

# THE AVIATION MAGAZINE

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Nº: 39 November-December 2015

Volume 6, Issue 9



- ✈ Thunder Over Michigan Air Show
- ✈ Le Musée d'avions de Chasse de Montélimar, France
- ✈ OV-10B Bronco: A closer look
- ✈ NATO DAYS, Ostrava, Czech Republic
- ✈ Malta International Air Show
- ✈ Goodbye to AVRO Vulcan and so much more...





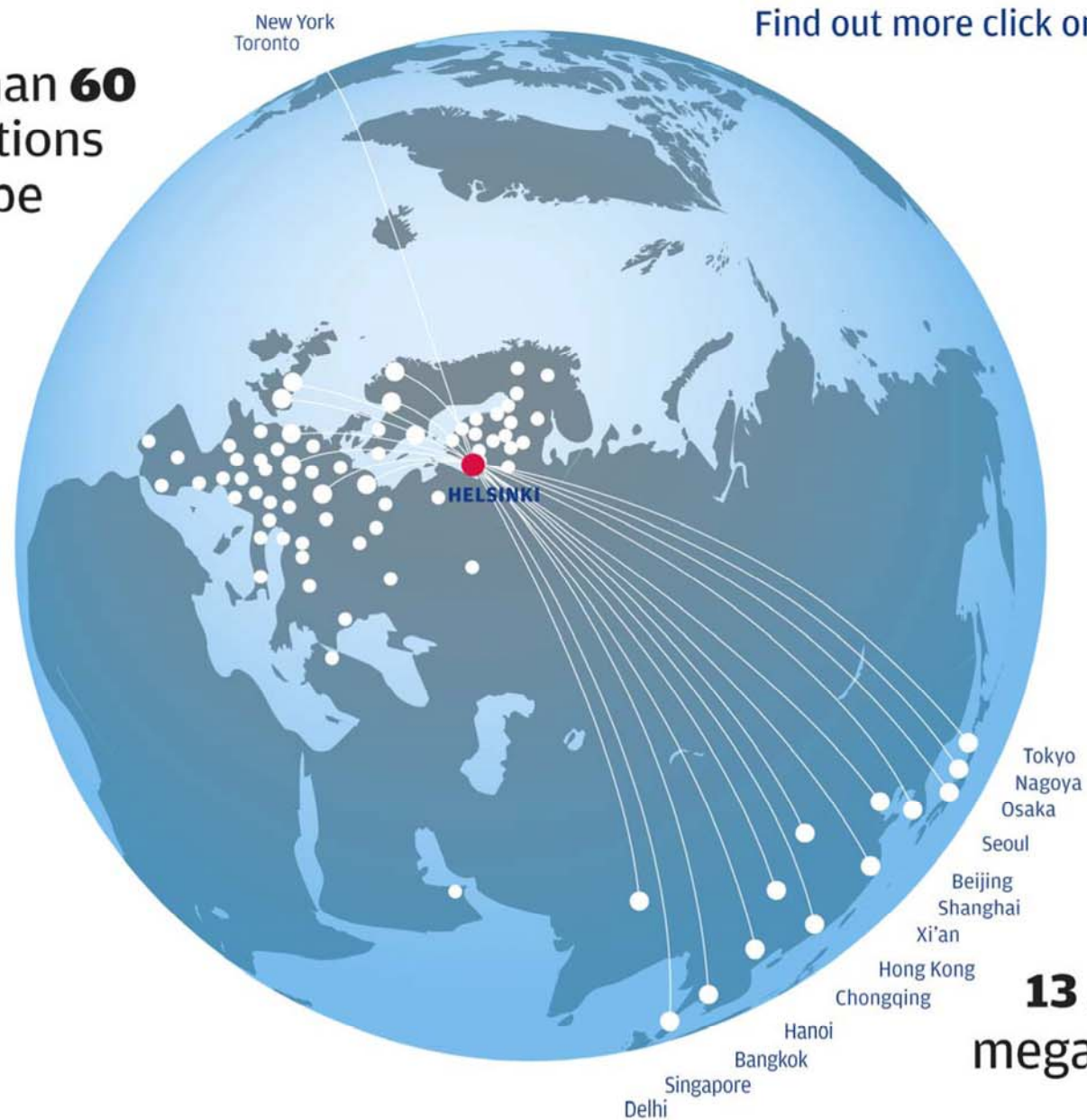
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# THE AVIATION MAGAZINE

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Cover: OV-10B Bronco over France, photo by Pascal Rioland

Index page: B-29 at TOM 2015, photo by Steve Bigg



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## THE AVIATION MAGAZINE

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**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 e-magazine 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 from Japan, with good English communication skills, also for someone to cover the South East and West 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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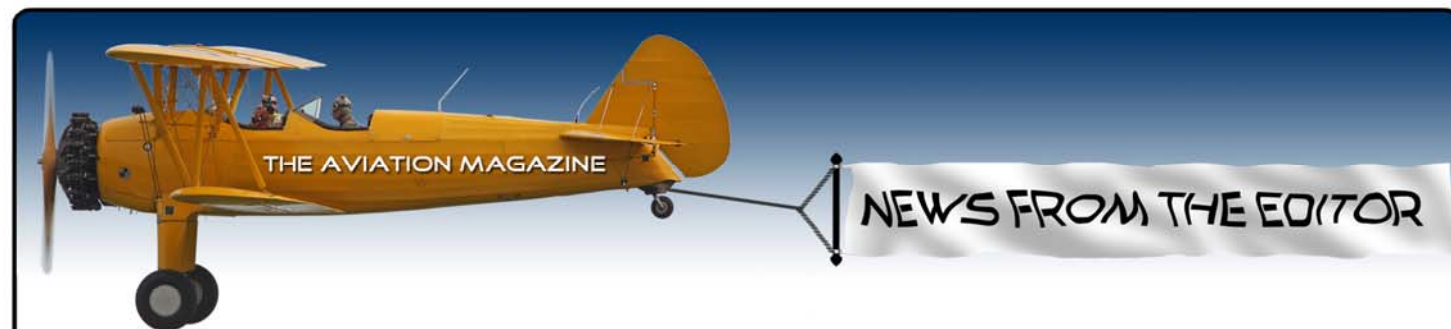
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Welcome to the 39th edition of **THE AVIATION MAGAZINE** with our revised bi-monthly date schedule, and at the same time last issue for 2015. We are mobile compliant on the Joomag magazine reader platform, <http://www.joomag.com/en/newsstand?q=the+aviation+magazine> Meaning that you can see our magazine issues on your smartphones, and tablets too not just on desktops or laptops.

2015 in retrospect was a challenging year for us, we made several changes not just to the format of the magazine and our website but also to our dedicated volunteer team members. While we covered fewer air shows than in previous years, the quality of our articles improved along with the quality of the images contributed by our team members.

We look forward to 2016 with a lot of enthusiasm, and to bringing you the "Best for Free"® e-based aviation magazine as we take you to aviation events "As close as you can get without being at an air show!"®





Stewart International Airport, which has struggled to hold on to and build its commercial flights since the 2008 recession hosted its first air show since 2003. The airport and its organizers were thrilled to be hosting the largest event to ever take place at this airport.

But despite the sunny and hot days, several recent air show tragedies were on spectators' minds. One week prior an aircraft at an air show at Shoreham, England crashed on a highway near the airport, killing at least 11 and injuring 14 others. Somehow the pilot survived. Two weeks prior to the show, a member of the Navy Seal Leap Frog parachute team was involved in a collision while performing with the Army's Golden Knights parachute demonstration team. The Golden Knight was killed and the Leap Frog parachute team which was scheduled to perform at the New York Air Show was forced to cancel their performance. And just a day before this air show tragedy struck Stewart International Airport when a pilot practicing for his performance at the air show was killed after his propeller-driven aerobatic plane crashed.

With respects being paid to the fallen and injured, the air show went on as scheduled with gates opening at 9 am. Headlining the show was the US Air Force F-22 Raptor, America's newest super-fighter and the world's most advanced aircraft. Piloted by Major John Cummings, the crowd was amazed as Major Cummings skillfully completed a 360-degree turn while flying straight up to the sky.

The Navy F-18F Super Hornet demonstration team flew in from NAS Oceana to put on a wonderful display of aerial maneuvers. And the West Point

Parachute Team demonstrated their elite skydiving skills. The crowd was awed as the AV-8B Harrier hovered in the air and descended to the runway like a helicopter. And the HH-60 Pavehawk helicopter demonstrated by the New York Air National Guard 106<sup>th</sup> Rescue Wing also performed, showing off their skills.

