requirements. Additionally, the installation also enables activation of the fighter's outboard weapon stations 1 and 9, which are each capable of carrying up to 1,000lb (454kg). ▶



Royal Saudi Air Force F-15SA 12-1002 undergoing its first flight. Boeing



The 428th FS operates the F-15SG Strike Eagle at Mountain Home AFB, Idaho, as part of Peace Carvin V, a partnership between the USAF and Republic of Singapore Air Force that sees the US train Singaporean crews on the type. Eric Bowen

F-15SA

In addition to the new F-15SA aircraft, up to 70 of Saudi Arabia's earlier F-15S models, delivered between 1995 and 1999, will be modified to the latest configuration with the majority of the upgrades being carried out in Saudi Arabia.

Saudi Arabia's purchase of the F-15SA was formally announced in December 2011. Boeing is currently producing 84 of this model for the Royal Saudi Air Force. First flown in St Louis on February 20, 2013, the F-15SA is the most advanced version of the Eagle built to date. Powered by two F110-GE-129 Improved Performance Engine (IPE) turbofans, the fighter is the first Eagle model to be fitted with the FBW flight control system.

According to information provided by the US Defense Security Cooperation Agency (DSCA), advanced systems incorporated in the F-15SA also include the DEWS, Link 16 Multi-functional Information Distribution System/Low Volume Terminal (MIDS/LVT), AN/APG-63(v)3 AESA radar, LANTIRN navigation pod featuring the Tiger Eye FLIR sensor, AN/AAQ-35 Sniper targeting pod and anIRST system. The front and rear cockpits incorporate advanced displays and JHMCS for the pilots. Weapons compatibility includes the AIM-9X and AIM-120C air-to-air missiles, AGM-84 Harpoon and AGM-88 High-speed Anti-Radiation Missile (HARM) air-to-ground missiles, as well as the full complement of precision guided weapons.

Additionally the aircraft can carry the UTC Aerospace Systems DB110 reconnaissance pod and the Remotely Operated Video Enhanced Receiver (ROVER) that enables the aircraft to transmit video data to remote terminals on the ground.

The F-15SA flight test programme includes three instrumented F-15SAs that were initially operated from St Louis before moving to Boeing's facility at the Air Force Plant 42 Production Flight Test Installation in Palmdale, California, in November 2013. Deliveries to the RSAF are scheduled to begin this year and conclude in 2019.

US UPGRADES

With plans to retain many of its F-15s in service until 2040, the USAF continues to upgrade its aircraft with new systems that will allow them to operate alongside the later fifth-generation Lockheed Martin F-22 Raptor and F-35A.

As part of those modifications, the USAF

is replacing the current mechanically scanned radar systems that equip 179 F-15Cs and 217 F-15Es with Raytheon AN/APG-63(v)3 and AN/APG-82(v)1 AESA units. Upgraded AN/APG-63(v)3 radars were first fielded by F-15Cs assigned to the Florida Air National Guard's 159th Fighter Wing at Jacksonville International Airport and the 18th Fighter



Above: A GBU-38 JDAM is loaded onto an F-15E at RAF Lakenheath. USAF/Staff Sgt Connor Estes



Above: A Strike Eagle drops a GBU-28 during a Combat Hammer sortie from Hill AFB, Utah. USAF



Wing at Kadena Air Base, Okinawa, Japan, in April and November 2010. The first F-15E, assigned to the 366th Fighter Wing at Mountain Home AFB, Idaho, was equipped with the AN/APG-82(v)1 in June 2014. By November 2014, 69 F-15Cs and nine F-15Es had received the upgraded radars.

Under current contracts Boeing will equip 120 F-15Cs and 28 F-15Es with the AESA radars. Around 47 F-15Es operated by the 389th and 391st Fighter Squadrons at Mountain Home are scheduled to receive AESA systems by 2017. In addition to delivering improvements in range and resolution, and increased capability against advanced electronic attack (EA) systems, AESA provides a significant improvement in reliability and maintainability. Both the F-15C's AN/APG-63(v)3 and F-15E's AN/APG-82(v)1 systems merged technologies incorporated in the F-15C's AN/APG-63(v)2 and the F/A-18E/F's AN/APG-79 AESA radars. Flight testing of the F-15E Radar Modernization Program (RMP) began at Eglin AFB, Florida, in January 2011, and in September the USAF approved the low-rate

The Republic of Korea Air Force's initial order of 40 F-15K Slam Eagles was followed up by a deal for 21 more aircraft. Boeing

initial production (LRIP) of the radar system.

Also under development for the USAF is the F-15 Eagle Passive/Active Warning Survivability System (EPAWSS). This will replace the fighter's TEWS, provide greater survivability in high-threat environments and will enable the Eagle to counter current and future air-to-air and ground-to-air radars. Incorporating a digital radar warning receiver, digital radio frequency memory jammer and Saab AN/ALE-58 BOL advanced countermeasures dispenser, the integrated electronic attack suite will enable both the F-15C and F-15E to counter current and future radar and infrared threats. Fielding is scheduled to begin in 2018 and the EPAWSS will replace the AN/ALQ-128 electronic warfare warning set (EWSS) that currently provides the F-15C/D with both threat warning and automatic countermeasures.

The Advanced Display Core Processor (ADCP) II will be a common replacement for the F-15C and E's current mission computer,

which have reached the limits of speed, memory and throughput. The enhanced mission processor will also enable future upgrades including data fusion connectivity with other fighters including the F-22 and F-35A. The project also replaces the Eagle's current Vertical Situation Display (VSD) with a new high-resolution colour display. Under current plans the USAF will purchase 175 ADCP IIs for installation in the F-15C/D fleet and 219 for the F-15Es.

Plans also call for incorporating a passive IRST sensor. It will provide a complementary capability to the fighter's AESA radar for detection and weapons cueing and when coupled to the radar will provide the aircraft with an integrated fire control system in an EA jamming environment.

Without additional orders, the Eagle production line will complete its run in 2019. However, Boeing will continue to develop and integrate new capabilities for the aircraft. These efforts will allow the aircraft to complement the USAF's fifth-generation F-22 and F-35A fighters and remain viable until replaced. **AN**

An Advanced F-15 on the ramp at Boeing's St Louis plant loaded with 16 missiles on November 7, 2014. Boeing/Richard Rau



Flight Bag

The latest products for the discerning aviation enthusiast

SIM X3000

Computer

Built by: **Wired2Fire**

Price: **£1,132**

Most games can be run on fairly standard computers, but flight simulation on a PC requires real power. That power doesn't come cheap. The Sim X3000 system from Wired2Fire hopes to offer a compromise between power and price.

The current specs are impressive. The latest Intel Core i5 4690K processor offers a lot of punch and is overclocked to a respectable 4.4GHz. You can upgrade to the latest Core i7 processor, the 4790K, but unless you're planning on doing a lot of video editing, the four extra virtual CPU cores will be wasted on a flight simulator.

Keeping the processor cool is the Corsair H80 water cooler. Graphics power is handled by the Nvidia 970 GTX. It sports 4GB of video memory and the ability to fly using three screens in Nvidia Surround mode. Filling out the final spec of the machine is a handy 8GB of fast memory and equally fast 250GB solid state drive (SSD).

Performance from the Sim X3000 is

good. For Microsoft FSX users, the extra power of the graphics processing unit offers higher levels of anti-aliasing for a smoother picture. Lockheed Martin's Prepar3d V2 and Laminar Research's X-Plane 10 users will notice the biggest difference though, with the Nvidia 970 GTX getting a great workout if you're using three screens. The overclocked CPU will help keep both FSX and P3D running smoothly and the H80 water cooler will ensure all that heat is kept under control.

At this price, though, there are compromises. The lack of an i7 CPU is forgivable but the real weak points are the amount of system memory and single SSD drive. A memory capacity of 8GB is fine for most things and P3D and FSX won't mind not having more memory headroom. But for X-Plane users the real minimum amount of system memory should be 16GB. The SSD is also a bit on the small side. X-Plane's installation can run to 80GB without any extra scenery and even P3D and FSX

installations will soon run out of space. You can customise your build, though adding an extra drive and more memory pushes the cost up by around £100.

In the end, though, the Sim X3000 is a great machine that will happily run your sim of choice and any other game you want to play for years to come, and at a fair price.

Specification

Intel i5 4690K processor
Nvidia GTX 970 4GB graphics card
8GB 1866 MHz DDR3 memory
Asus Z97-Pro motherboard
250GB Samsung solid state drive

For more information see www.wired2fire.co.uk



ROYAL AIR FORCE NORTHOLT 100

Commemorative Cover

Published by: **British Forces Philatelic Service**

Price: **£6.00 unsigned, £8.00 flown and £12.00 signed**

The British Forces Philatelic Service has issued a commemorative cover marking the centenary of Northolt as a military airfield. Opened in May 1915, the station that became RAF Northolt on the establishment of the junior service in 1918 was an important fighter base during World War Two and today hosts 32 (The Royal) Squadron.

The special cover, issued on March 3, includes a limited edition of 500 covers flown by 32(Tr) Sqn; some have additionally been signed by the station commander and officer commanding operations wing.

Based on the spoked wheel depicted in the station badge, the cover's design illustrates the many activities of the personnel from all three services currently based at the west London airfield. As well as 32(Tr) Sqn, they include The Queen's Colour Squadron; Central Band of the Royal Air Force; 600 (City of London) Squadron, Royal Auxiliary Air



Force; 621 Explosive Ordnance Disposal Squadron; 1 Aeronautical Information Documents Unit; the county and regional headquarters of the Air Training Corps; and the British Forces Post Office.

The cover also recognises the importance of civilian operators at Northolt, which sees large numbers of business aircraft movements. Additionally it hosts London's Air Ambulance, and its red and yellow MD Helicopters MD902 Explorer is featured prominently. On the flown covers an extra feature, a BAe 146 profile, is accompanied by the words 'Certified flown by 32 (The Royal) Squadron RAF'.

The covers are available from www.bfps.org.uk/shop

FLIGHT CRAFT 4: AVRO LANCASTER IN MILITARY SERVICE 1945-1965

Book

Written by: **Martin Derry and Neil Robinson**

Price: **£16.99**

Another in the Flight Craft series aimed at modellers and enthusiasts, this volume covers the ever popular Lancaster. The modelling work of Tony O'Toole is once again prominent in the section on plastic kits, although Martin Derry and Neil Robinson also contribute models as well as the main text.

The coverage is extensive and biased towards the scale modeller, with photographs reproduced in black and white and colour and a wide selection of colour artwork showing the Lancaster in military service with all its operators, except Egypt.

Kits from 1:48 to 1:144 scale are surveyed. The book is as much about modelling inspiration as it is informative, and every one of its 96 pages will appeal equally to serious modellers, 'box shakers' and enthusiasts of World War Two combat aircraft.

Published by **Pen & Sword Aviation**; ISBN1473827240 and available from www.pen-and-sword.co.uk





FLYING LEGENDS

AIR SHOW 2015 • IWM DUXFORD

11 & 12 JULY

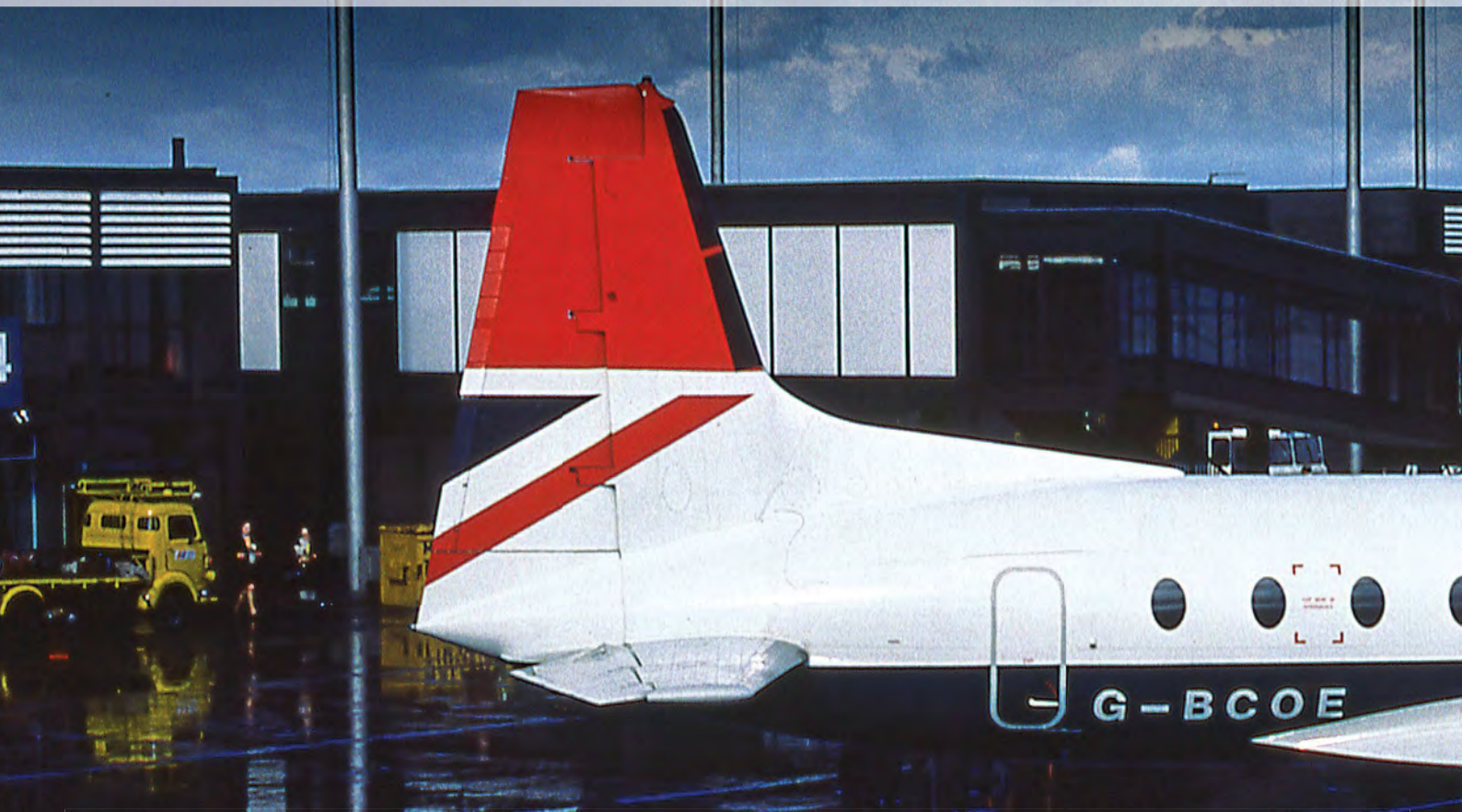
Cambridgeshire CB22 4QR
Junction 10, M11

To book discounted tickets
visit www.flyinglegends.com
or call 01223 499353



In association with IWM Duxford

BRITISH AIRWAYS



Bob O'Brien looks at the Hawker Siddeley HS 748 in British Airways service.

For many years, the Scottish division of British Airways, and its predecessor British European Airways (BEA), was under tremendous financial pressures to operate a sustainable service within Scotland and its outlying islands. In the mid-1970s, plans were in place to find an economically attractive successor to the Vickers Viscount, which had previously served these routes but was nearing the end of its service life with the airline.

By 1974, three aircraft had been submitted by their respective manufacturers as potential replacements for the Viscounts: the Hawker Siddeley HS 748, the Fokker 50, and the de Havilland Canada Dash 7. Although the trio fitted the specifications for short-field landing and sensible economics laid down by BA, the board of directors in London chose the HS 748, a long-standing design that had repeatedly proved its reliability in areas similar to the Scottish Highlands.

HISTORY OF THE 748

The 748 design originated in 1958, when Avro Aircraft decided to re-enter the civilian market after many years of producing solely military airframes.



The market leader at that time was Vickers-Armstrongs, which was enjoying worldwide success with its four-engine turboprop Viscount design, powered by Rolls-Royce Dart engines. However, Avro decided to design a smaller aircraft that could replace the venerable Douglas Dakota. The original plans for the 748 were for a high wing design similar to that of the Fokker F27, seating up to 30 passengers. However, after consultation with their clients, a low wing design was chosen with seating for between 40 and 52 depending on the configuration.

Avro's main competitor in the field turned out to be the Fokker aircraft company from the Netherlands, whose F27 design was gaining

momentum in the marketplace. While both aircraft were powered by the Rolls-Royce Dart turboprop engine, the 748 was designed with rugged terrain and short-field performance as its star selling points. Other features introduced by Avro included an internal engine starting system and various structures and systems that made inspection and repair far easier, an important consideration given the remote nature of some of the locations in which the aircraft would be operating.

The first Avro 748 flew from the company's Woodford facility in Cheshire on June 24, 1960 and subsequent prototype testing proved its exceptional short-field performance, a factor that would lead to its popularity with some

AND THE BUDGIES



Main photo: **The first British Airways HS 748, G-BCOE, at Glasgow Airport in April 1976. The airline operated 17 different 748s throughout the type's service with the carrier.** All photos Bob O'Brien Collection unless otherwise stated

Left: **British Airways leased HS 748s from a number of carriers including Dan-Air Services, which supplied G-AZSU.**

Right: **Oscar Foxtrot was one of just two HS 748s British Airways acquired direct from the manufacturer.**



of the world's most remote carriers. The first aircraft was delivered to UK carrier Skyways Coach-Air in early 1962 and the remaining early series 1 machines found their way to Argentina, to fly with Aerolíneas Argentinas on domestic and international services from Jorge Newbery City Airport in downtown Buenos Aires.

After an initial batch of 18 series 1 aircraft, production switched to the series 2. Although similar in size to the earlier aircraft, the new models were installed with the more powerful Rolls-Royce Dart Mk.531 engines, enabling an increase in gross weight. Initially a subsidiary of Hawker Siddeley, Avro merged into the parent company in July 1963, and the following

years saw a series of tweaks to the original design. In 1979, the series 2B was introduced, bringing many improvements over the original design including a 4ft (1.2m) increase in wing span, a much improved passenger cabin, and improvements to the fuel and engine systems.

The success of the 748 led to the licensed production of the aircraft in India, where Hindustan Aeronautics Limited (HAL) gained approval to produce the aircraft under the name HAL 748. Eighty-nine aircraft were built in India: 72 for the Indian Air Force and 17 for the Indian Airlines Corporation, for use on internal services to some of the smaller communities on its network. After some early teething problems caused by the

local climate's effect on engines and cabin pressurisation, the aircraft were a success, and a handful remain in use today with various government agencies.

