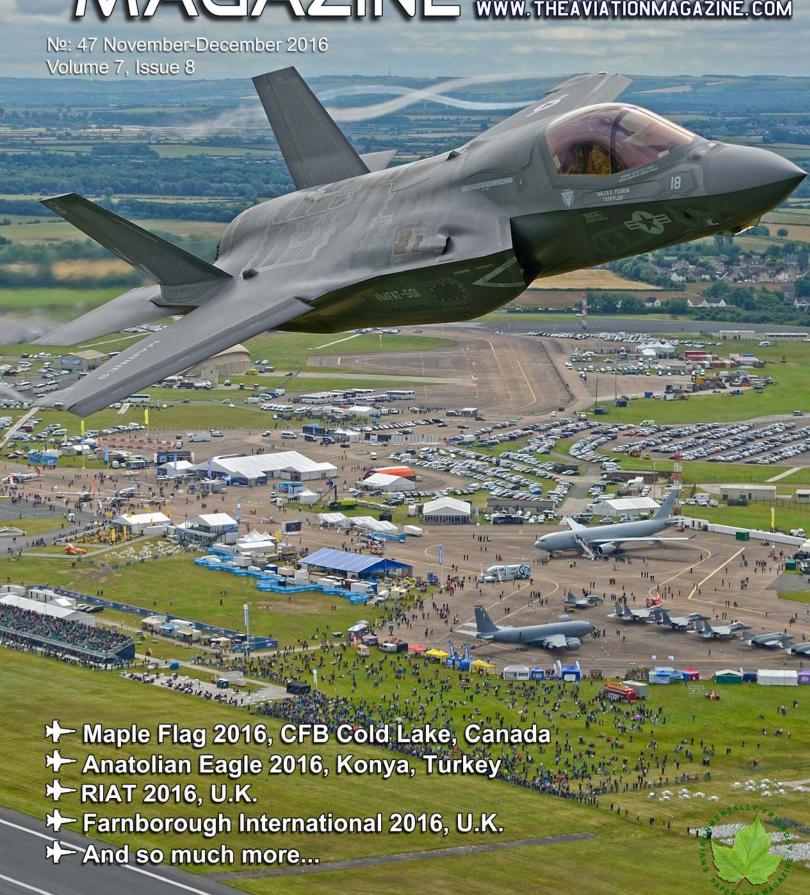
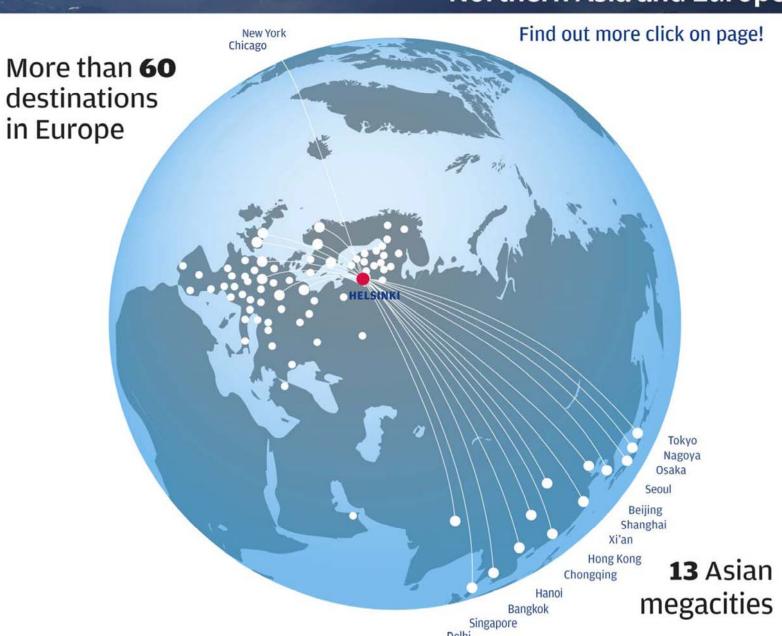
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# THE AVIATION MAGAZINE

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Cover: USMC F-35B over RIAT photo by Jamie Hunter
Index page: USAF F-22 Raptor at RIAT, photo by Wolfgang Jarisch







THE AVIATION MAGAZINE is published six times a year, by a Team of Volunteers interested in aviation. We are devoted to cover a wide range of aviation events ranging from air shows, air base visits, military exercises, civilian spotting, pilot and veteran interviews all with exceptional photography. THE AVIATION MAGAZINE is a leader in the emagazine format since 2009, bringing exclusive and fascinating reports to our global aviation enthusiasts digitally.

**Please note:** we do not accept any unsolicited articles or images for publication.

Interested in joining us? We have (3) Volunteer Team positions available. We are looking for a Far East contributor, preferably with good English communication skills, also for someone to cover the East and South-East portion of the USA, and for Marketing Person. If you are interested in becoming a contributor e-mail us with samples of your work:

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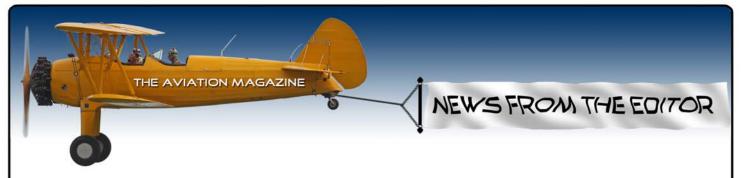
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Welcome to the 47th edition of **THE AVIATION MAGAZINE**. This is last issue for 2016, and it is packed with several military exercises and air shows from North America, Europe and Asia Minor.

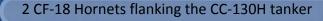
In our January-February issue we will continue cover additional air shows and events leftover from 2016, as usual. 2017 will be our 8th year. We look forward to bring you, our readers, the "Best for Free" <sup>®</sup> e-based aviation magazine as we take you to aviation events "As close as you can get without being at an air show!" <sup>®</sup> Tell all your friends to like us on Facebook, follow us for the latest reviews and news on Twitter and to subscribe on Joomag to automatically receive the latest issue of TIHE AVIATION MAGAZINE.

Be safe and arrive live: if you drink alcoholic beverages during the holidays do not drive or fly!



THE AVIATION MAGAZINE NOVEMBER-DECEMEBER 2016

THE AVIATION MAGAZINE № 47 🗧







MAPLE FLAG 2016 The Exercise was held at CFB Cold Lake, Alberta. Text by the Editor.

After 1,945 hours flown over the course of 1,137 sorties, 1,300 Canadian Armed Forces (CAF) personnel along with 400 members from partner nations concluded on June 24, 2016. Exercise MAPLE FLAG, the largest and most complex international training event of the year led by the Royal Canadian Air Force (RCAF). The exercise was successful in accomplishing the goal of preparing Canadian and international aircrew, maintenance, and support personnel for the rigours of operations in the modern aerial battlespace.

The exercise began on May 30, the aircraft which flew as part of the exercise included:

From Canada: (24) CF-18 Hornet fighters, (2) CH-146 Griffon helicopters, (1) CP-140 Auroras, (1) CC-177 Globemaster III heavy lift aircraft, (1) CC-130T Hercules air-to-air refuelling and (2) CC-130J Hercules transport aircraft, and contracted (6) Dornier Alpha Jets;

From the United States: (1) C-130 Hercules aircraft and (2) E-3 Sentry aircraft;

From France: (4) Mirage 2000-5 and (4) Rafale F3 fighter aircraft; and

From the United Kingdom: (1) E-3 Sentry aircraft.







Rafale F3 fighter aircraft of the Groupe de Chasse 01.091 "Gascognes" from Saint-Dizier-Robinson Air Base, France. The Fighter Squadron 01.091 "Gascognes" fly the highly advanced Dassault Rafale. The main mission of the unit is nuclear deterrence, and secondary missions can take various forms, including sovereign air defence and conventional attacks both day and night, in both air to air, and air to ground roles.





