

AirshowStuff

Magazine

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CONA Art

Midnight Sun Airshow

Thunder Over Michigan

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and more!

August 2011

AirshowStuff

Magazine

August 2011

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T-6 Texans in flight at the Nevada County Airfest in California.
Photo by Mark E. Loper. For more, see page 128.

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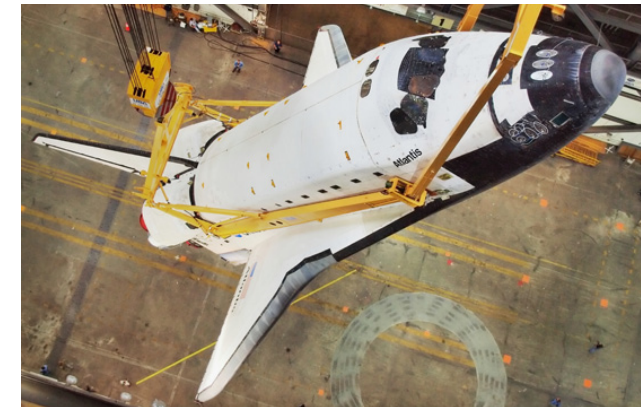


Photo Contest

If you are a photographer, pick your best shot and enter our monthly photo contest! Just take your photos at an airshow or airport and send them in to RS@AirshowStuff.com!

Photo Contest Rules

- Two entries per person per month.
- All entries must be your own work.
- All photographs must be from the current calendar year.
- Photos must be at least 1000 pixels on their longest side.
- The photographer retains all rights to the entered images.

We will review all of the entries and pick one winner and two runners up to get published. The winner will receive a free DVD set or 8x10 print of their choice from AirshowStuff.com. If you don't win, try again next month! Good luck!





Thanks to those who contributed to this issue!

See yourself here!

If you are an airshow enthusiast, we want your help! Everything you see in this magazine is created and submitted by people like you. All it takes is a simple e-mail each month with photos or articles you would like to submit. We may even be able to help you get a media pass if you cover a show for us! If you would like to join our team, please drop us an e-mail at RS@AirshowStuff.com We'd love to have you!

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1-10 Wartho

Burt Rutan's Race to Space

A review and chat with author Dan Linehan



Burt Rutan talks with two other "greats" from the world of space exploration, moon-walking astronaut Buzz Aldrin (right) and Dr. Maxim Faget (back to camera), the configuration designer of the spacecraft for the Mercury through Apollo programs.

With the much publicized retirement of aviation designer par excellence Burt Rutan, it was pretty much inevitable that someone would publish a book about his life and work. Author Dan Linehan, who made a splash with his gorgeous *SpaceShipOne: An Illustrated History*, has followed up that work with the equally well-illustrated *Burt Rutan's Race for Space*, leveraging his relationship with the eminent engineer and countless hours of interviews to produce the first broad overview of Rutan's life of creating unusual flying machines.

In his Introduction to the book, Linehan describes Rutan's manila folder holding the master list to all of his designs and model num-

bers. He writes, "Once opened, pistons roar, jet wash spills out, and rocket plumes light up the room, like some kind of aviation mysticism. It is thick with page after page of flying machines – record breakers, racers, world flyers, spaceships, and many other aerial innovations. Some eventually spring to life. Some don't." He goes on to describe his time with Burt and the simple folder: "With a grin that looks as if he's about to show off a map to secret treasure or a book of magic spells, he says, 'I'll give you a peek at it, so you can see the kind of depth of it. It is not very deep.'" It is typical Burt humor, and Linehan observes, "Oh, but it certainly is." And more than anything, that's what Line-

han's new book is, a peek inside one of aviation's most extraordinary minds, and the wonders it has produced over the years.

AirShowStuff Magazine caught up with Linehan at the Palmdale, CA Barnes & Noble, the closest bookshop to Rutan's old headquarters at Mojave, and had him tell us about writing on Rutan. "The pinch-me moments was in how much I worked with Burt on this," Linehan said. "I've stayed at both his houses, had a chance to goof around the golf course, sat in a hot tub together, some goofy things that are like 'I can't believe this is happening.' But I think that for as much as it was difficult with the first book to try to break in and get Burt to talk to me, this

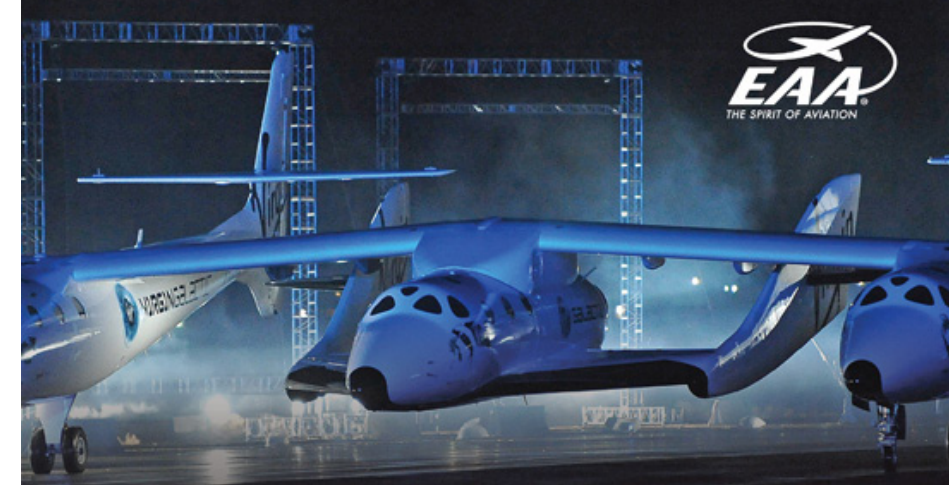
book was a lot easier. Burt was really forthcoming with his time with me."

Linehan is no stranger to his subject. His father was a Navy rescue pilot and later flew for United Airlines, "so I grew up around planes, and went to Oshkosh as a kid." As a youngster, he was familiar with Rutan and other designers, and ended up going to schools to become an engineer, the field in which he received his Masters Degree. A fascination with writing led him in that direction, however, and he wrote several pieces covering the X-Prize project. This led him to become one of the writers recommended to Rutan to write the definitive work on the SpaceShipOne effort.

Much of the photographic material was given to Linehan by Burt, and this priceless collection is supplemented by images taken by several other local photographers such as the talented Mike Masee. The breadth of Rutan's work is mindboggling, and a really exhaustive record of it would take volumes, and might not even be possible. "In a way, it's almost crushing, because there's no way one person could possibly know everything about these planes, even Burt doesn't remember half of the stuff," Linehan says with a chuckle. And yet, for a large-format 156-page work, the book manages to give a satisfying overview of the important points of Rutan's work.

Material on some of the early aircraft was hard to come by. For instance, Linehan opens a copy of

Courtesy of Zenith Press



BURT RUTAN'S RACE TO SPACE



THE MAGICIAN OF MOJAVE AND HIS FLYING INNOVATIONS
DAN LINEHAN
FOREWORD BY MIKE MELVILL



Dan Linehan signs a copy of his new book for Harold Smith. Smith, who brought his 4-year-old son Logan to the event, has worked as a fueler at the Mojave Airport for over three decades, and has fueled countless Rutan projects.

the book to a rough sketch of the MiniViggen, which Rutan had intended to be the first homebuilt design to be offered (although plans were sold for the earlier Vari-Viggen, Burt really intended that design to only be for his own personal use). For the MiniViggen, Rutan set out to make a canard aircraft out of a BD-5 kit. "I was trying to get a drawing [for the book] out of him, and he had no drawing. So he sketched this thing

Linehan also had access to other players in the Rutan world, including Sir Richard Branson, who is the money behind Virgin Galactic and the SpaceShipTwo project. "I think the interview I got to do with [Sir Richard] Branson was really good. In all the literature...no one really explained very well the connection, where they met, how they met, and I wanted to fill in those blanks," commented Linehan.

ible, to see how this person [Rutan] went about doing this I want people to take away knowledge about what Burt has done, but underlying that I want people to say 'wow, this is how he did it. If I go to school and try to think these ways, maybe that will really benefit me.' You need to know how those brilliant minds in the past have done things."

With Burt retired, Linehan ends the book with the question that he reiterates in our interview: "Who is going to be the next Burt Rutan? I had a great experience in Oshkosh when I had my first book come out. This five-year-old girl came to me in this giant building, with all these books and authors, and she walks straight up to me and says, 'I'm five years old and by the time I'm ten I'm going to the moon. My parents said I could have any book in this place, and I want yours.' So I signed her book and said, 'I hope you become a great space pilot one day because I'm probably going to need a ride, and would you please give me one?' The next day she came back, walked straight up to me and said emphatically, 'I read the first chapter and it was very good,' and then she walked right out again."

Regardless of who becomes the "next" Burt Rutan, Linehan has done an excellent job of chronicling the life's work of the one and only original, a final product that is an instant classic and one of those works that is a "must have" in the library of any serious follower of experimental aviation.



Burt Rutan, lower right, congratulates Mike Melvill (right) and Brian Binnie after the flight of the WhiteKnight during the unveiling ceremony for SpaceShipOne in April 2003.

for me. It's hot off the press," Linehan said laughing. Such are the unique insights that his book offer. Coming up with accurate specs on some many different experimental and homebuilt aircraft was especially challenging, due to the variations possible in the way the aircraft are built. Linehan came up with the best set he could, and then threw them back to Rutan to proofread. "So the specs are about as official as you could say," said the author.

Linehan does a lot of educational writing, as well, and this partly influenced how he approached writing about Rutan, and the general message he wanted his readers to be able to take away with them at the end of the book. "I really thought that this [turned out to be] a really good educational piece. If someone wants to be an engineer when they grow up, this really shows you the thought process. I thought that was really incred-



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Inside the Cold War Air Museum

Article and Photos by Andy Nixon



restoration finished in late 2011 or early 2012. The Mi-2s that CWAM operates are the only flying Hoplites in the United States.

The pride of the CWAM helicopter fleet is the pair of Mi-24D Hinds. These large Russian attack helicopters are a sight to behold in flight. Made famous to most Americans in the movie *Red Dawn*, these choppers are every bit as scary looking as you can imagine. The Hind has a titanium front and can hold eight fully loaded combat troops in the rear cabin along with a full range of rockets and gun pods. With a max speed of 200 mph, this 18,000 pound helicopter can move.

The museum originally acquired three Hinds from Bulgaria (none of which saw combat action) but only two have been restored to flying status. The third has unfortunately been put on gate guard status after it collided with a bridge during its trip from Houston to Lancaster. The other two Hinds, Bord 118 and Bord 120, have been successfully restored to flying status. The Bord number is the large number on the side of the aircraft that was used by the Bulgarian military for identification; on the Hinds the Bord is located on the engine cowling. Bord 118 got her airworthiness certificate in late 2009 and Bord 120 received hers in June 2011 after finishing the 10 hours of pattern work required by the FAA for safety purposes. While Bord 120 has not yet left Lancaster Regional, Bord 118 has flown to many airshows in Texas and Oklaho-

On a sleepy little airfield south of Dallas, Texas sits one of the largest collections of Russian aircraft in the Western Hemisphere. The Cold War Air Museum at the Lancaster Regional Airport is one of America's up and coming

museums and flying warbird collections, boasting a collection of over 20 airplanes and helicopters in three hangars. This includes a flying collection of five different types of fixed wing and rotary winged aircraft.

Founded in 2005, CWAM, as it is affectionately known to its volunteers, has quickly grown from a couple hangars filled with boxes of metal parts to hangars full of running and flying machines. Every day they get closer to the mu-

seum's ultimate goal of making everything flyable.

The first aircraft in the museum's arsenal were the Mi-2 Hoplites. The four light transport helicopters were manufactured by Mil Helicopters in Poland and

served in the Bulgarian Helicopter Air Regiment. Three of the four examples at CWAM have been restored to flying status; the newest one received its airworthiness certificate in late June 2011. The last Mi-2 is scheduled to have its



ma over the past two years. The good news for airshow fans is that CWAM is looking to expand their airshow performances across the United States with both Hinds. Just a couple weeks ago, both Mi-24s took to the air together for a successful formation flight, a sight that would please any airshow crowd.

Rounding out the CWAM helicopter fleet are two American choppers. A B-model Huey and a Cobra grace the hangars at the museum. The Cobra is fully intact but missing the logbooks. It was moved to the museum after the technical school it was at closed. The Huey is still in pieces and the flying fate of both aircraft remains undecided.

On the fixed wing side of things, CWAM's biggest attractions are the MiG-21 and the MiG-23. Both of these MiG fighters are former Bulgarian aircraft, shipped over via containers and rebuilt on site.