BRITISH AIRWAYS

British Airways decided to pursue the HS 748 as a replacement for its Vickers Viscounts and placed an order for two aircraft. The new additions to the fleet were commonly referred to as 'Budgies', because of their cheap running costs and easy maintenance. The aircraft – G-BCOE and G-BCOF – were series 2As, equipped with 46-seat interiors and uprated Rolls-Royce Dart engines. The first, Oscar Echo, entered service from Glasgow in July ▶



BRITISH AIRWAYS HAWKER SIDDELEY HS 748s

G-ATMI	series 2A	Lsd from Dan-Air	G-BGJV	series 2B	Lsd from British Aerospace	G-BOHZ	series 2B	Lsd from DLT
G-ATMJ	series 2A	Lsd from Dan-Air	G-BGMN	series 2A	Lsd from Euroair Transport	G-HDBA	series 2B	Lsd from British Aerospace
G-AZSU	series 2A	Lsd from Dan-Air	G-BGMO	series 2A	Lsd from Euroair Transport	G-HDBD	series 2B	Lsd from British Aerospace
G-BCDZ	series 2A	Lsd from British Aerospace	G-BMFT	series 2A	Lsd from Euroair Transport	G-HDBC	series 2B	Lsd from DLT
G-BCOE	series 2B	delivered 06/75	G-BOHY	series 2B	Lsd from DLT	G-HDBD	series 2B	Lsd from British Aerospace
G-BCOF	series 2B	delivered 08/75						
G-BFLL	series 2A	Lsd from Dan-Air						



1975 on internal Scottish services linking it with Aberdeen, Kirkwall in the Orkney Islands and Lerwick in the far-flung Shetland Islands as well as Belfast in Northern Ireland. The aircraft proved an immediate success for all concerned, particularly the accountants south of the border. Unlike its Viscount predecessor, the 748 was able to uplift a full load on the Lerwick-Aberdeen sector. The

second 748, Oscar Foxtrot, entered service in September of the same year, allowing the airline to increase schedules to more destinations including Birmingham and Southampton from Glasgow.

In 1982, British Airways formed the Highlands Division in an attempt to reverse many years of losses on the Scottish routes. Sumburgh was served from Aberdeen and

Above: **British Airways HS 748 G-BMFT seen on final approach to Dublin.** Fergal Goodman

Left: **The majority of routes served by the 748s were in Scotland.**

Below left: **The last British Airways HS 748 flight was operated by G-HDBD on April 15, 1992.** Alistair Henderson

Orkney was linked to Aberdeen, Inverness and the Shetlands. A service to Stornoway was also operated from Inverness. The scheduled flights from Edinburgh were to Glasgow, Inverness, Manchester and Birmingham while there was a multi-stop service to Aberdeen-Wick-Kirkwall-Sumburgh.

Now run as an autonomous unit, internal Scottish services were operated with a reduced crew of two pilots and one senior crew member working in the cabin. Budgie services outside of Scotland would include an extra member of staff in the cabin.

With up to 46 passengers to serve, the sole crew member in the cabin on Highlands and Islands flights could have a busy time: the morning Lerwick-Kirkwall-Aberdeen service, included a cold breakfast and a beverage, and the 45mins Glasgow-Aberdeen and Glasgow-Inverness services offered full bar service and a snack for every passenger.

The Highlands Division was also a multifunctional operation, with pilots assisting with baggage handling, and the cabin crew checking in passengers, a throwback to earlier times when they were known as flight clerks and dealt with all aspects of the flight. At some of the more remote destinations,



Left: **Passengers board G-BCOE at Edinburgh Airport in August 1991.** Alistair Henderson

this hands-on approach meant 'flight clerks' were familiar figures in the community, and were on first name terms with many of their passengers.

With the growth in the Scottish oil sector, network expansion meant more aircraft were needed. By 1982, three additional 748s had been leased in by the airline, one of which included a freight door (G-BCDZ). The airline, always very careful when acquiring leased aircraft, searched far and wide for extra capacity. Dan-Air Services, based at London Gatwick, had already built up a sizeable fleet of 748s over the years, many

maintenance facilities north of the border, the Dan-Air machines were sent back to Manchester for any heavy maintenance, with a substitute aircraft provided if needed.

During the 1984 summer season, weekend charters took the aircraft away from their usual services, instead journeying from Aberdeen and Edinburgh to the Channel Islands. Flight times for these charters could take anything up to 3hrs depending on the weather. When combined with the turn-around at destination, this meant that the Budgies' crews could be in for a very long working day.

"The new additions to the fleet were commonly referred to as Budgies, because of their cheap running costs and easy maintenance."

coming from South America where the aircraft had previously been utilised. Discussions between British Airways and Dan-Air gave BA a readymade fleet of well-maintained aircraft at very favourable leasing costs. Other aircraft were leased in from Euroair Transport and DLT from Germany. After the order for the first two aircraft, British Airways only ever leased in additional HS 748s.

The Dan-Air aircraft were prepared for service at the carrier's Manchester Ringway maintenance base and were delivered to Glasgow adorned in BA's colours. Although the Highlands Division had its own

Cross border flights became more common, with the aircraft rostered to operate from Manchester to destinations in Germany, where the crews could be away from base for days at a time. From June 1986 until the arrival of the new British Aerospace ATP in 1989, the 748s would also be called upon to operate British Airways' internal German services. These had originated when Russia annexed East Berlin, and British European Airways, Air France and Pan American World Airways were given the traffic rights to serve the remaining markets in the west of the country. Budgies operated on routes

from Berlin Tegel to Bremen and Münster, replacing the noisy and expensive BAC One-Eleven 500 series aircraft. The aircraft operated at full capacity on most sectors.

For the next few years the Budgies soldiered on delivering a profit for the accountants in London, but their successor was already on the way. The BAe ATP had been ordered as a direct replacement for the Highlands Division and was being feted as the new leader in the fiercely contested commuter market. However, the aircraft ultimately never lived up to its advertising hype, and was plagued by reliability issues that saw it fail to match the original 748 design it was brought in to replace.

After the arrival of the new ATPs in 1989, the Budgie continued to be flown alongside its successor, both north and south of the border. Its swan song came in April 1992 when the leased Dan-Air machines were returned. The final flight on April 15, was operated by the last Budgie to join the airline, G-HDBD, a series 2B machine. After a 40mins flight from Belfast to Glasgow, the aircraft's landing signalled the end of an era for British Airways and its fleet of 748s.

The Highlands Division has passed into history. Citing financial imperatives, British Airways divested itself of these routes in 2007.

The original two Budgies delivered to Glasgow in 1975, G-BCOE *Glen Livet* and G-BCOF *Glen Fiddich* have had a colourful career since departing Scotland. The aircraft were traded in to British Aerospace for new BAe ATPs and then found their way to Australia. Both aircraft served as freighters with Horizon Airlines which changed its name to Impulse Airlines, based out of Bankstown near Sydney on night freight contracts up and down the east coast.

After the demise of Impulse Airlines, the aircraft went to Africa, flying humanitarian missions for various agencies. Latterly, Oscar Echo had become ZS-SBM with Star Away Aviation but was broken up on April 25, 2012. Oscar Foxtrot had been registered as 5Y-BZR of Timbis Air Services. It was damaged beyond repair at Doro in South Sudan and struck off on April 2, also in 2012. **AN**

Below: **Budgie G-ATMJ awaits its next flight from Manchester in March 1987.**



FREE

DVD

WHEN YOU TAKE OUT A
2-YEAR OR DIRECT DEBIT
SUBSCRIPTION TO AVIATION
THE PAST, PRESENT AND FUTURE OF FLIGHT



3 EASY WAYS TO ORDER This fantastic subscription offer!



Visit
www.aviation-news.co.uk



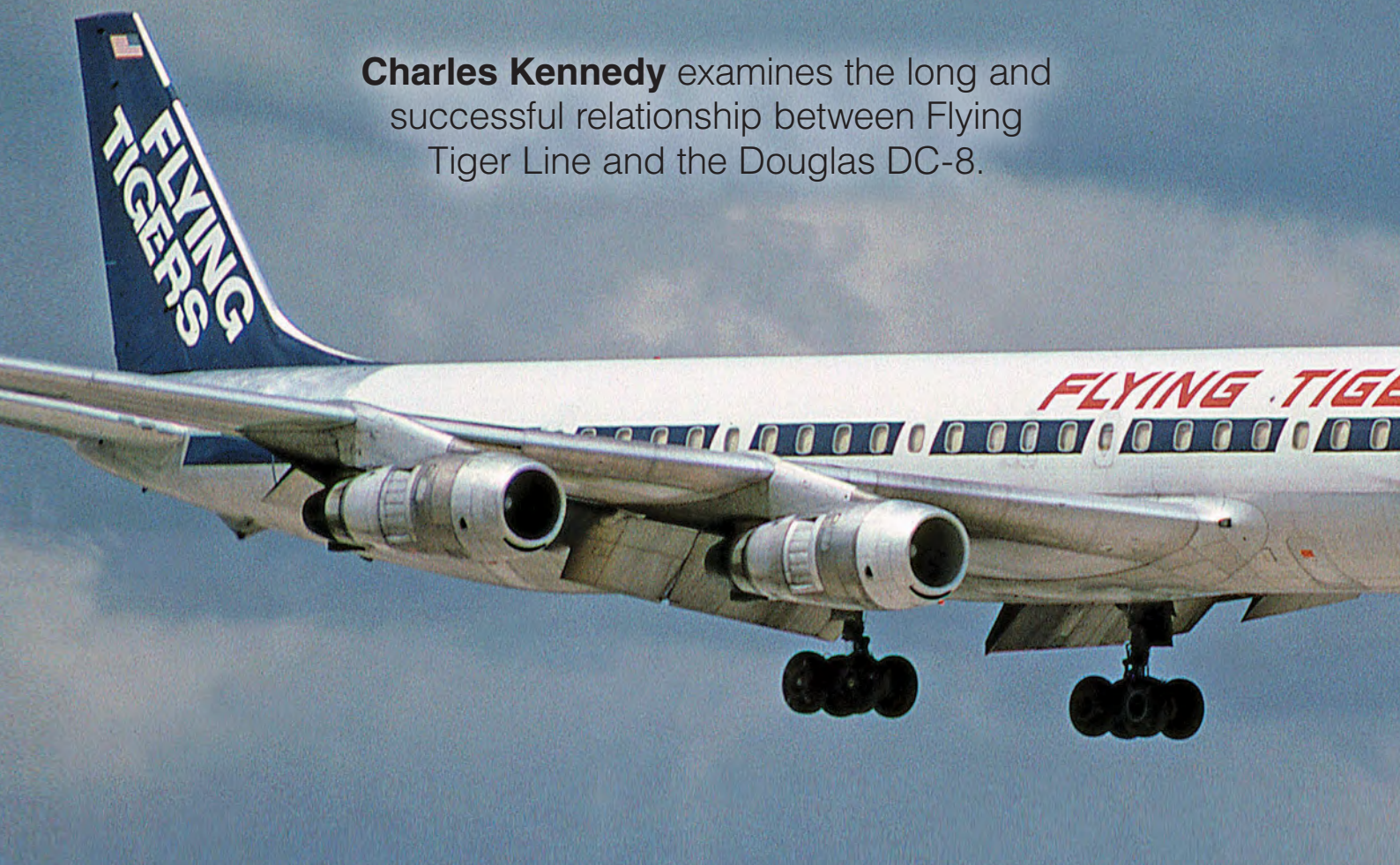
Call
UK: 01780 480404,
ROW: (+44)1780 480404



Complete the form and post to:
Aviation News, Key Publishing Ltd,
PO Box 300, Stamford, Lincs,
PE9 1NA, United Kingdom

FLYING TIGERS

Charles Kennedy examines the long and successful relationship between Flying Tiger Line and the Douglas DC-8.



Flying Tiger Line was a predominantly cargo airline based in the US. Its story began in the early days of World War Two, when a force of volunteers and a fleet of Curtiss P-40B and 'C' Warhawk fighters were sent to Burma by US President Franklin D Roosevelt to provide air cover for Chiang Kai-shek's Chinese nationalists in the second Sino-Japanese War.

The unit was called the American Volunteer Group, or AVG, but became known as 'The Flying Tigers'. One of its pilots, Robert William Prescott, along with other AVG airmen, started an air cargo business after the war called the National Skyway Freight Corporation. It began operations with a small fleet of Budd RB-1 Conestogas flying fresh produce from the farms of California to the east coast, returning west with furniture.

The aircraft were soon replaced by Douglas C-47s, C-54s and Curtiss C-46 Commandos. The rear fuselage of each aircraft carried 'Flying Tiger Line' titles, a nod to the company's heritage, and in 1950 that became the airline's new name.

On January 2, 1947, Flying Tiger Line moved from Mines Field (now Los Angeles International Airport) to Burbank and acquired Lockheed Super Constellations.



Despite a positive experience with the Boeing 707, Flying Tiger Line opted to switch to the Douglas DC-8 because of the type's efficiency, range and massive payload. Guy Visele

DC-8s



While the airline was mainly in the business of transporting airfreight, it also flew passenger charter flights across the Atlantic for American students and tourists and was a major mover of US military personnel – which included a huge role in the Korean War. The passenger flights came to an end in the early 1980s with the airline then focusing purely on freight.

The airline evaluated pure jets but its first

step into the jet age was its 1955 order for 13 turboprop-powered Canadair CL-44Ds, a stretched variant of the Bristol Britannia built under licence in Montréal, with a swing tail for easy loading. Although not a sales success, with only 39 built (including six passenger aircraft for Icelandic carrier Loftleiðir), the CL-44 was a success for Flying Tiger Line, its palletised loading and unloading system reducing turnaround

Main photo: **Flying Tiger Line was the largest operator of the Douglas DC-8 with 49 different airframes serving with the carrier.**

[AirTeamImages.com/Bob Robinson](http://AirTeamImages.com/Bob%20Robinson)

time from five hours with a 'Connie' to only 90mins.

Flying Tigers finally joined the jet age on September 27, 1965 when its first Boeing 707-349C was delivered from Seattle, Washington state, followed by a second on October 13. Given the rapidly escalating US combat mission in Vietnam, the 707s arrived just in time to begin a massive airlift of troops and materiel to Southeast Asia, although the airline continued to fulfil non-military cargo contracts with its fleet, to which two more leased 707s were soon added.

DC-8 APPEAL

The 707's rival, the Douglas DC-8, took to the air a year later, after the lion's share of first-generation jet orders had already been snapped up by Boeing. Second place in the jet race had serious commercial consequences – only 240 of the earlier DC-8s sold, from the turbojet-powered Series -10, -20 and -30 to the rudimentary fan-powered -40 (fitted with Rolls-Royce Conway engines) and more sophisticated -50 (powered by Pratt & Whitney JT3Ds).

To stay in the game, Douglas had to upgrade and stretch the DC-8: known as the Series 60, it was launched in three versions on April 4, 1965. The -61 had a 16ft 4in (5m) plug added before the wing and another, of 20ft (6m), aft of it – giving a total fuselage length of 187ft 4in (57m).

The stretch was possible because the standard DC-8's landing gear was high enough to accommodate the extra length without the tail striking the tarmac on take-off; and the wing sweep was modest enough for the outer engine pods not to come dangerously close to the ground. The 707's shorter landing gear and more aggressive wing sweep were the main reasons Boeing could never stretch the 707.

The -61 still used the standard wing and engines from the DC-8-55 so, despite its impressive exterior dimensions, it was very much a 'minimum change' upgrade. ▶



Flying Tigers DC-8-73CF, N703FT, at Heathrow on September 1, 1988. [AirTeamImages.com/Keith Blincow](http://AirTeamImages.com/Keith%20Blincow)



Douglas then turned its attention to upgrading the wing and engines, especially the engine pods which were shrunk in the new-generation design by 12% by moving the heat exchangers into the pylons. With a lesser stretch of the baseline DC-8-55 of 6ft 6in (2m), but with the new wing and engines, the DC-8-62 was a true long-ranger, able to fly 6,000 miles (9,656km) with a full load of 189 passengers.

Finally, the updated wing and engines of the -62 were mated to the long fuselage of the -61 to create the DC-8-63, which combined efficiency and range with a massive payload and would eventually account for a fifth of all DC-8 sales.

Flying Tiger Line couldn't resist such a capable machine and, while its experience with the 707 was positive, decided to change to the Douglas offering, ordering 19. The DC-8-63 was certified on June 10, 1968, and although the first -63 off the line in Long Beach, California, went to rival Seaboard World Airlines, Flying Tiger Line received its first aircraft on June 28 – which it immediately put into service on trips to Asia in support of the Vietnam War.

Flying Tiger's pilots soon reported they were having trouble stopping the jet on wet runways due to severe aquaplaning. Such was the respect given to the company's pilots that Douglas took them at their word and sent a DC-8-63 to its test facility at Yuma in Arizona for full stop landings on

Above: **Flying Tigers leased five DC-8-63s from Transamerica.** AirTeamImages.com/Bob O'Brien Collection

Below: **Groundcrew work on Flying Tiger Line DC-8 N798FT during a visit to Prestwick on September 10, 1975.** AirTeamImages.com/Carl Ford

a flooded runway at high weights. Sure enough, the Hytrol Mark II anti-skid system was found to be inadequate – and upgrades made it sufficiently different to be rebranded the Mark III, which was incorporated on all DC-8-63s.

FLYING TIGERS SERVICE

With the braking issue resolved, Flying Tigers fell in love with the DC-8-63, publicly announcing that each airframe would pay for itself in just 12 months, based on an acquisition price of \$11m and each flight grossing \$53,000 on a schedule of 16 round trips each month. Impatient for its order to be fulfilled, Flying Tigers leased a pair of Canadian Pacific DC-8-63s in late 1968 for interim lift until more of its own were delivered.

In July 1970 tragedy struck as N785FT crashed into the sea short of the runway while attempting to land at Okinawa, Japan, with the loss of all four pilots. The cause was found to be crew inattention to the instruments during a vain attempt to establish visual contact with the runway in low-visibility conditions. It was the only fatal

crash of a DC-8 in Flying Tigers service.