Civilian performers included the world famous GEICO Skytypers Airshow Team – a squadron of six vintage WWII SNJ2 aircraft typing messages in the sky with smoke and

performing precision flight maneuvers. Also featured was a large display of static aircraft including an Air National Guard C-17 cargo jet and a Marine Reserve KC-130 transport plane, both of which are based at the Stewart Air National Guard Base.

As a special treat, the public had an opportunity to not only watch Larry Kelley's performance in his Pancho B-25J Mitchell Bomber but to travel back in time themselves and fly aboard the B-25J, courtesy of the Delaware Aviation Museum Foundation. This bomber, one of only 32 airworthy airplanes that remains of the nearly 10,000 built, was available for

four flights each day with up to six passengers at a time for a half-hour flight. Although the requested donation of \$425 per person was steep for some, others were eager to enjoy this once-in-a-lifetime experience.

And always a crowd favorite, the show ended with the Heritage Flight consisting of the Air Force F-22 Raptor in close formation with a P-51 Mustang to salute the history of the Air Force from its beginning in 1947 to today.







- USAF HH-60 Pavement Hawk of the NY ANG 106th Rescue Wing, left page
- SNJ2 of the GEICO Skytypers, right page







- Panchito the WWII B-25J Mitchell bomber, above
- The Navy F-18F Super Hornet demonstration team, below



- USAF Heritage Flight F-22 & P-51D above
- USMC McDonnell Douglas AV-8B Harrier II, below







## Thunder Over Michigan

Article and photography by Norman A. Graf

The Yankee Air Museum puts on an annual warbird extravaganza and every year it features a collection of airplanes based on a particular subject. Usually this will be a specific aircraft, but the theme for the 2015 Thunder Over Michigan Air Show was "Bombertown, USA." This allowed the organizers to assemble a very broad selection of bombers ranging from light attack aircraft to the heaviest of strategic bombers from World War II. In addition, a large group of fighters was also in attendance. Jet noise was provided by the USAF's F-16 Viper Demo Team and the Navy's Blue Angels. Michael Goulian was the sole purely aerobatic performer.

Admissions and ticketing opened at 8AM, although the gates didn't open until 9AM. An optional photo tour allowed entry at 7AM to give enthusiasts an opportunity to photograph the aircraft on static display without the normal crowds. The flightline was largely devoted to chalets, although there was a section at air show left open to the public. The beer garden provided some shade and access to the fenceline somewhat closer to show center, but there was a cover charge to get in. There was an exclusive tented area at air show right devoted to the Photo Tour photographers. In addition to the aircraft, the air show always attracts a large number of military re-enactors who stage WWII ground battles, one in the morning and another in the afternoon. Similarly to the air show, the military vehicles feature a yearly theme. This year's show brought together the largest assembly of WWII American half-tracks in the world, with 18 in attendance.



Spitfire MkIX and Mosquito, left page and Focke-Wulf Fw 190 (Flug + Werk GmbH replica) with the Shvetsov ASh-82FN 14-cylinder twin-row radial engine of similar configuration and slightly smaller displacement (41.2 litres versus 41.8) above.

The battle re-enactments feature combined air and ground performances, with the aircraft making several low-level passes. Allied air support for the morning battle was provided by the Spitfire MkIX and Mosquito. It was a real treat to see the Mosquito down on the deck banking hard and showing off its topside. The afternoon battle featured a Junkers Ju 52 threatening an Allied ground column, being attacked by a P-51 and ended with a dogfight between the Mustang and a Focke-Wulf Fw 190.

The formal flying schedule began shortly after noon, with a fighter formation flyover composed of three Mustangs, a Corsair and Spitfire. They were then joined by the bombers, and the aircraft split into two racetracks, one circling behind the crowd, the other out in front. This meant that there were often multiple aircraft passing by in front of the crowd at the same time. The bomber flight featured a wide variety of aircraft. Light bombers included the de Havilland Mosquito, the Lockheed PV-2 Harpoon "ATTU Warrior", and a beautiful Douglas A-26B Invader "Silver Dragon". The medium bomber flight consisted of four North American B-25 Mitchells: "Briefing Time", "HOT GEN!", "SUPER RABBIT" and "Yankee Warrior". The Avro Lancaster, Boeing B-17G Flying Fortress "Memphis Belle", Consolidated PB4Y-2 Privateer and Boeing B-29 Superfortress "FIFI" teamed up to represent the heavy strategic bombers. Strangely, the Consolidated B-24 Liberator (of which over 8,500 were built at Willow Run at the monstrous Ford Willow Run bomber plant) was not represented.





- Boeing B-29 Superfortress "FIFI"
- Avro Lancaster B Mk X
- Boeing B-17G Flying Fortress "Memphis Belle"



Vought F4U-1C Corsair

Rick Volker, Harvard Mk. 4

P-51B Mustang "Baby Duck"

Junkers Ju 52

After a final formation flyover by the "heavies" it was time for the F-16 Viper East Demo to take to the sky. Captain Craig "Rocket" Baker put on a tremendous demonstration of the Fighting Falcon's tactical capabilities. After his demo flight he joined up with Vlado Lench, flying the P-51D Mustang "Baby Duck", for the Heritage Flight. Vlado later flew a very nice solo aerobatic performance. Other warbird aerobatic displays included Rick Volker in the Harvard and an FG-1D Corsair demonstration. But for a true demonstration of power aerobatics, Michael Goulian can't be beat, and he put on a jaw-dropping performance in his Extra 330. The afternoon's flying concluded with the headline act, the US Navy and Marine Corps' Blue Angels, starting off with Fat Albert's incredible eight-minute, envelope-pushing demonstration of the C-130's flight characteristics and finishing with the six Blue Angels F/A-18 Hornets tearing up the sky.

The warbird static lineup included a variety of trainers from primary (PT-17 Stearman, N3N Yellow Peril)

through basic (BT-13 Valiant) to advanced (AT-6 Texan, Beech AT-11 Kansan). There was also a second PB4Y Privateer on static display. Owned by the museum, it is being restored and perhaps we'll see it fly at a future show. Modern military aircraft included a USAF Boeing KC-135T Stratotanker, of the 127th Wing/171st ARS based at nearby Selfridge ANGB, and a rarely-seen German Luftwaffe Transall C-160, from Lufttransportgeschwader 63 based in Schleswig-Holstein.

Although not part of the air show's formal flying program, the Army Aviation Heritage Foundation's UH-1 Hueys and AH-1 Cobra were constantly taking off and landing as air show attendees booked rides.

Announcer Rob Reider did a great job of keeping the weekend's audience of almost 90,000 informed and entertained. We would like to thank Herb Gillen for arranging our media access and all of the show's performers, staff, sponsors and volunteers for making this show such a success. For a complete list of participants please see our review on the website by clicking here.



The Yankee Air Museum B-17G "Yankee Lady" with a BMW R75 sidecar and a Sd.Kfz. 251/1 Ausf. A Hanomag replica a Tatra OT-810

Image by Steve Biggs





- Junkers Ju 52 over several WWII American half-tracks, left page
- WWII Fighters composed of three Mustangs and a Corsair, top right page
- Lockheed PV-2 Harpoon "ATTU Warrior", bottom right page







- Boeing B-17G Flying Fortress "Memphis Belle" top
- North American B-25D Mitchell "Yankee Warrior" left middle
- North American B-25J Mitchell "HOT GEN!" left center
- Douglas A-26B Invader "Silver Dragon" left bottom
- North American B-25J Mitchell "Briefing Time" right top
- Boeing B-29 Superfortress "FIFI" right middle
- North American B-25J Mitchell "SUPER RABBIT" right bottom



# Location, Location, Location...

ARTICLE AND PHOTOGRAPHY BY STEVE BIGG



"FiFi" the world's only airworthy Boeing B-29 Superfortress cruises over the historic Willow Run airfield during the Thunder Over Michigan air show.

Who knew? I certainly didn't. The fascinating story of the Willow Run Bomber plant located near Ypsilanti Michigan was an incredible aviation story I knew nothing about. At least I didn't until I started looking into attending the Yankee Air Museum's (YAM) Thunder Over Michigan (TOM) air show for the first time. The theme for this year's show held at the end of August was "Bombertown USA" which got me wondering: why would an air show held on the edge of Detroit, Michigan i.e. Motor City USA, choose "Bombertown USA" as its theme? Turns out there probably couldn't have been a better choice.