The MiG-23 Flogger is a large, single engine, swept wing fighter. Built between 1967 and 1985, it earned its reputation as a good hit and run interceptor and ground attack aircraft in the skies over Afghanistan during the Soviet war there. CWAM currently has a MiG-23UB, Bord 022, which is a two seat version that was originally used as a training aircraft. Bord 022 is currently running and just completed its third successful afterburner taxi run on August 6, 2011. The aircraft is currently awaiting its airworthiness certificate from then FAA. Due to the





trainers are flying, with a third awaiting its airworthiness certificate. The other four were just received from another hangar on the airfield and are awaiting final assembly. Three out of the four L-39 advanced jet trainers are currently flying, with the fourth waiting for a final assembly. The one CJ-6, a Chinese-built, radial powered primary trainer, similar to the Russian Yak-52, is currently flying and has been seen at airshows in Texas and Oklahoma. This collection of training aircraft allows CWAM to operate a training program for pilots similar to that of the Russian Air Force, using all of the same aircraft. That means that all CWAM pilots can be trained in the same way a Russian or Bulgarian pilot was trained to fly their MiG fighters. The new pilots would start flight training in a Yak-52 or CJ-6, and progress through the L-29 into the L-39

before being selected to fly one of the premiere MiGs. No other museum in the US can match this claim. The only western jet in the museum is the Fouga Magister; a French built jet trainer which is flyable but it currently out of annual.

With the size of their fleet, CWAM must put as many aircraft in the air as they can every week-

end. Having only a select number of pilots and a multitude of aircraft needing to be flown, it creates times where there may be as many as three different CWAM aircraft in the pattern Lancaster at once. It is an awesome sight to behold. The museum is currently open on weekends only. Admission to the museum is free but donations are welcome. CWAM

was recently granted 501(c)3 status, so changes are pending to the operation hours.

CWAM is also contemplating attending ICAS this December to help expand their Mi-24 airshow schedule for 2012. The remaining 2011 schedule consists of two shows in Texas. Warbirds on Parade at Lancaster Regional on Sept. 3, is the home show for CWAM, and attendees should expect to see the full line up of CWAM aircraft in the air. The final show is in Georgetown, Texas on Oct. 1; CWAM will be bringing an Mi-24 and an Mi-2.

Special thanks to the CWAM Board of Directors and Ivan Voukadinov for making this article possible. If you would like more information on the Cold War Air Museum be sure to visit its website, and follow the museums day to day activity by liking them on Facebook.

www.CWAM.org



recent shutdown of the FAA, no time table has been set on when it could receive the certificate and begin flight testing.

The other large MiG fighter CWAM owns is a MiG-21 Fishbed. With its stubby delta shaped wing, it is commonly referred to as a lawn dart. Just like all other CWAM fixed wing aircraft, this one is a UM-model two seat training version, Bord number 38. She

was started earlier this year but currently spends her days sitting in Hangar 1. Some time and effort will be put into her later this year.

CWAM also supports one of the largest fleets of Eastern Bloc training aircraft in the Western Hemisphere. The collection consists of seven L-29s, four L-39s, and a CJ-6A. They also support a French-built Fouga Magister. Currently two of the L-29 light jet



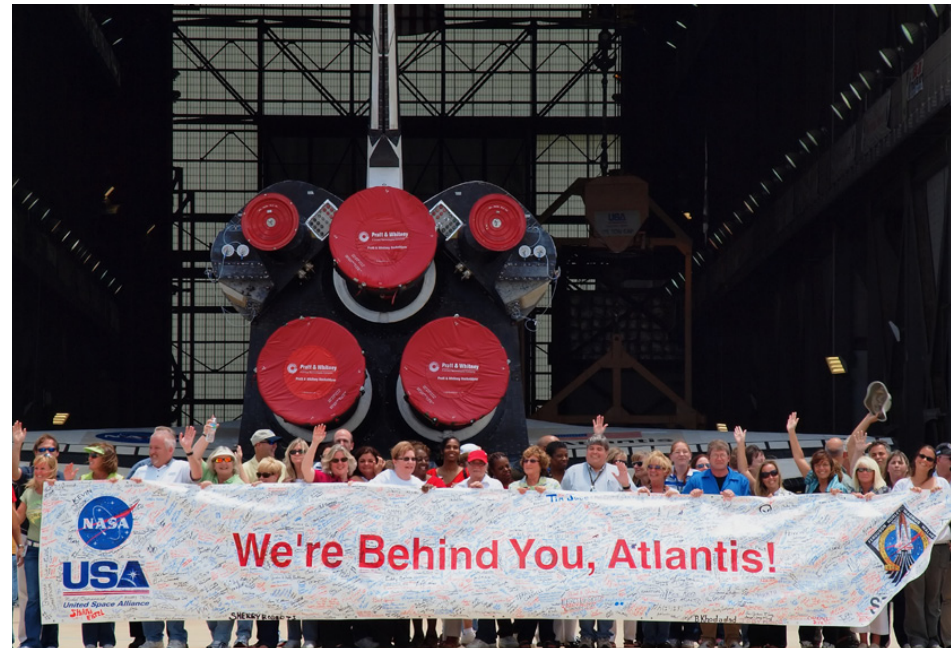
The Shuttle Era Ends

The Dream Lives On

Article and Photos
by Melanie D. Lee

In what is widely regarded as one of this decade's most anticipated events in aerospace history, four veteran astronauts completed the final journey for America's storied 30 year Space Shuttle Program.

Atlantis, the fourth of five space-capable Orbital Vehicles constructed in the US, had been cocooned within Orbiter Processing Facility #1(OPF-1) since May 2010 after completing STS-132. That was originally planned to be its final scheduled mission. Processing was already underway to turn around the Orbiter in the event that a Launch-On-Need Contingency rescue shuttle was needed for STS-134. But on 20 January 2011, workers at Kennedy Space Center were officially



given the green light to continue processing and convert the STS-335 LONC plan to one more final flight as STS-135. Throughout its final journey from processing to assembly, roll-out to launch, and landing to its final moments as an operational space ship, members

of the massive program workforce were given several special opportunities to say their last goodbyes to the vehicles they have grown up with and taken care of for so long.

The day after Endeavour had safely embarked to the ISS, Atlan-





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tis emerged from OPF-1 for the first of these events. The final four astronauts were on hand for each momentous occasion, carefully watching over what would become their home for almost two weeks in space. Those astronauts were Commander Christopher J. Ferguson (Captain, USN Ret.), Pilot Douglas G. Hurley (Colonel, USMC), Mission Specialist 1 (MS1) Sandra H. Magnus (Ph.D.), and Mission Specialist 2 (MS2) Rex J. Walheim (Colonel, USAF, Ret.). All had flown before on previous shuttle missions, with Dr. Magnus having spent the most time in space while aboard the ISS for 4 and a half months.

The day after the tow, the Shuttle was lifted by the massive 30 ton cranes inside the VAB and mated to its launch system later that night. The interior walls that had once housed the world's tallest – and most powerful – rocket series in the 1960s and 1970s were now adorned with the emblems of every mission that had started in its four cavernous High Bays.

As May turned to June and STS-134 came to a close at the nearby Shuttle Landing Facility, Atlantis made the final 3.5 mile crawl to launch complex 39A. Leaving the VAB's High Bay 2 at 8:42 pm, the platform did not arrive "hard down" at its perch on the mound at LC-39A until 3:29am. The roughly 4.5 million pounds of the Shuttle stack were held in place atop the mobile launch platform by just four large explosive bolts at the base of each Solid Rocket



Booster. As morning came, employees and media were invited out to the pad's perimeter. Over the next several weeks, some attendees were lucky enough to receive special access tours of the facilities that included getting onto the pad's service structures and even a rare tour around and inside Space Shuttle Discovery.

On the week of July 8, 2011, more than 3,000 reporters from around the world had flocked to America's premier Spaceport to join the estimated million-plus local viewers that had already gridlocked the streets of Titusville. More than four million viewers

also watched the launch live over the internet - another record for NASA. Numerous thunder storms had blown through the area in the last 24 hours, hampering some remote camera setups for media, and other logistics to wrap up the area for launch. The weather forecast by dawn only called for a 30% chance of good weather. By the time the final go for launch was given, the clouds were already parting on the western horizon. The only other thing that could have scrubbed history was a glitch in the gaseous oxygen vent "beanie cap" indicating that it was not fully retracted. A quick visual

check via a pad camera confirmed all was well in the three minute delay. But just like Endeavour 7 weeks before, the 184.2 foot stack rocketed into space through somber clouds, never to be seen again atop its pillar of fire. Vapor bursts were abundant as the craft's 6.5 million pounds of thrust pushed the astronauts skyward through each mach number.

The final four astronauts were the smallest crew since STS-6 in 1983. This was due to the need to use one of the Space Station's spare Soyuz capsules as a rescue vehicle instead of another LONC shuttle. The extra room was filled



Shuttle, it will stay on board to be retrieved by the space explorers of NASA's next vehicle, and eventually fly with those who will go beyond Earth's Orbit. America had fulfilled its commitment - The International Space Station was now fully assembled. The final task of the crew was to release the last of 180 satellites deployed from a Shuttle Payload Bay. The small eight pound PicoSat mini satellite demonstrator will help researchers develop better solar cell technology.

ing in 2010. By bringing back the pump, researchers hope to figure out why it failed to help them design a longer lasting system.

The last several missions had also been carrying a cargo of special commemorative items including coins, patches, pins, and flags. One of those flags had flown on the Shuttle program's very first mission, STS-1. Taped to the airlock door with a model of the

workers at the Kennedy Space Center, many of whom were also hours away from their own forced retirement. As the old saying goes, to all good things, there is an end.

The Space Shuttle program was a culmination of countless hours of dedication and perseverance of a national team to con-

Astronaut candidates were also selected from the private sector, including teachers and doctors. The Shuttles have also hosted international crew members from other space agencies around the world; 17 Russians, 8 Canadians, 7 French, 7 Japanese, 6 Germans, 5 Italians, and 3 Ukrainians. Candidates have also come from Aus-

provide limited servicing options in the fleet's absence, none of the currently proposed designs will offer the shuttle's unique ability to haul those large payloads back to Earth for study and refurbishment, leaving customers to use much smaller payloads that will fit the new vehicles or abandon the units as space junk to burn up



struct and maintain one of the most complicated machines ever built. The Space Shuttles' 355 Astronaut crew members represent all five branches of the military as well as the government; 70 from the Navy, 67 from the Air Force, 20 Marines, 15 from the Army, 2 Coast Guardsmen, and even 3 Senators. Well over 100

tralia, Belgium, Israel, Kazakhstan, Mexico, The Netherlands, Spain, Sweden, and Switzerland. There has even been Saudi Royalty aboard the Shuttle.

One of the greatest attributes of the shuttle program was its ability to test, hand-deploy, and even fix large payloads in orbit. While shuttle successors may be able to

in the atmosphere. Such would have been the fate of the Hubble Space Telescope, having benefited greatly from the servicing missions of STS-61, 82, 103, 109, and 125, since its launch on STS-31 on April 24, 1990 inside Discovery's Payload Bay. The multitude of scientific discoveries and advancements made in the Spacelab and



the Multi-Purpose Crew Vehicle, the system was broadened to encompass standard orbital operations (and eventually interplanetary missions) aside from its original lunar design. After having been assembled elsewhere in the country, Orion will call KSC home, along with United Space Alliance and NASA. They will be processed in the very same (newly renovated) Operations & Checkout Facility that once housed the Apollo Crew Capsules. Current plans call for Orion to be mated atop the Atlas V for its first missions until a NASA-built Heavy Lift Rocket is established for deep space missions.

The data gathered for the Ares rocket family is also being reused for several revised concepts still under evaluation. The manufacturer of the shuttle's reusable solid rocket boosters, ATK, has introduced its version called the Liberty Launch Vehicle. Its first stage will feature the five-segment reusable solid rocket motor as first seen on the Ares 1X. Liberty will also use the ESA's Astrium Ariane 5 core as the 300 foot rocket's upper stage. It will be assembled in the VAB and use the Apollo/Shuttle Mobile Platform that was modified for the Ares family. The flight-proven, human-rated hardware is touted to be capable of launching 44,500 pounds into low earth orbit with potential flight tests beginning as early as 2013.

Boeing is also developing its own Commercial Crew Vehicles, the first of which is designated the CST-100. It will match the



crew and cargo capabilities of the Dragon and Orion on missions to the ISS, but will also be able to dock with new inflatable space stations in development by partner Bigelow Aerospace. The CST-100 will also be compatible with multiple human-rated launch systems, including the Falcon, Atlas,

and Delta series of Rockets. The company hopes to successfully revolutionize space travel with its designs like it did with commercial and military aviation.