The DC-8 proved to be an extraordinarily resilient aircraft, perhaps best illustrated by Flying Tigers' air bridge of food and essential supplies into Cambodia's capital, Phnom Penh, in early 1975. With the city surrounded by Pol Pot's Khmer Rouge fighters, all supply lines were cut, so to feed the population Flying Tigers flew 175 flights from Saigon, Vietnam, to Pochentong International Airport (now Phnom Penh International Airport), bringing a total of 16,687,265lb (7,569,216kg) of rice. During landings, 20-minute turnarounds and take-offs, the DC-8s ran the gauntlet of rockets and artillery but did not sustain any direct hits. However, some tyres were damaged after rolling over shrapnel. The flights ended on April 12 with the fall of the city to the Khmer Rouge.

Only days later, the last remnants of South Vietnam were captured by the Viet Cong, and in the final days of the war Flying Tigers operated rescue flights to move Vietnamese refugees out of harm's way as a major player in Operation Frequent Wind, which also included the evacuation of US forces, dependants and local allies.

With the US military role in Southeast Asia at an end, Flying Tigers was able to use its large fleet to be in pole position as the economies of the Pacific Rim transformed themselves from agrarian societies to economic export powerhouses. The carrier invested heavily in cargo terminals not only





in Los Angeles and San Francisco but also at Tokyo's Haneda airport and the Hong Kong Air Cargo Terminal (HACTL); and in infrastructure at other important locations such as Anchorage, Manila and Singapore.

Additional use for the fleet came in October 1978 with the deregulation of the US domestic airline market, which enabled Flying Tigers to expand rapidly into markets it had coveted for years, such as Miami, Charlotte, Atlanta, Dallas, Houston, San Juan (Puerto Rico) and the US Virgin Islands. This required more lift, and the airline leased seven additional DC-8-63s from a variety of sources; the aircraft had previous operators as diverse as Korean Air, EFS Bahamas, Thai Airways International and Trans Caribbean Airways as well as US carriers such as Universal Airlines, Saturn Airways and Capitol Air.

By 1979, according to IATA figures, Flying Tiger Line was the world's second biggest cargo carrier behind the Soviet Union's Aeroflot, and ahead of global giant Pan Am.

The fleet expanded even more in 1980 with the takeover of rival US cargo giant Seaboard World, which brought seven DC-8-62s and -63s into the fold, although some were soon leased out to other airlines such as Air India, as they were surplus to requirements.

Above: **Flying Tigers DC-8-63 N783FT on final approach to Frankfurt in 1984.** AirTeamImages.com/Wolfgang Mendorf

Below: **Despite adding Flying Tigers titles, Douglas DC-8-62F N3931A still wore the basic scheme of its former operator, Alitalia.** Guy Van Herbruggen Collection

RE-ENGINEING THE DC-8

The 556th and last DC-8 to roll off the line at Long Beach was a -63 passenger aircraft, handed over on May 17, 1972 to Scandinavian carrier SAS. This wasn't as sad an occasion as it might have been, as Douglas – which by now had merged with the McDonnell Aircraft Corporation of St Louis, Missouri – was keen to free up production space at its Long Beach plant to build the new widebody DC-10 as well as DC-9s.

Consideration was given to re-engining the DC-8 with more efficient and quieter powerplants as early as July 1975, when General Electric held meetings with airlines about the CFM56, its new collaboration with Snecma of France, although the form of proposed noise legislation was still too vague for airlines to take expensive action.

In 1977, retired McDonnell Douglas executive Jackson R McGowan formed a new company to handle DC-8 refit contracts, and named it Cammacorp. The choice for a new engine to be fitted to extant DC-8s was between the CFM56 and Pratt & Whitney's

new JT8D – a powerplant developed primarily for the stretched DC-9-80, which later became the MD-80.

Delta Air Lines led the charge and decided on the offering from Pratt & Whitney for its DC-8s it had to be re-engined, as did United Airlines. But Flying Tiger Line had a different opinion: that although the CFM56 was more expensive at \$1.5m per unit versus \$980,000 for the JT8D, its greater fuel efficiency would pay for the difference relatively quickly. It also calculated the JT8D would provide less thrust in critical phases of departure, especially during a noise-abatement power-back climb.

In April 1979, Cammacorp announced the commitment by Flying Tigers for its nine owned DC-8-60s to be re-engined with CFM56s. All the airlines that needed DC-8s re-engined, including Delta and United, also went with the CFM56. Flying Tigers convinced the owners of its nine additional leased DC-8-63s (five belonged to Transamerica Corporation) to have the work done.

Soon Cammacorp had orders for 78 conversions from seven airlines, worth \$12m per aircraft. The re-engined jets





Above: **Flying Tigers DC-8 N791FT on the freight apron at Brussels in April 1976.** Jacques Barbé

Below: **The DC-8 fleet operated briefly for Federal Express following the cargo specialist's acquisition of Flying Tiger Line. The aircraft carried small Federal Express titles behind the door but soon left the fleet with most joining rival freight operators.** Guy Van Herbruggen Collection



were redesignated: the -61 became the -71, and was certified on April 13, 1981; the -62 became the -72; and the -63 became the -73 – both certified a month later.

The actual work was done by McDonnell Douglas at its Tulsa, Oklahoma, facility, with the new pylons and pods supplied by Grumman Aerospace. The resulting aircraft were very capable. For instance, the Cammacorp DC-8-72 demonstration aircraft operated a non-stop flight from Cairo to Los

Angeles in 15hrs 46mins, and after arrival it was calculated that, with the remaining fuel, it could have covered at least another 1,000 miles (1,609km).

The early 1980s, however, were not a profitable time for Flying Tigers, due mainly to the massive debt incurred when taking over Seaboard World. Even though the absorption of its rival had been seamless from an operational and personnel viewpoint, and gave the expanded carrier

a near-global footprint, synergy was frustratingly hard to realise, and soon the DC-8-70s were for sale – to be replaced on domestic routes by smaller Boeing 727-100s and on international services by bigger Boeing 747s.

Although the sale of the DC-8s raised capital, strategically it had a negative impact. The newly deregulated marketplace of the early 1980s was making life hard for Flying Tigers, now up against new blood such as





Above: **Douglas DC-8 N861FT** was one of many of the type leased by Flying Tigers. It was pictured at Atlanta in June 1978. Guy Van Herbruggen Collection

Below: **Flying Tigers DC-8s** were re-engined with CFM56s. Richard Vandervord

Airborne Express, Burlington Air Express, CF AirFreight, Emery Air Freight and UPS.

Most of the 18 DC-8s sold in this period went to these carriers (a few also joined German Cargo, a less direct competitor), augmenting their own DC-8-70 fleets and leaving Flying Tigers in an even more vulnerable position. It is also interesting to note that as a result of the sale, the airline most closely associated with the DC-8 freighter spent several years of the 1980s without a single example on strength.

In 1986 a new chairman, Stephen Wolf, who later went on to run United Airlines and USAir, was appointed to stem the losses. Ironically, the DC-8-70 was identified as an excellent candidate for long-haul trips with not enough demand to fill a Boeing 747, such as Charlotte to Zürich, and five DC-8-73s were acquired from Transamerica. Perhaps the combination was lucky, because the airline returned to black on the balance sheet in 1987, posting a \$106m profit.

By now, the network included far-flung routes such as Hong Kong to London via Taipei, Seoul and Anchorage, and Bangkok

“...Flying Tigers fell in love with the DC-8-63, publicly announcing that each airframe would pay for itself in just 12 months...”

to Brussels via airports in the Persian Gulf – Flying Tigers global reach and greatly improved balance sheet making the airline a target for a takeover bid. On December 17, 1988 ambitious parcel carrier Federal Express announced an \$880m buy out and the merger was completed on August 7, 1989.

Some of Flying Tigers 727s and 747s took on full Federal Express liveries but the DC-8-70's days were numbered and, despite getting new FE-suffixed registrations, only carried small decals announcing their new owners before they left the fleet, mostly going to rival parcel freight lines.

Including short-term leases Flying Tigers operated 49 DC-8s. Forty of them carried the airline's titles and FT registration suffixes. With the exception of a few -55 Jet Traders, they were all DC-8-63s or -73s. Flying Tigers was the biggest operator of the type.

Flying Tiger Line may be gone from the skies, and the number of operational DC-8s now only in single digits, but this was an aviation love affair that will never be forgotten. **AN**

An exclusive article written using research material from Charles Kennedy and Guy Van Herbruggen's book *DC-8 And The Flying Tiger Line*, available now from Astral Horizon Aviation Press. See www.theairlineboutique.com for more details.



AIRPORT MOVEMENTS

A round-up of notable aircraft visiting UK airports.



ABERDEEN

1/3 M-ELAS Gulfstream G280. 2/3 OY-JJD Beech 400A. 4/3 EC-LYO Gulfstream G550. 5/3 **TP-01 757-225ER Mexican AF**. 11/3 D-AFAB Challenger 604. 13/3 D-CXLS Citation 560XLS+ Air Hamburg. 14/3 D-CJET CitationJet 525B CJ3 Air Hamburg. 17/3 HB-VWJ Citation 560XL. 19/3 SE-FZL Cessna 414. 20/3 G-JPEG BN-2A-26 Islander. 23/3 **5N-BMD S-76C+ delivered by road to Bristow Helicopters**; N250Q S-92A delivered by road to CHC Scotia, to become G-WNSR; G-BLZJ AS332L, G-TIGC & G-TIGS AS332L1s all dep by road from Bristow Helicopters. 24/3 D-CGAA Citation 560XLS+ Air Hamburg. 25/3 VQ-BSF Falcon 7X. 28/3 N504AC Gulfstream G550. 30/3 G-SMLA BAe 146-200 JOTA Aviation.

BELFAST INTERNATIONAL

1/2 RA-82044 AN-124-100 Volga-Dnepr Airlines. 2/2 N505D Gulfstream G550 also 4th. 4/2 EC-HAK & EC-JKH Brasilias Swiftair. 15/2 ZZ176 C-17A 99 Sqn, RAF. 18/2 ZZ177 C-17A 99 Sqn, RAF. 23/2 M-PIRE Avanti. 26/2 ZZ337 Voyager KC3 10/101 Sqn, RAF.

BIGGIN HILL

1/10 D-ICEL Aerostar 601P dep 3rd; HB-DJR Extra 500 n/s. 5/10 D-EBIE Mooney M20K. 7/10 G-363 BN-2T Islander ex Ghanaian AF noted dismantled. 9/10 **T7-TUN Hawker 850XP dep 20th**. 11/10 C-GTJO Challenger 604 dep 14th. 13/10 OE-IPW Falcon 7X dep 15th. 14/10 M-ABGZ Falcon 900LX dep 16th; N8767 737-7EG BBJ1 dep 21st; OE-IEO Global 6000 dep 18th. 15/10 **EC-JSF Cessna 182S n/s**; YU-SMK Citation 560XLS. 17/10 **A7-KAL Lancair LC-41 n/s**. 18/10 D-EGJU Cessna 182P n/s. 22/10 D-ENTO AG-5B Tiger; SE-KSI SF340B Swedish Aircraft Holdings; SE-RHJ Citation 560XL. 26/10 2-HIGH Cirrus SR22T n/s. 27/10 CS-DTR Falcon 2000; D-EPBW PA-28-160 dep 30th; OO-JFT Cirrus SR20. 28/10 OE-FKZ Diamond DA42 n/s. 29/10 I-AFIT Falcon 7X n/s; OE-FKI Diamond DA-42 dep 31st. 30/10 OO-LIE CitationJet 525B CJ3. 31/10 OM-ATM Citation 560 Encore n/s.

Belgian Navy Alouette III, M-3, visited Glasgow on April 17 to pick up VIPs and take them to a ship taking part in Exercise Joint Warrior 15-1. Iain Mackenzie

5/11 9H-VCB Challenger 350 VistaJet. 7/11 OE-GDP Phenom 300 dep 9th. 9/11 G-BRRA/MK912/SH-L Spitfire IX; G-CGUK/X4560/KL-A Spitfire I; G-CHTK/P2921/GZ-L Hurricane X; G-LFIX /ML407/OU-V Spitfire T9; G-MXVI/TE184/DU-N Spitfire XVI; G-PBIX/RW382/3W-P Spitfire XVI; G-PMNF/TA805/FX-M Spitfire IX all participated in a remembrance flypast over the RAF Memorial Chapel. 10/11 HA-JEO Citation 650 III. 12/11 D-BAVG Citation 750 X n/s; N15XZ Avanti II; **OK-UNO Beech 200**. 13/11 F-HBIR Citation 510 Mustang. 14/11 OK-JDM Learjet 60. 15/11 LX-MOI Legacy 600 dep 17th. 16/11 HB-VPM Citation 510 Mustang n/s. 18/11 OY-MGO Falcon 2000EX n/s. 21/11 **OK-PMB PA-46-500TP dep 23rd**; P4-MLC Global Express; UR-ALB Phenom 100 dep 23rd. 22/11 CS-DVI Global Express. 24/11 PH-JAY Citation 510 Mustang n/s. 25/11 ZJ182 & ZJ186 Apache AH1s 4 Regt, AAC. 29/11 PH-DND ERJ 145MP Denim.

BIRMINGHAM

2/3 D-CWIR CitationJet 525C CJ4. 3/3 F-HAPN Falcon 50EX also 17th. 4/3 TC-FHB A320-214 Freebird Airlines f/v; N382G Gulfstream G200; D-COKE Learjet 35A. 5/3 F-HIKJ Falcon 2000EX also 19th; VP-BZE Falcon 7X; 2-MIKE Commander 114B. 6/3 9H-OME 737-505 Air X Charter. 9/3 OY-

SRH 767-204ERF Star Air; EI-JSK Gulfstream G650. 10/3 D-CAUW Citation 560 Encore; EC-JBB Falcon 900C. 11/3 D-IATE Cessna F406 Air-Taxi Europe. 13/3 **VH-FDN Beech 300C**. 14/3 ES-ACC CRJ900 Estonian Air op for SAS; EI-LIM AW139. 15/3 VT-ANT 787-8 Air India f/v; D-CGGG Learjet 31A. 16/3 OY-SRK 767-204ER/F Star Air. 17/3 F-HBPP CitationJet 525B CJ3 also 25th. 18/3 N912FD 757-28AF FedEx f/v; N272NR Phenom 300 also 20th. 21/3 OE-LEZ A321-211 Niki; HA-TAB SF340A FleetAIR; M-DSML BAe125-800B new resident. 22/3 F-GLTK Citation 550 II. 23/3 OY-SRF 767-219F Star Air; D-CRON Citation 560XLS. 24/3 I-AFIT Falcon 7X. 26/3 F-GLLO Merlin 3B AIR MANA; D-CFTG Learjet 35A; 2-OFUS Cirrus SR22. 27/3 LY-SPA A320-232 Small Planet Airlines f/v; PH-FHB PA-46-500TP. 29/3 LN-NGI 737-8JP Norwegian Air Shuttle f/v, new service. 30/3 **N2786B/NZ1411 & N2773B/NZ1410 T-6C Texan IIs Royal New Zealand AF on delivery**; **RA-26086 An-26 Pskovavia f/v**; LN-DYE 737-8JP Norwegian Air Shuttle f/v; A7-ACJ A330-202 Qatar Airways f/v, Manchester diversion. 31/3 LN-DYT 737-8JP Norwegian Air Shuttle f/v.

BLACKPOOL

6/2 M-CDFY Beech 200 BAE Systems n/s; XZ596 Sea King HAR3 22 Sqn, RAF. 13/2 D-CSUN



Swedish DHC-6 Twin Otter SE-GEE was photographed at Langar Airfield, Nottinghamshire on April 18. It stayed for a week operating skydiving flights, departing on April 26. Adrian Clark



These two Scat Airlines Bombardier CRJ200s, UP-CJ011 and UP-CJ012, were photographed on April 16 while on maintenance at Exeter. Ian Simpson

Citation 560XLS+ Air Hamburg n/s. 21/2 D-CEFO Citation 560XLS+ Air Hamburg n/s. 22/2 D-CFGG Learjet 35A; D-CNOC Citation 560XLS. 25/2 D-IRKE CitationJet 525 CJ1 n/s. 25/2 9H-OMK Global 5000.

BRISTOL INTERNATIONAL

4/2 D-ITMA CitationJet 525A CJ2+. 8/2 D-CEIS Citation 680 Sovereign. 9/2 D-MDOC Bristell n/s. 10/2 D-CAAE Learjet 55. 13/2 D-CWIN Citation 680 Sovereign also 20th. 18/2 S5-FUN Challenger 300 still present 1/3. 22/2 D-ASTA A319-112 Germania f/v; OO-AMR CitationJet 525A CJ2+. 23/2 D-CPMI Citation 560XLS+ also 24th. 25/2 I-ELYS Learjet 40. 27/2 D-IDBA Premier 1A.

CAMBRIDGE

2/3 LX-ONE Learjet 45; A7-HMD EC155B1. 6/3 D-CXLS Citation 560XLS+ Air Hamburg; OY-NCW Do 328JET SUN-AIR; 211 C-130J-30 12 Sqn, Qatar Emiri AF. 9/3 9H-CLG Challenger 850. 119/3 072/YA & 099/YP Xingus EAT00.319 French AF. 26/3 F-GMTJ Citation 510 Mustang; V-11 Gulfstream IV 334 Sqn, Royal Netherlands AF. 27/3 N770BM Learjet 60. 30/3 SP-NWM PC-12; VP-FAZ DHC-6-300 British Antarctic Survey; TF-FIK 757-256 Icelandair.

DONCASTER SHEFFIELD

5/3 EC-GXJ Metro II Flightline. 6/3 ET-APS 777-F6N Ethiopian Airlines n/s; OK-MAR CitationJet 525A CJ2 n/s. 8/3 ET-ARI 777-F60 Ethiopian Airlines. 10/3 EC-JIP Metro II Euro Continental Air; ZK-VAH Jetstream 32 Vincent Aviation n/s. 12/3 D-ICCC Cessna F406 Air-Taxi Europe; D-CGGG Learjet 31A n/s. 18/3 I-FORR Learjet 40; OM-EEX 737-4Q8 AirExplore. 24/3 9A-JSC CitationJet 525A CJ2. 27/3 T7-NES Premier 1A dep 29th.

DURHAM TEES VALLEY

3/3 D-CAAM Do 228-212 Arcus Air n/s. 9/3 D-CAST CitationJet 525B CJ3 Air Hamburg n/s. 10/3 D-COKE Learjet 45A; D-CEFO Citation 560XLS+ Air Hamburg. 11/3 F-GULY Beech C90B. 22/3 OO-TFA 757-28ASF TNT Airways. 23/3 D-CHIC Phenom 300 Air Hamburg. 27/3 D-CFGG Learjet 36A n/s. 29/3 D-AOLG Fokker 100 Avanti Air.