- RAF E-3 Sentry AEW1 from RAF Waddington, England, above
- CF-188C with 75th Anniversary scheme of the 410 Squadron, middle
- Discovery Air Defense Services' Dornier Alpha Jet, below.





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The Anatolian Eagle Training is conducted at the 3rd Main Jet Base at Konya. The city of Konya is located in the central region of Turkey, 1200m above sea level.

Konya is one of three Tactical Training Centers in the Western world, along with Nellis Air Force Base, home of Red Flag, in the USA and Canadian Forces Base Cold Lake, home of Maple Flag, in Canada. Turkey's Anatolian Eagle exercises have become a great opportunity for air forces from Europe and the Middle East to train together.

#### The Mission:

- Provide realistic operational training domain
- Enable fighters to execute their tactics
- Provide a platform to exchange ideas
- Keep fighters and GCI controllers current
- Teach how to survive

From the beginning of Anatolian Eagle in June 2001 until 2016, 14 countries along with NATO were invited and participated in these important exercises. Anatolian Eagle is intended to provide:

- Increase the operational training level of the pilots and air defence personnel in a most realistic operational environment,
- Exercise and develop joined and combined operational procedures,
- Decrease the losses to a minimum level and to increase mission effectiveness to a maximum level in real operation environment.

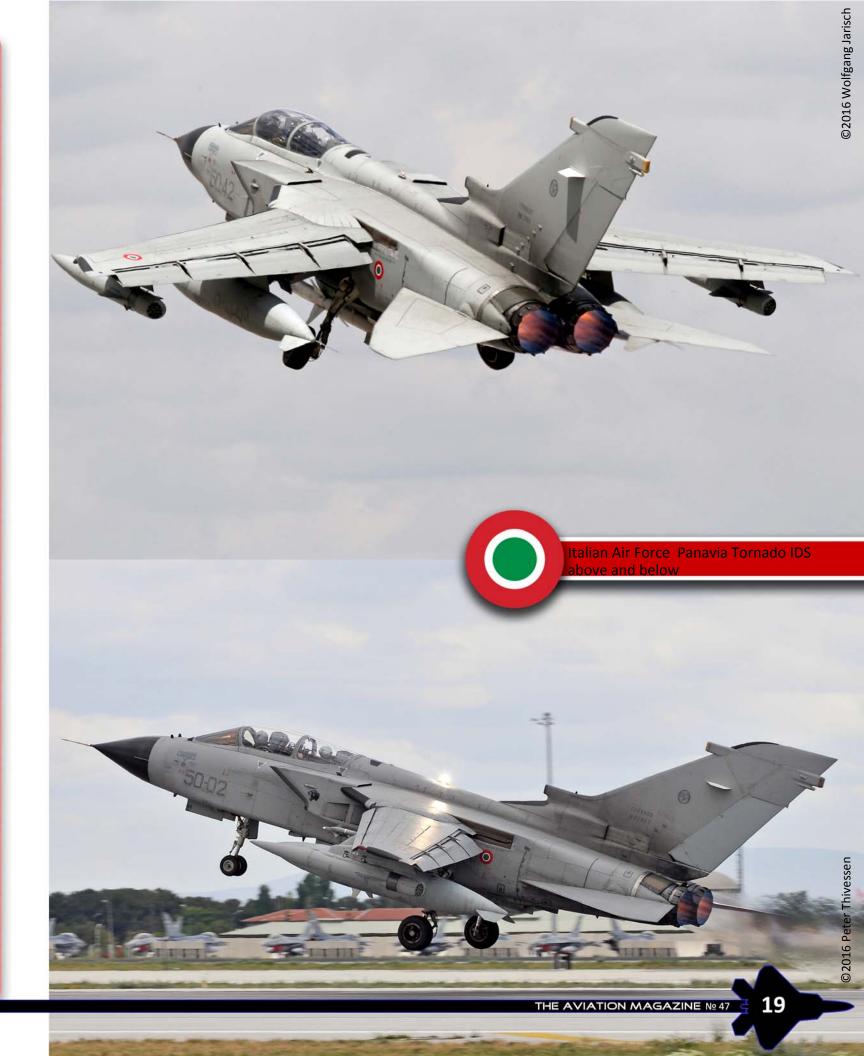
For Anatolian Eagle 16-2 the Operations Commander was Col. Mustafa Ertürk. 45 Turkish and 22 aircraft from allied nations were involved in this exercise. The elements of "Anatolian Eagle" were split in White HQ, Red and Blue Force. The White HQ did the operation for the training scenarios, monitoring and commanding, evaluating and analyzing the training. The Red Force was the training aid for the Blue fighters. The Blue Force was the primary target audience.

The Turkish Air Force participated with 35 F-16's and with 6 Phantoms, one UH-1 Huey, one Casa 235 and one C-130H in the exercise. Responsible for air refuelling over the huge training area were the Turkish Air Force with a KC-135R and the Netherlands Air Force's KDC-10. The Pakistan Air Force were involved in Multi Role Mission's with 6 F-16's and the Royal Saudi Air Force with 8 Tornado's for SEAD (Suppression of Enemy Air Defences) Missions. Also involved in SEAD Missions were the Italian Air Force with 6 Tornados.

The Turkish Phantoms were responsible for SEAD Missions. We saw the Phantoms with different pods, like the Pave Strike Pod and EL-8222 ECM Pod and weapons, like the Maverick or the Popeye. Most of the Turkish F-16's flown in Multi Role Missions, except 3 F16's from Diyarbakir, which were involved in CSAR Missions. The two AS-532 and the one UH-1H were also divided their time for multi role missions. The reconnaissance part of the exercise has been done by two NATO E-3A AWACS and one Turkish EW-7T Peace Eagle, with broadcasted live stream videos to mission control center at Konya, where the officers in charge got a real time view about the whole training scenario.

Additional key element of "Anatolian Eagle" was the use of different ground threat systems such as the SA-6 "Gainful", SA-8 "Gecko", SA-11 A/B "Gadfly", ZSU-23-4 "Gundfish", Skyguard /Sparrow Hawk and MTS. These threat systems brought this exercise to a real life time scenario. The second time in history of Anatolian Eagle, the Turkish Navy was the present. The in conclusion of AE 16-2 was to simulate real combat environment, flight safety and high quality training.

The Aviation Magazine Media would like to express our thanks and appreciation to the Turkish Embassies in Germany and Austria, especially to the Anatolian Eagle Training Center, the headquarters of the Turkish Air Force in Ankara, Major Mesut Yurtdan, 1st Lt. Mehmet Aslan and all the personnel on the base who assisted us for their support and hospitality.





# Patrouille de France in Formation with Ramex Delta

#### XXL Air Show at Istres AB France

Report and photography by Ralf Peter Walter

The second of only three air shows (Meeting de l'Air) of the French Air Force in 2016 took place at Istres AB on June 4th and 5th. The event was a perfectly balanced mixture of jets, props and helicopters. Military aircraft still in active service along with some out of service for decades performed excellent flying displays. The capabilities of today's fighter jets were impressively demonstrated by solo demos of the heavy F-18C Hornet of the Swiss Air Force, the more agile F-16A of the Belgian Air Force, and the French Rafale. The Ramex Delta team could be seen in several displays during the day. With their two Mirage 2000N they joined the Patrouille de France in different formations, simulated an in-flight refuelling with a C-135FR and flew their breathtaking role demonstration. The phase-out of the Mirage 2000N in 2016 will mark the end of the Ramex Delta team.

No less impressive were the 1944 manufactured North American P-51D Mustang and Douglas AD-4N Skyraider built in 1951, both in perfect condition. Not as spectacular as the fighters but a highlight for aviation enthusiasts was the display of the last flying Nord N-2501F Noratlas of which a total of 425 were built between 1949 and 1961.