While a return to crew capsules may be one of safety and efficiency, space planes will continue to make sonic booms over

SpaceHab missions of the 1980s and 1990s would have also been delayed without the 65 foot bay.

However, while the sun sets on the Era of the Space Shuttle, the age of manned spaceflight is far from over. A new era is set to begin as the dawn of the commercial space race swings into top gear. The thrill of seeing the skies of Florida and California light up to rocket's red glares will continue on. There is even renewed interest for launches from other spaceports in Virginia, Alaska, New Mexico, in the Pacific Territories, and elsewhere in the USA and abroad. The lessons learned by NASA's 60 years of manned

spaceflight will become the benefit for a number of new private sector companies that are eager to fill the void.

Space-X is one of those companies, already with a lead on the competition and set to corner the market. Their facilities at Launch Complex 40 were opened for a tour of their low cost Falcon Launch System. The first Dragon test capsule was also on display at its launch control center just outside the Cape Canaveral Air Force Station's gates. The company plans to continue its flight-worthiness tests of the Dragon atop its Falcon 9 rocket later this year, and has already impressed

NASA enough to earn a contract for travel rights to the ISS as early as this November. Prices start at \$10.9 million for its 81 foot Falcon 1e, and climb on a fixed rate to \$80M to \$125M for its 227 foot Falcon Heavy powered by 27 Merlin engines. The kerosene powered commercial rockets have already started to bring back customers to the Space Coast and its Hawthorne, California Headquarters from other countries for a solid manifest of launches well past 2017.

Despite the Constellation program's official cancellation, Lockheed's Orion Crew Capsule is still going strong. Officially renamed

Florida and California. The U.S. Air Force and DARPA's Orbital Test Vehicle program is well underway, with the most visual of the classified fleet being the Boeing Phantom Works X-37B. Russia even has its own bullet-with-wings design called the Kliper. It is envisioned to be the successor to the elderly Soyuz spacecraft and the RSA/ESA companion to the Orion. The ESA is also considering a hypersonic space plane that looks reminiscent of a ship from the Thunderbirds TV series, called the Skylon.

Of all the new designs to be publicly announced, one of the most inspiring to Shuttle fans may be Sierra Nevada Corporation's Dream Chaser. Itself a fourth-generation design developed from another shelved NASA lifting body, the HL-20, Dream Chaser

will allow for a crew of 7, along with some cargo, to travel to the ISS like its capsule competitors. Virgin Galactic will help market its commercial services while also utilizing the White Knight Two carrier aircraft for flight testing. The initial plan calls for use of the human-rated Atlas V, and the capability to operate on its own for three and a half days. Extended stays will also be possible when docked to the ISS or other habitable orbital platforms. The Dream Chaser is also touted to be capable of landing not just at the Shuttle Landing Facility, but also at many large international airports or military bases for added customer convenience.

As NASA's Commercial Crew Development program proceeds with just three finalists, the list

of shuttle era successors will still grow as the dream of spaceflight for all continues on. The Space Shuttle Program has left its mark in history as a shining achievement of knowledge, technology, and cooperation that will be remembered for all time. Its program has brought the world together on 135 missions with 852 booked seats that have traveled a combined 542,398,878 miles over the course of 1,332 days, 20 hours, 1 minute, and 34 seconds. Only time will tell when a Space Vehicle that succeeds the shuttle's size and ability will once again take to the stars. Regardless of the unsure times that lay ahead in a period of change, one thing is certain: Mankind's adventure into the Final Frontier has only just begun...



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A Year Of Celebration

Article by Chad Grosvenor

Photo by Alan Radecki - Courtesy of Northrop Grumman Corp.



With 2011 being the Centennial of Naval Aviation, it is becoming one of the most talked about and highly anticipated years for aviation. It all started in 1911 when Eugene Ely proved to America that it was possible to take off and land on a ship. Here we are 100 years later honoring a century of mission-ready men and women and recognizing unique aviation-related achievements through events and special paint schemes on certain naval aircraft.

The flying festivities all got started in sunny San Diego, CA on February 12, 2011 with the Centennial of Naval Aviation Kick-Off

Celebration. They kept it classy with over one hundred Navy, Marine Corps, and Coast Guard aircraft from the past and present performing flybys and demonstrations. In addition, the ramp at North Island, referred to by some as "The Birthplace of Naval Aviation", was stacked with naval aircraft of all shapes and sizes from nearly every period of naval aviation along with modern aircraft painted in all kinds of schemes honoring the progression of naval aviation. This wonderful year will come to an end in Pensacola, FL, also known as "The Cradle of Naval Aviation", with the Blue Angels

Homecoming Air Show in November.

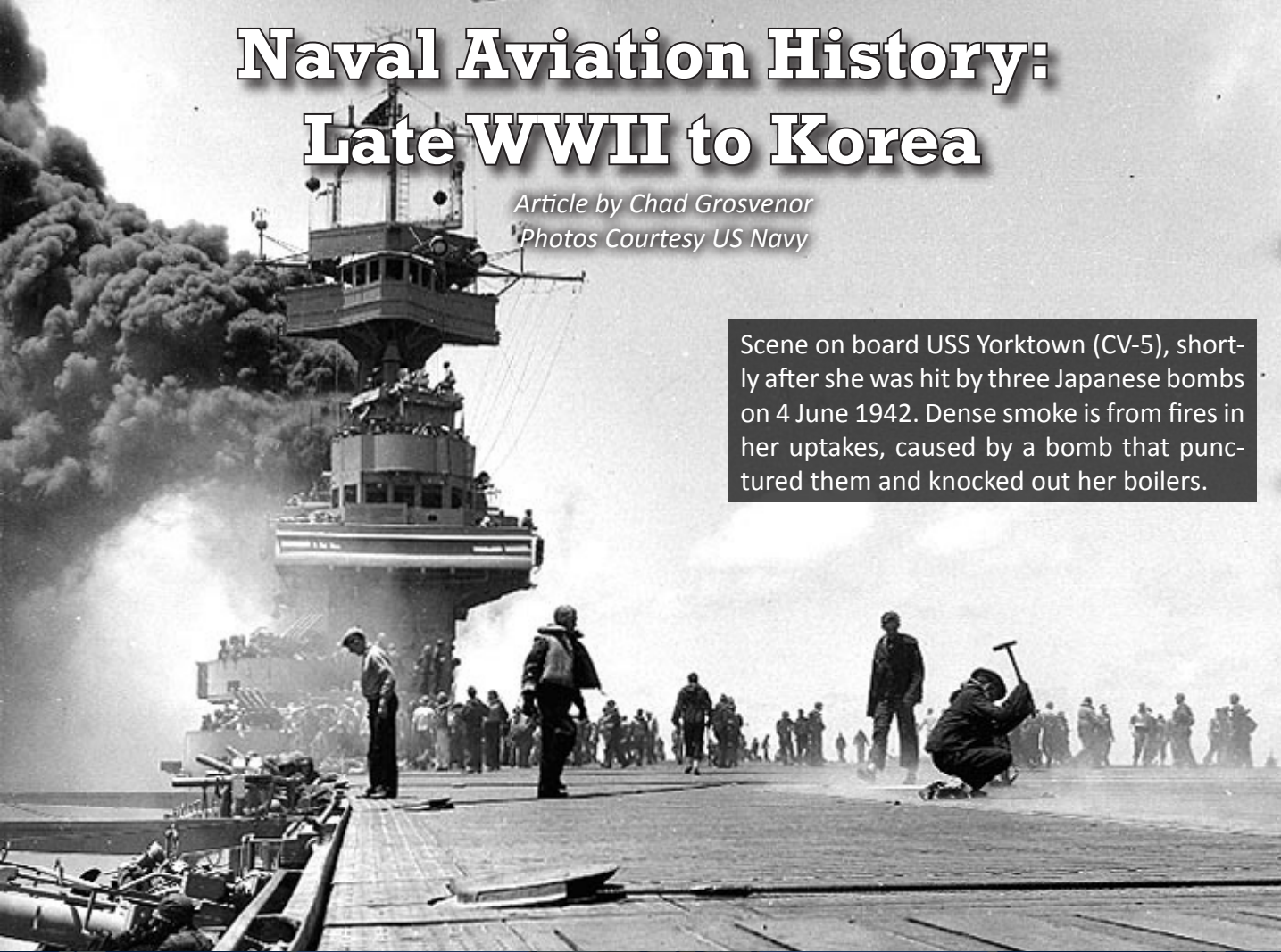
You can expect us to cover this tremendous milestone in aviation history throughout all of our issues in 2011. Be on the lookout for this special CoNA section in each issue, containing articles covering periods of Naval Aviation from Ely's first flight off the deck of a ship all the way up to and beyond the 5th generation F-35, as well as profiles of each of the special paint schemes and reports from centennial events. You won't want to miss it!

Major Upcoming Centennial of Naval Aviation Events

August 26-27	The Great State of Maine Airshow - Brunswick, ME
September 3-4	NAS Pax River Air Expo '11 - Patuxent River, MD
September 6-11	Omaha Navy Week and Guardian of Freedom Airshow - Omaha, NE
September 14-18	National Championship Air Races - Reno, NV
September 17-18	Memphis AirFest - Memphis, TN

Naval Aviation History: Late WWII to Korea

Article by Chad Grosvenor
Photos Courtesy US Navy



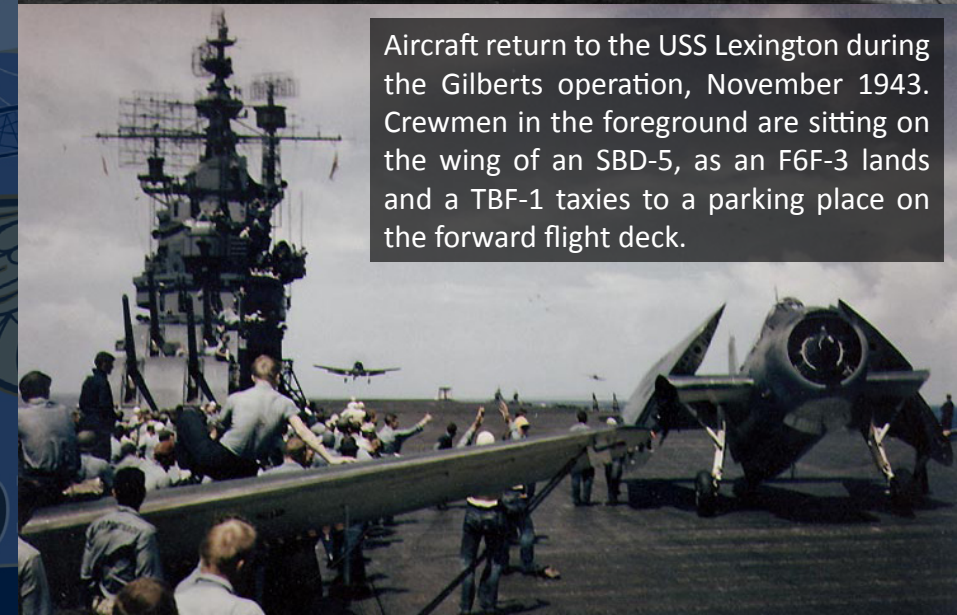
Scene on board USS Yorktown (CV-5), shortly after she was hit by three Japanese bombs on 4 June 1942. Dense smoke is from fires in her uptakes, caused by a bomb that punctured them and knocked out her boilers.

and the USS Yorktown, which sank on June 6th and 7th respectively. This significant victory marked the end of Japan's successful offensive and effectively turned the tide of the Pacific War.

Three days after an inspection of Igor Sikorsky's VS-300 helicopter took place on June 26th, Lcdr. Frank A. Erickson of the Coast Guard suggested that helicopters be acquired for antisubmarine convoy duty and for saving lives. On July 7th, the Army and Navy made an agreement that the Army would give a particular quantity of B-24 Liberators, B-25 Mitchells, and B-34 Venturas to the Navy to meet their need for long range land-based aircraft. In the next few months, more flying wings and groups were created and on November 2nd, 1942, NAS Patuxent River was established in Maryland to function as a place to test aircraft and equipment. Two weeks later, the very first night fighter squadron in naval aviation was established at MCAS Cherry Point in North Carolina. VMF(N)-531 was under the command of Lt. Col. Frank H. Schwable and, following primary instruction with SNJs and SB2A-4s, they were given twin-engined PV-1 aircraft that were outfitted with a British Mark IV type radar. The first night fighter squadron in the Navy, VF(N)-75, came nearly 5 months later at Quonset Point, RI. Development of the very first jet aircraft in the US Navy was started on January 7th, 1943, when a Letter of Intent was issued to the McDonnell Aircraft



An F6F-3 "Hellcat" of Fighting Squadron Sixteen (VF-16) gets the take-off flag from Lieutenant John M. Clark during operations in the Gilberts and Marshalls, 23 November 1943. VF-16 pilots shot down seventeen Japanese aircraft on that day.