EAST MIDLANDS

1/3 S5-ICR Citation 560XL. 2/3 LX-VCJ 747-8R7F Cargolux. 3/3 UR-82007 An-124-100 Antonov Airlines; D-FFHZ PC-12; F-HATG CitationJet 525C CJ4. 5/3 OE-GGP Citation 560XLS; D-CAPO Learjet 35A; LZ-FLL An-26B Air Bright. 6/3 PH-CKC 747-406FER KLM, F1 charter. 7/3 OO-THC 747-4HAF/ER Emirates Sky Cargo F1 charter; D-CCCA Learjet 35A. 12/3 EC-JXJ A319-111 Iberia for painting. 14/3 LZ-AOA A319-111 Balkan Holidays. 15/3 M-ABIM A320-232 for painting for Aegean Airlines; D-CTRL Learjet 35A.

18/3 D-ACNH CRJ900 Eurowings; F-GVVB CitationJet 525B CJ3. 19/3 S5-AVB 737-4K5 Solinair. 20/3 OE-FID Citation 510 Mustang; CS-TLZ 767-375ER euroAtlantic Cargo. 23/3 LX-LAA Learjet 45. 25/3 D-FUEL PC-12. 26/3 D-CEFD CitationJet 525B CJ3. 27/3 D-CGAA Citation 560 XLS+ Air Hamburg. 28/3 OH-BLI 717-2CM Blue1 for painting for Volotea; 9H-VCA Challenger 350 VistaJet. 30/3 UR-CNN An-12B Cavok Air. 31/3 N315AA 767-223F ABX Air, Stansted diversion; PH-EZI E190STD KLM Cityhopper.

GUERNSEY

2/3 HB-JKL Falcon 2000LX. 3/3 2-HIGH Cirrus SR22T. 6/3 F-BVTF PA-28-180. 7/3 N97821 Mooney M20J; F-GHBQ PA-28-181. 9/3 N543GL Global 6000. 10/3 F-HEND Citation 510 Mustang. 17/3 D-IVIN Avanti; N67JK Cessna P210N (Silver Eagle II turboprop conversion). 18/3 N182K Cessna 182Q (King Katmai conversion, with canard foreplanes); PH-BYD Beech 58 KLM Luchtvaartschool. 21/3 F-GGTL PA-46-310P. 22/3 PH-HLM PA-34-200T. 23/3 CS-DTQ Phenom 300. 24/3 CS-DTC Phenom 100. 25/3 F-BXIN Cessna F172M. 26/3 D-ANTR Challenger 604. 31/3 OM-MCA Cessna 414.

INVERNESS

12/3 OY-SWO Falcon 2000S dep 14th. 14/3 N527XP Hawker 400XP. 18/3 ZJ195, ZJ182, ZJ190 & ZJ216 Apache AH1s 4 Regt, AAC. 20/3 OY-CKK Falcon 2000S also 27th & 29th. 22/3 OY-EKC Falcon 7X. 30/3 HB-GJU Beech 350.

LEEDS BRADFORD

13/1 M-ABGV Learjet 45 Ryanair. 26/1 HB-JGL Gulfstream G200. 29/1 15003 CC-150 437 TS, RCAF; OY-NCM Do 328JET SUN-AIR, Manchester diversion. 30/1 D-CFOR Learjet 35A.

3/2 F-GSJD Beech 58P. 5/2 F-GTCR Beech C90A. 6/2 M-HRPN Bell 429. 9/2 D-COBC CitationJet 525B CJ3; PH-CTR Citation 680 Sovereign. 10/2 D-CARO Citation 680 Sovereign; G-CHMR ERJ 145MP Eastern Airways & PH-KZO Fokker 70 KLM Cityhopper both

Humberside diversions. 13/2 N585EE Phenom 300; D-AFUN Legacy 650 Air Hamburg; LX-AVT Challenger 300. 17/2 D-CHRB CitationJet 525C CJ4; F-HARC Beech C90GTI. 19/2 D-CGGG Learjet 31A; D-CEFA CitationJet 525C CJ4; N824MT CitationJet 525 M2. D-IMGW CitationJet 525A CJ2+ Air Hamburg. 24/2 LX-MOI Legacy; OY-GWK Falcon 2000S. 25/2 ZJ195 & ZJ190 Apache AH1s 4 Regt, AAC; D-GTAC PA-34-220T. 27/2 PH-DND ERJ 145MP Denim. 28/2 EC-HVQ Citationjet 525 CJ1.

LIVERPOOL

1/3 PH-HWM Challenger 605. 2/3 OY-EKC Falcon 7X; OE-FHK Citation 510 Mustang. 3/3 D-IZZY Avanti; D-CAPO Learjet 35A also 19th. 8/3 D-ISJP CitationJet 525A CJ2 also 11th-13th; 9H-FAM Phenom 100 also 11th; VP-CUH Falcon 7X dep 9th also 10th; 129 Falcon 10MER 57S, French Navy o/s. 11/3 OY-CKK Falcon 2000LX; F-GPKL PA-46-350P; UR-WRM A320-212 WINDROSE Aviation. 12/3 OE-IDB Legacy 600. 13/3 084/YH Xingu EAT00.319 French AF. 16/3 EI-DJM PA-28-161 dep 18th. 18/3 D-BMAD Do 328JET SUN-AIR, Manchester diversion; N2086P PA-23-150 Geronimo. 19/3 PH-HZI 737-8K2 Transavia also 20th. 20/3 LN-WDI Dash 8-Q402 Widerøe. 21/3 4X-CPX Gulfstream IVSP. 22/3 EI-WXP Hawker 800XP; N900GX Global 5000; YU-BZZ Citation 550 Bravo; LN-WDI Dash 8-Q402 Widerøe. 25/3 OY-JCA Cirrus SR22. 27/3 D-CEIS Citation 680 Sovereign. 28/3 D-CPRO Learjet 31. 29/3 OO-ACC CitationJet 525A CJ2+. 30/3 F-HJD CitationJet 525A CJ2+ also 31st n/s. 31/3 OE-GKM Citation 560XLS; YR-BAF 737-322 Blue Air inaugural Bacău flight.

LONDON GATWICK

2/3 EI-FHG 737-86N Norwegian; TC-JYL 737-9F2ER Turkish Airlines. 4/3 LN-HOT CitationJet 525B CJ3. 6/3 A6-EOB A380-861 Emirates Airline f/v. 10/3 TC-FHB A320-214 Freebird Airlines; B-8298 Gulfstream G550. 11/3 F-HBXA E170STD HOP! 12/3 A6-EEW A380-861 Emirates Airline f/v. 14/3 A6-EEZ A380-861 Emirates Airline f/v; LX-JFR PC-12. 16/3 TC-JLR A319-132 Turkish Airlines; N117AL Gulfstream G550; SE-RKY Learjet 45. 17/3 TC-JYM 737-9F2ER Turkish Airlines; YI-ASS 737-81Z Iraqi Airways delivery flight. 19/3 D-ABCK A321-211 airberlin; OY-NDP CitationJet 525A CJ2+. 20/3 G-LGNG SAAB 340B Loganair. 22/3 N114HC Falcon 50EX. 23/3 LX-TAI PC-12. 25/3 N999LR Gulfstream G550. 28/3 EC-LRG A320-214 & EC-LVQ A320-216 both Iberia Express f/v; G-ZBJG 787-8 British Airways; HB-JOG A319-112 HolidayJet; TF-MOM A321-211 WOW air. 29/3 CN-NMI A320-214 Air Arabia Maroc; EC-LKH & EC-MEG A320-214s Iberia Express f/v. 30/3 EC-JFG & EC-LKG A320-214 Iberia Express f/v. 31/3 EC-JFH A320-214 Iberia Express f/v; EC-LYM A320-216 Iberia Express f/v.



Voyageur Airways DHC-7 C-GGUL arrived at Glasgow on March 29 en route to Africa. It departed the following day for Eindhoven. Iain Mackenzie

LONDON HEATHROW

1/3 EC-MBY A320-214 Vueling Airlines f/v. 3/3 CN-RGR E190AR Royal Air Maroc f/v. 4/3 D-AIDX A321-231 Lufthansa f/v. 5/3 A6-EOD A380-861 Emirates Airline f/v. 8/3 SX-DGR A320-232 Aegean Airlines f/v; XA-AMR 787-8 Aeromexico f/v. 10/3 4R-ALM A330-343E SriLankan Airlines f/v; VT-ANT 787-8 Air India f/v. 11/3 N800AN 787-8 American Airlines f/v.

LONDON LUTON

1/3 XA-GNI Falcon 2000EX; A6-IGT Lineage 1000; OK-NEO A319-112 CSA. 3/3 N900CH Falcon 2000EX; D-AHXC 737-7KN airberlin for maintenance with Thomson; D-AFAB Challenger 604. 4/3 B-KEY Gulfstream G650. 6/3 N543GL Global 6000. 7/3 HA-LYL A320-232 Wizz Air. 10/3 D-CYKP Citation 550 Bravo; LY-LTY Challenger 850; S5-ICR Citation 560XL. 12/3 N790T Falcon 900EX; PH-HWM Challenger 605; LX-ZED Challenger 605. 13/3 VP-CGN Gulfstream G650. 15/3 N738E Challenger 300; OY-CHT ATR 42-300 op for Denim; VQ-BSF Falcon 7X. 16/3 147 TBM 700A ET00.060 French AF. 17/3 F-HBPP CitationJet 525B CJ3; OO-FDG Falcon 2000EX. 19/3 D-ABKM 737-86J airberlin for maintenance with Thomson. 22/3 N878SC Global 6000; N957DT Challenger 300. 23/3 2-TRAV Gulfstream IV; N22T Gulfstream G650; N205FP Challenger 300. 24/3 N199HF Gulfstream G280; 9H-MMM Global 5000. 25/3 N667LC Gulfstream G450; N147CJ Falcon 2000EX. 27/3 9H-VCG Challenger 350 on delivery to VistaJet; OE-LBV A320-214 Austrian Airlines; SX-DGT A321-231 on delivery to Aegean Airlines, ex G-OZBP; F-HBXK E170LR HOP! 28/3 4K-AI88 Gulfstream G650. 29/3 9H-ICS Challenger 605; I-SLNI Falcon 900EX; OO-ABC Falcon 7X. 30/3 N650HC Gulfstream G650; EC-JNB CRJ900 Air Nostrum, new service to Vigo. 31/3 OK-TSF 737-8GJ SmartWings on for Wizz Air.

LONDON SOUTHWEND

3/3 VP-CCJ A319-133X to ATC (Lasham) dep 8th. 6/3 D-CRAS Short SD3-60 Nightexpress; VQ-BEN 737-85R Orenair to ATC (Lasham). 8/3 OY-TCD A321-211 Thomas Cook Airlines Scandinavia to ATC (Lasham), dep 11th. 10/3 OY-SWO Falcon 2000S.

MANCHESTER

1/3 HB-JVM E190-100LR Helvetic Airways f/v, op for Swiss; TF-DAD A321-211 (SL) UTair/WOW air f/v - arrived for painting at Air Livery, dep 7th. 2/3 LX-ONE Learjet 45 f/v. 3/3 YR-FZA Fokker 100 Carpatair;



Cirrus SR22 TC-SAR was at Gloucestershire Airport on March 23. Ian Simpson



Robin Hood Airport Doncaster Sheffield welcomed Thai-registered Gulfstream G200 HS-VNT on April 14. Clive Featherstone

D-ICCP Citation 510 Mustang f/v. 4/3 TC-FHB A320-214 Freebird Airlines f/v. 5/3 OY-NDP CitationJet 525A CJ2+ f/v. 6/3 EC-INO A340-642 Iberia f/v, for painting at Air Livery, dep 19th. 9/3 OK-OER A319-112 CSA Czech Airlines f/v, op for Norwegian; 143 Falcon 10MER 57S, French Navy. 10/3 A6-LRE 777-237LR Etihad Airways f/v; B-8298 Gulfstream G550 f/v. 11/3 A6-ENY 777-31HER Emirates Airline f/v; LY-VEO A320-233 Avion Express f/v, op for Norwegian; 1301 A330-243MRTT UAE AF n/s. 12/3 D-BMAD Do 328JET SUN-AIR f/v. 13/3 M-IUNI Global 5000 f/v. 15/3 YI-ASQ 737-81Z Iraqi Airways f/v, inaugural service from Sulaimaniyah; HZ-AKU 777-268ER Saudi Arabian Airlines f/v; M-GSIX Gulfstream G650 f/v; N720CH Global Express f/v. 17/3 N585EE Phenom 300 f/v. 18/3 TC-JYM 737-9F2ER Turkish Airlines f/v; EC-LRN A320-214 Vueling Airlines f/v; OY-CHT ATR 42-312 Denim f/v; N912FD 757-28AF FedEx Express f/v. 19/3 LX-LGU 737-8C9 Luxair f/v; EC-MAH A320-214 (SL) Vueling Airlines f/v. 20/3 OY-CKK Falcon 2000LX f/v. 23/3 LN-NHC 737-8JP Norwegian f/v. 24/3 OH-JRD PC-12 f/v. 25/3 NAF477 Alpha Jet Nigerian AF f/v, delivery flight. 27/3 TC-JNG A330-202 Turkish Airlines f/v; 9H-BBJ 737-7BC BBJ1 f/v; 05-0730 C-40C 73rd AS, USAF f/v; MRTT032 A330-202MRTT Royal Saudi AF f/v, for painting at Air Livery, dep 13/4. 29/3 A6-EOG A380-861 Emirates Airline f/v.

NORWICH

1/3 F-GRET Citation 510 Mustang. 2/3 D-ASTV A321-211 Germania to Air Livery dep 10th. 4/3 D-FIBE PC-6B2/H4; OE-GPS Citation 550 Bravo. 6/3 9H-LEO Citation 550 II. 7/3 YL-BAJ Dash 8-Q402 Air Baltic to Air Livery dep 11th. 8/3 OE-IHN E190AR Niki to Air Livery

dep 20th. 14/3 D-CXLS Citation 560XLS+ Air Hamburg. 22/3 D-ABMC 737-86J airberlin dep ex-Air Livery. 23/3 D-AIZS A320-214 (SL) Germanwings to Air Livery dep 29th. 26/3 PH-HHO EC155B1. 27/3 N9997X Falcon 7X. 28/3 D-CFFG Learjet 36A. 30/3 D-AIZT A320-214 (SL) Germanwings to Air Livery.

PRESTWICK

1/3 130339 KCC-130H 435 TRS, RCAF; N621AR CASA 212 EP Aviation. 2/3 N270GA Gulfstream G280 on delivery; C-GYAJ 767-35EER Cargojet op for LOT. 3/3 N914GA Gulfstream G150; 09-0540 C-40C 73rd AS, AFRC, USAF n/s. 5/3 CH-08 C-130H 15 Wing, Belgian Defence – Air Component; 165833 C-40A VR-59, USN. 6/3 N215DK PC-12. 8/3 N915GA Gulfstream G150; N992NA Gulfstream III NASA; TC-ACH 747-433F myCARGO. 9/3 HB-FQV PC-12 c/n 1527. 10/3 05-4613 C-40C 73rd AS, AFRC, USAF n/s. 14/3 165836 C-40A VR-57, USN n/s. 15/3 C-FJVV SF340B; C-FGZO A-4N Discovery Air, on delivery to Wittmund. 16/3 UR-CKM An-12BP Cavok Air; UR-CJN An-12B Cavok Air; 130341 KCC-130H 435 TRS, RCAF n/s; 165836 C-40A VR-57, USN. 19/3 M-ALSH Global Express. 21/3 472/93-CC C-135FR GRV02.091, French AF. 22/3 94-7315, 96-7323 & 96-7324 C-130Hs 731st AS, AFRC, USAF all n/s. 23/3 N702RS SF340B. 24/3 UR-CAH An-12BK Ukraine Air Alliance; HB-FQY PC-12 c/n 1529; N176RA EO-5C US Army. 26/3 HB-FQX PC-12 c/n 1528. 27/3 87 Xingu 28F, French Navy; N757AF 757-2J4ER Trump; N952CA 747-428BCF National Air Cargo. 28/3 RA-82045 An-124-100 Volga-Dnepr Airlines; 130338 KCC-130H 435 TRS, RCAF. 29/3 VP-FAZ DHC-6-300 British Antarctic Survey; N919CA 747-428BCF National Air Cargo.

SOUTHAMPTON

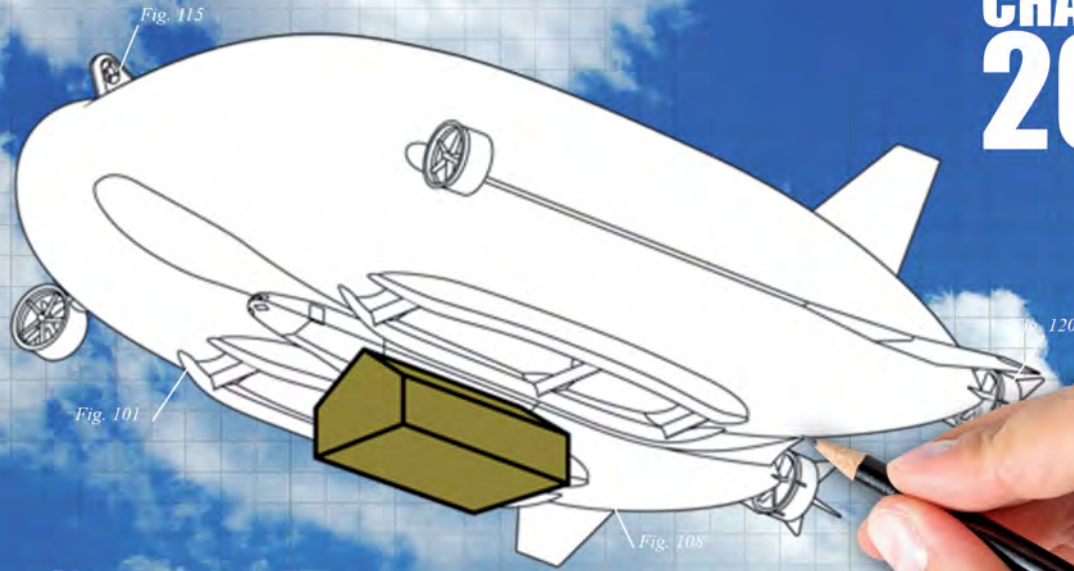
2/2 OE-FHC CitationJet 525A CJ2+. 9/2 C-GIWO Learjet 35A. 12/2 D-CYKP Citation 550 Bravo. 14/2 OE-FID Citation 510 Mustang.