The helicopter part of the air show saw a SAR/SATER demonstration (French: SATER = SAuvetage TERre) performed by an Aerospatiale AS332L1 Super Puma of the Helicopter Squadron EH 01.044 from the Base Aérienne 126 Solenzara on Corsica. The flight performance and manoeuvrability of the medium-sized transport helicopter NH-90 Caiman was perfectly demonstrated by tight turns, steep climbs and even steeper dives. No less exciting was the display of an Eurocopter EC120B Calliopé from the company Helidax, providing flight training for student pilots and instructors from the various components of the French military.

No major air show without aerobatics. Well known performers such as the Patrouille de France with their nine Alpha Jets or the Extra 330SC of the "Equipe de Voltige de L'Armée de l'Air" and the Spanish air Force Patrulla ASPA with five EC120 Colibri helicopters displayed at Istres.

The air show was not only military. Rarely seen on public events, a Bombardier CL-415 and a Grumman S-2FT Tracker firefighting aircraft of the Sécurité Civile performed several flybys, dropping about 1600 gallons and 870 gallons of water in a simulated fire attack.

The static display was very varied. Unfortunately, taking photos of some of the most interesting aircraft - such as a B-1B Lancer, a Mirage 2000B or an Alenia Aermacchi M-346 - was almost impossible since they were closely cordoned off. However, on the evening before the show there was a chance to walk the flight line with plenty of photo opportunities.

Base Aérienne 125 Istres-Le Tubé is a major French Air Force base located northwest of Marseille in southern France. Its runway is 12.300 ft long with an overrun area of 3.900 ft, making it the longest runway in Europe and an alternate emergency landing site during Space Shuttle operations. Istres is home to the Strike Fighter Squadron EC 02.0004 La Fayette with Mirage 2000N and Rafale and the Air Refuelling Group GRV 02.091 Bretagne flying the C-135FR and KC-135FR Stratotanker.











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Eurocopter EC120-B

Ramex Delta

Airbus Helicopters NH90







#### DANISH AIRSHOW

REPORT AND PHOTOGRAPHY BY MAX ZAMMIT



We started with arrivals on Friday at the runway approach area. The Turkish Stars and Patruilla Aguila rehearsed twice in cloudy weather. Soon after the Ukrainians arrived with a spectacular low pass with their IL-76 and SU-27s, escorted by 2 Danish AF F-16s. All the rest followed swiftly and to our surprise, 2 Norwegian AF F-16s replaced the "scheduled" French AF Mirage 2000, while the Lithuanians sent a SAR AS365 Dauphin instead of their Let L-410 Turbolet. The Cartouche Doré French display team went tech and unfortunately didn't make

Saturday was spotters day at the opposite side of the base, facing the crowd line. At a cost 150 Danish Krones, the event was limited to 250 photographers but it offered a much better perspective of the show. So many great performances, including demos from the Hellenic AF and Belgian AF F-16s, Danish AF C-130J, Polish AF MiG-29, YAK-3, CAC Boomerang replica and the SwAFHF Draken and Harvards. The Ukranian Flanker added the wow-factor to the day with some majestic manoeuvres, worth the spotter-pass price alone.

Sunday's air show day started with a long walk to the flightline with hundreds of families showing up from the early hours of the morning. The gates opened at 8, the Air Show itself started at 10. We were greeted by the historic aircraft line-up of the Danish AF: F-84, F-100, F-104 and F-16. Static vehicles and armour were on display as well. The static line-up allowed the public to get into the cockpits and close to the aircraft and helicopters. This restricted photography of the hardware, but offered a great opportunity for the younger generation to interact with pilots and crew.

Over all the event was very good with non-stop action from 10 am until 16:30 (4:30 pm), that included a B-52H flyby.





The Tigers Parachute Team from the UK with the Danish flag



Yak-3U, above, and Supermarine Spitfire F.XVIe, below



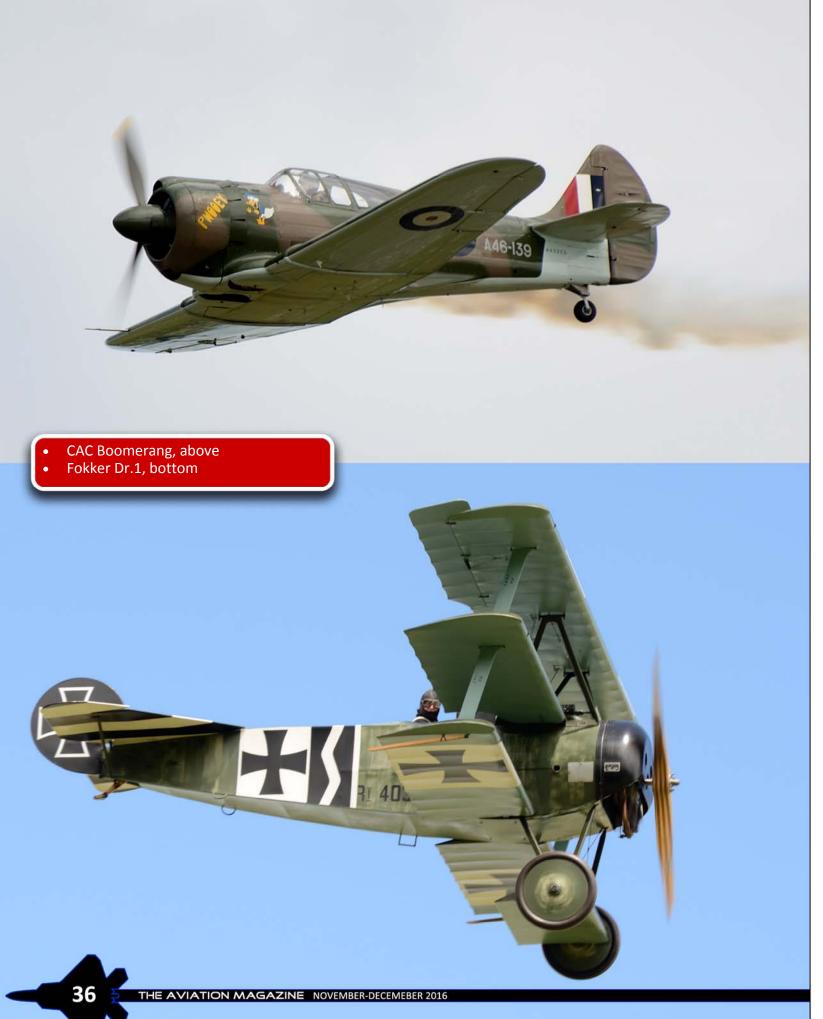


IL-76 and SU-27s of the Ukrainian Air Force, above Saab 35 Draken of the Swedish Air Force, below









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#### **Quinte International Air Show** 8th Wing CFB Trenton, Ontario

Report and photography by Jason Phelan

The Quinte International Air Show was held at 8th Wing, CFB Trenton, over the weekend 25th & 26th June 2016. Over 60,000 visitors attending each day and with temperatures in the 30C+, a warm welcome was received from all on base. This year's air show celebrated the 75th anniversary of the British Commonwealth Air Training Plan (BCATP) and the formation of the 400 series squadron Article XV of the BCATP agreement.

The main highlights in the flying Display included the USAF F-22 Raptor Demonstration Team, CAF Snowbirds with a stunning 40 minute routine, C-130H & J Hercules, CAF Skyhawks parachute team, C-117 Globemaster, Harvard Formation Team, three different display from Kent Pietsch Airshows in his Jelly Belly Interstate Cadet and a unique flypast from an Avro Lancaster, B25 Mitchell and P51 Mustang (Quick Silver). Also the F22 Raptor and P51 "Double Trouble too" provided the USAF Heritage Flight with a tight formation that included rear crowd passes. The CF-18 Demonstration Team with Captain Ryan Kean at the controls, carries a striking scheme commemorating the pan-Canadian effort to train aircrew for the Second World War, including pilots, wireless operators, air gunners, and navigators through the British Commonwealth Air Training Plan.