Wandering around the TOM air show website to see what all the show would be offering this year, the focus on bombers was obvious from the extensive line up of 11 bomber/heavy attack aircraft scheduled to be at the show. Keeping these large war birds running is a difficult task and often aircraft are unable to make their commitment to be at a show so I didn't expect to see all the aircraft listed actually make it. That made for a pleasant surprise when not only did all the bombers make it to the show but the number increased





One of only thirteen airworthy Boeing B-17 bombers left, The Movie "Memphis Belle" B-17 flew on both days of Thunder Over Michigan's "Bombertown USA" air show.

to 12 when an additional Consolidated PB4Y-2 Privateer was on static display at the show. An impressive turn out for sure which included the only flight worthy Boeing B-29 Superfortress bomber, one of only two flight worthy Lancaster bombers, four B-25 Mitchell bombers, two B-17 Flying Fortresses including the museums "Yankee Lady". An A-26 Invader, a PV-2 Harpoon and two Consolidated PB4Y-2 Privateers rounded out the bombers at the show.

But going back to figuring out the "Bombertown USA" theme for the show, I linked back from the show's website to the museum's to learn more about the museum itself and learnt that the museum has managed to raise enough funds to secure a new home for itself. It's not un-common for a successful museum, especially one that manages to support keeping a portion of their aircraft collection in airworthy condition and actively flying, to grow and require a larger home. It is however much less common that a museum has an opportunity to move into a space that has such historical significance as the future home of YAM.

The YAM is presently located in a building on the property of the Willow Run Airport near Ypsilanti just south of Detroit Michigan. The airport was built there to support the Willow Run Bomber plant that manufactured B-24 bombers during WW II. The YAM in conjunction with The Michigan Aerospace Foundation ran a "Save The Bomber Plant" campaign to raise the millions of dollars necessary to purchase and preserve a portion of the original bomber plant as a new home for the museum. In keeping with the plant's history of incredible feats that border on miracles, the money needed was raised in a little over a year. So, what makes the Willow Run Bomber Plant such a significant historical site that millions of dollars can be raised in such a short time to save it in these lean times? The list is long.

In 1940 the writing was on the wall and America was very likely going to be drawn into the war

in Europe. President Roosevelt realised this and knew America's military was not well prepared to join the war and long range heavy bombers were a particularly weak point that would need to be strengthened if America was to be able to help fight Hitler in Europe. As part of the effort to strengthen the bomber fleet the military ordered the production of B-24 Liberator bombers from the Consolidated aircraft company. To help increase the manufacturing capacity for the bombers, the Ford Motor company was asked to help by building components for the B-24 Liberator bombers. Ford's Vice President of Production, Charlie Sorensen visited Consolidated's plant in San Diego California to tour their production line. The day after touring the plant Sorensen's 35 years of experience with Ford's production line philosophies lead him to put forth what seemed like an insane proposal. He proposed that instead of building components, Ford should build a plant to build complete aircraft. Not so crazy an idea until he claimed that the auto manufacturer would build a complete plant dedicated to the production of the bomber and that it would be able to increase the completed aircraft production rate from the current rate of one aircraft a day to one per hour! With paper sketches in hand Sorensen convinced Edsel Ford, president of the Ford Motor Company at the time, that his idea was sound. Ford and Sorensen pitched the idea to the president of Consolidated Aircraft, Major Reuben Fleet and the chairman of the national defence advisory commission Dr. George Mead. Despite the fantastic nature of the proposal, Sorensen and Ford were able to convince everyone that the concept was sound and they were granted a contract to begin construction on what became the world's largest manufacturing facility under one roof.

Finding a suitable location and procuring the lands needed could have taken a lengthy time but Henry Ford owned an area of farmland next to the Willow Creek in Ypsilanti Michigan suitable for the bomber plant and the airfield required to support it. So was born the Willow Run Bomber Plant and airport. Knowing that I was standing on the infield of an airport with such a significant history greatly enhanced the experience of watching bomber after bomber fly by during the air show. Looking across the airfield at the





Willow Run factory and imagining the incredible effort that went into building it and building the aircraft it produced certainly caused me to pause and reflect on the lesser told story of those who supported the war at home. Add to that the fact that one of the most iconic figures of the support the war effort actually worked here at the Willow Run Bomber Factory and the "Bombertown USA" theme was starting to become crystal clear.

"We Can Do It!" was the tag line of a campaign to encourage women to join the war effort during WW II by taking jobs manufacturing military equipment and supplies. The poster girl for the campaign wearing her blue coveralls and red bandana with large white polka dots has become known as "Rosie the Riveter". Rosie was a fictional icon, but may have been based on a woman that worked at the Willow Run bomber factory named Rose Munroe. The TOM show features a WW II battle re-enactment and numerous other period re-enactors dressed as aircraft pilots and crew including numerous women and girls dressed as Rosie The Riveter that serve to again bring a focus to the significance of the air shows location itself.

Rosie the Riveter says "Save The Bomber Plant!" Consolidated PB4Y-2 Privateer, below



PV-2 Harpoon "ATTU Warrior"



B-25J Mitchell "Briefing Time" above  
B-25J Mitchell "Super Rabbit" below







One of many incredible heavy bomber formation fly pasts at the Thunder Over Michigan "Bombertown USA" show. Here are the B-29, Lancaster and B-17 bombers, above  
Reenactors with a WWII Jeep below in front of the B-17-F Memphis Belle replica, below

Ultimately the Willow Run Bomber Plant would prove to be such a significant contributor to America's war effort that the area around the plant in south east Michigan earned the title of being America's "Arsenal of Democracy". At its peak the plant employed 42,000 people. A third of those were women like Rosie The Riveter doing heavy manufacturing jobs that would have typically been done by the men that were off at war. Once the plant and the manufacturing process had worked up to its full production rate it was able to produce more bomber aircraft in a month than Japan was able to produce in a year. The mile long production line produced more than 8,600 complete B-24 bombers in less than 5 years in addition to manufacturing part assemblies for other manufactures. Peak production rate? As a testament to the 'get the job done' attitude in America during the war, the plant was able to actually exceed Charlie Sorensen's vision of a bomber and an hour and was able to roll a plane off the line every 59 minutes.

I've been to a lot of air shows. I love going to air shows. I enjoy civilian aerobatic performers, war bird demonstrations and the awesome display of the power and technology of the latest and greatest military aviation has to offer. But the experience of attending TOM's "Bombertown USA" show knowing the related history of location was an aviation experience I won't soon forget. For more information on the history of the museum's new home in the Willow Run Bomber Plant and to help make it a reality you can visit [www.savethebomberplant.org](http://www.savethebomberplant.org)





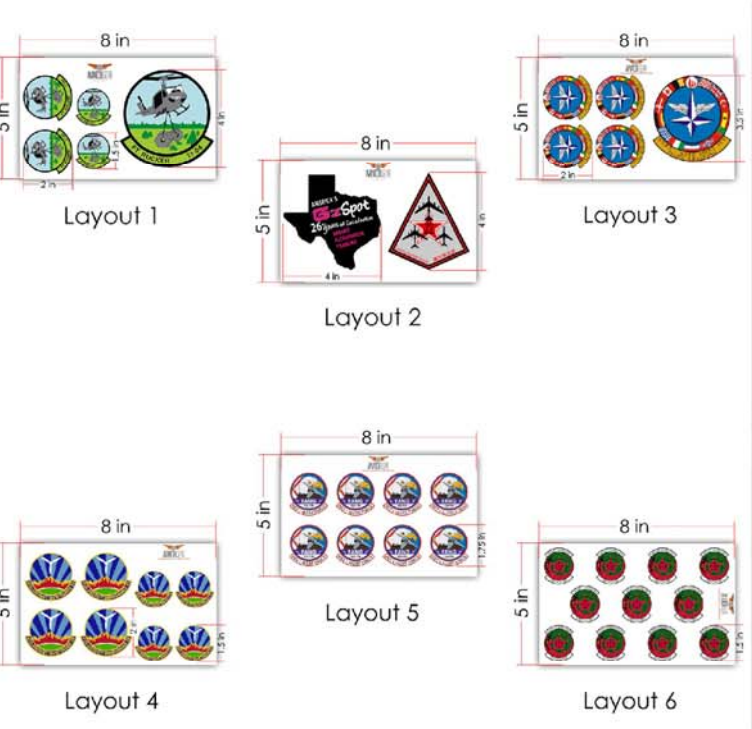
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**Le Musée d'avions de Chasse de Montélimar**

Article by the Editor with photography by Patrice Olivier unless noted otherwise



T-33 Image courtesy of Bruno Crouzeix

The entrance to the Museum flanked with T-33 and a Matra SAM missile, the inner courtyard features additional aircraft

There are several private museums in France that focuses on the reservation of military aviation. Le Musée Européen de l'Aviation de Chasse is one of them is located in the Rhône Valley, between Valence and Avignon, at the Montélimar Airfield. For reference Montélimar is 167 km north of Marseilles and 610 km south of Paris. As the name of the museum suggests le Musée Avions de Chasse that it specializes in fighter aircraft, although there are several





liaison, training aircraft and prototypes, as the name can be translated to English as The European Aviation Museum of Fighters.