3/3 ST-43 SIAI SF-260D CC Air, Belgian Defence – Air Component. 5/3 D-ICCP Citation 510 Mustang. 11/3 N531EA Eclipse EA500. 14/3 OE-LVD Fokker 100 Austrian Airlines. 17/3 F-HIPE Phenom 300. 20/3 OY-CHT ATR 42-300 Denim; N51JJ CitationJet 525B CJ3. 27/3 OE-GBD Gulfstream G100. 29/3 D-CEIS Citation 680 Sovereign. 30/3 D-IEKU CitationJet 525A CJ2.

Key: f/v first visit; n/s night stop; o/s overshoot.

With thanks to: D Apps, D Banks, D Bougourd, S Boyd, J Brazier, N Burch, P Claridge, A Clarke, I Cockerton, KW Ede, M Farley, N French, P Gibson, D Graham, A Greening, J Gregory, I Grierson, D Haines, M Harper, K Hearn, G Hocquard, B Hunter, S Lane, G Morris, S Morrison, R Richardson, R Roberts, E Russell, RJ Sayer, M Shepherd, A Smith, D Turner, JA White, G Williams, Blackpool Aviation Society, Manston Movements, Solent Aviation Society/Osprey, South Wales Aviation Group, CIAN, GSAE, The Aviation Society, EGPE ATC, www.dtmovements.co.uk, Aerodata Quantum Plus, RHADS.

SCHOOLS AEROSPACE CHALLENGE 2015



DESIGN A HEAVY-LIFT AIRSHIP! £5000 PRIZE MONEY

Can you generate ideas for the design and operation of a Heavy-Lift Airship?
The Schools Aerospace Challenge is the annual Team Design Exercise for 16 to 18 year olds.
This year we're tasking young thinkers with concepts for humanitarian support.

Join us for the Challenge at
Cranfield University this summer:

- Learn about aircraft and aircraft engines
- Practice free fall parachuting in a wind tunnel
- Get airborne in the Jetstream Flying Classroom
- ...plus much more

To find out how you can take part go to www.aerospacechallenge.org



Follow @aerochallenge on Twitter



Find us on Facebook for information and inspiration



AIR BASE MOVEMENTS

A selection of the most interesting aircraft to visit air bases in the UK recently.



RAF BRIZE NORTON

1/3 CN-AOG C-130H Royal Moroccan AF, also 15th.
 5/3 15003 CC-150 437 TS, RCAF n/s, also 3rd. **9/3**
 100001 Saab Tp-100 TSFE, Royal Swedish AF n/s, also
 12th n/s. 16/3 1622 C-130H-30 16 Sqn, Royal Saudi AF.
23/3 KAF328 KC-130J 41 Sqn, Kuwait AF dep 25th.
 26/3 E877705-LC Alpha Jet E EAC00.314, French AF
 o/s. 31/3 M-518 Merlin Mk.512 Royal Danish AF dep
 by road.

RAF CONINGSBY

9/3 99/YP Xingu EAT00.319, French AF. 11/3 100001
 Saab Tp-100 TSFE, Royal Swedish AF. 12/3 107/
 YV Xingu EAT00.319, French AF. 23/4 084/YH Xingu
 EAT00.319, French AF.

RAF CRANWELL

4/3 ZJ219 & ZJ232 Apache AH1s 673 Sqn, AAC. **19/3**
 ZZ504 Avenger T1 750 NAS.

RNAS CULDROSE

5/3 ZZ376 Wildcat HMA2 825 NAS. 13/3 ZJ185
 Apache AH1 673 Sqn, AAC. 16/3 ZZ395, ZZ388,
 ZZ398 & ZZ394 Wildcat AH1s 652 Sqn, AAC all dep
 26th. 19/3 ZZ514 Wildcat HMA2 825 NAS.

FAIRFORD

20/2 10-0215 C-17A 437th/315th AW, USAF. 24/2
 68-10337/BB U-2S 99th RS, 9th RW, USAF dep 27th;
 80-1089/BB U-2S 99th RS, 9th RW, USAF dep 25th.

31/3 80-1096/BB U-2S 99th RS, 9th RW, USAF dep
 1/4.

LAKENHEATH

5/3 08-8199 C-17A 62nd/44th AW, USAF. 13/3 **78-**
0651/DM, 81-0992/DM, 81-0956/DM & 82-0648 A-10Cs
354th FS, 355th FW, USAF all dep 20th; 06-6156
 C-17A 60th/349th AMW, USAF. 20/3 **162143 C-2A**
VRC-40, USN. 23/3 02-1101 C-17A 437th/315th AW,
 USAF; 06-6164 C-17A 60th/349th AMW, USAF. 24/3
 10+23 A310-304 FBS, German AF; 016 C295M 13 ELTr,
 Polish AF; 900528 C-26D AOD Sigonella.

RAF LEEMING

18/3 ZE961/HH Tornado F3 dep by road to a scrapyard
 at Seaham, Co Durham, following RTP. **25/3 XA634**

A detachment of five Turkish Air Force F-16
Fighting Falcons from 191 Filo deployed from
Balikesir AB to RAF Leeming to participate
in Exercise Joint Warrior 15-1. F-16D 92-0024
was captured arriving at Leeming on April 9.

Nicholas Hoenich

Javelin FAW4 was removed from the main gate and dep
 by road to Gloucestershire Airport.

RAF LEUCHARS

6/3 84-0083 C-21A 76th AS, 86th AW, USAF. 18/3 84-
 0096 C-21A 76th AS, 86th AW, USAF. 31/3 Control of
 Leuchars passed from the RAF to the army.

RAF LOSSIEMOUTH

12/3 60+07 P-3C MFG3, German Navy; 100001 Saab
 Tp-100 TSFE, Royal Swedish AF. 13/3 ZZ417 Shadow
 R1 14 Sqn, RAF. 25/3 B-537 C-130J Esk 721, Royal
 Danish AF n/s.

MILDENHALL

1/3 02-1464 C-130J-30 115th AS, Ca ANG dep 4th.
2/3 92-1535 & 93-7311 C-130Hs 187th AS, Wy ANG
both n/s. 4/3 94-6705 C-130H 130th AS, WV ANG
 n/s; 92-1531 C-130H 187th AS, Wy ANG dep 6th. 8/3
 07-4637 C-130J-30 unit unknown, USAF; 166382/BH
 KC-130J VMGR-252, USMC flew missions 9th & 10th,
 dep 11th. **11/3 14-0013 A400M 221 Filo, Turkish AF**
n/s also 15th n/s. 14/3 87-0043 C-5B 337th AS, 439th
 AW, USAF n/s. 17/3 G-988 C-130H 336 Sqn Royal
 Netherlands AF. 19/3 02-1466 C-130J-30 115th AS,

Ca ANG dep 21st. **21/3 11-9358 E-11A 653rd ELSG,**
USAF n/s. **23/3 B-583 C-130J-30 Esk 721, Royal**
Danish AF. **29/3 470/93-CA C-135FR GRV02.091,**
French AF.

RAF NORTHOLT

5/3 260 PC-9 ACC/FTS, Irish Air Corps; G-01 Cessna
182Q Belgian Police n/s; F-ZBEY/07 Grumman S-2T
Sécurité Civile - all visited in connection with the RAF
 Northolt nightshoot. 10/3 103/YT Xingu EAT00.319,
 French AF; CM-02 Falcon 20E-5 15 Wing, Belgian
 Defence – Air Component also 12th. 11/3 258 Learjet
 45 102 Sqn, Irish Air Corps. 19/3 2235 AS332M
 EH03.067, French AF. 20/3 97-00105 UC-35A D/52nd
 Avn, US Army. 25/3 E173/705-MA, E31/75-RK &
 E87/705-LC Alpha Jet ES EAC00.314, French AF.

RAF SHAWBURY

17/3 ZZ380 Wildcat HMA2 825 NAS; ZJ221 & ZJ228
Apache AH1s 3 Regt, AAC. 18/3 ZJ223 Apache AH1
 673 Sqn, AAC also 20th. 19/3 ZJ190, ZJ195, ZJ216 &
 ZJ182 Apache AH1s 4 Regt, AAC. 20/3 ZJ193 & ZJ213
 AH1s 673 Sqn, AAC.

RNAS YEOVILTON

5/3 XZ257 Lynx HAS3/Wildcat procedures trainer dep
by road. 12/3 93/XL TBM 700A ET00.060, French AF.
16/3 ZZ191 Hunter F58 HHA. 23/3 163591/RU KC-
 130T VR-55, USN. 26/3 XT626 Scout AH1 AACHF.

Key: n/s night stop; o/s overshoot



Four F-15Cs of the Louisiana ANG's 122nd FS, 159th FW prepare to depart RAF Lakenheath
on April 17 whilst en route from the US to Graf Ignatievo AB in Bulgaria for Exercise Thracian
Eagle. In total eight 122th FS F-15C/Ds passed through heading eastbound. Mark Kerton

WEB

AIR-BRITAIN NEWS MONTHLY
Registration news & changes worldwide from £45pa
Printed or Electronic alternatives

AIRLINE FLEETS
Annual comprehensive coverage of the world's airline operators and fleets
One of Air-Britain's annual register books - civil & military




See www.air-britain.com for full details of membership & books or contact membership@air-britain.co.uk +44(0)1394 450767

AVIATION RETAIL DIRECT

Order Hotline: 01895 231 707

- Aircraft models
- Books
- DVDs

Our aviation shops:

10 Sutton Court Road
Hillingdon, Middlesex
UB10 9HP, Tel: 01895 231 707

BAA Academy, Newall Road
Heathrow Airport
TW6 2AP, Tel: 0208 759 8759



www.AviationRetailDirect.com

Air Photographic International

TOP QUALITY
Colour Slides/Colour Photos/
B&W Photos
Check out our website
www.airphotographicinternational.com

The Guild of Aviation Artists
The premier society for the promotion of Aviation Art
www.gava.org.uk
e-mail: admin@gava.org.uk

DVD

CLASSIC AIRLINER DVDS



www.avionvideo.com

DVD'S OF AIRLINES AT AIRPORTS around the world 1997 to 2012.
Over 100 titles.
All three hours plus.
Dvds £12 each. Free p+p. see www.airlinerdvd.co.uk or
Tel: 0161 366 6628

FOR SALE

AIR PICTORIAL/AVIATION NEWS 1954 - 2013 All bound 59 binders £300 ono
Buyer collects Edgware 07904 420658

WANTED

COLOUR SLIDE AND B&W PHOTO COLLECTIONS WANTED
Top prices paid - all other aviation related items considered, will collect.
Contact Chris Tel: 0208 422 5899
Email: chrisknott.api@icloud.com

UNMADE PLASTIC KITS, bought and sold. All subject, all scales.
Kingkit (AN) Unit 8, Halesfield 17, Telford, Shrops. TF7 4PF
Tel: 01952 586457

PHOTOS

MILITARY AVIATION REVIEW

www.mar.co.uk
Monthly magazine featuring comprehensive military movements from the UK, Europe, the USA and elsewhere. Plus news, rundowns and historical articles. Print and digital subscriptions available.
Also browse and purchase from our catalogue of over 400,000 aviation images and 30,000 original slides.
brianmap@btinternet.com
Westfield Lodge, Aveland Way, Aslackby, Lincs, NG34 0HG, United Kingdom

BINOCULARS

EAST OF ENGLAND BINOCULAR CENTRE

Binoculars from under £40 to over £1000
All popular makes and models available by carriage FREE nationwide mail order.
Telephone, write or e-mail for our free catalogue
Also: astronomical telescopes, image intensifiers, monoculars, spotting scopes and tripods
70 Shearwater Road, Lincoln LN6 0XA
Tel: 01522 807991
www.eebc.co.uk e-mail: ap@eebc.co.uk
Mail order only

MILITARY & CIVIL AIRCRAFT PHOTOS

1940s onwards - professionally printed from 80p inc P&P.
Digital images available - free for internet use
Catalogue of over 60,000 original aircraft photos at
www.na3t.org/air
On-line or mail order

SAE: NA3T(AN), 14 Gannon Road, Worthing, BN11 2DT
eMail: info@na3t.org Phone: Bob 01903 235167
Suitable land, sea or air negative collections purchased

To advertise in



please call **Andy Mason**
on

01780 755131

Manchester Airport Aviation & Transport Festival

"Under the wings of Concorde"

Manchester Airport Runway Visitor Park
WA15 8XQ

Sat 11th - Sun 12th July

Over 200 tables selling everything "Aviation & Transport"

Models, Books & Magazines, Collectables, Memorabilia, Aviation software, Virtual radar sales and demonstrations
Pilot shop, Optics, RC model aircraft and much, much more.
Everything for Aviation and Transport enthusiasts.
Railway layouts, Giant Scalextric, Vintage cars, Military vehicles, Cockpits, RC Trucks, Cars & Boats, Hot air balloons, Entertainment for the family including a Playground & Bands. Food and bar available.

fair@tasmanchester.co.uk

www.tasmanchester.co.uk



REGISTER REVIEW

The latest changes on the UK, Irish, Isle of Man and Guernsey registers.



New easyJet Airbus A320-214 G-EZOG taxis in at Palma de Mallorca Airport on March 16. Javier Rodriguez

RESTORATIONS

REG'N	MODE(S)	TYPE	C/N	OWNER
G-BMTO	40282C	Piper PA-38-112 Tomahawk	38-81A0051	S Adamov, (Lendava, Slovenia)
G-BRLV	402F94	CCF Harvard IV	CCF4-194	BA Van Waeyenberghe, Kortrijk-Wevelgem, West-Vlaanderen, Belgium
G-BSEH	406DC7	Cameron V-77	2167	Atlantic Ballooning BVBA, (Destelbergen, Belgium)
G-CCVE	406E09	Raj Hamsa X'Air Jabiru(3)	BMAA/HB/361	GJ Slater, Clench Common, Wiltshire
G-CEMG	40519F	UltraMagic M-105	105/153	Comunicazione In Volo SRL (Carpineti, Regio Emilia, Italy)
G-EZEN	400ADD	Airbus A319-111	2245	easyJet Airline Company Ltd, Luton (NB)
G-EZIF	400C48	Airbus A319-111	2450	easyJet Airline Company Ltd, Luton (NB)
G-FDZD	400FF4	Boeing 737-8K5	35132	Thomson Airways Ltd, Luton (NB)
G-IGWT	40616D	Bombardier Challenger 850	8078	Skywings Ltd, (Hamilton, Bermuda)
G-LKTB	404624	Piper PA-28-181 Archer III	2843496	Aero-Club du Pontreau Cholet-Le Pontreau, Maine-et-Loire, France
G-LTFC	401859	Piper PA-28-140 Cherokee B	28-26259	NMG Pearson, Henstridge, Somerset
G-MYWF	403A74	CFM Shadow Series CD	K248	J Wibberley, (Earls Barton, Northamptonshire)
G-MZLU	403FF9	Cyclone AX2000	7439	E Pashley, (Spencers Wood, Reading, Berkshire)
G-OJBM	4036B3	Cameron N-90	2899	SJ Bettin, (Greatham, Liss, Hampshire)
G-RAMA	4050E5	Cameron C-70	10939	Poppies (UK) Ltd, (Wootton Fitzpaine, Dorset)
G-RORY	402564	Piaggio FWP.149D (built by Focke-Wulf Flugzeugbau GmbH)	014	M Edwards, Pear Tree Farm, Marthall, Cheshire
G-ROTI	402E51	Luscombe 8A Silvaire	2117	R Ludgate, Old Hay Farm, Paddock Wood, Kent
G-SEGA	4036AC	Cameron Sonic-90	2896	ME White, (Abbeyview, Trim, Co. Meath)
G-VINI	406A2C	Sikorsky S-92A	920220	Bond Offshore Helicopters Ltd, Aberdeen International

NEW REGISTRATIONS

REG'N	MODE(S)	TYPE	C/N	OWNER
G-CILM	406D7D	Cameron Z-77	11887	Morson Group Ltd, (Salford, Greater Manchester)
G-CILN	406D81	AgustaWestland AW139	31586	Bristow Helicopters Ltd, Aberdeen International
G-CILP	406D82	AgustaWestland AW139	31590	Bristow Helicopters Ltd, Aberdeen International

G-CILU	406D83	Guimbal Cabri G2	1092	European Helicopter Importers Ltd, Cotswold, Gloucestershire
G-CIMR	406DC8	Airbus Helicopters AS350B3 Ecureuil	8021	Airbus Helicopters UK Ltd, Oxford
G-CIMY	406DD4	Sadler Vampire SV2 (built by Skywise Ultralight Pty Ltd)	SU 021	CAS Powell, (Burton-on-Trent, Staffordshire)
G-CINL	406DE3	Best Off SkyRanger Swift 912(S)1	BMAA/HB/647	British Microflight Aircraft Association Ltd, (Deddington, Oxfordshire)
G-CINP	406DF0	Airbus A330-223	353	SASOF II (K) Aviation Ireland Ltd, (stored at MoD St Athan, Glamorgan)
G-CINR	406DF1	Airbus A330-223	362	SASOF II (K) Aviation Ireland Ltd, (stored at MoD St Athan, Glamorgan)
G-CINS	406D73	Airbus A330-243	948	ACG Acquisitions (Cayman) 948 Ltd, (stored at Perpignan-Rivesaltes, France)
G-CINU	406DF7	Airbus Helicopters EC225LP	2832	Omni Helicopters International SA (Lisbon, Portugal)
G-CINV	406DF8	Aeroprakt A22-LS Foxbat	LAA 317B-15316	JP Mimmagh, (Heswall, Wirral, Merseyside)
G-CIOA	406DFE	Murphy Rebel (built by K Hoyer)	629R	OP Sparrow, Scotland Farm, Hook, Hampshire
G-CIOH	406E1E	Airbus A330-322	116	SASOF II (A) Aviation Ireland Ltd, (stored at Dresden, Freistaat Sachsen, Germany)
G-CIOI	406E1F	Airbus Helicopters AS332L Super Puma	2082	Vector Aerospace International Ltd, Fleetlands, Hampshire
G-CIPM	406DD5	P & M QuikR	8715	MR Niznik, East Fortune, East Lothian
G-CIPP	406D5E	AutoGyro Calidus (assembled by Rotorsport UK Ltd)	RSUK/CALS/025	PH Smith trading as Dragon Gyrocopters, Llanbedr, Gwynedd
G-CIPS	406D7C	Aeropro Eurofox 912(1)	BMAA/HB/661	P Stretton, (Adlington, Kent)
G-CIRA	406DC4	Robinson R22 Beta	1403	G Borella, (Bariano, Italy)
G-CIRC	406E17	Such 60-20	001	DG Such, (Barkway, Hertfordshire)
G-CISL	406DFB	Cameron C-70	11880	S Lundin, (Växjö, Sweden)
G-CLON	406D47	Glasflugel 304 S Shark (built by HPH spol. s.r.o.)	045-MS	PD Ruskin, Gransden Lodge, Cambridgeshire
G-CLPB	406DF3	Rolladen-Schneider LS6c-18W	6276	CH Harrison, Lasham, Hampshire
G-CMDG	406DC3	P & M QuikR	8713	MD Greaves, East Fortune, East Lothian
G-DCHG	406E05	PZL-Bielsko SZD-30 Pirat	B-294	KW Robinson, RNAS Culdrose, Cornwall
G-DFOV	406E12	CARMAM JP15-36AR Aiglon	28	M Howley, (Halifax, West Yorkshire)
G-DHMM	400D0C	Piper PA-34-200T Seneca II	34-7770062	Cristal Air Ltd, Brighton Shoreham, West Sussex