Within the varied static park military support came from the Mexican Air Force with a C295, USAF B52, Canadian CC-150 Polaris, CT-156 Harvard II & CC-144 Challenger. Civilian static included a T-33 Silver Star "Mako Shark", A4 N Skyhawk, North American T28 Trojan, Westland Lysander III plus 35 other aircraft types represented. It must be noted at Trenton almost all the aircraft on display in the static park had no barriers round them and the pilots were on hand to talk to the public. Military aircraft were open free to the public to walk around and engage closely with the armed forces staff.

Also in the static park marking the 75th anniversary of 419 Squadron "City of Kamloops" the Royal Canadian Air Force have painted a CT-155 Hawk (155217) in a special camouflage scheme, wearing the serial KB799. The scheme is based on World War Two bomber command markings and it wears the code call letters of "VR-W".



The flying display lasted over 5 hours and was well balanced with little or no gaps making for an extremely entertaining throughout and choreographed show. Trenton Air Base display axis is very photographer friendly with the sun behind the display line most of the day making for good photographic opportunities.

Over all this was a large scale military event that felt open and welcoming to the public that few air shows can deliver. Being the first event since 2009 at Trenton you had a sense of an established yearly event that was well organised. The only negativity reported was the long queues to get into the show reported on the morning of the show days. However, the organisers had predicted about 30,000 each day, this was in fact doubled on both show days highlighting the interest in aviation events of this scale in Canada.

My thanks goes to the Media Team at Trenton for their friendly support and advice on the day and early access to the static park.



- Snowbirds in their Canadair CT-114 Tutor jets, above
- EADS CASA C-295 Mexican Air Force, left bottom
- USAF F-22 Raptor Demo Team, right top
- P-51D Mustang "Quick Silver" flown by Scott "Scooter" Yoak, bottom right







# 2016 PHOTOGRAPHY AS NOTED



#### Article by the Editor

History was made both in the air and on the ground at the Royal International Air Tattoo at RAF Fairford in Gloucestershire. The airs how, which took place over three days (July 8-10), attracted a sell-out crowd of 153,000 people who enjoyed demonstrations by some of the world's leading pilots. Friday's flying programme featured the first ever international display by Lockheed Martin's F-35B Lightning II, the world's most advanced fighter jet and on the same day, the air show hosted a visit by the Duke and Duchess of Cambridge who attended with Prince George on his first ever public engagement. Other Royals attending the air show were HRH Prince Michael of Kent and HRH Prince Feisal of Jordan.

More than 230 aircraft, from 24 countries participated in the Air Tattoo which took place in warm, largely sunny weather. Among the many highlights were displays by the F-22 'Raptor', a Polish MiG-29, an RAF Typhoon and Chinook, a French Rafale and the Belgian Air Force's F-16.

Flypasts included a unique formation of the Red Arrows, an F-35B and two RAF Typhoons giving a glimpse of the future of the UK's defence capability. There were also some notable firsts and lasts, with the Croatian Air Force displaying for the first time in the UK with their display team Wings of Storm and the last ever display by the French Air Force 'Ramex Delta' Mirage 2000D duo. Croatia became the 56th nation to take part in the Air Tattoo since it was first staged in 1971.

There were 36 international military chiefs in attendance including Air Chief Marshal Sir Stuart Peach, Chief of the Defence Staff; Air Chief Marshal Sir Stephen Hillier, the RAF Chief of the Air Staff (Designate); and new Chief of the US Air Force, General David Goldfein. Senior industry guests included the Chairman of BAE Systems, Sir Roger Carr; Lockheed Martin CEO Marillyn Hewson and Airbus CEO Mr Allan McArtor. The UK's Armed Forces Minister Penny Mordaunt and the Minister for Defence Procurement Philip Dunne were also attended.

As usual the Royal International Air Tattoo 2016 at RAF Fairford in Gloucestershire ended with the crowning of the air show's 'Top Guns' at the traditional Sunday night hangar party. The ceremony was introduced by Air Marshal Sir Kevin Leeson, chairman of the Royal Air Force Charitable Trust. HRH Prince Feisal of Jordan presented the first of the evening's trophies, the King Hussein Memorial Sword, in memory of the late HM King Hussein, patron of the International Air Tattoo from 1983-89. Awarded for the best overall flying demonstration, it was presented to the Croatian Air Force aerobatic team, the Krila Oluje (Wings of Storm). This was the first appearance of the Krila Oluje, flying six Pilatus PC-9M turboprop trainers, and of the Croatian Air Force at a British display. The award was bestowed for, in the words of the citation, "Precision aerobatics in challenging conditions incorporating novel manoeuvres". Team leader Lt Col Damir Barišić said: "We are very happy to be among all these friends, all these people who share the same passion for 'old-school' flying in these days when everything is becoming unmanned and automatic. Of course it's a big honour to receive such an award, especially on the first occasion we've been here."

The Paul Bowen Trophy, presented in memory of the Royal International Air Tattoo co-founder Paul Bowen for the best jet demonstration, went to Capitaine Jean-Guillaume Martinez for his French Air Force Rafale C display. The best individual flying display was adjudged to be that given by Capt Peter Fallén of the Swedish Air Force in the JAS 39C Gripen.

The recipient of the RAFCTE Trophy, presented for the best flying demonstration by an overseas participant, was the French Air Force Ramex Delta team comprising two Mirage 2000N nuclear strike aircraft. The citation said that they put on "a superbly co-ordinated and choreographed pairs tactical demonstration". This was an emotional occasion for Ramex Delta, as RIAT was their final ever display — the team is being disbanded. One of the pilots, 'Pierrot', said afterwards: "We are very proud, because it was very special to attend this year's RIAT. This was our last air show ever, and it was a great deal of pleasure for us to fly today. For us — the pilots, the team, the squadron — it's a special honour because this year is the 100th anniversary of our squadron, the 'La Fayette' squadron. It's a good ending to the incredible experience that was Ramex

Delta." The night was a double success for Ramex Delta, as the Mirage 2000N they displayed in, which featured a special colour scheme to mark the 'La Fayette' squadron centenary, won the award for best livery as voted for by the Friends of the Royal International Air Tattoo (FRIAT).

Below are the Ramex Delta Team members with their two trophies: Best Livery and the RAFCTE.





The "As The Crow Flies" trophy for the best overall flying demonstration as judged by members of FRIAT was presented to Major Dan 'Rock' Dickinson from the US Air Force Air Combat Command F-22 Raptor Demonstration Team. 2016 was the first time for six years that the F-22A had displayed at the Air Tattoo.

A special presentation by Air Tattoo Chief Executive Andy Armstrong, his own RIAT CEO Award for an outstanding contribution to the show, went to all involved in the debut Lockheed Martin F-35 Lightning II deployment to Britain. This star attraction at RIAT 2016 involved F-35A models from the US Air Force and F-35Bs from the US Marine Corps and the United Kingdom, and was the subject of a great deal of planning by a host of individuals and organisations on both sides of the Atlantic.



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Philip E. West

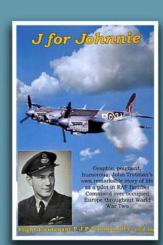
During our visit we had the pleasure to met Flight Lieutenant John "Johnnie" Trotman, DFC, and Bar, who wrote his autobiography "J" for Johnnie, in which he recalls his airborne exploits as a pilot with RAF Bomber Command during World War II.

In the course of 5½ years, he clocked up over 2,000 flying hours, completed two operational tours, flew 70 missions over the third Reich, including the last two raids of the war carried out by Bomber Command in Europe before peace once more settled upon the land. He walked away from three crashes - an extraordinary record. His recollections of these missions, plus many other details of his activities at the time, combine to paint a vivid picture of the life of a wartime bomber pilot. His first tour was with 150 Squadron, based at RAF Snaith in Yorkshire, flying a Vickers Wellington III (call-sign 'J' for Johnnie) to attack many German cities, including Cologne, Hamburg, Munich and Ludwigshafen. After a spell as a flying instructor at RAF Tilstock and RAF Peplow he volunteered

for a second operational tour and was soon flying a de Havilland Mosquito VI with 692 Squadron, based at RAF Graveley in Cambridgeshire and part of the Pathfinder Force. John's recollections contain elements to entertain a wide variety of readers: the technically-minded will enjoy his descriptions of the classic warplanes he flew, but there are also plenty of personal revelations and humorous stories to involve and entertain readers of all ages and persuasions.