The museum was formed in 1985, and it is governed by the 1901 Law on Associations, and is founded by individual visits, guided tours (for more than ten people) and donations. It has three full time employees whose skills and knowledge are valued daily and is led by a board of directors composed of 10 members headed by the president, Alain BES, who is also the Chairman of the museum since 2002.

While the museum is more about fighters there are others on display such as the Douglas DC-3A, a Max Holste MH 1521 Broussard, a Sud Aviation SE-210 Caravelle, which itself houses a small museum inside, and one can see the cockpit through a glass partition.

There are several diorama displays in the buildings, one of them with a real nose and cockpit section of a Vought F-8 Crusader taking off from an aircraft carrier. There are various engines, armaments and radar pieces on display throughout the museum. There are several superb scale models of various aircraft on display all the way to 1:5 life size.

The museum also has a unique collection of military communications devices, and it is hosting the collection at the request of the City of Montélimar. The collection includes transceivers equipment from 1930 era to 1975 from England, Germany, Russia, Italy, the USA and France.

There is also a small souvenir shop on the grounds of the museum. There is a restoration workshop, where the aircraft are restored. A rare Potez 36-13 aircraft is currently under going restoration. It was built in 1933, damaged in 1957, and it was acquired by the museum in 2002, the aircraft has been classified as historical monuments. It will be the only Potez 36-13 in flying condition in the world when restored.

The museum is the owner of one of the two only flying North American Rockwell OV-10B Broncos, in Europe (French Registration F-AZKM) that is currently sporting the USMC Desert Storm camouflage paint scheme, This aircraft is marked with BuNo 155454, assigned to Marine Observation Squadron Two (VMO-2), Marine Aircraft Group 39 (MAG-39), 3rd Marine Aircraft Wing (MAW-3), MCAS Camp Pendleton, California, USA. This particular Bronco is featured on the cover of this issue, piloted by Alain Bess.



The museum has one additional ex German Air Force OV-10B Bronco 99+27 that is used for parts to keep the current one flying.

There are three pilots at the museum who are qualified to fly the Bronco; Alain Bes; Xavier Buffa a professional pilot who flies the Canadair CL-415 water bomber for the Civil Security, and Damien Vadon who is an instructor pilot at the National School of Civil Aviation (ENAC).

We wish to congratulate Damien for becoming a World Champion Pilot in the individual WPFC 2015 at the 22nd FAI World Precision Flying Championships held at Skive, Denmark, in July 2015. Seen from left, Marcin Skalik (2nd) of Poland, Damien Vadon of France (1st), and Boleslaw Radomski (3rd) of Poland.



See more about the museum's Bronco starting on page 42. Further information about the museum can be found at their website: <http://www.meacmtl.com>







Matra R-422 SAM, above  
Gloster Meteor NF 11, below



Mirage 2000, below



Mirage IV, below



Sud Aviation SE-210 Caravelle 3



MiG 21UTI Mongol in the former German Democratic Republic Air Force markings



Dassault Falcon 20C with a special nose



Mirage F1CT



MiG 23 MF Flogger B, above  
MiG 17/Lim 5 Fresco, below



Breguet BR 1050M Alizé, below



Hawker Hunter Mk58A, below







Vought F-8 Crusader (nose section) diorama above & below



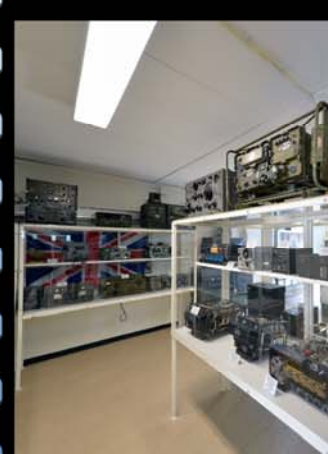
Fouga-Magister jet engine, below



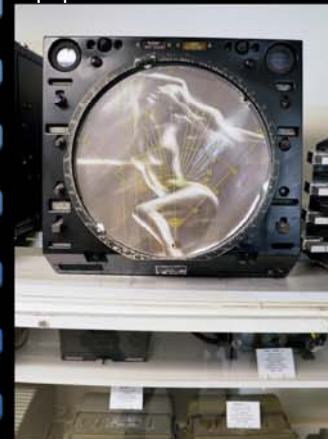
Hughes Taran 18 from Mirage IIIS, below



A Douglas DC-3A above, and inside one of the exhibition halls of the museum on Sept 9, 2015, hosting a plastic modelers festival, in the forefront is a Dassault MD.450 Ouragan of the EC 3/4 Fladres, Patrouille de France 1956 livery, next is a MD.454 Mystère IVA and a Dassault Super Mystere B.2



A collection Communication equipment and radar screens



A Willys Jeep WWII era, below



Renault-Snecma 12T motor below







- Swiss AF Mirage IIIR reconnaissance aircraft above and various Matra made cameras at various focal lengths 44, 76, 100, 200 and 600mm top left and under
- NA Bronco OV-10B used for parts, top right
- Embraer EMB312F Tucano, bottom right







- A Bleriot XI above
- A Morane-Saulnier 760 Paris II R in the center below, flanked by a FIAT G91-T1 to the left and a SAAB Sk37E Viggen to the right



- SNCAN SV4A Stampe above
- A very rare SAAB Sk37E Viggen there were only ten 2 seater Electronic Warfare versions made, below







- Douglas A-4 Skyhawk with Singapore Air Force markings, above
- Dassault MD 312 Flamant in the center, behind to the left an ex-Belgian Republic F-84F Thunderstreak, to the right a Swiss Hawker Hunter Mk58A and a partially hidden a Soviet MiG 23 Flogger



PZL-Mielec TS11 ISKRA with Polish Air Force markings, above





Without a doubt Le Musée Européen de l'Aviation de Chasse's biggest asset and that generates the most revenue is their only flying Bronco. The North American Rockwell OV-10B Bronco is a former German Air Force target tug variant 99+24.

The Museum acquired two Broncos through donation (the other is 99+27 used for spare parts) in December 1991. It took three years to restore the 99+24 with the valuable help from mechanics at CEV (flight test center in Istres AB). In February 1996 she received the air worthiness certification and was registered as F-AZKM. She flew first with German Air Force original colors before repainted in 2013 to the current the desert camouflage scheme of the US Marine Corps. The aircraft is marked with BuNo 155454, assigned to Marine Observation Squadron Two (VMO-2), Marine Aircraft Group 39 (MAG-39), 3rd Marine Aircraft Wing (MAW-3), MCAS Camp Pendleton, California, USA.

## The history of Bronco is quite fascinating:

The aircraft was initially conceived in 1959 through an informal collaboration between WH Beckett and Colonel KP Rice, U.S. Marine Corps, who met at Naval Air Weapons Station China Lake, California. Their idea was for a special aircraft for counter-insurgency (COIN) combat, and as Close Air Support (CAS) aircraft. The original concept was for a rugged, simple, close air support aircraft to properly support the ground troops, the aircraft needed to be small enough to operate from roads; be able to use 'on hand' fuels; be simple enough to be maintained under adverse field conditions; and be tough enough to land on whatever terrain was available. The aircraft needed to be versatile - so it could fly far enough - fast enough - and carry enough - to perform it's assigned mission. At the time, the U.S. Army was still experimenting with armed helicopters, and the U.S. Air Force was not interested in close air support.

The official definition of CAS is "Air support...integrated with the ground scheme of maneuver." This meant that it had to be there when it was needed, and close enough to distinguish the enemy, the situation and friendly troops. The jets were too big, too expensive and too centrally controlled to be properly responsive, and their speed was so high that they couldn't find, let alone hit, CAS targets. Something else was needed to go after the fleeing and elusive targets that are often so close to friendly troops that discrimination becomes a major factor. (Decades later this

requirement was fulfilled by the twin turbofan jet: the A-10 admirably.) Other important requirement was for a forward air control (FAC) aircraft. With these requirements in mind Beckett and Rice developed a basic platform meeting that met all the aforementioned. They then attempted to build a fiberglass prototype in a garage in 1961 with initial funding finagled through China Lake as long as they showed progress. Several parts were sourced from older aircraft located at the boneyard at China Lake.