G-ECNX	406DF9	Reims Cessna F177RG Cardinal RG	F177RG0038	V Haack, Borkenberge, Nordrhein-Westfalen, Germany
G-EMHD	401384	AgustaWestland A109S Grand	22027	D and NT Burton trading as Burton Aviation, Costock Heliport, Nottinghamshire
G-ERJR	404C96	AgustaWestland A109C	7622	3GRCOMM Ltd, (Little Birch, Herefordshire)
G-ETXN	406DBA	Extra EA 300/LT	LT018	T Eichhorn, (Bad Camberg, Hesse, Germany)
G-EXLC	406DD9	Extra EA 300/L	1313	Cirrus Aircraft UK Ltd, Sywell, Northamptonshire
G-EZOD	406CDO	Airbus A320-214	6502	easyJet Airline Company Ltd, Luton, Bedfordshire (NB)
G-EZOE	406CD1	Airbus A320-214	6509	easyJet Airline Company Ltd, Luton, Bedfordshire (NB)
G-EZOF	406CD2	Airbus A320-214	6525	easyJet Airline Company Ltd, Luton, Bedfordshire (NB)
G-EZOG	406D8C	Airbus A320-214	6541	easyJet Airline Company Ltd, Luton, Bedfordshire (NB)
G-FPEH	406DBD	Guimbal Cabri G2	1093	Paul D White Ltd, Elstree, Hertfordshire
G-GCWS	406DF6	Cessna 177 Cardinal	17700504	BA Mills trading as Pilot Flying Group, Bourn, Cambridgeshire
G-GORA	406DDD	Robin DR400/160 Chevalier	2271	Robin Flying Club Ltd, Exeter International, Devon
G-GORD	406ADA	Robin DR401	2669	CS and JA Bailey trading as SJ Aircraft, Elstree, Hertfordshire
G-HANC	4033F6	Robinson R22 Beta	1740	S Hancock, (Pilsley, Derbyshire)
G-HELL	406E02	Sonex Aircraft Sonex	LAA 337-15182	TJ Shaw, North Coates, Lincolnshire
G-HOTY	406DB8	Bombardier Challenger 604	5443	Hangar 8 Management Ltd, Oxford
G-IGBI	406DFF	Game Composites GB1 Gamebird	001	Game Composites Ltd, (Market Rasen, Lincolnshire)
G-IPIG	406E04	Mac Para Elan 550/Powrachine Pegasus Cosmos Fly Away 01 (built by C Andrieux)	E1-030202395/201BL00110L	R Frankham, Easton Maudit, Northamptonshire
G-JBAV	406D6B	Evektor EV-97 Eurostar SL (assembled by Light Sport Aviation Ltd)	2014-4215	JB Aviation Ltd, Rufforth East, North Yorkshire
G-JZHB	406C80	Boeing 737-8K5	28623	Jet2.com Ltd, Leeds-Bradford International, West Yorkshire (NB)
G-KENK	406CF8	Cameron TR-70	11873	KR Karlstrom, (Northwood, Greater London)
G-KISP	406DD1	Rolladen-Schneider LS10-st (built by DG Flugzeugbau GmbH)	L10-004	DG Pask and JJ Shaw, Sutton Bank, North Yorkshire
G-KXMS	406DDA	Schempp-Hirth Ventus 2cT	225	AJ McNamara, Dunstable, Bedfordshire
G-MCGO	406DE5	AgustaWestland AW189	92002	AgustaWestland Ltd, Yeovil, Somerset (NB)
G-MCGP	406DE6	AgustaWestland AW189	92003	AgustaWestland Ltd, Yeovil, Somerset (NB)
G-MCGR	406DE7	AgustaWestland AW189	92004	AgustaWestland Ltd, Yeovil, Somerset (NB)
G-MCGS	406DE8	AgustaWestland AW189	92005	AgustaWestland Ltd, Yeovil, Somerset (NB)
G-MCGT	406DE9	AgustaWestland AW189	92006	AgustaWestland Ltd, Yeovil, Somerset (NB)
G-OLEC	406D67	Alisport Silent 2 Electro	2069	Lleweni Parc Ltd, Lleweni Park, Denbighshire
G-OSPX	406DF2	Grob G 109B	6414	GC Westgate trading as Aerospax, Parham Park, West Sussex
G-PCPC	406D9F	AutoGyro Calidus (assembled by Rotorsport UK Ltd)	RSUK/CALS/026	Newcroft Training Ltd, Damyns Hall, Upminster, Essex
G-POTR	4064B2	AgustaWestland A109E Power	11043	Castle Air Ltd, Trebrow, Liskeard, Cornwall
G-POWM	406CDD	Airbus A320-232	2564	Titan Airways Ltd, London Stansted (NB)
G-RDEN	406D60	Cameron Z-105	11879	Hillmount Bangor Ltd, (Bangor, Gwynedd)
G-REYE	406DB4	Robinson R44 Raven I	2390	Redeye.com Ltd, (Sheffield, South Yorkshire)
G-RGBY	406DCC	Cessna 525B CitationJet CJ3	525B0139	Volante Aviation Ltd, Coventry, Warwickshire
G-RLDX	406D33	Cameron A-375	11860	Red Letter Days Ltd, (London N14)
G-SARP	406D74	Cessna R182 Skylane RG	R182-01652	Aerobatica LDA, Cascais, Lisbon, Portugal
G-SASN	406D68	Airbus Helicopters EC145T2	20025	Bond Air Services Ltd, Gloucestershire (for Scottish Air Ambulance)
G-SAWG	406D72	Scheibe SF 25C Turbo-Falke	44732	The RAF Gliding and Soaring Association Ltd, RAF Halton, Buckinghamshire (NB)



Castle Air's newly re-registered AgustaWestland A109E Power, G-POTR, was one of 32 helicopters at Cheltenham Racecourse on March 12 during the Cheltenham Festival. Clive Glaister

G-SHWN	40687C	North American P-51D Mustang	122-40117	Sharmouth Ltd, Goodwood, West Sussex
G-STD0	406E15	BRM Aero Bristol NG5 Speed Wing	LAA 385-15314	JA Strong and SM Wade (London N21/North Weald, Essex)
G-STUZ	406E14	Lambert Mission M108	LAA 370-15326	SA Blanchard, (Cottingham, East Yorkshire)
G-TCDH	406D37	Airbus A321-211	6515	Thomas Cook Airlines Ltd, Manchester (NB)
G-TTEN	40692E	Tecnam P2010	008	RC Mincik, Goodwood, West Sussex
G-UISE	406E19	Van's RV-8	LAA 303-15324	JS Green (Aspley Guise, Bedfordshire)
G-VBAI	406CF3	Cameron A-400	11868	Aircite Ltd, trading as Virgin Balloon Flights (Telford, Shropshire)
G-VBAJ	406CF4	Cameron A-400	11869	Aircite Ltd, trading as Virgin Balloon Flights (Telford, Shropshire)
G-VBAK	406CF5	Cameron A-400	11870	Aircite Ltd, trading as Virgin Balloon Flights (Telford, Shropshire)
G-VBAL	406CF6	Cameron A-400	11871	Aircite Ltd, trading as Virgin Balloon Flights (Telford, Shropshire)
G-VBAM	406CF7	Cameron A-400	11872	Aircite Ltd, trading as Virgin Balloon Flights (Telford, Shropshire)
G-VZIG	406C3B	Boeing 787-9 Dreamliner	37969	Virgin Atlantic Airways Ltd, London Heathrow
G-WNSR	406DE4	Sikorsky S-92A	920250	CHC Scotia Ltd, Aberdeen International
G-XRTV	4068EE	Bombardier Challenger 601-3A	5085	Arena Aviation Ltd, Biggin Hill, Kent
El-FGX	4CA378	Boeing 737-3Q8	28054	Aircraft 23810 QC Holdings Ltd (leased to Mistral Air, Rome-Ciampino, Italy)
El-FIE	4CA376	Boeing 737-8AS	44695	Ryanair Ltd, Dublin (NB)
El-FIF	4CA377	Boeing 737-8AS	44696	Ryanair Ltd, Dublin (NB)
El-FSB	4CA341	Airbus A321-211	1554	Prens Turizm Aircraft Leasing Ltd, (leased to Metrojet, Moscow-Domodovo, Russia)
M-ALSH	43EA4A	Bombardier Global Express	9097	Mirgab Aviation Ltd, Aarhus, East Jutland, Denmark
M-CSMS	43EA42	Bombardier Learjet 45	45-017	SMS Aviation Services SA, TBA
M-DMBP	43EA45	Bombardier Learjet 40	45-2133	Ven-Air, Dublin, Republic of Ireland
M-HPIN	43EA4E	Embraer Phenom 300	505000276	Harpin Parkin Aviation Limited Partnership Inc, Leeds-Bradford, West Yorkshire
M-MAEE	43EA41	Gulfstream G450	4322	Royston Sky Holding Ltd, TBA
M-PLUS	43EA46	Gulfstream G650	6113	650 Management Ltd, TBA
M-ROIL	43EA50	IAI Gulfstream G200	237	Exillon Energy PLC, Urai, Russia
M-SAAJ	43E7C1	Gulfstream G550	5301	Horizon Aviation Ltd, Basle-Mulhouse, Switzerland
2-ABBX	43EB30	Boeing 737-808	34969	AerCap Holdings NV (for lease to Fiji Airways)
2-ABBY		Boeing 737-808	34970	AerCap Holdings NV (for lease to Fiji Airways)
2-TBXA	43EB2C	Boeing 737-79P	28255	AerCap Holdings NV (for lease to Southwest Airlines as N7827A)
2-TBXB		Boeing 737-79P	30035	AerCap Holdings NV (for lease to Southwest Airlines as N7826B)

Air-Britain Books for 2015 BUY NOW

Unbeatable reliability

All books postage free to UK addresses

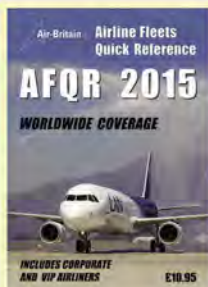
www.air-britain.co.uk



Causeway House, Chiddingstone Causeway,
Tonbridge TN11 8JP UK

sales@air-britain.co.uk 01892 870472

Air-Britain (Trading) Ltd. Cheque or credit/debit cards
ALL BOOKS POSTAGE FREE UK - OVERSEAS AT COST



AIRLINE FLEETS QUICK REFERENCE 2015

Annual edition of this very successful title. The content gives the fleets of all the operators you are likely to see with jet and turbine equipment at any of the world's major airports down to approximately the size of a Jetstream. Nearly 170 countries and 1700 operators in 288 pages. A5 soft-back format. Includes Corporate & VIP airliners.

£10.95 (£8.95 Air-Britain members)



BUSINESS JETS & TURBOPROPS QUICK REFERENCE 2015

Annual edition containing all the world's civil and military biz-jets and biz-turboprops as at Jan2015. Lists in regn order with type and c/n. A5 softback, 176 pages.

£10.95 (£8.95 Air-Britain members)



UK & IRELAND QUICK REFERENCE 2015 CIVIL & MILITARY COMBINED

Registrations & types of all current UK, Ireland & foreign-registered aircraft based in the UK. Includes the complete current UK military serials as well as a military/civil registration/serial decode. Also includes an EXPANDED based aircraft index, museums, and a VHF frequency listing. 160 pages. A5 soft-back format.

£10.95 (£8.95 Air-Britain members)



AIRLINE FLEETS 2015

The full annual edition of Airline Fleets provides coverage of almost 2,500 fleets. It is indispensable for the serious airliner enthusiast.

680 pages of fleet lists, jet and turboprop airliners in non-airline use, airline two/three-letter designators, operator index and airport three letter codes. New data spot marked.

Hardback. A5 size. Comprehensive unbeatable reliability

Available 1st June: £27.00
(Save £6 by Joining Air-Britain)



EUROPEAN REGISTERS HANDBOOK 2015

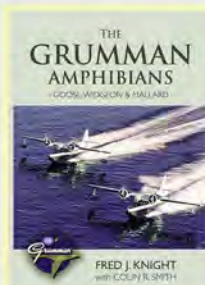
The 30th edition of this market leader covers 46 countries west of Russia (excluding UK). Listing all known current powered aircraft, gliders, sailplanes, balloons and ulms with all available c/ns and identities included in a both versions.

Available in A4 printed format with over 600 pages or on CD as searchable pdf files with the added bonus of colour photo coverage of 2014 events.

A4 softback book: £24.95 (£19.95 Air-Britain members)

CD: £13.95 (£9.95 as Air-Britain members)

Buy both together: £30.95 (£24.95 Air-Britain members)



THE GRUMMAN AMPHIBIANS - Goose, Widgeon & Mallard

This book documents the development of all three types and gives detailed coverage of world-wide military and civilian operators, with full details of all the many modifications and conversions carried out on all three types.

625 monochrome photos, 75 in colour. Other illustrations include drawings, maps, advertisements, brochures, timetables and philatelic items. Appendices cover the detailed history of each of the 721 airframes. Without doubt, the most comprehensive coverage of these iconic aircraft yet.

A4 hardback, 480 pages.

(Save £15 by Joining Air-Britain) £49.95

AIR-BRITAIN VINTAGE & CLASSIC FLY-IN 20 & 21 June 2015 North Weald Airfield (EGSX)

Auster - Marking 75 years entering military service; **Beagle** - 55 years since its formation. **Cessna 120/140, Beech 35 & Aeronca Chief** - 70 years since first flight.

*** ALL WELCOME ***

AIRFIELD OPEN: 09:00 to 19:00

No landing fees - Airborne Arrivals Strictly

PPR - 01992 524510 to arrange PPR

GATES OPEN 09:00 - Vehicle + driver £10.00,

Other adults £5.00, Under 18s free

FURTHER INFORMATION 01376 344441

www.air-britain.com/flyin-about

JOIN AIR-BRITAIN FIRST
TO BUY BOOKS
AT MEMBER PRICES

Choice of up to 4 magazines from £22pa (incl. membership)

BUY AIR-BRITAIN BOOKS AT MEMBER PRICES - UP TO ONE-THIRD SAVING

For full details of membership and all Air-Britain books please go to www.air-britain.co.uk

PREVIOUS IDENTITIES

REG'N	P.I.	REG'N	P.I.
G-BSEH	ex OE-SNI	G-IGWT	ex N546JB
G-CIMY	ex LN-YTB	G-IPIG	ex 87 ER (French ultralight sequence)
G-CINP	ex VT-IWA	G-JZHB	ex D-AHFS
G-CINR	ex VT-IWB	G-KISP	ex D-KISP
G-CINS	ex N948AC	G-KXMS	ex D-KXMS
G-CINU	ex PR-OMV	G-OSPX	ex EI-HCS
G-CIOA	ex PH-CRE	G-POTR	ex G-OFTC
G-CIOH	ex 9M-MKI	G-POWM	ex 4R-ABJ
G-CIOI	ex LN-OPB	G-RGBY	ex N93CW
G-CIRA	ex I-SRHA	G-SARP	ex CS-ARP
G-CLPB	ex SP-3823	G-SASN	ex D-HCBW
G-DCHG	ex BGA1551	G-SHWN	ex N167F
G-DFOV	ex BGA3450	G-TCDH	ex D-AVZZ
G-DHMM	ex G-BEJV	G-VINI	ex LN-OEE
G-ECNX	ex D-ECNX	G-XRTV	ex G-OWAY
G-EMHD	ex G-STGR	EI-FGX	ex N54AU
G-ERJR	ex M-DBOY	EI-FIE	ex N1796B
G-ETXN	ex D-EAXN	EI-FSB	ex F-WXAK
G-EXLC	ex D-EXAF	M-ALSH	ex A6-MHA
G-EZEN	ex HB-JZI	M-CSMS	ex D-CSMS
G-EZIF	ex HB-JZQ	M-DMBP	ex PR-RNF
G-EZOD	ex D-AXAX	M-HPIN	ex PR-PEZ
G-EZOE	ex D-AXAY	M-MAEE	ex N422GA
G-EZOF	ex D-AVVC	M-PLUS	ex N613GD
G-EZOG	ex D-AVVF	M-ROIL	ex N415VF
G-FDZD	ex C-FITZD	M-SAAJ	ex M-SAAJ
G-GCWS	ex SE-CWS	2-ABBX	ex D-ABBX
G-GORA	ex F-GORA	2-ABBY	ex D-ABBY
G-GORD	ex G-JSMH	2-TBXA	ex B-5031
G-HANC	ex G-CHIS	2-TBXB	ex B-5032
G-HOTY	ex M-CRCR		

CANCELLATIONS

REG'N	TYPE	C/N	REASON
G-AIZY	Auster J/1 Autocrat	2233	Cancelled by CAA (CofA expired 20.9.78. Last known of dumped outside at Tenchard Farm, Eggesford, Devon 10.13)
G-ASOX	Cessna 205A	205-0556	To Hungary
G-ATSY	Wassmer WA41 Super Baladou IV	117	Cancelled as Permanently WFU (CofA expired 23.11.91. Last reported stored, dismantled, at Rufforth, North Yorkshire 9.14)
G-AXCM	SOCATA MS880B Rallye Club	1322	Cancelled as Permanently WFU (CofA expired 20.12.14. Last noted at Bidford, Worcestershire 5.13)
G-BEJV	Piper PA-34-200T Seneca II	34-7770062	Re-registered as G-DHMM
G-BGAG	Reims Cessna F172N	1754	To Mali
G-BHSS	Pitts S-1S Special	C1461M	Cancelled as Permanently WFU (Permit to Fly expired 4.3.12. Was based in Germany)
G-BNSV	Cessna 152	15284531	To Hungary
G-BRFL	Piper PA-38-112 Tomahawk	38-79A0431	Cancelled by CAA (CofA expired 25.6.11. Parted out for spares at Perth, Perth & Kinross 12.11)
G-BUPI	Cameron V-77	1778	Cancelled as Permanently WFU (CofA expired 6.9.11)
G-BVMU	Aerostar Yakovlev Yak-52	9411809	To Norway as LN-AIA
G-BWIV	Sky 180-24	008	Cancelled by CAA (CofA expired 21.4.09)
G-BWXI	Slingsby T67M-260 Firefly	2244	To USA
G-BYYU	OGMA DHC-1 Chipmunk 22	50	To Poland as SP-YAC
G-CEMG	UltraMagic M-105	105/153	Cancelled as Permanently WFU (but restored again later in the month, based in Italy)
G-CFCH	Campbell Cricket Mk.4	93	Cancelled as Permanently WFU (no Permit to Fly issued, believed not completed)
G-CFDV	Sikorsky S-76C++	760666	To USA
G-CFHJ	Centrair 101 Pegase	101A0278	To Poland (crashed on landing at Kippeneck, Germany 9.6.14 and for sale)
G-CFZA	PZL-Bielsko SZD-51-1 Junior	B-1913	To Poland (hit trees on approach to Wycombe Air Park, Buckinghamshire 11.1.14 and for sale)
G-CGUZ	Cessna 525A CitationJet CJ2	525A0473	To USA as N473CJ
G-CHBP	Glaser-Dirks DG-500/22 Elan	5E36S8	To Germany
G-CHIS	Robinson R22 Beta	1740	Re-registered as G-HANC
G-CJHX	Bolkow Phoebus C	930	Cancelled as Permanently WFU (CofA expired 5.6.09. Last known of for sale at Wingland, Lincolnshire 7.13)



Cessna 680 Citation Sovereign G-XBLU was cancelled from the register and transferred to the US as N483TW on March 12.