Aircraft return to the USS Lexington during the Gilberts operation, November 1943. Crewmen in the foreground are sitting on the wing of an SBD-5, as an F6F-3 lands and a TBF-1 taxis to a parking place on the forward flight deck.

Corporation for manufacturing, advancement, and tooling for two VF planes. Soon after, two Westinghouse 19-B turbojet engines were specified and they designated the airplane as XFD-1. It grew to be the prototype for the FH-1 Phantom fighter jet, not to be confused with the F-4 Phantom II. Keep in mind that this is just a little over 30 years after the US Navy obtained their first airplane and we're already dipping into the age of jet aircraft.

February 11th marked the first time that a Vought F4U Corsair flew in a combat mission when twelve aircraft from VMF-124 based on Guadalcanal escorted a PB2Y Coronado to Vella Lavella to get pilots that had been shot down. However, that flight was monotonous and its first combat action took place only two days after that when aviators from that same squadron came across some confrontation when they were escorting PB4Ys of VP-51 on

The Battle of Midway was a powerful push by the Japanese in the Central Pacific to occupy Midway Island. It was led by a mobile force of four carriers with aid from heavy units of the First Fleet and was covered by a diversionary carrier attack on Dutch Harbor in the Aleutians. The raid was met by a significantly outnumbered US carrier force comprised of Task Force 17 with the USS Yorktown, Task Force 16 with the USS Hornet and USS Enterprise, and by units from the Navy, Marine Corps, and Army that were stationed on Midway.

On June 3rd, 1942, aircraft from Midway found and attacked

vessels of the Japanese Occupation Force that were located about 600 miles to the west, and proceeded to go after the mobile force the next day as they sent their planes against defensive installations on Midway. Focusing on the destruction of Midway air forces and getting sidetracked by their bombing attacks made the Japanese carriers unprepared for an air attack against them. Around 10:30 am, dive bombers hit and sank the Japanese carriers Akagi, Kaga, and Soryu. Japan launched a counter attack at noon, followed by another two hours later which damaged the USS Yorktown

so badly that the crew abandoned ship. Later in the afternoon, the US hit and sank the fourth and final Japanese carrier in the battle, the Hiryu. With air superiority lost, Japan retired from the attack of Midway-based aircraft on June 5th and proceeded to withdraw from carrier airspace on the next day.

When all was said and done, Japan lost a total of two heavy and two light carriers, one heavy cruiser, 258 aircraft, and a majority of their best carrier pilots. The United States left behind 40 land-based and 92 carrier aircraft in addition to the destroyer Hammann

a daytime strike against enemy shipping in the Kahili area of Bougainville.

The first time a jet was flown by a pilot of the United States Navy occurred on April 21st when Capt. Frederick M. Trapnell flew a Bell XP-59A Airacomet jet in Muroc, California. Next month on the 22nd of May, Grumman Avengers from VC-9, which were based on the USS Bogue, sunk the U-569,

a German submarine that went down in the middle of the northern Atlantic Ocean. This marked the first time a vessel was sunk by an escort carrier on hunter-killer watch in World War II.

August 30th was a day of firsts for a couple pieces of the Navy's newest hardware. It marked the first attacks launched by Essex and Independence class carriers, as well as the first time the

Grumman F6F Hellcat was used in combat. Task Force 15 sent out nine strike groups in a full day aerial assault on Japan's installations located on Marcus Island. The Navy accepted their very first helicopter after the Sikorsky YR-4B (HNS-1) completed an hour long assessment flight in Bridgeport, Connecticut. It was piloted by United States Coast Guard Lcdr. Frank A. Erickson.

On October 31st, Lt. Hugh D. O'Neil from VF(N)-75, destroyed a Mitsubishi G4M Betty in a nighttime strike off the island of Vella Lavella. This was the first time a kill was recorded by a night fighter that was equipped with radar in the Pacific Fleet. Maj. Thomas E. Hicks and TSgt. Gleason of the VMF(N)-531 supplied guidance from the ground. It was a team effort by the first night fighter squadrons of both the Navy and Marines.

Three heavy and two light aircraft carriers arranged in two carrier task forces assaulted Japan's naval shipping at Rabaul sinking one destroyer and wounding several ships in the process. This was the first time Curtiss SB2C Helldivers saw combat action. The first attack conducted with rockets that fired ahead occurred on January 11th, 1944 against a U-boat from Germany. The mission was carried out by two TBF-1C Avengers of VC-58 from the USS Block Island.

On February 23rd, following a successful night of fighting off a sequence of air attacks from the adversary, two carrier groups

of Task Force 58 hit targets on Saipan, Tinian, Rota, and Guam. These airstrikes had two objectives: (1) diminishing the enemy's airpower in the Marianas, and (2) collecting photographic intelligence for the imminent invasion. Hard work from both the aviators and the antiaircraft gunners accounted for the 67 enemy planes that were shot down from the skies and the 101 that were destroyed on the ground—a total of 168 aircraft. The very next day was the first time an underwater enemy submarine was found utilizing magnetic airborne detection (MAD) gear. It was discovered by Catalinas from VP-63, who then hit the U-761 with retrorockets and sank it with the help of two ships and planes from two additional squadrons. MAD gear is still used today on several aircraft in the Navy's inventory to detect submerged submarines.

A powerful Fifth Fleet force that was centered around Task Force 58, with eleven aircraft carriers, sent a cycle of airstrikes to Palau, Yap, Ulithi, and Woleai, as well as shipping in that vicinity in a mission intended to get rid of the resistance to the landings at Hollandia and to collect photographic intelligence for upcoming battles. The airstrike of the Palau Harbor by Torpedo Squadrons 2, 8, and 16, was the first mission of its kind by carrier planes as well as the very first significant daytime bombing mission in the Pacific war. On April 1st, when all was said and done, 157 enemy aircraft and 28 ships totaling 108,000

SB2C-1 "Helldiver" bombers return to the USS Yorktown after a raid in early July 1944. Photographed by Photographer's Mate First Class O.L. Smith, USNR.

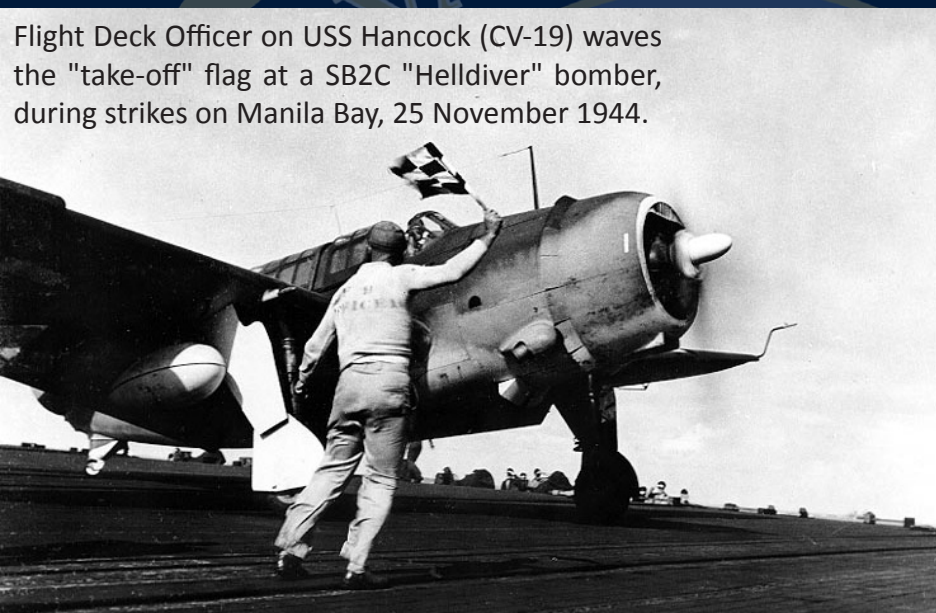


tons had sunk over the course of two days.

The USS Block Island was torpedoed and sunk by a German U-boat on May 29th while on hunter-killer patrol near the Azores. It was the only US aircraft carrier that was sunk in the Atlantic. From June 11th to August 10th, the occupation of the Marianas took place and by August 10th, 110,000 tons of enemy shipping fell to the ocean floor and 1,223 adversary aircraft were destroyed thanks to the US Navy's carrier aircraft and their pilots. On July 14th, PB4Y Liberators from Bombing Squadron 109 conducted the first attack on Iwo Jima with land-based aircraft. The occupa-

tion of Palau and Morotai lasted the month of September. While not as many enemy aircraft were destroyed as there were in the Marianas, which lasted about the same length of time, 67 war and merchant vessels were sunk, adding up to 224,000 tons. However, carrier aircraft still did their job and destroyed 893 enemy planes.

Iwo Jima was secured on March 16, 1945, but not before a month of airstrikes and fighting on the ground. Just two days later, the Okinawa Campaign started and went on for a little over three months. Over those three months, the US Navy received the most intense punishment in its history as a result of Japan's human-direct-



Flight deck crews prepare to load a Mark XIII torpedo on a TBM aircraft, during strikes in the Luzon-Formosa area, 13 October 1944.



ed missiles, otherwise known as Kamikazes. While no carriers were lost, a total of twelve were hit. Carrier air support was on a much greater and more widespread scale than any other amphibious campaign in the past. Over 40,000 combat sorties were flown by carrier aircraft and they wiped out 2,516 adversary planes and blew

enemy positions away with over 17 million pounds of bombs and 50,000 rockets. Land-based Marine Corps squadrons hit an additional 506 Japanese aircraft and used 3.6 million pounds of bombs and 15,865 rockets while providing close air support.

On April 23rd, PB4Ys from VPB-109 released two Bat glide

bombs on adversary shipping in Balikpapan Harbor, Borneo. This was the first time the only automatic homing bomb to be used in World War II was employed in combat. While piloting an HNS-1 helicopter, Coast Guard Lt. August Kleisch rescued eleven stranded Canadian airmen in northern Labrador approximately 125 miles away from Goose Bay on May 2nd. This marked the first rescue mission that utilized a helicopter. President Truman announced the war was over in Europe on May 8th, which is also known as V-E Day.

Carrier operations against Japan took place from July 10th to August 15th. Over the course of that month, heavy airstrikes on airfields, war and commercial transport, along with naval and other military bases occurred. This was the last carrier action of World War II, and carrier-based planes destroyed 1,223 enemy aircraft with more than a thousand of those being on the ground. 23 war and 48 shipping vessels accounting for 285,000 tons were also damaged by carrier aircraft and sent to the ocean floor.

The official surrender of the Japanese occurred on September 2nd, also called V-J Day, aboard the USS Missouri in Tokyo Bay. World War II was over.

The McDonnell Aircraft Corporation's XHJD-1 was the earliest helicopter with two engines and it completed a hovering flight on March 25th, 1946. On April 3rd, the Douglas Aircraft Company was given a contract for the planning



Curtiss SB2C-3 "Helldiver" aircraft bank over the USS Hornet before landing, following strikes on Japanese shipping in the China Sea, circa mid-January 1945.



F6F "Hellcat" fighters prepare to take off from USS Ticonderoga for strikes against targets in Manila Bay. The two leading planes are F6F-5N night fighters, with wing-mounted radar.



USS Ticonderoga (CV-14) afire after she was hit by a "Kamikaze" attack off Formosa, 21 January 1945.

and building of the XF3D-1 night fighter which developed into the Douglas F3D Skynight.

Three weeks later on April 24th, the CNO Adm. Chester Nimitz ordered that a flight exhibition team be created to increase Navy morale, display their airpower, and to keep the public interested about aviation in the Navy. They would become known as the Blue Angels and thrill audiences all over the US and overseas as they still do today.

Even more contracts were issued in June, keeping North American Aviation Inc. and Chance Vought occupied. Those contracts

produced the North American AJ Savage, which would later be known as the A-2 Savage, and the Vought F7U Cutlass.

On June 26th, the Aeronautical Board collectively decided that the knot and the nautical mile should be used by both the AAF and the Navy as their standard units of speed and distance measurement. Lt. Cmdr. James Davidson made several landings and takeoffs in his XFD-1 Phantom aboard the USS Franklin D. Roosevelt on July 21st. This was the first time a jet aircraft had ever landed on an aircraft carrier. The USS Roosevelt would see

many more jets landing and taking off from her flight deck in her 32 years of service in the US Navy.