The Museum's 99+24 German AF colors



©2010 Jakub Halun



The Bronco at Dittengen, Switzerland, 2015







It wasn't an easy process for W.H. Beckett and Colonel K.P. Rice to convince the Powers To Be, at the Pentagon, and they faced many obstacles however it is sufficient to say that they eventually succeeded and several companies submitted proposals for the Light Armed Reconnaissance Aircraft (LARA).

Convair started construction of a prototype Convair Model 48 "Charger" as a private venture before a winner of the LARA competition was announced. In August 1964, the US Navy announced North American Aviation's design, the NA-300 aka YOY-10 (later to become the OV-10 Bronco) as the winner of the LARA competition. The U.S. Marine Corps and U.S. Air Force favored the Charger, however, and protested against the U.S. Navy's decision, and Convair continued construction of their prototype, which made its maiden flight on 25 November 1964, after some flight testing the Convair Model 48 "Charger" crashed in October 1965.

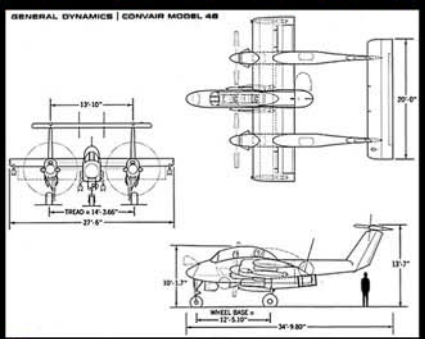
North American started working on the NA-300 right away in 1964. There is an interesting article about the "Flying Jeep" in December's issue of Popular Science. Click on cover to read it. On July 16, 1965, Chief Test Pilot Ed Gillespie made it's first flight of the North American YOY-10A (BUNO 152879) in Columbus, Ohio. The YOY-10 based upon Beckett and Rice's ideas although it was much larger and heavier than both originally visualized. At first it was built with a 30 foot wingspan but soon it was extended to 40 feet. When the first production OV-10A with a 40ft wingspan and a few other improvements such as larger (715hp) engines, angled sponsons and tail fillets was cleared for production in early '68, the airplane had great tactical capabilities, but was already severely limited in its applications by politics.



### The OV-10 in Service

Deliveries of the production OV-10As started in February, 1968, first to the Marine's VMO-5 at Camp Pendleton, California, and then to the Air Force's 4409th CCTS at Hurlburt Field, Eglin AFB, Florida. Five months later the first OV-10As had been deployed to Vietnam. The initial six aircraft used by the Marines were flown to Vietnam after having been delivered to the Philippines on an aircraft carrier. Just two hours after the ferry flights across the South China Sea to VMO-2 at

Convair Model 48 "Charger"

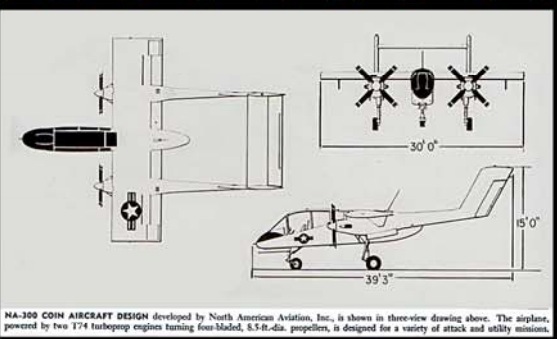


Charger test flights



Images from San Diego Air & Space Museum Archives

NA-300 COIN



NA-300 COIN AIRCRAFT DESIGN developed by North American Aviation, Inc., is shown in three-view drawing above. The airplane, powered by two 174 turboprop engines turning four-bladed, 8.5-ft.-dia. propellers, is designed for a variety of attack and utility missions.



OV-10A test flight with 30 ft wingspan



OV-10A with extended 40 ft wingspan

Images courtesy of blackpony.org



Marble Mountain, the first OV-10A "Bronco" went into action - a two hour reconnaissance mission in support of Marines just south of the demilitarized zone. Within six weeks this first six plane contingent had amassed 500 combat hours, almost 250 missions and was averaging 100% utilization.

The Marines quickly confirmed that the Bronco was not only an excellent weapons platform but also demonstrated the aircraft's unique effectiveness in reconnaissance, artillery and naval gunfire spotting, FAC airborne, light attack and helicopter escort. During the Vietnam conflict the jets couldn't get low enough and helicopters were unstable, while the OV-10 excelled.

The US Air Force used the Bronco mainly for FAC work. In combat, the FAC pilots expanded their role and became essentially very successful airborne command posts.

The Navy "Black Ponies," operating side by side with their own armed helicopters, demonstrated that the OV-10 could get to the target much faster than helicopters, and they often accomplished emergency missions hours before the centrally controlled jets arrived - much to the dismay of the Air Force. The Black Ponies weren't as restricted as the other services and probably got the most out of the aircraft. Even they were very limited in the ordinance they had available, mostly five inch

Romain Gonnon and Nicolas Chareyron, the two mechanics and with the help of the museums' volunteers apply a new paint scheme from the original German Air Force to the US Marines desert camouflage livery. The turboprops are receiving the required maintenance too, just before the Ferté Alais Air Show in 2013. Images by MEACM.







OV-10B At the 2013Valence Chabeuil Air Show

rockets and machine guns, sometimes a 20mm pod.

In spite of these successful operations in three services (Marines, Navy and Air Force) the light attack component was overshadowed more and more by the Air Force's opposition to anything that would give the "Grunts" on the ground anything airborne except what was left over after Air Force priorities were met. This eventually forced the Army into the development of the armed helicopter as the only way it could get the timely and dependable support needed.

### Verdict

The original concept of the early '60s for the light attack and observation aircraft that could operate from short and rugged runways was first stopped, and then highly modified the weight ballooned with additional equipment the "Powers of Be" in the Pentagon. Therefore, losing the capability to operate with the troops in the process. Despite of opposition by both the Air Force hierarchy and the Navy's SUSCOM, the OV-10A still uniquely covered the low end of the performance envelope and served with distinction in Vietnam with the Marines, Air Force and Navy.

The Bronco received several modification through its life cycle. It was sold to eight foreign air forces, continued in US service through "Desert Storm". In addition, the OV-10 has seen service with NASA, BATF the Bureau of Land Management and as spotters for fire bombers. The models are:

#### OV-10A

Original production version with enlarged wing and 715 shp T76-G-10/12 engines. Distinguished by a long-wire HF antenna between the center rear stabilizer and the central nacelle, 114 for the United States Marine Corps and 157 for the United States Air Force.

#### OV-10B and OV-10B(Z)

Target towing variant for Germany, with a target towing pod mounted beneath the fuselage. A clear dome replaced the rear cargo door. The rear seat was moved to the cargo bay to look backwards out the dome, 6 were built in this configuration. OV-10B(Z) was a variation of the German target tug, with one J85-GE-4 turbojet mounted in a nacelle above the fuselage. 12 were built. In total of 18 aircraft were supplied to the Germans Air Force.

#### OV-10C

Export version for Thailand; based on the OV-10A, 32 built.

#### YOV-10D

The prototype night observation/gunship variant developed as the OV-10D, at least one conversion from OV-10A.

#### OV-10D

Second generation Bronco developed under the Night Observation Gunship (NOGS) program. The D-model was an extensively modified OV-10A airframe, adding a forward-looking infrared night-vision system with a turret-mounted camera under an extended nose, visually distinct from the short rounded nose of the A-model. The D also has bigger engines and larger fiberglass propellers. Other noticeable external differences are the chaff dispensers installed midway down the booms and infrared-suppressive exhaust stacks (which mix the exhaust with colder air to reduce the aircraft's heat signature). 17 modified from OV-10A.





#### OV-10D+

The next USMC upgrade, consisting of A and D aircraft being extensively reworked at MCAS Cherry Point Naval Air Rework Facility with new wiring and strengthened wings. Engine instrumentation update.

#### OV-10E

Export version for Venezuela; based on the OV-10A, 16 built.

#### OV-10F

Export version for Indonesia; based on the OV-10A, 16 built

#### OV-10G+

Designation given to OV-10s loaned from NASA to the United States Special Operations Command for evaluation under the Combat Dragon II as a counter-insurgency aircraft, featuring new Hartzell four-bladed props and an off-the-shelf sensor suite. 3 modified from OV-10D+.