John Trotman was born 9th September 1921, and he is still flying, he is England's oldest Pilot. We wish him all the best for the upcoming years and many flying hours in the skies of Great Britain.

The Aviation Magazine would like to thank the "Saab Group" and "Leonardo" for the invitation in their chalets on the weekend during RIAT 2016 and all the personnel involved hosting the BEST and largest air show in the world especially Richard Arquati BD PGCE MCIPR, Head of Press and PR.







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Luftwaffe Eurofighter EF-2000 Typhoon with 60 Anniversary scheme, above Patrouille Suisse F-5E Tiger II Swiss Air Force, below

Former RAF BAC 84 Jet Provost T5, above



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Ramex Delta's last performance in their Dassault Mirage 2000Ns, above Dornier Do228 Netherlands Coastguard, below



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Eurofighter EF2000 "The Cyber Tiger 2016" of the Luftwaffe, above Lockheed C-130J C.5 Hercules 50th anniversary in RAF service, below







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McDonnell Douglas F-4E Phantom II of the Hellenic Air Force , above Lockheed CP-140 Aurora of the Royal Canadian Air Force, below



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A rare sight an F-22 together with an F-35, America's latest and best, above Boeing P-8A Poseidon US Navy, with an AGM-84A Harpoon anti-shipping missile mounted, below



.016 Wolfgang Jaris

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Royal Jordanian Falcons Extra EA300L, Royal Jordanian Air Force, above Team Orlik PZL-130TC-2 Orlik, Polish Air Force, below



016 Peter Thivessen

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AH-64D Apache, above and CH-47 Chinook below from the Royal Netherlands Air Force



ROYAL NAVY ZZSI3

ROYAL NAVY ZZSI3

Black Cats Wildcat Augusta-Westland AW-159 Wildcat HMA.2 Royal Navy, above Bell Boeing V-22 Osprey USAF, below



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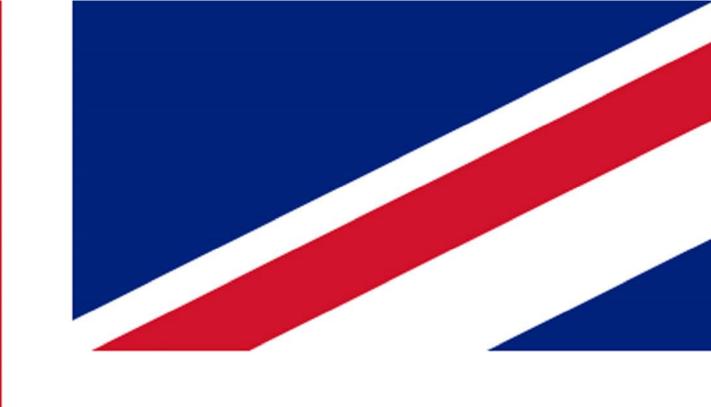




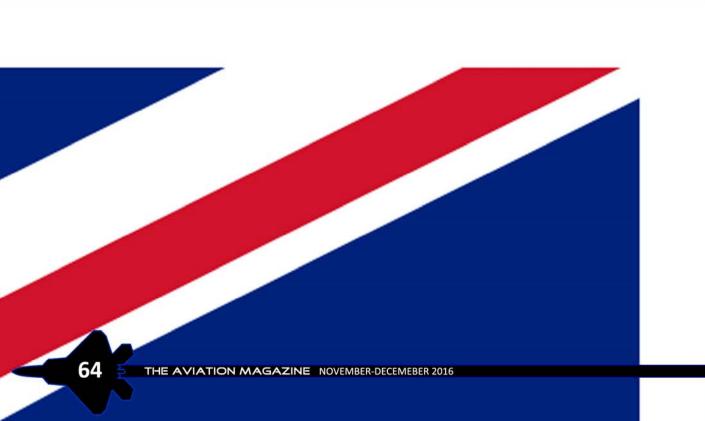
RAF Eurofighter Typhoon with 100th Anniversary of the 41 Squadron scheme, above. Perhaps the future of aviation (mock up, below) of the Northrop Grumman X-47B unmanned combat air vehicle (UCAV) which as been tested by the US Navy successfully landing on aircraft carrier. The X-47B is a tailless jet-powered blendedwing body.







# Farnborough International 2016





The biennial held Farnborough International Air Show (FIAS) proved to be a huge success for the organizer as well as for the exhibitors and their customers. Record sales and some premiers made this year's edition of FIAS 2016 worth a visit for all participants.

Prime Minister David Cameron opened the show on Monday 11th July. After Cameron's opening speech was the fly-bye of the Red Arrows in formation with the Royal Navy F-35B Lightning II, in typical British weather conditions (fog and rain). The Prime Minister also used his appearance at the air show to announce a new strategic partnership between Boeing and the UK, as well as nearly £400m for new aerospace R&D projects. He said in his opening speech: "It's great to be back here, because this is the right place to talk about the future for the British economy. Why? Because in the new situation we face, we are going to need to play to our strengths. And the British aerospace industry is clearly one of those greatest strengths."

Shortly after the kick off of FIAS, was the first multi billion pound deal signed. Sir Richard Branson from the Crawley based Virgin Atlantic, ordered 12 Airbus A-350's, worth around \$4.3billion.

Another premiere was by the newly named company "Leonardo", the former Finmeccanica Group. Leonardo is a global high-tech company and one of the key players in the Aerospace, Defence and Security sectors. Headquartered in Italy, the company employs more than 47,000 employees worldwide. Leonardo was one of the key exhibitor with the largest pavilion on the fairground. The new CEO Mauro Moretti chose the new name inspired by Leonardo da Vinci, a universally recognised symbol of creativity and innovation. CEO Mauro Moretti and Giovanni Soccodato, responsible for Strategy, Markets and Business Development, explained at the press conference the new structure of the company, and the strategic direction. At Leonardo's large static display area they exhibited their helicopters (various configurations including the AW189, AW159, AW149, AW 169 and AW101), a mock-up of the T-100 for the US, based on the advanced M-346 trainer, as well as unmanned aircraft such as the Falco EVO for fixed wing, and the SD-150 Hero, rotary wing, specialized for surveillance missions, and the C-27J twin-engine transport aircraft.

Diamond Aircraft of Austria, just two months after its maiden flight, introduced to the world their Dart-450 single turboprop at FIAS 2016, for the first time. The Dart 450 is an all carbon fibber tandem, 2 seat aerobatic and military trainer. The aircraft powered by an Ivchenko-Progress/Motor Sich AI-450S turboprop engine, is equipped with ejection seats, adaptive mission equipment and intelligent flight management system, a HO-TAS system and a preconfigured fuselage with mounted retractable surveillance camera(s) and sensors according to the newest standards and payload requirements. The maximum endurance of +7/-4g airplane is 8 hours plus reserve.



The orders for the civil market were dominated by Airbus and Boeing. Airbus received 403 orders and options, 375 were for the A-320neo. Airbus could not sell even one Airbus A-380, so they reduced the production rate for them starting in 2018 to one per month. Boeing had 179 fixed orders, out of which 150 were for the 737 family. Additionally Boeing and the Volga-Dnepr Group signed a contract covering long-term logistics support and a purchase intent for (20) 747-8F. Boeing stated that "The new 747-8 Freighter gives cargo operators the lowest operating costs and best economics of any large freighter airplane while providing enhanced environmental performance."



Embraer S.A. is a Brazilian aerospace conglomerate, dominated the regional jet market with 272 fixed orders and 398 options. Embraer brought their E190-E2 to Farnborough just a few weeks after its maiden flight.