AirTeamImages.com/Bill Blanchard

G-CJUS	Grob G102 Astir CS	1403	Cancelled as Destroyed (Crashed near Poynings, West Sussex 8.6.13)
G-CMXX	Robinson R44 Raven II	10661	To USA as N322TC
G-COWN	P & M Quik GTR	8619	Cancelled by CAA (Badly damaged in forced landing after a bird strike near Mallaig, Highlands 24.6.14)
G-DDAA	Robinson R44 Raven II	10105	To USA
G-DOME	Piper PA-28-161 Warrior III	2842062	To Sweden
G-DPEP	Aero AT-3 R100	AT3-027	To Kazakhstan
G-EHUP	Aérospatiale SA341G Gazelle 1	1407	To Serbia as YU-HWF
G-EOLX	Cessna 172N	17269099	To Romania
G-HCCL	Beech 200GT King Air 250	BY-142	To Switzerland as HB-GSB
G-IGWT	Bombardier Challenger 850	8078	To USA as N546JB (only restored two days earlier)
G-IMBL	Bell 407	53943	To Sweden as SE-JVE
G-JSMH	Robin DR401	2669	Re-registered as G-GORD
G-KPLG	Schempp-Hirth Ventus 2cxM	163/382	To Germany
G-MMHE	Mainair Gemini Sprint	229-184-2	Cancelled by CAA (Permit to Fly expired 27.5.98)
G-MNTE	Southdown Raven X	SN2232/0151	Cancelled as Permanently WFU (Permit to Fly expired 27.6.04)
G-MOSS	Beech D55 Baron	TE-548	Cancelled by CAA (CofA expired 12.10.13, was based in Portugal)
G-MWOY	Solar Wings Pegasus XL-Q	SW-WQ-0414	Cancelled as Permanently WFU (Permit to Fly expired 6.6.09)
G-MWZD	Solar Wings Pegasus Quasar IITC	SW-WQT-0494	Cancelled by CAA (Permit to Fly expired 16.4.12)
G-MZGS	CFM Shadow Series DD	K284	To France
G-OFTC	AgustaWestland A109E Power	11043	Re-registered as G-POTR
G-OLUG	Cameron Z-120	10349	Cancelled as Permanently WFU (CofA expired 31.5.11)
G-OOUK	Cirrus SR22	1463	Cancelled by CAA (CofA expired 6.10.13, Last known of stored at Turweston 1.15)
G-OWAY	Bombardier Challenger 601-3A	5085	Re-registered as G-XRTV
G-OZBP	Airbus A321-231	1433	To Greece as SX-DGT
G-ROWN	Beech 200 King Air	BB-684	To USA as N130Z
G-SKYJ	Cameron Z-315	10964	To Spain
G-STGR	AgustaWestland A109S Grand	22027	Re-registered as G-EMHD
G-THLA	Robinson R22 Beta II	3462	Cancelled as Destroyed (crashed at Stargate Lane, Brookland, near Brenzett, Kent 13.2.15)
G-VIKS	Maule MT-7-235 Super Rocket	18087C	To Krygyzstan
G-VSSH	Airbus A340-642	615	To Iraq
G-XBLU	Cessna 680 Citation Sovereign	680-0143	To USA as N483TW
G-YKYK	Aerostar Yakovlev Yak-52	9812106	To Lithuania
EI-CWU	Airbus A320-214	1439	To Spain as EC-MEG
EI-CWV	Airbus A320-214	1450	To Spain as EC-MEH
EI-DSR	Airbus A320-216	3502	To Germany as D-ABZC
EI-ERF	Boeing 757-256	26254	To Iceland as TF-FIK
EI-EZS	Airbus A320-232	1823	To Latvia as YL-LCP
EI-OZJ	Airbus A300B4-622R(F)	770	To Hong Kong Special Administrative Region of the People's Republic of China as B-LDN
M-ABIM	Airbus A320-232	2359	To Greece as SX-DGU
M-CRCR	Bombardier Challenger 604	5443	To United Kingdom as G-HOTY
M-DBOY	AgustaWestland A109C	7622	To United Kingdom as G-ERJR
M-EMBC	Embraer ERJ 145LR	14500815	To Bermuda
M-SAJJ	Gulfstream G550	5301	Re-registered as M-SAAJ
M-SPOZ	Raytheon Premier 1A	RB-286	To USA as N480RE
2-PAEK	Airbus A320-214	1439	To Republic of Ireland as EI-CWU
2-PAEL	Airbus A320-214	1450	To Republic of Ireland as EI-CWV
2-TBXA	Boeing 737-79P	28255	To USA as N7827A
2-TBXB	Boeing 737-79P	30035	To USA as N7826B

Key: NB – Nominal Base

A place name in brackets relates to the owner's address as where the aircraft is based is unknown.

BATTLE FOR BRITAIN

SPECIAL EDITION



Seventy-five years ago Reichsmarschall Hermann Göring launched the might of the Germany's Luftwaffe against Great Britain. The latest edition of the very popular *Luftwaffe Eagles* special publications focuses on the exploits of the fighter and bomber crews and the wider air war. Prepared by the renowned editorial team that brings you Britain's top-selling aviation monthly, *FlyPast*, this is a highly collectable 100-page tribute to a formidable air force in this special anniversary year

FEATURES INCLUDE:

DESTROYING A MYTH

Andrew Thomas on how Herman Göring's concept of the heavy fighter was crushed during the Battle of Britain.

ON THE RUN

Graham Pitchfork describes three of the first 'Home Runners', evading the enemy to return to the fight.

HIGH COMMAND

Much has been written about the RAF's commanders in the Battle of Britain, but what about their Luftwaffe counterparts? Chris Goss examines their careers.

RICHTHOFEN KAMERADEN

We profile the fortunes of Battle of Britain pilots of the elite JG 2 – the Richthofengeschwader.

AND MUCH MORE!

JUST
£5.99*



Available now from **WHSmith** and all other leading newsagents
ALTERNATIVELY, ORDER DIRECT

JUST £5.99 FREE P&P*

*Free 2nd class P&P on all UK & BFPO orders. Overseas charges apply.

Free P&P* when you order online at
www.keypublishing.com/shop



Call UK: 01780 480404
Overseas: +44 1780 480404

Monday to Friday 9am - 5:30pm

SUBSCRIBERS CALL FOR YOUR £1.00 DISCOUNT!

HEINKEL He 111

THE LUFTWAFFE'S WORKHORSE

Chris Goss examines the long, varied and remarkable career of the Heinkel He 111.



Probably the most distinctive German bomber of World War Two was the Heinkel He 111. A pre-war civilian aircraft, it then served from the first to the last days of the war on all fronts in bomber, reconnaissance, training, test and evaluation, torpedo and transport roles. It was even used as a launch platform for the V1 flying bomb.

EARLY DEVELOPMENT

The Treaty of Versailles, which formally ended World War One, placed severe restrictions on German aircraft (particularly military aircraft) development and manufacturing. The future for German aircraft designers and manufacturers looked bleak. In 1922, Ernst Heinkel, who had previously worked for the LVG, Albatros, Hansa-Brandenburg and Caspar-Werke aircraft companies, formed the Heinkel-Flugzeugwerke company

at Warnemünde on the edge of the Baltic. Customers were initially hard to come by but he obtained contracts with Sweden and Japan. The rise of Adolf Hitler and the Nazi Party (Heinkel was a Party member) meant the time soon became right for the company to develop new aircraft.

In the early 1930s, Heinkel announced the company's intention to produce a passenger aircraft. Design and development was controlled by Siegfried and Walter Günter. The first aircraft was the single-engine, four-passenger, He 70 which could reach speeds of 230mph (390km/h). The He 70 then spawned what essentially was a twin-engined version of itself. When the Dornier 17 proved a better and faster passenger aircraft than the He 70, Heinkel put considerable effort into development of the He 111.

The He 111 first flew on February 24, 1935.

It was powered by BMW VI liquid-cooled engines which were poor compared to the Junkers Jumo 205 used on the Junkers Ju 86, considered by many to be the He 111's serious competitor. Re-engining the He 111 with Daimler Benz DB600 engines gave it a considerable advantage over its rival and the He 111 became the favoured civilian, and quickly afterwards military, aircraft for pre-war Germany.

INTO PRODUCTION

The second production He 111 entered service with Deutsche Luft Hansa in 1936, initially designated the He 111 C. The upgraded version would be the He 111 G which had a number of improvements including wing modifications and a series of different engines. By 1937, a total of 12 He 111 Cs and Gs were in service with Luft Hansa. Attention now switched entirely to military usage.

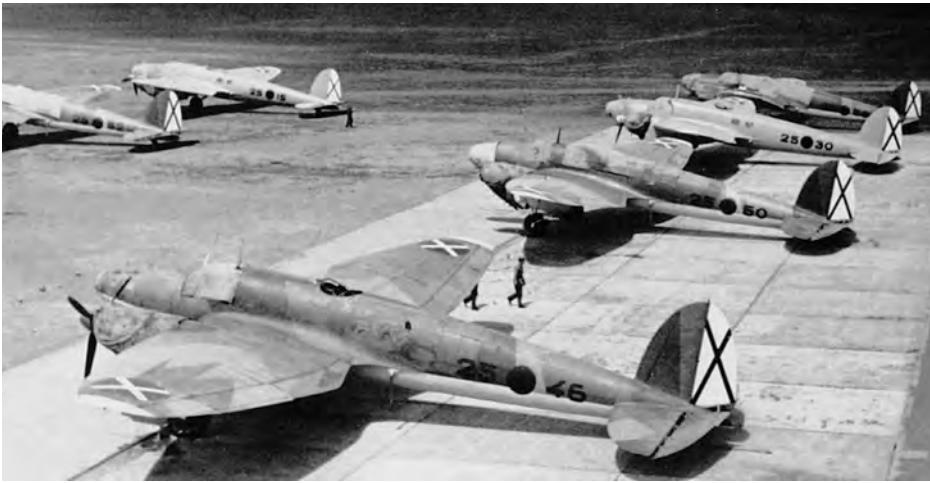
The first military version was the He 111 A which had a machine gun in the nose, another on the upper fuselage and a retractable ventral 'dustbin' turret. Performance was seriously reduced once bombs were loaded. As a result, the He 111 B was produced, powered by DB600 engines. It also featured minor changes to the nose and ventral gun positions. This appealed to the Luftwaffe which placed orders for 300 B-1s, the first of which was completed in January 1937. Heinkel was unable to meet demand which resulted in Arado, Dornier and Junkers being used as sub-contractors, ironically all of them competitors of Heinkel.

The next development was the He 111 E powered by Jumo 211 engines which was produced in time to serve with the Legion Condor in Spain in 1938. Later sub-variants saw external bomb racks fitted, modified internal bomb racks and an increased fuel capacity. The F series also used Jumo

Above: **Heinkel He 111 H-3, 1T+AB, of KG 28. The Luftwaffe used He 111s in different roles including torpedo bomber, balloon cutter, glider tug and V1 launcher.** EN-Archive

Below: **The second prototype, He 111 V2, D-ALIX Rostock, with He 111 C D-AXAV Köln flying overhead.** Chris Goss Collection





Above: Six He 111s lined up at Léon airfield in May 1939 shortly before the Legion Condor departed from Spain. The aircraft demonstrate the variations in camouflage schemes carried by the Heinkels of the Legion – from overall early sandy grey to a four-colour splinter pattern. EN-Archive

Below: In October 1942, the unarmed He 111 H, RN+EE, of the DFS at Ainring was involved in rigid-towing take-off trials as part of overall trials for Mistel composite combinations. It is towing the DFS 230 glider, CB+ZB. The tail cone of the He 111 has been removed to accommodate the towing coupling. EN-Archive

211 engines and saw minor design changes. After this Heinkel developed the He 111 J which was intended as a maritime bomber. Most Js ended up as trainers because of disagreements between the Luftwaffe and Kriegsmarine as to who 'owned' maritime combat aircraft and how they would be operated.

WAR

The more well known He 111 without the stepped cockpit of the earlier versions was the He 111 P which first flew in January 1938. The new glazed nose, updated DB601 engines, additional defensive armament, armour plating, external bomb racks and more aerodynamic dorsal and ventral gun positions were the main changes. The He 111 P was widely used in Poland, Norway, the Battle of France and Battle of Britain but quickly proved vulnerable to modern fighters. This resulted in four additional machine guns being installed on the He 111 P-4 sub-variant. However, at this stage of the war the Luftwaffe now needed DB601 engines for its fighters which resulted in the He 111 P being re-engined with Jumo 211 engines. It was re-designated the He 111 H, all but identical to the P-4 apart from the

engines. The He 111 H would be the ultimate He 111 variant, serving in various guises until the end of the war. The different versions were numbered H-1 to H-23 but skipping H-13, H-17 and H-19. In addition to standard bomber roles, these included torpedo bomber (H-6), balloon cutter (H-8 to H-10), glider tug (H-11/R2, H-16/R2), glider bomb carrier

“The He 111 H would be the ultimate He 111 variant, serving in various guises until the end of the war.”

(H-12), Blohm & Voss BV 246 glide bomb launch pad (H-15), pathfinder (H-16/R2, H-18), paratrooper carrier (H-20/R1), cargo carrier and glider tug (H-20/R2) and V1 launcher (H-22).

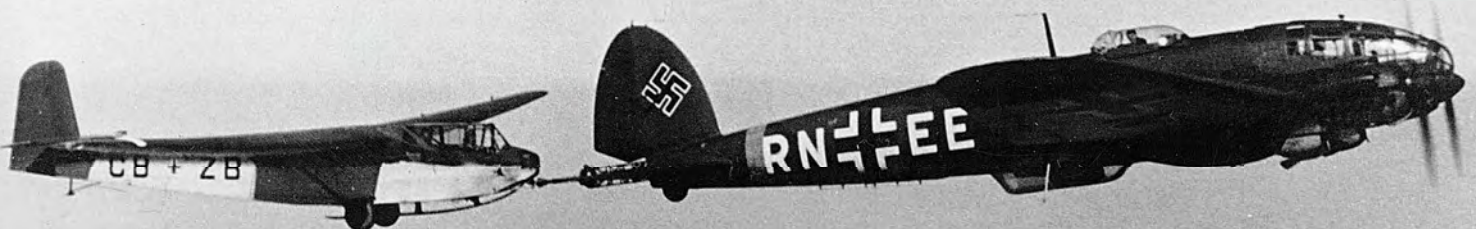
The arrival of the more modern and faster Junkers Ju 88 saw a number of He 111 units, such as Kampfgeschwader 51 (KG 51), being

re-equipped with the Ju 88 by the summer of 1940. The increase in the He 111's defensive armament also necessitated adding a gunner to its normal crew of a pilot, observer, radio operator and flight engineer (the latter three also acting as gunners). The Luftwaffe's failure in the Battle of Britain resulted in daylight operations being replaced by increased night missions which involved the He 111. The type also served on these night missions as a pathfinder using the X and Y Verfahren blind bombing aids against British mainland targets.

In June 1941, the majority of the Luftwaffe moved eastwards to attack the Soviet Union while, at the same time, more German air assets were needed in the Mediterranean. The He 111 became a very rare visitor to the skies over Britain and it was used more in the anti-shipping role, especially in the Mediterranean. The development of the torpedo role was given to 1 Staffel/ Kampfgruppe 126 (later redesignated 1/KG 28).

In November 1940, three crews, commanded by Oberleutnants Helmut Lorenz, Josef Saumweber and Friedrich Müller, began experimental torpedo missions in the seas around Great Britain flying from Nantes in western France. Their first mission was stated as being November 9, 1940 during which the He 111 H-4 'Luft Torpedo Flugzeug', as it was called and flown by Lorenz, was shot down by a Bristol Blenheim of 236 Sqn. The He 111 H-6 continued to be used in the maritime reconnaissance and attack task over the Bay of Biscay, before being replaced by the Focke Wulf 200 and Dornier 217. The torpedo-equipped He 111s, the mission now taken on by 11/KG 26, would have more success in the Mediterranean.

Over Russia, it was soon discovered the He 111's restricted range and bomb load – the He 111 H-6 had a range of just under 1,500 miles (2,414km) and a bomb load just under 4,500lb (2,041kg) – prevented it from being a true strategic or long-range bomber capable of reaching targets well inside the Soviet Union. Its replacement, the He 177, was plagued by development problems and despite He 177 flying its initial missions at the end of 1943, the He 111 had to soldier on; the last production month for the He 111 was September 1944. By then the German bomber force was a





Above: A pair of He 111 J-1s of 5/KG 253, finished in standard splinter pattern, airborne from Erfurt in 1938. EN-Archive

shadow of its former self and Germany was concentrating more on fighter aircraft for defence.