#### OV-10M (modified)

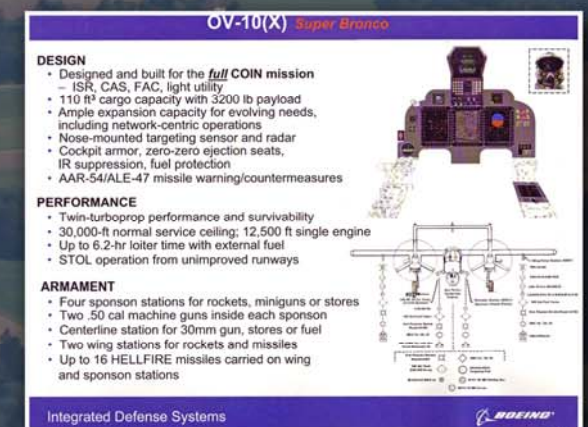
A four-bladed version of OV-10A; modified to accommodate bigger engines with larger fiberglass props. Equipped with square chaff dispensers midway down the booms and with new wiring and strengthened wings. Engine instrumentation upgrade by Marsh Aviation for the Philippine Air Force.

#### OV-10T

Proposed cargo version of the OV-10, capable of carrying 8-12 troops or 4,500 pounds (2,000 kg) of cargo, studied during the Vietnam War but not proceeded with.

#### OV-10(X)

Proposed version for the USAF's light attack contract by Boeing. The X also known as the Super Bronco would have featured upgraded avionics and weapons capabilities, but never proceeded with.







## OV-10B SPECIFICATIONS

|                  |   |
|------------------|---|
| Wing span:       | 40 ft (12,19 m)                           |
| Length:          | 44 ft (13,41 m)                           |
| Height:          | 15 ft 2 in (4,62 m)                       |
| Empty Weight:    | 6.893 lbs (3127 kg)                       |
| Max. Weight:     | 14.444 lbs (6552 kg)                      |
| Powerplant:      | 2x Garrett T76 -G-410/412 715shp (533kW)  |
| Max Speed:       | 281 mph (452 km/h)                        |
| Service Ceiling: | 24.000 ft (7315 m)                        |
| Range:           | 576 miles (927 km) without external tanks |



Click on image for video



## ALAIN "BILOU" BES



©Alain Bes

Alain BES born in 1953 in France. Alain began his career as a pilot when he was 17. He joined the French Air Force, where he served for 18 years.

Alain was a French Air Force fighter pilot with a rank of a Captain, he was a squadron leader of the 5th Mirage III Squadron and Mirage F1 C. He was a fighter flight school instructor flying the Lockheed T-33 and the Dassault/Dornier Alpha Jet. Over the years he flew several different aircraft in the French Air Force and he was qualified for the Fouga CM.170 Magister, Dassault Mystère IV A and B, Dassault Mirage III and IIIC, Dassault Mirage F1C and B, Dassault Mirage 2000. Upon retirement from the air force, he continued as a civilian flight instructor. He is qualified to fly the MH Broussard, Mudry CAP 10, and of course OV-10 Bronco.

Alain is also the President of the Le Musée Européen de l'Aviation de Chasse, located in Montélimar, France.

The Aviation Magazine would like to thank all those volunteers at the Museum who are performing such an outstanding job, and for their help, along with Alain Bes, Laurent Calame pilot of the TBM Avenger, Pascal Rioland and Patrice Olivier photographers and Bob Peetz from the Black Pony Organization, for their cooperation and invaluable help in the preparation of this article.







# OV-10B BRONCO





# SPIELBERG, Austria

Report by by the Editor with photography as noted



Kirby Chambliss of the United States flies in formation with Hannes Arch of Austria and Nicolas Ivanoff of France over the Dachstein mountain range in Styria, Austria on the right.





The 6th of the 8 round the Red Bull Air Race World Championship took place in Spielberg, Austria.

Hannes Arch, the Austrian local hero from the nearby town of Trofaiach, was confident of his chances of winning his third round Red Bull Air Race of the season and putting the pressure on overall leader Paul Bonhomme of Britain after the Austrian ace posted some of the fastest times in training on Friday. Arch still holds the track record at the Red Bull Ring that he set a year ago.

Saturday's Qualifying session was cancelled due to rain and low clouds at the racetrack set up in the infield area of the Red Bull Ring. The race course at Spielberg is set up on the infield of the Formula One race track, is considered by the pilots to be the most challenging on the circuit this year. By winning on Sunday Matt Hall upset Red Bull Air Race World Championship leader Paul Bonhomme. Beating Britain's Paul Bonhomme into second place in a dramatic final while American Kirby Chambliss got his first podium since the race in New York City in 2010 with third. Getting the first victory of his career, Hall was flawless in the final on a windy afternoon. His time of 56.851 seconds was the fastest of the day and was just enough to beat Bonhomme (56.908 seconds) in the high-speed, low-altitude race to collect 12 championship points. Local hero Hannes Arch was knocked out in the opening round after hitting a pylon.

Racing just meters above the ground at speeds of up to 370 km/h, the 14 pilots from 11 nations faced extraordinary challenges on the spectacular Spielberg track, set up on the infield of the Formula One race track. Not only did they have to contend with trees and undulating mountain slopes along with considerable turbulence and gusty winds, they also had to deal with a difficult 61-meter change in elevation that makes the Spielberg stop so challenging for the pilots. Despite getting knocked out in the opening round, Austria's Hannes Arch, who is third overall with 30 points, still holds the track record time of 55.545 seconds set last year in Qualifying in cooling temperatures in October.

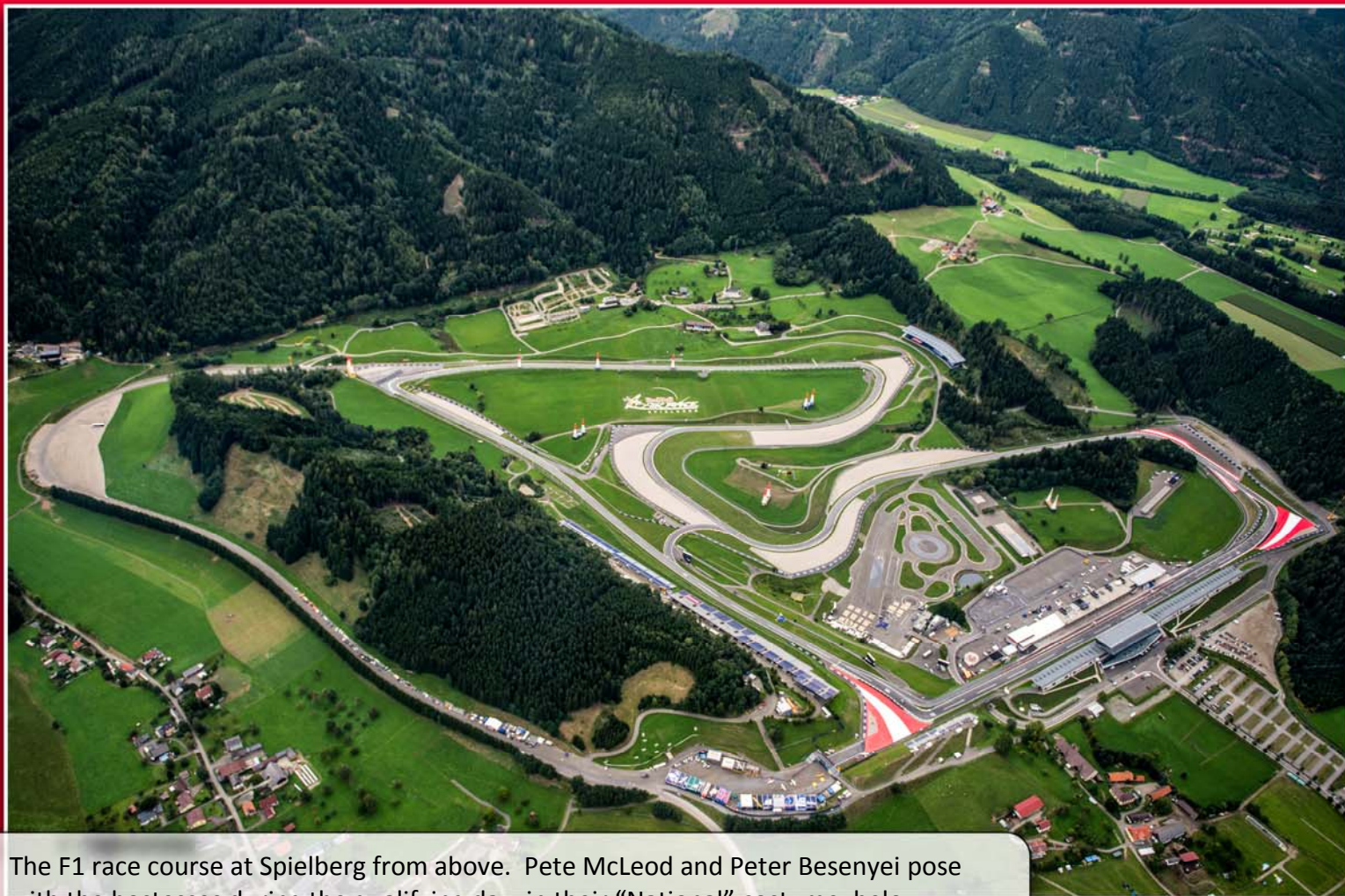
Results Spielberg: 1. Matt Hall (AUS), 2. Paul Bonhomme (GBR), 3. Kirby Chambliss (USA), 4. Martin Sonka (CZE), 5. Pete McLeod (CAN), 6. Matthias Dolderer (GER), 7. Michael Goulian (USA), 8. Peter Besenyei (HUN), 9. Nicolas Ivanoff (FRA), 10. Yoshihide Muroya (JPN), 11. Juan Velarde (ESP), 12. Hannes Arch (AUT), 13. Nigel Lamb (GBR), 14. François Le Vot (FRA)