On October 1st, the Naval Air Missile Test Center in Pt. Mugu, CA was set up to perform tests and assessment of guided missiles and their components. The United States Navy's first live test of an ejection seat occurred on October 30th when Lt. jg. Adolph J. Furtek ejected from his JD-1 while flying at approximately 250 knots 6,000 feet above Lakehurst, NJ. Ejection seats would go on to save many pilots, as they still do today. A Grumman F8F Bearcat flown by Lt. Cmdr. Merl W. Dav-

enport took off in just 115 feet from a standstill and ascended to 10,000 feet in only 94 seconds. The Bearcat would go on to hold this record for 10 years until it was broken by a fighter jet, however it still couldn't match the Bearcat's short takeoff distance. February 12th, 1947 was the very first time

On June 4th, with the likelihood of operating jets from an aircraft carrier on the horizon, the Chief of Naval Operations authorized new carrier features to be included in an enhancement plan called "Project 27A". In this program, Essex Class carriers underwent changes such as installation of

record. Five days later, Marine Corps Maj. Marion E. Carl flew the same aircraft and beat Cmdr. Caldwell's record by 10 miles per hour on the same course. On December 1st, HMX-1 was established in Virginia at MCAS Quantico. Their assignment was much different than it is today; their

aeronautical engineering and methods of flight testing at the Naval Air Test Center in Patuxent River, Maryland. It would go on to become the US Naval Test Pilot School ten years later. Two months later on May 5th, VF-17A became the first jet squadron in the Navy to be carrier qualified.

SC. While no aviator wanted to be "that guy", Lt. Fruin was the first US pilot to eject from his aircraft due to an in-flight emergency. Carrier aircraft saw combat in Korea for their first time on July 3rd, 1950. Throughout the Korean War, naval aircraft executed airstrikes on everything from air-

on July 3rd, a pair of Yak-9s were shot down by F9F Panthers from VF-51 piloted by Lt jg. Leonard H. Plog and Esn. Elton W. Brown Jr. This was the first aerial kill for the Navy in the war as well as the first time an enemy aircraft was shot down by a Navy jet. In early November, enemy

USS Oriskany (CV-34) with a North American AJ-1 "Savage" attack plane on her flight deck.



USS Essex underway during her first Korean War deployment, circa August 1951-March 1952. Two F2H-2 "Banshees" of Fighter Squadron 172 are flying by in the foreground, preparing to land.



a guided missile was shot from a submarine when a Loon guided missile was fired from the USS Cusk off of the coast of Pt. Mugu.

The US Army and Navy took on a customary system of giving guided missiles popular names on April 30th. This was the birth of surface-to-air missiles being called SAMs as well as other designations that are still used today.

two H-8 catapults, reinforcement of the flight deck, and an increase in elevator capacity. Blast deflectors, a larger fuel capacity, and jet fuel mixers were also added in preparation for jet operations.

Cmdr. Turner F. Caldwell flew his Douglas Skystreak D-558-1 at 640.663 mph over a three km course in Muroc, CA on August 20th, breaking the worlds speed

duty was creating different methods and plans for the variety of uses helicopters had during amphibious operations. Currently, they're well known for their role of providing transportation for VIPs, such as the President of the United States.

On March 4th, 1948, a Test Pilot Training Division was started to teach skilled aviators in

They had 16 FH-1 Phantoms and every squadron pilot along with the Commander of the Air Group completed at least eight takeoffs and landings to become qualified. Over a year later on August 9th, 1949, Lt. Jack L. Fruin from VF-171 ejected from his F2H-1 Banshee when the cockpit became iced over and instruments failed, leaving him helpless near Walterboro,

fields to factories and provided close air support for amphibious landings as well as other occasions when they were needed. This would be the first combat trials for a few of the Navy's newer aircraft, such as the Grumman F9F Panther and Douglas AD Skyraider. Both aircraft would go on to be quite successful in the war. In the first attack over Pyongyang

hostility increased and the fast carrier forces were called back into action. Two days afterward, the force was assigned a primary mission of stopping Chinese Communist support from Manchuria by taking out the international bridges that crossed the Yalu River.

The first airstrikes on the Yalu River bridges at Sinuiju were con-



Two Grumman F9F-2 "Panther" fighters dump fuel as they fly past the carrier, during Korean War operations circa May 1951.



Grumman F9F-2 "Panther" jet fighter on the deck edge elevator of USS Franklin D. Roosevelt (CVB-42), circa 1950.

as a bomber. Eight Skyraiders and twelve Corsairs took off from the USS Princeton on May 1st and executed an aerial assault on the Hwachon Dam in the one and only time aerial torpedoes were employed during the war. The flood gate damage caused water from the reservoir to be released into the Pukhan River and made it more difficult for Communist forces to cross. The United Nations military representatives arrived in Kaesong, Korea, on July 10th for armistice deliberations with Communist leaders, followed by several difficult months where talks were alternately suspended and reopened at the same time as fighting continued.

August 7th was an eventful day as three different milestones occurred in three different states. In St. Louis, MO, the McDonnell XF3H-1 Demon finished its first flight. A Viking research rocket reached a height of 135.3 miles after being shot off from the White Sands Proving Grounds in New Mexico. Last, but not least, Bill Bridgeman flew a D-558-2 Skyrocket at a speed of 1,238 mph above Muroc, CA setting an unofficial world record. Eight days later, Bridgeman, flying the Skyrocket, attained an altitude of 79,494 feet; the highest height ever reached by a human at the time.

Even more carrier modifications came along on February 1st, 1952 including stronger arresting cables and catapults to name a couple. On April 28th, the Navy proclaimed that they would adopt

the steam catapult for US aircraft carriers after three months of tests.

Starting on June 23rd, and over the course of two days, the USAF, USN and USMC teamed up and practically destroyed the electric power potential of North Korea with airstrikes on major military objectives that were avoided during nearly two years of war. Even though this assault only lasted two days, it involved more than 1,200 sorties and turned out to be the biggest single air effort since World War II ended. It was the first to utilize aircraft from all of the US services fighting in Korea.

On September 3rd, the Naval Ordnance Test Station, now NAWS China Lake in Inyokern, CA, shot the earliest completely configured Sidewinder air-to-air missile, thus starting a widespread phase of developmental testing. It would go on to become the AIM-9 Sidewinder and is still widely used today.

Test operations of an angled carrier deck commenced on January 12th, 1953 and throughout the next four days, six aircraft models completed takeoffs, landings, and touch and goes during the day and night in various wind conditions on the angled deck of the USS Antietam. The Navy obviously liked what they saw and decided to incorporate it in upcoming upgrades as well as all future carriers to date.

From June 7th to the 19th, the main effort of carrier aircraft was directed on a continuous basis against the Communist vanguard



and supporting locations to oppose the enemy's evident attempt to gain ground before a potential peace agreement was reached.

On July 11th, Marine Corps Maj. John F. Bolt, a former member of the infamous VMF-214 Black Sheep, became the first naval pilot to achieve five victories in jet air-to-air combat when he shot down his fifth and sixth MiG-15s while flying an F-86 Sabre with the 39th Fighter Interceptor Squadron in Korea. Maj. Bolt was the one and only pilot not in the USAF to become an ace in the Sa-

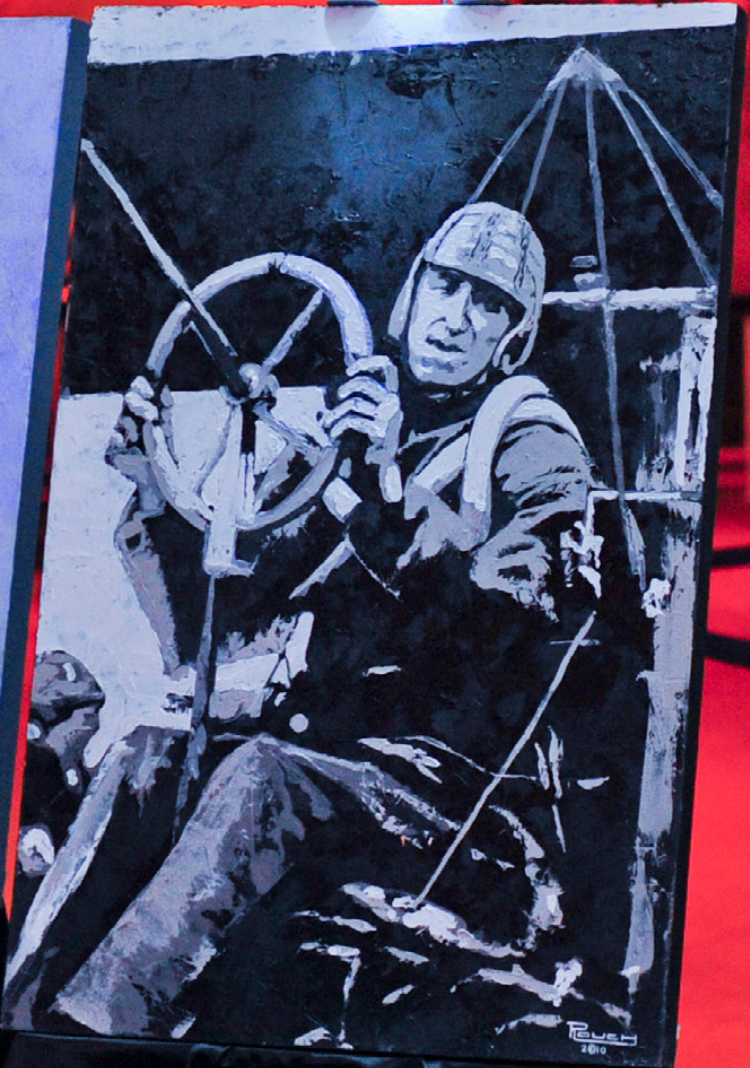
bre and he was the single naval aviator who achieved the status of ace in two different wars.

Task Force 77 aviators took part in 600 total sorties on July 25th, their record for one day of Korean War operations. Two days later the war was over after United Nations and Communist representatives signed an armistice in Panmunjom.

Check back next month as we continue to tell the saga of naval aviation with an article covering through the Vietnam War!

Michelle Rouch: CoNA Artist

Volunteers



Article and Photos

by Alan Radecki - Courtesy Northrop Grumman Corp.

When visitors to the Centennial of Naval Aviation (CoNA) kick-off reception walked into the main hall at the San Diego Aerospace Museum, they were greeted by a series of original paintings commemorating the legacy of naval aviation. The following night, at the gala on the USS Midway, guests walked the red carpet through the ship's hangar deck with the same commemorative

pieces displayed along the route. The artist behind this series of eleven paintings is a talented and energetic engineer and aviation artist named Michelle Rouch.

The project was inspired by a lecture given by Navy historian and CoNA Project Director Captain Richard Dann to the American Society of Aviation Artists in Savannah, GA, in 2010. Energized by the talk, Rouch says she "want-

ed to capture the moment in time of Naval Aviation History and promote the Centennial."

After producing the eleven paintings, plus three digital mini-posters, Rouch approached Capt. Dann about displaying them during the CoNA celebration events. Dann was able to connect her with other event organizers, who quickly agreed with the idea. Dann commented that he "loved"

Four of Rouch's paintings line the red carpet on the hangar deck of the USS Midway during the VIP gala.

her art. "I think it has a feel to it, an old-time, retro feel to it, and it captures the spirit and essence of naval aviation in the early days."

Of the eleven original paintings, five have so far been promised a place of permanent display, or have been bought by private collectors. She has approached the San Diego Air & Space Muse-

ums many of the CoNA Tier One events around the country.

As Rouch describes it, "The strongest influence to produce this series was researching...Eugene Ely. He was the first daredevil to fly off and land on the USS Pennsylvania in 1910/1911." Of the centennial paintings, her personal favorite is the abstract

friend of mine, James Horkovich uses this artwork in his AIAA System Safety lectures."

A key moment for Michelle as the artist of the CoNA painting series occurred during the SDASM reception, when Vice Admiral Allen G. Myers, Commander, Naval Air Forces and Commander, Naval Air Force, U.S. Pacific Fleet said,



Under an imposing PBY Catalina, two of Michelle Rouch's CoNA paintings greet visitors to the San Diego Air & Space Museum's CoNA Kick-off Reception.

um (SDASM) to see if they are interested in acquiring the remaining CoNA pieces. One of the digital mini-posters has been licensed to Ely-Curtiss Aerial Exhibitions, who have applied the design to T-shirts for sale at airshows and online to provide financial support for the organization's flying replica 1911 Ely-Curtiss Pusher, as it

oil entitled, Pioneer Aviator Eugene Ely. "I used a palette knife to enhance the drama of the pilot wearing a football helmet, mouth guard, and rubber inner-tubes for a flotation device. As an engineer auditor, I found the 1911 flight safety gear quite intriguing. Thank goodness flight system safety has come a long way. A

"We have a tremendous start and a terrific year telling our story across the country and around the world, celebrating 100 years of accomplishments, 100 years of achievements, and 100 years of courage." For Rouch, her Centennial-themed works "further enhanced the event, and I felt that the artwork connected me to

1911-2011



One of three mini-posters created by Michelle Rouch, this piece is also offered by Ely-Curtiss Aerial Exhibitions as a T-shirt to support the flying operations of their replica 1911 Ely-Curtiss Pusher. Image courtesy of and copyright Michelle Rouch.