The Russian Sukhoi Super Jet 100 was displayed in the livery of their latest customer CityJet: an Irish regional airline. The interior was designed by the Italian designer Pininfarina (who also designed several Ferrari models). The aircraft, developed by Sukhoi and Alenia Aeronautica, a joint venture company, and according to them "the SSJ100 is the most up-to-date and environment-friendly 95 seat regional jet on the market." This particular aircraft destined to be used by the Irish Olympic Team to fly to Rio. The Canadian manufacturer Viking is expected to delivered the hundredth Twin Otter in October this year. Fifteen more of this robust aircraft were on order.

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On the military side, it was a duel by troop transporters. Lockheed Martin's C-130J fund a competitor in Embraer's KC-390. Embraer developed KC-390 Transporter/Tanker made its successful debut at the show. Before the initial flight-test prototype arrived in Farnborough, it has made a stopover at Alverca air base in Portugal, where it was presented to the Portuguese air force. Portugal has signed a letter of intent for six examples of the KC-390 as a replacement for its aging fleet of the Lockheed Martin C-130Hs. Paulo Gastão Silva, VP KC-390 Program, explained the details of the aircraft during a press briefing "Our vision is to bring the troops comfortably as possible to their destination." The briefing was followed by guided tour through the aircraft. The KC-390 has a real toilette on board!



After Farnborough the KC-390 will be on tour visiting the Czech Republic, three other countries in the Middle East and several potential customers in Africa.

The Antonov An-178 (with 18 ton capacity vs the KC-390's 21 tons) made its official debut at the Farnborough Air Show. The An-178 was part of the daily flying display. Saudi Arabia had ordered 30 copies of this robust transporter.



The British military was on a shopping tour. The procurement of nine Boeing P-8 Poseidon was confirmed at FIAS 2016. The first two Poseidon should be available for the Royal Navy in April 2018. The purchase of 50 Boeing AH-64E Guardians was also confirmed. The first helicopters for the Joint Helicopter Command will be available in spring 2020. The purchase of 20 of new Certifiable Predator B (CFB) for the Protector-Program of the Royal Air Force was confirmed also. The Predator's should replace the existing fleet of 10 MQ-9 Reaper.



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The Saab Group, had a JAS 39 Gripen on display with various armaments, including the new MBDA Meteor missile. At FIAS, the Swedish Air Force (SwAF) announced during a ceremony that MBDA's Meteor Beyond Visual Range Air to Air Missile has now officially entered service on its Gripen combat aircraft.

Major General Helgesson, Chief-of-Staff of the SwAF said, "After extensive testing by FMV and the Gripen Operational Test and Evaluation unit, all of the new MS20 functions including the Meteor missile are now fully integrated with Gripen. The Swedish Air Force is now in its Initial Operational Capability phase with the Meteor. The Meteor missile is currently the most lethal radar-guided missile in operational service, and the Swedish Air Force is the only operational user so far. I am very proud and satisfied to have the Meteor in the inventory of my air force."

When the MBDA Meteor is compared an AMRAAM, its throttleable ramjet and active radar seeker combine to provide unmatched end-game speed and manoeuvrability at greatly extended ranges, resulting in a No-Escape Zone several times greater than other existing weapons.



One of the main highlights for aviation enthusiasts was a flying display of Boeing 727 from T2 Aviation. The aircraft is equipped with a spray bar at the rear fuselage to spray liquid on oil spill sites. It was not only a Boeing 727, it was the last produced Boeing 727-2S2F with serial number 22938/1832 delivered on Sep. 18.1984 to Federal Express. Now in service for T2 Aviation which operate for Oil Spill Response.

The daily flying program on the trade days was short but continuous. Monday the flying program was cancelled due to heavy rain also the site had to be closed early due to flooding. The weekend flight display area was moved further away from the spectators as a result of last year's accident at Shoreham.

#### Some interesting statistics:

- US\$124 billion of orders and options announced
- 95 aircraft featured in the static/flying displays
- 1500 exhibitors from 52 countries
- 73,000 trade visits over 5 days

- 73,000 trade visits over 5 days
- 25% of trade visits were CEO or Director level
- 1451 accredited media
- 98 military delegations from 66 countries

#### Aircraft making their Farnborough debut in 2016:

- Boeing 737 Max
- Bombardier C Series
- Embraer E190-E2
- Embraer KC 390
- Embraer Legacy 500

- F-35 Lightning II
- Antonov AN-178
- HondaJet
- Diamond Dart-450
- Gulfstream G500





The Aviation Magazine would like to thank all who gave us such an incredible support in Farnborough among them: Mrs. Valtécio Alencar and Mr Paulo Gastão Silva of Embraer, the Airbus Group, Lockheed Martin, the Saab Group, Leonardo and Sukhoi. Mrs. Anita Lentsch from Diamond Aircraft for the great photo position. See you at FIAS 2018

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## FLYING LEGENDS 2016 IWM DUXFORD

REPORT BY CHRISTOPHER MIFSUD WITH PHOTOGRAPHY AS NOTED





- de Havilland DH-82A Tiger Moth II from 1942, top left
- North American P-51D-25NT Mustang 'Miss Velma' from 1944, bottom left
- Group flyby: Boeing B-17G Flying Fortress and (2) NA P-51D Mustangs, top right
- Douglas DC-3 in Swissair livery (ex USAF) from 1941, bottom right

All images ©2016 Christopher Mifsud





- de Havilland DH Dragon Rapide from 1946, top
- Hawker Nimrod II from 1934, bottom

All images ©2016 István Kelecsényi



For almost every year in the past decade the UK's two foremost annual air shows have coincided with each other on the very same weekend in July. The clash of dates is viewed by many, who enjoy both modern jets and classic warbirds, as an inconvenience. With venues in Cambridgeshire (Flying Legends) and Gloucestershire (RIAT) being situated around 121 road miles apart, several enthusiasts opt to attend one venue on a day and then switch to the other. One must therefore book accommodation well ahead and be prepared for the journey.

The weather is a key element at both events and it not uncommon to hear about last minute cancellations due to high wind gusts, low cloud and/or rain squalls. Some aircraft are vulnerable to the elements and most of the flying is held under VFR conditions. I attended the Saturday show this year and the weather was mainly cloudy, with a westerly wind. There were some sunny spells and an occasional rain cloud in the late afternoon.

Duxford sports a grass strip which is parallel to a paved runway, both lie 06/24. On the day runway 24 was in use meaning that all aircraft were taking off from left to right. Almost all aircraft at Legends are tail draggers and some like Classic Wings' DH Tiger Moth sport tail skids dictating their need to use a grass strip.

The designated viewing areas and crowd line as from 2016 (and future years) have been modified to comply with the CAA's newly imposed restrictions in the wake of the Hawker Hunter tragedy at Shoreham last year. Whereas in previous years it was commonplace to see spectator 'freeloaders' on the other side of the airfield, this year the fields were empty. Public traffic was not permitted all around the secondary roads leading to the approaches and perimeter. The crowd line alongside the Land Warfare Museum (aka, the Tank Bank) was closed off as this was deemed to be too close to the runway in the event of an emergency. People were discouraged from setting up wind breakers along the whole length of the crowd line.

In the morning and prior to the commencement of the flying display all participating aircraft were gathered into a viewing area which extended from the control tower to close by the taxiway for runway 24. For an additional charge of £5 one could enjoy the flight line walk and take photos of the aircraft and re-enactors/additional equipment. Shortly before flying commenced the area was checked for any F.O.D.

Throughout the morning and later after the show, Classic Wings provided flights in their distinctive fleet of DH Dragon Rapides, DH Tiger Moths and NA Harvards. I had the opportunity to fly in a DH-82A Tiger Moth DF112/G-ANRM some years ago and the experience was exhilarating.