World Championship standings: 1. Bonhomme 55 points, 2. Hall 50, 3. Arch 30, 4. Sonka 23, 5. McLeod 18, 6. Lamb 17, 7. Dolderer 15, 8. Muroya 11, 9. Ivanoff 11, 10. Goulian 10, 11. Chambliss 9, 12. Besenyei 8, 13. Velarde, 14. Le Vot

Kirby Chambliss of the United States flies in formation with Hannes Arch of Austria and Nicolas Ivanoff of France over the Dachstein mountain range in Styria, Austria on the right.







The F1 race course at Spielberg from above. Pete McLeod and Peter Besenyei pose with the hostesses during the qualifying day, in their “National” costume, below.



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And the winners: Masters — 3rd Paul Bonhomme of Great Britain (L), 1st Matt Hall of Australia (C) and 2nd Kirby Chambliss of the United States. Challenge Cup — 3rd Petr Kopfstein of Czech Republic (L), 1st Mikael Brageot of France (C) and 2nd Daniel Ryfa of Sweden (R)



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# DNY NATO DAYS 2015

Report by Wolfgang Jarisch & Peter Thivessen  
with photography as noted

NATO Days in Ostrava & Czech Air Force Days are traditionally held at Leoš Janáček Airport, the aviation gateway to the largest city in Moravian-Silesian Region. Ostrava Leoš Janáček Airport as well as City of Ostrava and the Moravian-Silesian Region participate at the organization of the event at the long-term basis already

NATO DAYS IN OSTRAVA began their tradition in 2001. Originally, they were a regional public presentation of armed forces, police and rescuers and have since evolved into the largest air, military & security show in Central Europe. This reference has been proven not only by the increasing interest among foreign participants but above all by the sheer numbers of event's visitors.

CZECH AIR FORCE DAYS are the official event of the Czech Air Force which is held upon the decision of the Ministry of Defence simultaneously with and as part of NATO Days in Ostrava. Thanks to this connection, a new prestigious format of the show emerged, serving as important quality warranty especially for foreign participants. This joint endeavour encourages organization of further international activities, as were the summit of the air force chiefs of the V4 countries, top-level bilateral meetings, conferences and other side-events during our show.

Special Guest Nation was Sweden, which brought a lot of equipment to Ostrava. So did the BAE Systems Land Systems Hagglund of Sweden BV S10 and the Bofors Artillery System FH 77BW L52 Archer and the Sikorsky UH-60M in the static display, and the Swedish Air Force Historic Flight in the flying display, in formation and each aircraft also as solo display.



Orlik Display Team 8 x PZL-130TC II, Polish Air Force



Several generations of SAABs: (l to r) 105 trainer, JA 37 Viggen (top) JA35 Draken, JAS 39 Gripen, J 29 Tunnan

Both images ©2015 Wolfgang Jarisch



But this is not only an event organized by NATO and the Czech Republic, this also the biggest security event in Europe. Responsible for the security part was the Czech non profit organisation JAGELLO 2000 which is also a part of the Atlantic Treaty Organisation since 2003. Many different units from the Czech Republic, Fire Brigade, Border Control, Police, etc. were involved in the ground and the static displays. Special guest were 8 members from the King Abdullah II Special Operations Training Center (KASOTC), the Female Company for Special Security Tasks of Jordan Armed Forces (FCSST JAF). They were shown in a dynamic demonstration together with soldiers of the 102nd Reconnaissance Battalion of the Czech Army and they will present the cast up of a terrorist base from a helicopter airdrop and the liberation of hostages. At the end of day one can say that it was a fantastic and unique event in Europe!

Food with enough variety for everyone with excellent prices that worked for all budgets.

In conclusion NATO Days was a highly successful event for everybody! Great flying demos, fantastic ground displays combined with a professional organization. Well done!!!

The Aviation Magazine Media would like to express our thanks to the head of the press Center for their great hospitality and assistance on base. Our special thanks to Mrs. Barbora Urbisova. Thank you!!



German Eurocopter EC135 above and the F-16C Demo Team “Zeus”, Hellenic Air Force, right



©2015 Peter Thivessen

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Swedish AF C-130T Air-to-air refuel demo with two JAS 39 Gripen above



KDC-10, Royal Netherland Air Force, above  
AW139M Italian Air Force, below



Saab 105OE, Austrian Air Force, below



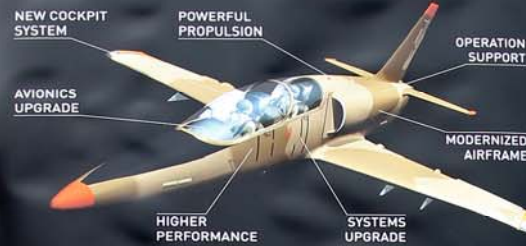
A Belgian AF C-130H is doing a low level fly-by, really low level <4m!



AN-26, Hungarian Air Force, above



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 • Followed by double seater final type in the syllabus  
 • Developed to train pilots for MiG-29, Su-27, MiG-31  
 • HUD, tactical info presentation



**1970 L-39 - Standard WarPac jet trainer**  
 • Followed by MiG-21U in the syllabus  
 • Training for MiG-23, Su-15, 17, Mirage, F-5E, F-16  
 • Systems sophistication



**1960 L-29 - Standard WarPac jet trainer**  
 • Followed by MiG-15UTI in the syllabus  
 • Training for early supersonic fighters (MiG-21, Su-7)  
 • Simple systems



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- Lynx MK8, Royal Navy UK, above
- PZL-Swidnik W-3A Sokol, SAR of the Czech Air Force



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# THE MALTA INTERNATIONAL AIRSHOW

SEPTEMBER 26 & 27 2015  
MALTA INTERNATIONAL AIRPORT

Article & photography by Ray Biagio Pace and as noted

The 23rd Malta International Airshow organised by the Malta Aviation Society was held on the 26/27 September 2015. The weather was fortunately much better than forecast. The air show was yet again superbly organized with excellent comments by foreign air show enthusiasts.

This year's arrivals began on Thursday 24th and on Friday 25th, as in previous editions of the air show, the MAS volunteers and pass holders were taken to the Runway 31 threshold to view and capture the arrivals. The gates were open from 10.00 am to 6.00pm on both days. Attendance was high and all free parking places available were taken up on Sunday - all of which were managed very efficiently by the younger volunteers from the Malta Aviation Society.

Despite no participation by "big" aerobatic teams, the organizers secured enough material to spice up the public's interest as well as that of foreign media and aviation enthusiasts from Europe. As in all previous air shows, spectators were in a very strategic place close to where the taxiing aircraft and flight display took place thus being able to capture all the action without difficulty.

Restroom facilities were predominantly new and clean. Medical and Rescue crews were present, luckily their intervention was not required. A large refreshment and food stall with reasonable prices was available with separate queuing for air crews/air show volunteers and spectators. Other smaller stalls and a children's play area were set up around Park 4.

The Armed Forces of Malta Air Wing and the Italian Military mission were as usual present with their own stands selling Army memorabilia and showing their various aircrafts to the public. The Armed Forces of Malta participated in the flying display with a spectacular duo display by their fixed wing King Air and the Augusta AW139 helicopter. The Italian Military Mission participated in a SAR simulation with their AB212 helicopter.

The four main local flying schools were kept busy with young students and their parents enquiring about the various pilot, cabin crew and other courses being offered whilst seeing their aircraft displayed.