NAVAL CENTENNIAL of FLIGHT



ROUCH

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that moment.”

Michelle is a systems engineer by training, and works as an engineering auditor with the DoD’s Defense Contract Management Agency at the Raytheon Tucson Missile Operations facility. While she had painted other subjects for many years, she started painting planes in 2002 as a result of some gentle suggestions from her husband, Fotios, who is also a systems engineer. “I find my inspiration from my husband’s artistic skills in making one of a kind resin airplane models, and he influenced me to become an aviation artist,” says Michelle.

“Mathematically, if you combine a portrait and a building, you can draw an airplane,” explains Rouch. “The curvature of a face and the perspective of a building allowed me to quickly grasp aviation art. The support of my husband landed me my first commissioned work, the first painting of which included my son walking at Pima Air & Space Museum, and is being sold on stationary at the museum’s gift shop. My second painting, a C-2 Greyhound, was published on box tops for airplane models. The aviation art world got serious fast.”

As Rouch said in an address at the Pima museum, “Art is a communication tool and I use my art to communicate technology.” Her experience as an engineer affects how she approaches her art, as well. “When I start with any project, I think like a Program Manager. Managing large acquisition programs every day has curbed

my way to think of the end product first and how to calculate cost, schedule and performance.”

For her art projects, Michelle takes the same approach. “First I have to see the feasibility of the total cost, and then I have to measure how long the piece of work will take and if I can fit the work into my life. Being a full time mom and engineer leaves very little room to be creative. After cost and schedule constraints are

neering and art led the American Institute of Aeronautics and Astronautics (AIAA), of which she is a senior member, to recognize Rouch’s unique contributions in their June 2011 Momentum Member Spotlight.

Besides the CoNA events, Rouch also currently has an exhibition at Pima Air & Space Museum, where her art has been shown on a number of occasions. Her paintings have also been exhibited at



The Gate Bridge serves to frame the 1911 Curtiss Pusher in this Rouch CoNA painting, with a Pan Am Ford Tri-Motor overhead.

reasonably thought out, I then create a rapid prototype and explore every possible scenario before I execute the painting. Rapid prototyping in an essential piece, because it brings the final painting to a well thought plan. Once I have the artwork sketched in pencil, I request for inspection and my Quality Manager, my husband, ensures all angles are correctly defined. He has a critical eye and can detect the slightest imperfections; we make a good team.”

This hybridization of engi-

the National Naval Aviation Museum, the Pentagon, the USS Hornet museum, Planes of Fame, Kitt Peak Observatory, Mighty Eighth Air Force Museum, and Tucson International Airport, among other venues. Some of her work was exhibited at this year’s EAA AirVenture Gathering of Eagles Gala at Oshkosh, where Naval Apollo Astronauts Gene Cernan, Jim Lovell, and Dick Gordon were due to sign her artwork on stage before it was auctioned off for charity.

Special Paint Scheme Profiles

Articles and Photos by Kevin Helm



T-45C (BuNo 163656) is painted with a silver fuselage, orange-yellow wings, and a black tail (denoting carrier assignment) with black section markings (denoting fourth section leader). It was the first jet aircraft to receive a complete CONA Heritage Paint Project scheme.

Aircraft: T-45C Goshawk (BuNo 16365)
Unit: Training Wing Two
Stationed: Naval Air Station (NAS) Kingsville
Aircraft Mission: Advanced Jet Training
Period: 1939
Significance: Scheme of aircraft assigned to USS Wasp (CV-7)
Painted: NAS Kingsville/L-3 Corp, June - July 2010



Ryan Sundheimer



Aircraft:	HH-60H Seahawk (BuNo 163787)
Unit:	HSC-84 "Red Wolves"
Stationed:	Naval Air Station (NAS) Norfolk
Aircraft Mission:	Special Warfare Support, Combat Search & Rescue (CSAR)
Period:	1968-1972
Significance:	UH-1B of Light Attack Helicopter Squadron 3 (HAL-3) "Sea Wolves", Vietnam War
Painted:	Fleet Readiness Center (FRC) Mid-Atlantic, Norfolk, VA

The HH-60H Seahawk (BuNo 163787) is painted in the Army Olive Drab with White lettering worn by the UH-1B Hueys of U.S. Navy Attack Helicopter Squadron 3 (HAL-3) "Sea Wolves" during the Vietnam War. The aircraft was the first aircraft to emerge with a Centennial Heritage Paint Project and was unveiled to a group of 17 HAL-3 alumni on July 23, 2010.

The HSC-84 "Red Wolves" are the only squadron in the U.S. Navy dedicated to supporting Navy SEAL and SWCC Teams, and Combat Search & Rescue. They currently operate eight HH-60H "Rescue Hawks" organized into four independent, two aircraft detachments that can deploy anywhere in the world within 72 hours of notice. The "Red Wolves" draws its lineage back to the HAL-3 "Sea Wolves".





Antonio More'

Aircraft: F/A-18C Hornet (BuNo 164673)
 Unit: VFC-12 "Fighting Omars" (Reserve)
 Stationed: Naval Air Station (NAS) Oceana
 Aircraft Mission: SFARP (Strike Fighter Advanced Readiness Program)
 Period: Mid 1945
 Significance: Late WWII



Antonio More'



The F/A-18C Hornet (BuNo 164673) is painted in the gloss sea blue of late WWII. The markings represent F6F-5 Hellcats assigned to VF-12 aboard the USS Randolph (CV-15) in 1945. Notice the authentic white ailerons and that the stripes on the vertical tails are the exact proportions as the original F6F scheme.

The left canopy rail is adorned with the name of CDR (Ret) Hamilton "Mac" McWhorter III (1921-2008). Then Lt. McWhorter became the first Hellcat ace on 19 NOV 1943, and the first double ace on 16 FEB 1944. In mid 1944, McWhorter helped to re-organize VF-12 (formerly flying Corsairs) as a Hellcat squadron, on the carrier Randolph. He took part in the first carrier raid against Tokyo on 16 FEB 1945, downing a Zero.

Later in his career, McWhorter served as Executive Officer of VF-12 aboard the USS Franklin D. Roosevelt from FEB to SEPT 1953, and then as Commanding Officer from SEPT 1953 to SEPT 1954 flying the F2H Banshee jet fighter.



The MH-60S (BuNo 166323) is painted in the overall glossy sea blue scheme in use at the time of the Korean War. The 1950's scheme represents specifically a Sikorsky H-3S "Dragon Fly".

Aircraft:	MH-60S Knighthawk (BuNo 166323)
Unit:	HSC-3 "Merlins"
Stationed:	Naval Air Station (NAS) North Island
Aircraft Mission:	Multimission Shipborne Helicopter
Period:	1947-1956
Significance:	Korean War
Painted:	Fleet Readiness Center (FRC) Southwest, San Diego, CA, Sept 2010





First Place - Jeremy Hampton (23 points)



Second Place - Jeremy Hampton (18 points)

Third Place - Eric W. Miller (12 points)



Photo Contest

Congratulations to the winner of the August photo contest - Jeremy Hampton! If you want to see your photos here, be sure to enter next month's contest! The rules are on the inside cover. Thanks to everyone who entered!

Judging: Each judge selects their top five pictures. Their first choice gets five points, their second choice gets four, and so on. The points are added up and the one with the most points is the winner.

Fourth Place - Alan Radecki (11 points)

Fifth Place - Eric W. Miller (11 Points)



AirPower11

Zeltweg, Austria



Article by Pieter Stroobach

The bi-annual airshow at Zeltweg (LOXZ), also known as Fliegerhorst Hinterstoisser, has likely the most scenic backdrop of any show in Europe. The rolling hills and mountains of the Alps in the background presents very nice photo opportunities. If that wasn't enough of a draw, the Austrians had recently introduced the Eurofighter EF2000 Typhoon as their new air defense fighter. The show also had the pleasure of being the first ever show in Europe

to host the Royal Saudi Hawks. That was a nice catch for them! When it became clear they would also have a factory fresh Saudi Eurofighter EF2000 Typhoon on static display, many European aviation enthusiasts made plans to attend Zeltweg.

Unfortunately the static show offered very lousy photo opportunities because of lots of fences and people. Having said that, there were many aircraft from all over Europe. Most nations

Tom Lammens



sent at least one representative, but much of the shows support comes from the Österreichisches Bundesheer (Austrian Armed Forces). There was also the large fleet of Flying Bull aircraft.

From nine o'clock onwards, an impressive aerial display took place. The grand opening was of course the Eurofighter, which was followed by three Pilatus PC-6 Turbo Porters which dropped parachutists before making a flyby together. After that, the first of the flying bulls came along and showed that a DC-6B is very capable of entertaining the crowds below. Then it was time for a little history lesson with a flyby and demonstrations of two Piper PA-18 Super Cubs, a Cessna L-19 Bird Dog, a Saab 91D Safir and a North American T-6 Texan.

A Pilatus PC-7 Turbo Trainer of the Austrian Air Force brought things back to the present. A somewhat rarer bird was the Bede BD-5J Microjet of the Flying Bulls, which claims to be one of the smallest jets in the world. The next performer, the Aerospaiale Alouette III, is a rapidly disappearing bird in the European sky but still serves with the Österreichisches Bundesheer. It had been a while since I had several of them in formation, so that was a nice treat. Next up were the Belgians, who sent an Agusta A109 for an always nice solo display, as well as their demo F-16 Fighting Falcon a special 65th anniversary of the Belgian Air Force livery.

Next there was some time for the civilians; first the Flying Bulls

Aerobatic Team with their Zlins and second the Breitling Jet Team with their L-39 Albatrosses. One of the more surprising recent additions to the show circuit, present at Zeltweg, is the Flying Bulls Bell Cobra TAH-1F. A Messerschmitt Bf-109G and Messerschmitt Me 262, flown by an historical society with the help of EADS, were also nice and rarely seen additions to the show.

After persistent rumors that it would not attend due to budget cuts, the Czech Mil Mi-24 Hind was a most welcome sight. The Czechs also brought an Aero L-159 ALCA, presumably still hoping to sell it. Very new to the air show circuit was a Polish MiG-15 from the Fundacja Polskie Orly, which was interesting to compare with the Polish MiG-29 on static. Formation flying is something the Austrians like to show off with their Saab 1050E, still in use as a trainer and still a pleasure to look at. The Turkish Stars were the nice punch before lunch.

During lunch time some more parachutists came down, some gliders passed by, and then things got going again with a solo Saab 1050E demo and a full demo of the Eurofighter EF2000 Typhoon. While that was landing, the Royal Saudi Hawks took off and went in to a holding pattern because we had another Saab coming along - this time the Czech Tiger JAS39 Gripen, which offered a nice opportunity to compare two of Europe's current fighters. At last it was time for the Royal Saudi Hawks, which had been eagerly



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awaited by many. Their flying did not disappoint!

Back in to the past again with a solo display of a replica Fokker Dr. I, brought all the way from Sweden by truck. The Flying Bulls were next, and showed off their hardware in two formations consisting of the Douglas DC-6B, Chance Vought F4U Corsair, North American B-25J Mitchell, Lockheed P-38L Lightning, two Alpha Jets, a Pilatus Porter PC-6, Boeing PT-17 Stearman, Bell Cobra TAH-1F, two BO-105s, an Extra 300 and an Alouette II which over saw it all. Speaking of showing off, the Dutch F-16 Fighting Falcon demo showed its bright orange livery while thundering through the

skies. The Krila Oluje (“Wings of Storm”) of the Croatian Air Force showed the crowds that propeller driven aircraft like their PC-9s have got what it takes to give a very good performance in aerobatic and formation flying.

Next was another highlight of the show, the Österreichisches Bundesheer demonstration of a base attack with all of its helicopter types; the OH-58, B212, Alouette III, S70. C-130 transports and PC-6 were used to bring in even more troops. To conclude the demo, two Eurofighters demonstrated a scramble to intercept an unknown aircraft in Austrian airspace, played by the C-130.