Chocks away, the flying started with the traditional squadron scramble of Supermarine Spitfires, of varying early marks, signifying the historic link which exists between Duxford and the iconic Spitfire. It was back in August 1938 that the RAF's first operational Spitfire Mk I squadron, numbered 19, was formed here as a fighter squadron. The Spitfires made three figure of eight circuits which was a relatively shortened display, at a higher altitude than usual, with fewer low level tail chases.

I was on the lookout for EP122, a newly restored airworthy Spitfire Mk Vb sporting the same camo and markings carried when it was stationed in Malta in 1942. This aircraft eluded my attention and I was to learn later on that it had been repainted for film work to represent an earlier mark with its cannon fairings removed and temporary serial R9649/LC.

The Spitfires were followed by a duo comprising of a F4U Corsair and Grumman F8F Bearcat. A trio of Hawks then took over with their tight formation flying comprising of a Curtiss-Wright Hawk H75, a Curtiss-Wright P36C and a Curtis-Wright P40C Kittyhawk.

Flying Legends and jet aircraft do not frequently mix. This year a F22A Raptor (tail code FF) made a unique appearance at Legends with a P51D (Miss Helen) representing the USAF Heritage Flight.

Another most welcome appearance was of the Swiss Classic Formation comprising of a Douglas DC-3 and two Twin Beech aircraft in their shiny interwar chrome scheme and colourful cowls. Truly splendid.

The Flying Bulls gave us a superb display consisting of their F4U, P38J and B25. Their flying skills are truly out of this world, bravo.

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The 'Sally B' is the only flying B17 anywhere in Europe. I have seen this aircraft fly on a number of occasions but I will always stare in awe of its graceful shape. The B17 is without doubt a flying monument to the USAAF, RAF and allied crews who persevered against all the odds and who perished, to preserve our freedom, in those dark days of WW2. Sally B flew in formation with three P51 Mustangs on the day.

Malta/Battle of Britain display. A formation made up of the superb Bristol Blenheim MkI, Spitfire MkI, Hurricane XIIa (but depicting a Mk I) and two Gloster Gladiators defended the airfield and provided cover against a duo of Hispano Buchon, a Luftwaffe simulated attack by Bf109 Emils. The Buchon is a Merlin powered version of the Bf109G (Gustav), having been produced under licence in Spain. The Gloster Gladiator is famously remembered for its valiant defence of Malta against the Regia Aeronautica and Luftwaffe, during the early months of the MTO campaign.

US Naval aircraft, a duo made up of a Grumman TBM Avenger and Grumman F4F Wildcat (in FAA Martlet colours) gave a most impressive display over the airfield. Hawker biplanes performed a spectacular routine comprising of a Hawker Nimrod and a Hawker Fury MkI. A Bucker Jungmann was flown most skilfully, it is such an agile aircraft. The newly repainted Hawker Fury MkII gave, what I would say was, the highlight of this year's show. Retaining the pedigree of the hurricane and tempest, this aircraft shows just how capable and steady the design was and its evolution from early fighter to thoroughbred fighter/bomber. G-CBEL was manufactured in 1953 and served in the Iraqi AF.

A Lockheed 12A Junior Electra and DC-3 represented American Transports, a themed display which followed that of the Fury.

It has been a tradition that every Flying Legends show ends with a massed formation which is called 'the Balbo'. Several of the aircraft take off again to join up formation to flypasts over the airfield. I counted a Balbo of 19 aircraft this year. Flying Legends is a celebration of warbirds and flight, the Balbo is a salute to all who make it happen. The 'Joker' represents the master of ceremonies himself, who has chosen the Gloster Gladiator as his own. It is truly remarkable to appreciate just how agile this biplane is when it is handled so expertly.

Eagerly looking forward towards Flying Legends 2017.



- US Heritage Flight: P-51D with a F-22A, a very rare event at Duxford, top left
- Bristol Blenheim Mk I, Spitfire Mk I, Hurricane XIIa, center left
- Curtiss Wright P36C, Curtiss-Wright Hawk 75, Curtiss-Wright P40C, bottom left
- Hispano Buchon (Merlin powered version of the Bf109G) bottom right

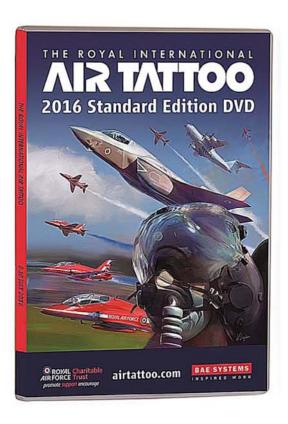
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- Boeing B-17G "Sally B" with the NA P-51D Mustang, above
- Grumman TBM Avenger "Charlie Heavy" USN and Grumman Wildcat FM-2 "That Old Thing" RN (Martlet markings), bottom



## AIR TATTOO DVD READY FOR TAKE OFF



#### Relive the thrills, buzz and excitement of the 2016 Royal International Air Tattoo

Expertly shot in high definition and ultra-high 4K resolution by aviation film specialists PlanesTV, the Air Tattoo DVD includes in-cockpit footage, behind-the-scenes features and pilot interviews alongside coverage of the extensive flying display, arrivals and departures.

All the highlights from the world's biggest military air show have been captured including the show-stopping international display debut of the F-35B, whose manoeuvrability and hovering capabilities were demonstrated for the first time to a UK audience by RAF test pilot Squadron Leader Hugh Nichols. The aircraft also appears in an iconic joint flypast with the Red Arrows and two RAF Typhoons, which provided a dramatic demonstration of UK airpower to the Air Tattoo's sell-out crowd.

Sold in support of the Royal Air Force Charitable Trust, the official Royal International Air Tattoo 2016 Official Souvenir DVD is priced £20 (Blu-ray, £25). The two-disc Collector's Edition DVD, featuring an additional two hours of special features including extended in-cockpit action, and full coverage of arrivals and departures, is priced £30 (Blu-ray, £35).

A must-buy for aviation fans of all ages, the official Air Tattoo 2016 official souvenir discs can be ordered from: http://www.airtattoo.com/shop

# SPOTTING AT U.S. AIR BASES IN THE U.K. REPORT AND PHOTOGRAPHY BY CHRISTOPHER MIFSUD

Eurofighter Typhoon T3, (touch-n-go) from No. 6 Squadron RAF Lossiemouth at RAF Mildenhall below

- F-15C Eagle this one with an air-to-air combat kill star, at RAF Lakenheath, above
- KC-135R Stratotanker landing at RAF Mildenhall, below



During the Second World War, the RAF and USAAF constructed several air bases in East Anglia for their heavy bomber fleets which were to conduct the Combined Bomber Offensive against Nazi-occupied Europe. On average it is estimated that during the height of the war there was an air base for every eight miles and an extensive civil engineering project was undertaken that inevitably changed the otherwise unspoilt environment. The region's proximity to mainland Europe and its open flat terrain made East Anglia the ideal heavy bombing platform, shortening flights and allowing for greater bomber loads to be carried.

Not far from the adjoining border between Suffolk and Norfolk, lies the small rural town of Brandon. A secondary 'A' road winds through the town, joining with its High Street and crossing over a narrow river. The A1065 is also the primary route to two air bases, RAF Lakenheath and RAF Mildenhall. Both are used predominantly by the USAFE, and home to the famous Liberty Wing (48th FW) and the 100th Air Refuelling Wing respectively. RAF Mildenhall was established as an RAF station in 1930 and opened in 1934.

RAF Lakenheath pre-dates Mildenhall and was originally used by the Royal Flying Corps during the First World War. With the end of hostilities in 1918 it was abandoned. During the Second World War it was set up with runway strips, aircraft and lights to serve as a decoy for RAF Mildenhall.

In 1948 overall command of RAF Lakenheath was passed onto the USAFE with RAF Mildenhall following two years later. The runways were refurbished for SAC aircraft based there during the Cold War. It is estimated that the Cold War increased the population of the region by over 5,000 RAF and USAFE personnel and their families.