Despite no "renowned" major aerobatic teams, the organizers managed to secure the participation of the Swiss and





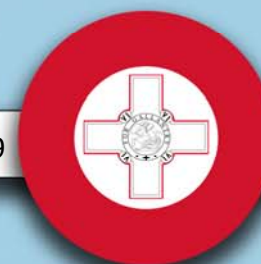
Polish Air Forces aerobatic teams and both did not disappoint the public present with spectacular displays and formations never seen before. The Egypt Air Force K8 and its Support aircraft – the Hercules C-130H returned for the static display on both days and their participation was a great hit once again.

The Royal Canadian Air Force returned to the Malta Airshow after a lapse of 17 years with their CP-140 Aurora. Other notable flying display participants were the Italian Military Augusta AW149 helicopter and the Hellenic Air Force T-6A Texan II Daedalus aerobatic solo aircraft. The British Army participated with The Tigers Parachute Display Team being dropped off from the Armed Forces of Malta Islander aircraft. The Royal Navy Black Cats display team also awed the public present with their two Wild Cats helicopter display.

Undoubtedly, the Belgian Air Force F16-AM solo display was the highlight of the flying display with low passes and noise adding to the thrill and delight of the public present.

The organizing committee and volunteers were happy with the outcome of this year's air show and said that work has already commenced for the 2016 air show which is being held on the 24th and 25th September 2016.

Maltese King Air 200 with a maritime surveillance and imaging radar & AW139



All film strip ©2015 Ray Biagio Pace

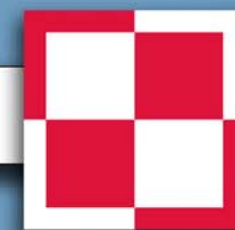


Tigers Parachute Display Team    US C-130J Super Hercules    The Royal Navy Black Cats    Lots of Ultralights    Egyptian K-8E pilot helmets    Show volunteers & Polish PLZ-130 Orlik Team





Polish Navy  
PZL M28B



Egyptian AF K-8E above with an C-130H landing below, for static display







Belgian F-16AM Solo Display Team



Swiss Air Force PC-7 Display Team



Hellenic AF Mirage 2000 arriving







Polish AF PZL-130 Orlik Display Team above, Royal Canadian Air Force CP-140 Aurora, below



Swiss Air Force PC-7 Display Team above, Royal Air Force C-17 Globemaster III landing beside a below Turkish Airlines Boeing 737 Next Gen





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# Shuttleworth Uncovered

ARTICLE AND PHOTOGRAPHY BY CHRISTOPHER MIFSUD

Old Warden is a suburb of Biggleswade in the county of Bedfordshire, with a population of around 300 people. The aerodrome covers what is probably half of the village's total area and is surrounded by pockets of cottages and a parish church. This small place on the map is however home to one of the world's largest and best collections of antique and classic aircraft, vehicles, steam engines and bicycles which are collectively known as the Shuttleworth Collection.

At least once every month between May and September, usually in the afternoon of the mid-month weekend, a pageant of the Collection is held where a selection of aircraft can be seen taking off and performing fly-bys. Many of the aircraft are handled manually out of their hangar and onto the grass field. Once every season an 'uncovered' show is held where one can walk up to the exhibits on the grass and talk with the pilots and other personnel.

The show on 4th Oct 2015 was this year's 'uncovered' event. This had been postponed from September so as to attract more people to attend what will surely be remembered as one of the last outings of XH558, the world's only flying Avro Vulcan.

Jet appearances are very rare at Old Warden and October's show was no exception. Not only was the appearance of the Vulcan restricted to perform within a tight area because of noise tolerance levels, but also because of the CAA's newly imposed regulations in the aftermath of the Shoreham Hawker Hunter tragedy of 22nd August 2015 which left 11 people dead.

Within a few hours of the Vulcan being confirmed for the show the limited sale of tickets quickly sold out. I bought mine online around 12 days before the show and there were none left a day later. I am told that tickets were then turning up on eBay for over £130 each!!

It took me just over 40 minutes to drive up from Luton to Old Warden and I was the eighth in the queue at about 6.45am. As the day progressed it became clear that the sell-out crowd would quickly fill up the aerodrome and that the sunshine would keep. Many of the usually quiet stalls had long queues of people waiting for their pints, teas, hot dogs and chips. Staff and volunteers handled the organisation superbly and the show progressed like clockwork.

The star of the show was undoubtedly XH558, as it prepared to fly in for its slot accompanied by the Collection's own Avro 19 Anson the crowds eagerly scanned the sky beyond the treeline for an early glimpse of the Tin Triangle. XH558's display was impeccable and a few tears rolled down many a cheek as the Vulcan departed.



Participating aircraft included a Seafire 17, Sea Hurricane MkI, Hurricane MkI, Sopwith Pup, Avro 504K, Anec II, Percival Mew Gull, DH88 Comet Racer, Hunting Percival Provost, a NA AT6 Harvard, Royal Aircraft Factory SE5A, 2 Hawker Cygnets, BBMF's Dakota, Gloster Gladiator, Hawker Demon, Polikarpov Po-2, Bristol Scout, Bristol F2B, a replica Bristol M1C, Fauvel glider and last but not least Edwardian era aircraft. Aerobatic pilot Mark Jeffries performed a stunning display in an Extra 330SC. The Red Devils paratrooper display team from 2 Para, the Parachute Regiment, gave us a most impressive display of parachuting skills and pinpoint landings after jumping from a Cessna Caravan flying at 3,500ft.

Other notable aircraft which did not take part in the flying display per se included a DH82 Moth, Miles Magister, Hawker Tomtit, Bleriot XI, Christen A-1 Husky floatplane and a highly polished chrome Spartan Executive.

Overall it was a very worthwhile visit to the Shuttleworth Collection in England, enjoy the images that I took.

Avro Vulcan B2 accompanied by Avro 19 Anson









Hawker Hurricane MkI with a Supermarine Seafire 17 to the right





- Royal Aircraft Factory SE5A above
- Avro 504K below



- Sopwith Pup above
- Avro 19 Anson below





# South Dakota's Lancers: a brief visit to Ellsworth AFB

Article and images by Ralf Peter Walter



B-1B "Lancelot" of the Thunderbirds 34th Bomb Squadron



Ellsworth AFB near Rapid City, South Dakota is home to the 28th Bomb Wing. The 28th BW is one of only two wings that operate the B-1B Lancer, commonly nicknamed the "Bone" (B-one).



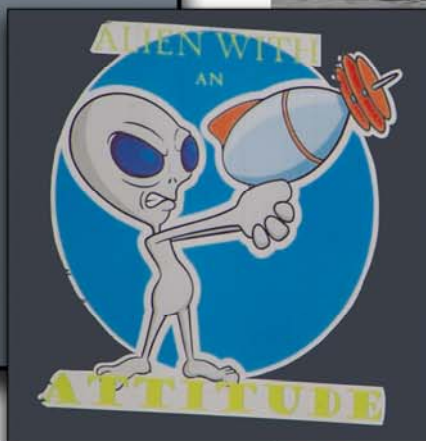
The Wing is comprised of 4 Groups, the 28th Operations Group, the 28th Maintenance Group, the 28th Mission Support Group and the 28th Medical Group. The 28th Operations Group commands the 34th Bomb Squadron Thunderbirds and the 37th Bomb Squadron Tigers with a total of 27 B-1Bs. Both squadrons are among the most senior units of the US Air Force.

The 34th BS was established as the US Army 34th Aero Squadron on June 11, 1917. The 37th BS stood up as the 37th Aero Squadron in June 1913 and saw action during World War I when being deployed to France with the American Expedition Force. In April 1942 both squadrons took part in one of the most famous air raids of World War II when they flew the B-25 Mitchell from the deck of the USS Hornet with Lt. Col. Jimmy Doolittle on the raid over Tokyo. In September 2002 the Thunderbirds joined the 28th BW, the Tigers have been with the wing since 1977.

Global Reach - the mission of the 28th BW with its B-1Bs is to guarantee US expeditionary combat power anywhere and anytime on the Globe. This was impressively demonstrated on March 27, 2011. That day the 34th BS flew the first B-1 combat mission launched from the US to strike overseas targets, when flying nonstop from Ellsworth AFB to Libya to strike targets as part of the Operation Odyssey Dawn.

Since October 1st the Wing part of the Eighth Air Force and is assigned to the Air Force Global Strike Command, headquartered at Barksdale AFB, La.

We would like to thank 1st Lt Rachel E. Allison and SrA Jordan L. Thompson, both 28th BW PAO for their assistance.



B-1B "Alien with an Attitude" of the 37th Tigers Bomb Squadron





A B-1B taking off from 37<sup>th</sup> Bomb Squadron Tigers





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