An Italian Alenia C27J Spartan

came next to give its breath taking demonstration and was followed by the faithful trainer of the French Air Force, the AlphaJet. The Swiss sent their F/A-18C Hornet demo and the Northrop F-5E Tigers of the Patrouille Suisse to visit their neighbor. A Pilatus PC-21 performed a demo, which was followed by the Slovakian MiG-29 Fulcrum. The cherry on top was the Frece Tricolori, who wrapped it all up at around 18:30. All in all not a bad day full with aviation fun!

If that wasn't enough Austrian aviation fun for you, the airbase also plays host to the Air Force Museum with lots of interesting items of the Austrian Air Force.



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Pieter Stroobach



Pieter Stroobach



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By the Light of the Midnight Sun

Kauhava, Finland



*Article and Photos
by Pieter Stroobach*

Usually people arrive at an airshow around 9:00 am, and some start to leave at around 3:00 pm. I am of course not talking about that special breed of human being called the aviation spotter, who lives in another time frame on days like that. However, there are nations where things are done slightly differently. In Finland for example, during the midsummer festivals people start to arrive at 3:00 in the afternoon. Originally a pre-Christian celebration of light and fertility, nightless night of the midsummer sizzles with superstition. The old tales have it that demons and witches are out and about. To drive them away, loud noise is encouraged and bonfires are lit.

Well, loud noise and bonfires in the shapes of jets are present at Kauhava Air Base of the Ilma-voimat (Finnish Air Force). Kauhava is the home base of a part of the Training Air Wing and HavLLv 41 (41 Fighter Squadron). This squadron is equipped with the well known BAe Hawk, currently of the Mk.51/51A variety but soon to be replaced/reinforced with Hawk Mk.66s, formerly used



by Switzerland, which are updated to the needs of the Ilma-voimat. A part of this unit are the Midnight Hawks, the demo team of the Ilmaivoimat. The small but nimble Air Force is not seen that much throughout Europe during the airshow season, so this show is a nice excuse to go there and see what the Ilmaivoimat has to

offer. As it turns out, it is not so much an airshow as it is a festival with aviation activities added to it. Besides the aircraft, there are monster truck demos, car driving demos, music, and a fair. For those who were interested, a Finnair Airbus A320 was present for some sightseeing flights. How-







ever between 3:30 pm and midnight there are three periods of aviation activity, each one and a half hour long. It would conclude around midnight with the Midnight Hawks and an F/A-18 making some passes to chase away any ghosts that remained.

This year's show was haunted by lousy weather predictions, but apart from a few showers that fell between the flying activities which did not stop anything, the weather was very good. During the show, the sun slowly but steadily gets lower in the sky, but never sets. The spectacular phenomenon gives continuously changing light conditions and makes it all the more interesting.

The show itself started with a Pitts Special, an Extra 300, and a CAP 232, which all showed im-

pressive aerobatics. They were followed by one of the latest additions to the Ilmavoimat, an NHI NH-90TTH. Its demo made clear that in the capable hands of Ilmavoimat pilots, this is a chopper to reckoned with. To wake the ghosts of the past, a former Ilmavoimat Fouga CM-170 Magister showed why it was once one of the most widely used trainer aircraft in the world with a breath-taking demo. A nice addition this year was the Polish Team Bialo-Czerwone Iskry, who fly their seven PZL TS-11 Iskras around with ease and distinction. After them, the Midsummer Hawks showed off their own form of aerobatics. A half hour filled with high speed formation flying was more than impressive.

In between the flying portions, one had plenty of time to visit the

nice static show. A few BAe Hawk Mk.51s were present in their old colors, as well as a brand new Pilatus PC-12, which replaced Piper 350 Navajos only last year. Valmet L-70 and L-90 trainers, seldom seen outside of Finland, were present also. The most likely to wake the ghosts of the future was a BAe Hawk Mk.66, recently refurbished by Valmet.

A mist formed near the ground as the clock approached midnight, but this did not stop the Finns from celebrating. Flying continued until midnight, when all of the ghosts were sent away for another year by formation flying Hawks, flares, afterburner noise and an F/A-18C Hornet. All in all, one perfect way to get rid of superstition.





A Special Airshow For Special Needs

Article and Photos
by Chad Grosvenor

A large number of air shows put on special events for veterans, special-needs people, and children with life-threatening diseases. Unfortunately, many people don't get to see that heartwarming side of them. Every year, Fair St. Louis holds an air show along with concerts, fireworks, a parade, and many more family-friendly activities on the St. Louis riverfront to celebrate the Fourth of July. For the air show, most of the aircraft stage out of the St. Louis Downtown Airport just across the river in Cahokia, IL. However, it is not uncommon for a couple to stage out of Lambert International Airport or their



home bases.

On Sunday July 3rd, an air show exclusively for people with special needs was held at the St. Louis Downtown Airport, so they could avoid the crowds and parking issues that they would face if they went to the riverfront. Many of the performers put on a teaser routine, if not their full show,

delighting an estimated crowd of 2,000 as they returned to the airport from the riverfront. Additionally, free water and shade was provided for all attendees who needed it.

Most of the pilots were more than happy to sign autographs, take pictures, and answer questions for their newest fans after

they landed. Sadly, just before the final act of two MV-22 Ospreys took off, an isolated thunderstorm hit the airport, ending the show and causing everyone to retreat into the airport fire station and head home. Although the rain put a damper on the end of the show, overall it was a success and everyone seemed to have a great time.





Thunder Over Michigan 2011

[Click here for videos from the show!](#)

Article by Ryan Sundheimer

After the past few years, it should come as no surprise that the annual Thunder Over Michigan airshow, organized by the Yankee Air Museum at Willow Run airport near Detroit, is one of the best shows of 2011. Each year has a theme, usually a gathering of as many of a certain aircraft type can attend. Previous gatherings include B-17s, B-25s, P-47s, and C-130s. This year the theme was of course the centennial of naval aviation, and the show featured a wide array of historical and current

Navy, Marine, and Coast Guard aircraft. Six of the CoNA aircraft were in attendance, as were several more aircraft in other special schemes.

The flying display was heavily centered on the naval warbirds in attendance, although room was made for other excellent demos - Viper East, a B-1 flyby each day, a B-2 flyby on Saturday, as well as some surprise flybys by a Convair 440 used by General Dynamics for research and development work at the airfield. There was also the

now traditional European Theater battle reenactment, featuring strafing runs by three P-51 Mustangs.

Still, it was clear that this was a celebration of naval aviation. The highlight of the show was the 'legacy parade' in which nearly every warbird in attendance - An SNJ, SNV, SBD Dauntless, TBM Avenger, SB2C Helldiver, C-1 Trader, PBX Catalina, and five Corsairs, three of them in formation. The weather prevented a couple aircraft from making it to the show, but on Sun-

day a PV-2 Harpoon, FM-2 Wildcat, and an F8F Bearcat joined the parade. All of the aircraft made numerous passes before swinging out and coming in head on to the crowd. Incredible.

The day also saw a SAR demonstration from the local Coast Guard Air Station Detroit at Selfridge ANGB, a mock dogfight between Will Ward in his MiG-17 and Paul Wood in the Warbird Heritage Foundation's A-4 Skyhawk. After the dogfight, Paul showed off the A-4s maneuverability with

a full on aerobatic demonstration. The Corsairs returned later in the afternoon when six of them took off to provide air cover for the afternoon battle, a reenactment of American Marines landing on a Pacific island. The battle featured four amphibious vehicles as well as a working flamethrower! Two real Japanese Zeros swooped in only to be fought off. The show concluded with a remarkable contrast. The 1911 Curtiss Pusher replica made several passes immediately before the Blue Angels

roared into the skies.

The lone disappointment with the show was that the planned "Hornet Nest", which would have seen two dozen F-18s on static, never came to fruition. However, this was also a testament to Thunder's greatness. For any other show, a cancellation of even half that magnitude would be devastating. At Thunder, it wasn't even noticeable. Truly, Thunder Over Michigan may be the best show I attend this year, and I suggest you make plans for next year ASAP!



Sean Sydnor



Patrick Barron



William Derrickson

Sam Bulger



Sean Sydnor



Michael Pentrak

Michael Pentrak

Shawn Yost



William Derrickson

William Derrickson







Ryan Sundheimer

William Derrickson

William Derrickson

William Derrickson



Michael Pentrak



Ryan Sundheimer

William Derrickson



William Derrickson

Sean Sydnor





William Derrickson



William Derrickson



William Derrickson



William Derrickson



William Derrickson

William Derrickson



William Derrickson

William Derrickson



Mark Kolanowski



Ryan Sundheimer



William Derrickson



Ryan Sundheimer



Sam Bulger



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William Derrickson



Shawn Yost



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OSHKOSH 2011

The legendary EAA AirVenture in Oshkosh, WI has come and gone, and our AirshowStuff Contributors have a TON of great photos of the event - so many that full coverage will have to wait until next month's issue. Enjoy this quick taste of aviation heaven, and check back in a month for plenty more!



Patrick Barron



David Jacobson



David Jacobson



Ryan Sundheimer



Ryan Sundheimer



David Jacobson



Ryan Sundheimer



David Jacobson



David Jacobson

REPORTS FROM THE FIELD

We have some of the best airshow photographers helping us bring you amazing photographs and informative reviews from airshows all over North America and even the world. The following pages are stuffed with this outstanding coverage of recent airshows and aviation events.

If you would like to see your own photos and reviews here, just contact us and ask how to contribute. The only requirement is a passion for aviation!

Veterans Day - Den Helder, Netherlands

Article and Photos by Pieter Stroobach

The day before the “open days” of the Royal Dutch Navy, a veterans day is organized. Although mainly a naval event, a small aerial demo is put together for the crowd. Although the Naval Air Service has been cut due to the economy, its 7th and 860th Squadrons are now part of the Defensie Helicopter Commando (DHC - Defence Helicopter Command). The current Dutch naval helicopter is the Westland Lynx SH-14D, but it is to be replaced with the NHI NH-90NFH within the next few years.

For the opening of the fly-

ing program, a Koninklijke Luchtmacht (KLu - Royal Netherlands Air Force) AH-64DN Apache put on an impressive demo in its new livery. This was followed by a demonstration of the Lynx, which showed that it is still capable of doing its job after more than 25 years of service. Showing the future was a NH-90NFH, which is currently used in an initial operating capability for training purposes.

HMS Castor, a former training vessel of the Royal Netherlands Navy turned museum ship, served as the waterborne basis for the

other demonstrations. First was a demonstration of a man overboard using a Lynx. This was a fitting goodbye because the rescue mission was passed on to other units only a week later. Next was a demonstration of what to do with drug transports in the Caribbean, which showcased a combination of a vessel, Marines, and a helicopter. The final demonstration showed how Marines recapture a ship that is taken hostage by pirates of the coast of Somalia. Small demonstration but good fun for everyone!



Battle Creek Field of Flight Airshow Battle Creek, MI



Shawn Yost



Michael Pentrak



[Click here for videos from the show!](#)

Patrick Barron



Ryan Sundheimer



Shawn Yost



Ryan Sundheimer



Ryan Sundheimer



Alan Barbor



Bretten Bailey



Shawn Yost

Alan Barbor

Ryan Sundheimer



Patrick Barron



Michael Pentrak

Alan Barbor



Alan Barbor



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Ryan Sundheimer



Bretten Bailey



Ryan Sundheimer



Ryan Sundheimer



Bretten Bailey



Ryan Sundheimer



Ryan Sundheimer



Ryan Sundheimer

RAF Waddington International Airshow

RAF Waddington, UK

Article and Photos by Dennis Vos

A friend of mine in the UK asked me to come over for the Waddington Airshow this year, and I agreed. Waddington was scheduled for one of the five European appearances of the Thunderbirds this year and I had to see them for the first time. The weekend trip to my first show of the year would take place the first weekend in July.

Friday evening we flew to Birmingham Airport in the UK and drove to the lovely city of Nottingham, which would be our refuge for the weekend. After a fun evening full of laughter and plenty to drink, we had a few hours of sleep

because we had to start the voyage to the show at 06.00 the next morning. Parking on base was very easy (one of the first shows I experienced this at actually) and not long after that we had our cameras ready for the action. We discovered that flying wouldn't start before 10, so we had some time to walk around the static displays. We had the privilege of visiting to the live side of the show so that we could see some actual preparation being done for the flying. After capturing the show aircraft up close, it was time to go back and set up our places for the show. Because of the layout of the

airfield we had sun directly overhead – the good photo ops would not come until later in the afternoon. We crossed our fingers and hoped for the best.