The famous Statue of Liberty Wing, 48th Fighter Wing, is presently equipped with the 3 variants of the F-15 Eagle. The complement is comprised of three fighter squadrons (FS), 493rd FS, issued with F-15C/D Eagles and two squadrons of F-15E Strike Eagles, the 492nd FS and 494th FS. All aircraft of the 48th FW carry the tail code 'LN'. Apart from being single seaters, F-15Cs and Ds carry a blue and grey camouflage pattern as opposed to the dark grey livery of the two Strike Eagle squadrons. The USAF has just a handful of F-15C squadrons left in its inventory, one of which is based at RAF Lakenheath. These are now considered to be older generation aircraft, having been built in the early eighties and are used solely as Air Defence Fighters.

The Strike Eagles, on the other hand, are newer generation version of Eagles, having been built in the nineties and are all twin-seaters. Although their main role is ground attack, they have a very strong ADF capability. The three squadrons can be easily distinguished by a different coloured stripe on the tops of their tail fins. The Wing Commander's mount has a stripe containing all three colours.

The Eagles are due to be replaced by the F-35A, although some sources are saying that there might be F-22 Raptor squadron/s too since the main role of the F-35 is not as an ADF. This is in fact why the RAF will have a mixed fleet of F-35B and Typhoon types, with the F-35B replacing both the Tornado and the previously withdrawn Harrier.

The Liberty Wing also houses the 56th Rescue Squadron which is equipped with HH-60G Pave Hawk, Combat Search and Rescue Helicopter.

RAF Mildenhall is home to a number of aircraft types formed under Wings with varying duties and tasks. The main aircraft types operating from Mildenhall are KC-135R/T Stratotanker, RC-135 Joint Rivet reconnaissance platforms, MC-130J Commando II and C-130 Hercules, C-17 Globemaster III and CV-22B Osprey tilt-rotor.

The host unit at RAF Mildenhall is the 100th Air Refuelling Wing (ARW) which deploys aircraft and manages the European Tanker Task Force comprising of a rotational air refuelling service for US and NATO aircraft flying in the European Theatre. Operating their Boeing KC-135R Stratotanker fleet the squadron has adopted the historic 'Square D' badge as used previously by the unit during the Second World War.

From an aircraft spotter's perspective the activity around RAF Lakenheath is much busier than that found at RAF Mildenhall. While we were watching the movements at RAF Lakenheath we estimated that we must have seen around thirty different aircraft on what was considered to be a very busy day of flying even by resident LN Spotters' standards. Meanwhile at Mildenhall the pace was somewhat calmer a day later, the airbase itself is extensive but the viewing places are relatively fewer.



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F-15E at RAF Lakenheath, 492nd Tactical Fighter Squadron (red tails stripes), above

#### F-15E at RAF Lakenheat, 48th Wing Commander's aircraft (blue/red/yellow tail stripes), below





### Varazdin = Croatian International Air Show

Report and photography by István Kelecsényi, translated by the Editor

**V**arazdin is not the center of Europe, not even Croatia's, but the Croatian Air Force organizes its international air shows more-or-less frequently there. The runway of the small airport of the town (LDVA Varazdin Airport) is only 5676x98 feet, not able to support larger aircraft, with limited places for viewers too, but its sufficient for smaller civilian aircraft.

The Croatian Air Force could be in a better shape by 2016. After Croatia ceded from the former Yugoslavia, they elected to maintain only their (23) MIG-21BiS and UMs and only upgraded one fighter squadron (8 single seat BiS and 4 two seat UMD) at the Bascu aircraft repair plant in Romania. Since then, they flew all the flight hours with the upgraded ones.

While they planned to upgrade additional jets in Ukraine, but due to the incorrect storage procedures, the repair costs would be much more expensive than their budget available for upgrades. The Ukrainian firm (Odesaviaremservis) proposed to repair 7 planes which were in better shape and upgrade/refurbish (5) Algerian MiGs originally proposed for Yemen. The Croatian Air Force agreed for the repairs/upgrades. In the spring of 2014 they arrived, but that was just the beginning of their problems. One crashed during the welcome parade (the pilot successfully ejected in time) and another had to make an emergency landing on the same day. The investigation following these accidents concluded that the ID numbers of in the Ukrainian documentation couldn't be reconciled back to the actually parts used. The additional 5 planes bought turned out to be Bulgarian, with only wings originated from the Algerian MiGs. The origin of 2 engines couldn't be identified at all. As a direct result of this fiasco the Croatian Air Force can only provide minimal air policing with their MiG-21 BiS.

During the show the demo pilot Brigade General Ivan Selak flew one of the MiG-21 UMDs painted to the national colors (red and white checkers) of Croatia. The aircraft nickname: Kockicza (Little Cubes). The MiG-21 landed on the small airfield after the display on Saturday and flew back to its home base on Sunday.

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Their national team known as Krila Oluje (Wings of Storm) flying the Pilatus PC-9 trainers also went under a major change. Most of the experienced pilots and engineers quit the Air Force and left for Oman to form a new team there. The only remaining senior pilot, Lieutenant Colonel Damir Barišić Deputy Squadron Commander and Team Leader, was joined by five new wingmen. The new team, after a considerable time of practise, now can perform the same spectacular routines safely as their preceding team did. Their performance during the air show showed a high quality of professionalism.

Most of the invited international participants such as the USAF, Belgian, Austrian, & Slovenian Air Forces declined their participation. The only modern high speed – high tech aircraft that participated was the JAS-39C Gripen of the Hungarian Air Force, that flew on Saturday. Other jet at the show was the Soko Galeb 2 trainer and light attack plane that was produced originally by the former Yugoslavia.

Speaking of former Yugoslavian aircraft, there was a Soko J-20 Kraguj flying too, first manufactured in 1962. The Soko J-20 Kraguj is light military, single-engine, low-wing single-seat aircraft with a metal airframe, capable of performing close air support, counter insurgency, (COIN) and reconnaissance missions. The powered by a 340 hp Textron Lycoming GSO-480-B1J6 piston engine and Hartzell HC-B3Z20-1/10151C-5 three-blade metal variable-pitch propeller.

One Croatian Mi-17SH medium transport helicopter was on display. The Croatian Mi-17SH helicopters will probably be sold to Ukraine with US help as Ukraine no longer can source new ones from Russia, since the Ukrainian technicians, pilots and air bases are familiar in the maintenance of the Mi-17s. The Croatia Air Force will receive used Bell OH-58D Kiowa Warrior light attack and liaison helicopters as replacements from the USA. A LockheedC-5M Galaxy heavy transport aircraft on July 30th, 2016, transported four Kiowa helicopters to Croatia. Civilian aircraft that attended the event included two old Russian designed planes. One of them a Polikarpov Po-2 biplane used in WW2 as a liaison and as night-light bomber. Approximately 30,000 were built originally. Only a few Po-2 can be seen flying as the stars of air shows. The other one was an AN-2 light transport aircraft. Used for civilian transportation and as a platform for parachute jumpers, due to its good speed and cheap maintenance costs. It can carry up to 12 parachute jumpers and during in the air show these capabilities were illustrated by the parachute drops.

Italian Luca Bertossio sponsored by Red Bull, performed a dynamic show with his Swift S-1 glider. Another pilot of the day was Stefano Landi who flew a Russian Yak -11. The 2 seat trainer version of the famousYak-3 fighter. Approximatly 4500 were built throughout the years. Currently about 120 only remain capable of flying, and sometimes it is used to play Russian fighters on air shows. Slovenian Red Bull Air Race pilot Peter Podlunsek has flown with his EDGE-540V2 solo and in formation with the Soko Galeb 2. There were several modern touring, and ultra-light aircraft as well as the local police's Bell 212 helicopter performed during the air show.

While it was not the biggest air show in Europe, but to see the MiG-21 UMD and the Galeb G-2 fly, it was worth the visit.





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JAS-39C Gripen of the Hungarian Air Force

### THE AVIATION MAGAZINE

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