OPERATIONAL HISTORY

A good illustration of how the He 111 was used throughout the war is through the career of NCO Observer Josef Schmauz. He joined 6/KG 53 in France at the end of 1940 and flew night bombing missions over Britain before moving to the Russian front in June 1941. On June 29, 1941 while flying a daylight bombing raid in an He 111 H-4, he and his crew were shot down by Russian fighters and crashed behind enemy lines. All survived the crash without injury but only Schmauz and one other crewman escaped. The other three, although

they surrendered, were never seen again. With a new pilot, Schmauz continued to fly missions over Russia. On January 20, 1943 he was flying resupply missions into Gumrak in support of German troops surrounded at Stalingrad when his He 111 H-6 had its fuselage severed by artillery. He and his crew were lucky to get out once more. Then, on July 31, 1943, their He 111 H-16 was shot down by flak and all baled out successfully. Schmauz returned to Germany to be an instructor before returning to operational flying in 1944. After D-Day in June 1944, his unit was flying resupply missions from Rouvres in France with the He 111 H-20. On August 28, 1944 they were recalled to Germany where they would undertake training to fly missions

launching the V1 flying bomb. They were bounced by American fighters – seven He 111 H-20s, all of which were carrying ground crew, were shot down – 34 were killed and 22, including Schmauz, wounded.

By mid-July 1944, the Allied advance began to overrun V1 launch sites so the Luftwaffe began night launches under slung from He 111s in an attempt to continue what was known as Operation Rumpelkammer (Junk Room), the V1 assault on the UK. Initial operations were flown by III/KG 3 from Venlo in the Netherlands, launching 300 V1s at London, a further 90 at Southampton and about 20 at Gloucester by the end of August 1944. After a lull while III/KG 3 transferred from Venlo to bases in Schleswig-Holstein in northwest Germany, where they would join and later be subsumed into KG 53, operations resumed on September 16, 1944. Sporadic attacks were made on most nights up to the end of the month with a total of 177 missiles despatched, predominantly against London. This increased to 282 in October and 316 in November 1944 by which time Leeds and Manchester were targets. The hazardous nature of the operations took a heavy toll on KG 53 with 17 aircraft lost either to RAF night fighters, accidents or even the V1s detonating prematurely after take-off. These air-launch operations finally ended on January 14, 1945 by which stage KG 53 had lost another 12 He 111s made up of H-16s and H-20s. The He 111 would now be used purely in the



Above: An unidentified He 111, believed to be an E-6 model. Chris Goss Collection



Above: Groundcrew load practice torpedoes onto an He 111 H-4. Chris Goss Collection

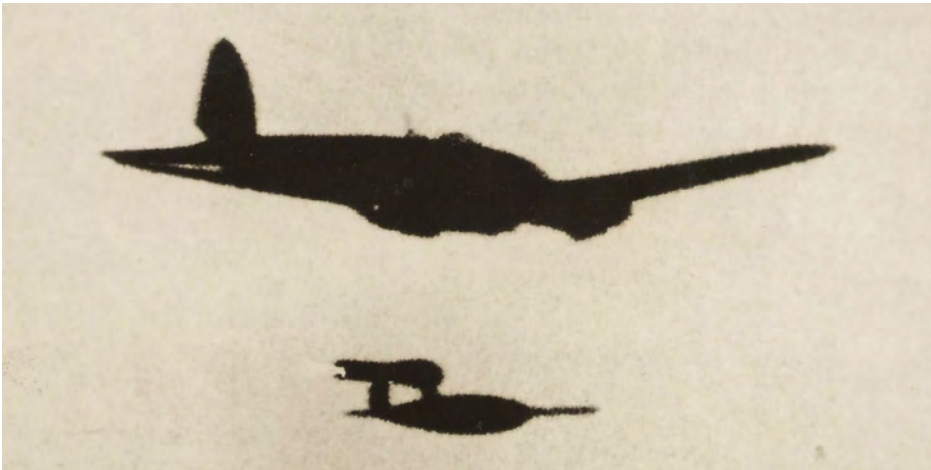
Below: An He 111 Z-1 of GS-Kommando 2 in the Crimea in early 1943. The aircraft was used to tow the Me 321 Gigant glider. EN-Archive





Above: **This He 111 H-8, Werk Nummer 3944 coded 1G+ZM of 4/KG 27, crash-landed at Lulworth, Dorset on May 22, 1941. The Kuto-Nase barrage balloon cable cutter was of particular interest to the RAF.** Chris Goss Collection

Below: **A V1 being launched from an He 111 H-16.** Chris Goss Collection



transport role but most would be grounded due to lack of fuel, spares and crews. Operations were also difficult to mount due to overwhelming Allied air superiority.

CURIOUS TWIN

There was one further version of the He 111 – the He 111 Z or Zwilling (Twin). The joining of two He 111 H-6 fuselages and the fitting of five engines allowed this curious aircraft to tow the massive Messerschmitt Me 321

Gigant glider. Putting engines on the glider resulted in the Me 323 and no need for a tug to get it airborne. It is believed ten Zwillings were produced but were used for towing the more normal Gotha Go 242 and on transport missions. Most were lost in accidents or during attacks on airfields but one, Werk Nummer 2704 from 4/Luftlandegeschwader 2, together with the two Go 242s it was towing, was shot down by a Mosquito of 418 Sqn near Tavaux airfield in France on February

26, 1944. The successful Canadian pilot, on seeing the twin fuselage, even considered filing a claim for two He 111s.

There was an intention to use the He 111 Z-2 as a launch platform for the Henschel Hs 293 glide bomb and the He 111 Z-3 as a strategic reconnaissance aircraft but these were never pursued.

EXPORT

Pre-war, He 111 F-1s and G-1s were bought by the Turkish Air Force and another 12 He 111 As were procured by the Chinese. At the end of the Spanish Civil War, Spain kept a number of the older variants formerly used by the Legion Condor. During the war, Germany's allies Bulgaria, Hungary, Romania and Slovakia operated a number of He 111s and some were used in civilian roles after the war. From 1945 to 1956, the Spanish aircraft manufacturer Construcciones Aeronáuticas SA produced the CASA 2.111. To say it was identical to the He 111 is incorrect but it did share the same airframe in appearance and the earlier aircraft did have Jumo 211 engines although it was more common for them to be powered by Rolls-Royce Merlins. The company produced 236 and the aircraft was withdrawn from service in 1973 but not before having been used with great success in the epic film *Battle of Britain*.

SURVIVORS

A total of just over 6,500 He 111s were built between 1935 and 1944 but only four genuine examples exist – an He 111 E-3 in the Museo del Aire in Madrid, an He 111 H-2 in the Deutsches Technikmuseum in Berlin, an He 111 P-1 in the Norwegian Air Force Museum at Oslo Gardemoen and an He 111 H-20 in the RAF Museum London at Hendon. A cockpit section of an He 111 H-6 is known to exist in Sweden. There are also about 14 CASA 2.111s that exist around the world either in storage, on display or being renovated. **AN**

The next issue will be on sale on June 18, 2015*

*UK scheduled on sale date. Please note that the overseas deliveries are likely to be after this date.



June 2015
Volume 77 No 6.

Founded in 1939 as Air
Defence
Cadet Corps Gazette.

EDITOR: Dino Carrara
E-mail: dino.carrara@keypublishing.com

ASSISTANT EDITOR: James Ronayne
E-mail: james.ronayne@keypublishing.com

General enquiries to:
Vanessa Smith,
Aviation News incorporating Classic Aircraft,
PO Box 100, Stamford, Lincs, PE9 1XQ, UK
Tel: +44 (0)1780 755131
Fax: +44 (0)1780 757261
www.aviation-news.co.uk

DESIGN: Froggatt Designs

COVER DESIGN: Tracey Mumby

PRODUCTION MANAGER:
Janet Watkins

ADVERTISING AND COMMERCIAL:
Commercial Director: Ann Saundry

Advertisement Manager:
Andrew Mason
E-mail: andrew.mason@keypublishing.com

Advertising Production Manager:
Debi McGowan

Advertising Production Controller:
Cheryl Thornburn
E-mail: cheryl.thornburn@keypublishing.com

Group Marketing Manager: Martin Steele

MANAGING DIRECTOR and PUBLISHER:
Adrian Cox

EXECUTIVE CHAIRMAN:
Richard Cox

SUBSCRIPTIONS / MAIL ORDER:
See the subscriptions advertisement in this issue for details of current offer rates. Copies can also be obtained by placing a standing order with your newsagent.

Contacts: PO Box 300, Stamford, Lincs, PE9 1BR, UK.
Tel: +44 (0)1780 480404. Fax: +44 (0)1780 757812.
E-mail: Subscriptions: subs@keypublishing.com.
E-mail: Mail Order: orders@keypublishing.com.
www.keypublishing.com/shop

Readers in the USA can place subscriptions by visiting www.aviation-news.co.uk or by calling toll free 800 676 4049 or fax 757 428 6253 or by writing to Aviation News incorporating Classic Aircraft, 3330 Pacific Ave, Ste 500, Virginia Beach, VA, 23451-9828.

Aviation News incorporating Classic Aircraft (ISSN: 2047-7198), is published monthly by Key Publishing Ltd, PO Box 100, Stamford, Lincs, PE9 1XQ, UK and distributed in the USA by Mail Right Int., 1637 Stelton Road B4, Piscataway, NJ 08854.

Periodicals Postage Paid at Piscataway, NJ and additional mailing offices

POSTMASTER: Send address changes to: Aviation News incorporating Classic Aircraft, Key Publishing Ltd C/o Mail Right International Inc. 1637 Stelton Road B4, Piscataway NJ 08854

DISTRIBUTED BY: Seymour Distribution Ltd, 2 Poultry Avenue, London, EC1A 9PP, UK. Tel: +44 (0)20 7429 4000 Fax: +44 (0)20 7429 4001

PRINTED BY: Warner's (Midland) plc, The Maltings, Bourne, Lincs. PE10 9PH

KEY PUBLISHED MONTHLY BY: Key Publishing Ltd, address as Editorial. Printed in England ISSN 2047-7198

The Editorial team is always happy to receive correspondence. It is all read and appreciated, but we cannot always guarantee a reply. While every care is taken with material, the Publisher cannot be held responsible for any loss or damage incurred. All items submitted for publication are subject to our terms and conditions. These are regularly updated without prior notice and are freely available from Key Publishing Ltd or downloadable from www.keypublishing.com. We are unable to guarantee the bona fides of any of our advertisers. Readers are strongly recommended to take their own precautions before parting with any information or item of value, including, but not limited to, money, manuscripts, photographs or personal information in response to any advertisements within this publication. The entire contents of Aviation News incorporating Classic Aircraft is © Copyright 2014. No part of it can be reproduced in any form or stored on any form of retrieval system without the prior permission of the publisher.

Note to contributors: Please note that images published on the Air Forces Daily website do not attract a fee, though they will be credited appropriately. If such images are also published in our printed titles, they will be paid at the appropriate usual rate.

Seldec Publishing
27 Chichester Avenue
Kidderminster
Worcestershire
DY11 5JA
Telephone: 01562 746620

www.seldec.com

E-mail: seldec@aol.com

SELDEC
PUBLISHING
Est. 1993



**"THE UK, NORTHERN IRELAND & IRELAND FLIGHT ROUTES"
NEW 2015 EDITION.**

Lists over 10000 of flights which originate & arrive at UK/NI/ROI airports. Lists airport of origin & destination with aircraft type, days of operation. **Not** a timetable although guide times are shown as certain flights with the identical flight numbers arrive & depart at different times on different days. Approx. 200 pages A5 Wire bound.

Price £16.95 p&p £2.75 UK



**"THE DIRECTORY OF AIRLINE CODES AND CALLSIGNS"
NEW 2015 EDITION.**

OVER 350 changes since the last edition! The book lists around 2250 airline companies including scheduled, charter & cargo, by name, call sign, two and three letter codes and country of origin in four separate sections.

The 216 pages are A5 format, Wire bound with colour cover. £16.95 P&P £2.75 UK



**"NORTH & SOUTH ATLANTIC FLIGHT ROUTES 12"
NEW 2015 EDITION.**

Lists thousands of flights which cross the Atlantic Oceans. Lists airport of origin & destination with aircraft type & days of operation. Hundreds of Cargo flights are included.

This is not a timetable.

200 pages A5 Format Wire Bound £16.95 P&P £2.75 UK

More titles on our web site: www.aviationbooksonline.co.uk For Clocks see www.time4clocks.co.uk



Price £95.00 including 20% VAT

The RAF Sector Clock played a vital role in the defence of Britain during World War II .

Our unique and handsome reproduction clocks are handmade in England and are based on the original style. They have a real brass bezel with glass, and are complete with a back box (so the dial sits off the wall by some 2 1/2"). The base is lacquered with a rich dark mahogany finish and the clocks are fitted with a quality quartz movement and have spade style hands as did the original clocks. These are substantial wall clocks, weighing 1.4kg (3 lbs) and measuring approximately 291mm in diameter (11.5") and 80mm deep (3"), including the back box. The clocks are supplied with a brass hangar and the required battery.



Carriage UK £12.00

You may order by Telephone: 01562 746620

Or by post to address at top, E-mail: seldec@aol.com or via website

www.aviationbooksonline.co.uk www.ships-clocks.co.uk

Payment by Visa & Mastercard Credit Cards, Cheque or PayPal.

BOEING 787

Aeromexico

Ordered: 9 x 787-8 & 6 x 787-9
First Delivery: 787-8 – August 2013



Azerbaijan Airlines

Ordered: 2 x 787-8
First Delivery: December 2014



Air Canada

Ordered: 15 x 787-8 & 22 x 787-9
First Delivery: 787-8 – May 2014



British Airways

Ordered: 8 x 787-8, 22 x 787-9 & 12 x 787-10
First Delivery: 787-8 – June 2013



Air India

Ordered: 27 x 787-8
First Delivery: September 2012



China Southern Airlines

Ordered: 10 x 787-8
First Delivery: May 2013



Air New Zealand

Ordered: 12 x 787-9
First Delivery: June 2014



Ethiopian Airlines

Ordered: 10 x 787-8
First Delivery: August 2012



All Nippon Airways

Ordered: 36 x 787-8, 44 x 787-9 & 3 x 787-10
First Delivery: 787-8 – September 2011 & 787-9 – July 2014



Etihad Airways

Ordered: 41 x 787-9 & 30 x 787-10
First Delivery: 787-9 – December 2014



American Airlines

Ordered: 21 x 787-8 & 21 x 787-9
First Delivery: 787-8 – January 2015



Hainan Airlines

Ordered: 10 x 787-8
First Delivery: July 2013



Arke

Ordered: 3 x 787-8
First Delivery: June 2014



Japan Airlines

Ordered: 25 x 787-8 & 20 x 787-9
First Delivery: 787-8 – March 2012



Avianca

Ordered: 15 x 787-8
First Delivery: December 2014



Jetairfly

Ordered: 1 x 787-8
First Delivery: December 2013



FUTURE CUSTOMERS

Aeroflot – Russian Airlines

Ordered: 22 x 787-8



Air Astana

Ordered: 3 x 787-8



Air China

Ordered: 15 x 787-9



Air Europa

Ordered: 8 x 787-8 & 14 x 787-9



Air France

Ordered: 16 x 787-9



Gulf Air

Ordered: 16 x 787-8



Icelandair

Ordered: 1 x 787-8



Iraqi Airways

Ordered: 10 x 787-8



Jet Airways

Ordered: 10 x 787-9



KLM Royal Dutch Airlines

Ordered: 21 x 787-9



Korean Air

Ordered: 1 x 787-8 & 10 x 787-9



DREAMLINER

Jetstar Airways

Ordered: 14 x 787-8
First Delivery: September 2013



Royal Jordanian Airlines

Ordered: 7 x 787-8
First Delivery: August 2014



Kenya Airways

Ordered: 9 x 787-8
First Delivery: March 2014



Scot

Ordered: 10 x 787-8 & 10 x 787-9
First Delivery: 787-9 – January 2015



LAN Airlines

Ordered: 22 x 787-8 & 10 x 787-9
First Delivery: 787-8 – August 2012 & 787-9 – February 2015



Thai Airways International

Ordered: 6 x 787-8 & 2 x 787-9
First Delivery: 787-8 – July 2014



LOT Polish Airlines

Ordered: 8 x 787-8
First Delivery: November 2012



Thomson Airways

Ordered: 11 x 787-8
First Delivery: May 2013



Norwegian

Ordered: 8 x 787-8 & 6 x 787-9
First Delivery: 787-8 – June 2013



United Airlines

Ordered: 12 x 787-8, 26 x 787-9 & 27 x 787-10*
First Delivery: 787-8 – September 2012 & 787-9 – September 2014



Qatar Airways

Ordered: 30 x 787-8
First Delivery: October 2012



Virgin Atlantic Airways

Ordered: 20 x 787-9
First Delivery: October 2014



Royal Air Maroc

Ordered: 5 x 787-8
First Delivery: December 2014



Xiamen Airlines

Ordered: 6 x 787-8
First Delivery: August 2014



Royal Brunei Airlines

Ordered: 5 x 787-8
First Delivery: October 2013



Air Niugini

Ordered: 1 x 787-8



Air Tahiti Nui

Ordered: 2 x 787-9



Arik Air

Ordered: 7 x 787-9



Arkia Israeli Airlines

Ordered: 4 x 787-9



Biman Bangladesh Airlines

Ordered: 4 x 787-8



Delta Air Lines

Ordered: 18 x 787-8



Oman Air

Ordered: 6 x 787-8



PrivatAir

Ordered: 2 x 787-8



Saudi Arabian Airlines

Ordered: 8 x 787-9



Singapore Airlines

Ordered: 30 x 787-10



Uzbekistan Airways

Ordered: 2 x 787-8



Vietnam Airlines

Ordered: 8 x 787-9



TOTAL PARTNERSHIP



www.eurofighter.com

BENCHMARKING EXCELLENCE

- **Effective:** being the most powerful and reliable swing role fighter
- **Proven:** in global operations with highest operational statistics
- **Trusted:** to deliver performance, political and industrial partnership



 **Eurofighter
Typhoon**

Effective Proven Trusted