The show was a little less than expected because of the operation going on in Libya, but we still had a wonderful day. The RAF made every type available for the show, even if only on static. The show kicked off with a flypast of the E3-D Sentry and RC-135 Rivet Joint. A Yak-52 and a Spitfire did an amazing routine and thrilled the crowds. The RAF supplied a Grob Tutor, Shorts Tucano, BAe Hawk, Chinook demo, Battle of



Britain Memorial Flight, and the Red Arrows. Belgium sent over their F-16 demo, which is always excellent. The British Army put their Apache attack helicopter on display with a nice demo. The Thunderbirds didn't do what we expected due to the overcast, but we did enjoy the show they put on. Later in the day we saw much more blue skies, which really helped with the flying program. The only airworthy Avro Vulcan in the world put on a terrific show. Team Viper was very impressive to see with their five Hawker. One of the personal highlights for me was a pair of De Havilland Vampire jets from Norway. The show concluded with the Royal Navy and their "Black Cat" Lynx demonstration.

I would like to thank the RAF for their support and effort to arrange everything on base, my English friends for their generous and endless hospitality and my Dutch friend for his company. It was a blast! If you are in the UK next year, stop by the show which will be held on the 30th of June and 1st of July at Waddington Air Station.





Eyes to the Skies Balloon Festival - Lisle, IL

Photos by Fred Shabec



Thunder Over Cedar Creek - Mabank, TX

Photos by Andy Nixon



Fair St. Louis - St. Louis, MO

Photos by John Nyren





Dubuque Riverfront Fireworks and Airshow Dubuque, IA

Photos by Nate Burrows



Wings Over Tyler - Tyler, TX

Photos by Andy Nixon



Koksijde Airshow - Koksijde AB, Belgium

Photos by Tom Lammens





Nevada County Airfest - Grass Valley, CA

Photos by Mark E. Loper





Growing the Park Airshow - El Toro, CA

Article and Photos by Matt Shinavar

With the closure of El Toro MCAS in 1999, military aviation all but left Orange County after a presence of more than 50 years. The closed Marine Corps base was turned into the Orange County Great Park, which promises the archive military aviation's presence in Orange County for future generations. Before the existing four runways completely deteriorate or are removed, a group of volunteers has been able to organize an airshow to keep the flying

spirit alive.

The Growing The Park anniversary celebration has brought flying back to the El Toro area. While the Growing The Park celebration is a long shot from the Marine Corps airshows of the 90s that are still in recent memory, the amount of aviation entertainment a small group of volunteers has been able to muster is truly commendable. The anniversary celebration brought active military and civil service aircraft, his-

torical military aircraft, vehicles, aerobatic demonstrations, a wing walking performance, and sky divers.

Due to the current condition of the runways, only smaller and slower aircraft were able to land to take part in this celebration. Sure, there were no 400 knot passes from current front-line military fighters, but that only made it more fun.

Since all the aircraft present were smaller and slower, the public could be that much closer to them during startup and during the performances. While it seems most military airshows are best viewed through a telescope for the public's safety from high performance jets, this show was comfortably watched unaided as most of the aircraft did not even have to leave the confines of the Great Park to turn around and line up for their next pass. A small and intimate show like this is fairly uncommon in the Southern California region and to have one was a real treat.





Gathering of Eagles XV - Willoughby, OH



Ryan Sundheimer



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Ryan Sundheimer



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Hank Plumley



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Flying Legends - Duxford, UK

Article and Photos by Dennis Vos



It had been two years since I'd last been to Duxford, so this year it was time to pay another visit to this interesting place where time has stood still since the 1940 in some places. That Friday evening we left with our aviation travel company, 4Aviation, to arrive at 7:30 at Duxford airfield, where the fun had started already.

From where I stood a decent camera with 300mm lens will do quite well for the entire flying display.

After checking in with the Press Office, we got a tour of the Flight line; everything was allowed including detail shots of

the aircraft. The only problem was that it was a bit to early, so not every aircraft was lined up. We were allowed to walk in and out of the flight line the entire day, so I took a trip through the museum and explored the exhibits to kill some time while the flight line filled in and the covers got removed from the aircraft. The museum is so immense that you can't see it all in one day, so I chose some places I missed last time and spent some extra time there. Look for those pictures in the next issue!

The flying program didn't start until 2:00 pm, but there was a lot of traffic going in and



out of the airfield itself. Most of them were visitors, but the well known pleasure flights also filled the pattern. The mood on the airfield during this show is very calm and pleasant. Food prices are quite high but the quality is good. The flying display itself contained aircraft from a Fokker DR.1 to a Hawker Sea Fury. The total time of the flying display is three and a half hours, which is filled to the

maximum with a lot of mass take-offs, flybys and landings. There are tail chases you wouldn't have imagined in your wildest dreams, and very good photographic flying with good top-side passes. I won't go into the details of every aircraft, but I must say that my personal favorites for this year were the Horsemen (flying Mustangs "February" and "Fragile but Agile" imported specially for the Flying

Legends event), Red Bull's P-38L in polished metal finish, the desert camo P-40F that was bought from Australia, and last but not least, the F4U-5 Corsair flown by Meier Motors from Germany with its new matte black color.

I would like to thank IWM Duxford for their help and assistance and 4Aviation for offering the Duxford trip, which I hope to take again next year!







CAF Heart of America Wing Air Expo Olathe, KS

Photos by Jeremy Hampton





Airdrie Regional Airshow - Airdrie, AB

Photos by Rob Ironside



Gary South Shore Airshow - Gary, IN



David Jacobson



Alan Barbor



Fred Shabec
Bretten Bailey



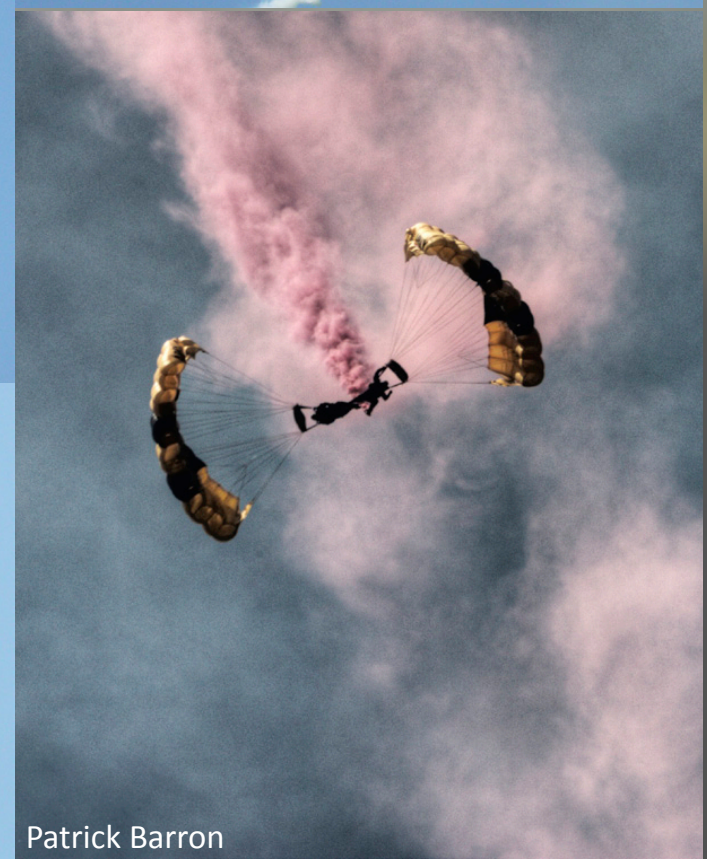
Patrick Barron



Bretten Bailey



Bretten Bailey



Patrick Barron





Alan Barbor



David Jacobson



Patrick Barron



Fred Shabec



Alan Barbor



Fred Shabec David Jacobson



Patrick Barron

David Jacobson



Patrick Barron



Alan Barbor

Royal International Air Tattoo

RAF Fairford, UK



Pieter Stroobach

Article by
Pieter Stroobach

The annual RIAT was held at RAF Fairford where the show has a home on the formerly American-run base. The show is legendary with its long history, including the Guinness World Record for being the "largest military airshow" in 2003, when 535 aircraft were on display. Visiting the show on Sunday was the better choice this year as the weather was a big improvement over the day before. Although it started out quite wet, it was dry by the time the show started at least. A vast array of

aircraft and demo teams took to the skies while on the ground a surprisingly different array of aircraft was present. Where else can one find a replica Gloster E.28/39 celebrating its first flight in 1941 and the new Airbus KC-30 tanker in one place?

I have just one little issue with this year's show; when your unique selling point is being the biggest military air show on the planet, ending the show with civilian wing walkers and a civilian demo team suggests at least a little lost focus from those who organize the show.



Pieter Stroobach



Tom Lammens



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*DFW Summer Balloon Classic and Airfest
Midlothian, TX*

Photos by Andy Nixon





Dupage Community Days - Dupage, IL

Photos by Fred Shabec



Vectren Dayton Airshow - Dayton, OH



Eric W. Miller



Eric W. Miller



Patrick Barron



Patrick Barron



Patrick Barron Ryan Sundheimer



Patrick Barron



Eric W. Miller

Patrick Barron

Eric W. Miller



Patrick Barron



Ryan Sundheimer

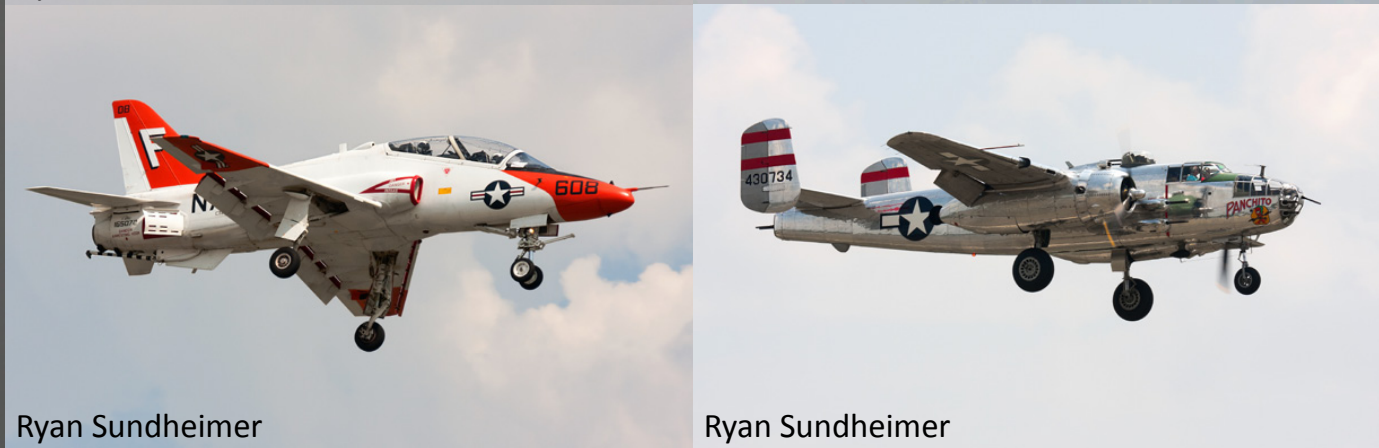
Eric W. Miller



Patrick Barron



Patrick Barron



Ryan Sundheimer

Ryan Sundheimer



Patrick Barron



Eric W. Miller

Prairie Airshow - Peoria, IL

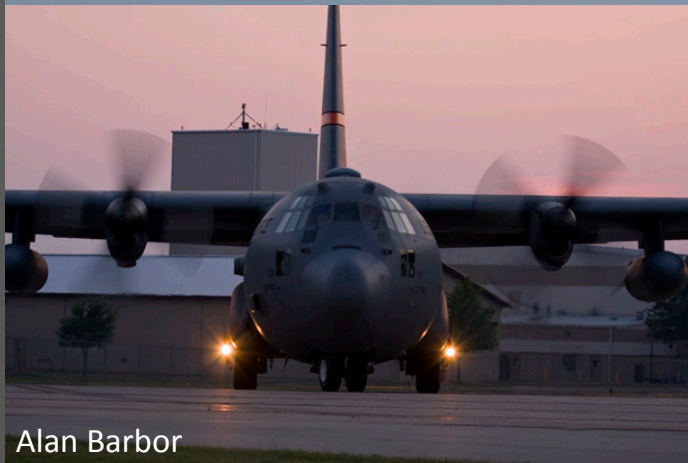


Alan Barbor



David Jacobson

Alan Barbor



Alan Barbor



Chad Grosvenor



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Alan Barbor



Chad Grosvenor



Chad Grosvenor



Chad Grosvenor



Chad Grosvenor



David Jacobson



David Jacobson



Chad Grosvenor



David Jacobson



David Jacobson

Spangdahlem AFB Open House Spangdahlem AFB, Germany

Photos by Tom Lammens





Travis Air Expo - Travis AFB, CA

Photos by Mark E. Loper





Thanks for Reading!

