



THE THRILL OF **OSHKOSH!**

AIRVENTURE 2015 opened its recent annual show with dozens of new developments in aviation; anniversaries; a new sky-diving record and the debut of several aircraft types.

Attendance figures are reported to have topped the half-a-million mark, making this year's event the biggest since 2005.

NASA used AirVenture 2015 as the occasion to celebrate its centennial, as well as the 45th anniversary of the Apollo 13 mission, while Burt Rutan celebrated the 40th anniversary of the VariEze.

Stinson celebrated its 95th anniversary of Stinson Aircraft and the 40th anniversary of International Stinson Club. It was also the 40th anniversary of the Lockheed F-16's first flight.

Also celebrated was the 70th anniversary of the first test flight of the Pitts S-1, and 70 years ago the prototype Republic RC-3 Seabee made its maiden flight. The 75th anniversary of the innovative ERCO Ecoupe was also celebrated.

Airbus used the show to debut the A-350 XWB in Oshkosh, the airliner being capable of seating 350 passengers. Goodyear's newest airship, "Wingfoot One" continued a long tradition by making its inaugural appearance at AirVenture. An F-100 Super Sabre made its first appearance at AirVenture 2015 and took part in the warbirds show. One

Its name may well have been changed to AirVenture, but to most it will always be remembered as OSHKOSH

*Text by: Henry Holden
Photographs by: Abri Kriegler*

of the rarest of warbirds, the mostly wooden de Havilland Mosquito, flew into the Warbird Section for the week, and an Avro Lancaster was also there.

Show events included the F-35 Lightning II making its air show debut along with the F-22 Raptor, and a replica Junkers F13, which also made its first appearance.

Themed performances commemorating the Battle of Britain, Victory in Europe; D-Day, Victory over Japan, and the Vietnam War were all staged.

Nightly programmes included the fifth appearance of actor/musician Gary Sinise, and the Lt. Dan Band, movies, and speakers, plus 75 different air show acts.

A Boeing B-52H bomber made its first appearance at Oshkosh during the week, but not without an extraordinary effort on the part of ground crews, and eight

months of planning with the US Air Force.

Wittman Field's longest runway is about 8 000 feet by 150 feet. A local newspaper reported that crews had to remove 6 000 feet of runway lights to accommodate the bomber, which has a second set of outboard landing gear 148 feet wide.

The 93-ton aircraft needed a big yellow parachute for its landing rollout. "It's a tight squeeze for us," said pilot Major Jeremy Holt of the 93rd Bomb Squadron.

"We usually land on runways 10 000 feet long and 300 feet wide so it's half the width."

The particular 1961 model is powered by eight turbofan engines that deliver 17 000 pounds of thrust and can fly up to Mach 0,84, with a payload of 35 tons. It can travel more than 8 800 miles with a crew of five, and with aerial refuelling it has flown 16 000 miles nonstop.

The B-52Hs were the last models built between 1958 and 1962. The B-52s have been in military service for 60 years with more than 65 still in service. They are expected to remain actively flying for at least another 25 years.

"THAT'S ALL, BROTHER"

An icon of World War II, one of the variants of the Douglas DC-3, the C-47, was recently discovered.

It is not just any C-47. Nick-named



That's All, Brother—it was the aircraft that led the massive paratrooper drop on June 6, 1944, D-Day.

It was discovered resting quietly in the Basler Turbo Conversion storage yard in Oshkosh, Wisconsin. This C-47 was built as a C-47A, USAAF 42-92847, c/n12693. It was assigned to the 9th Troop Carrier Command in April 1944.

Five hours before the beach landings in Normandy began, 821 "Skytrains" dropped more than 13 000 paratroopers behind enemy lines. The aircraft was named as a personal message to Adolf Hitler that, with the Allied invasion of Europe, it was the beginning of the end.

After the war it returned to the USA and was owned by 13 different corporations and registered NC88874. It served a church group, and several small airlines. In 2004 the Aero Heritage Museum restored it to an AC-47. Basler Turbo Conversions bought it in October 2008, and recently transferred it to the Commemorative Air Force for restoration.

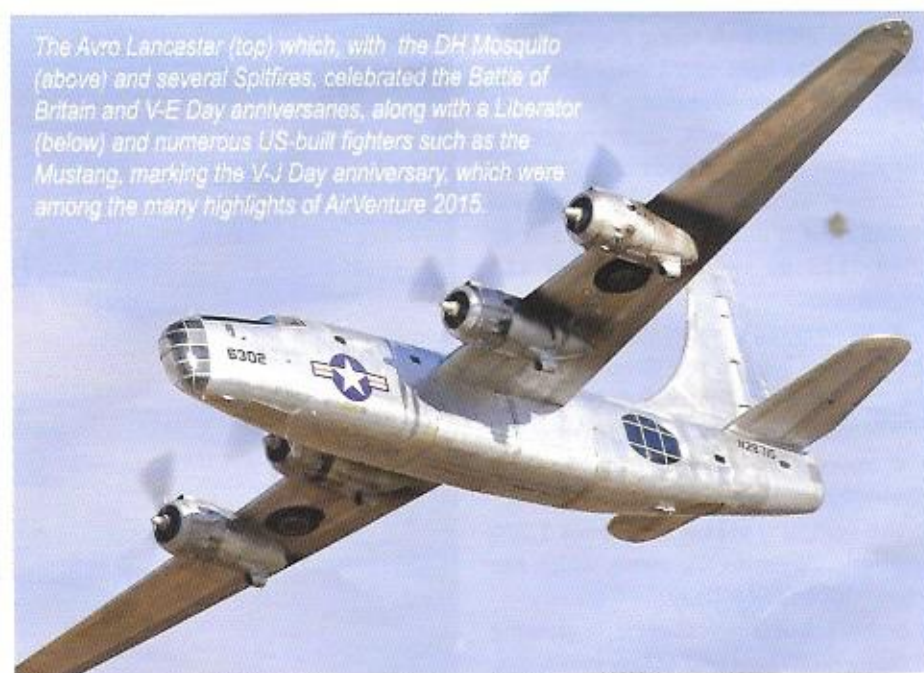
It is hoped that the million dollar plus restoration will be finished and airworthy for the 75th anniversary of D-Day in 2019.

BURT RUTAN'S SKIGULL

Legendary aircraft designer, Burt Rutan, introduced his 46th aircraft creation, a seaplane named "SkiGull." The SkiGull is a trimaran-hulled aircraft designed to land on water, snow, ice, and other unprepared surfaces without having to make physical changes to its configuration.

According to Rutan, the SkiGull should solve the shortcomings of an amphibian, and augment the performance of a light seaplane. "So we are trying to develop to an impossible specification," he said.

Rutan added that there were shortcomings in seaplanes: shock absorption, and major configuration



The Avro Lancaster (top) which, with the DH Mosquito (above) and several Spitfires, celebrated the Battle of Britain and V-E Day anniversaries, along with a Liberator (below) and numerous US-built fighters such as the Mustang, marking the V-J Day anniversary, which were among the many highlights of AirVenture 2015.

changes required to operate on various surfaces. "Seaplanes are noisy, they lack range and are inefficient. There is also the corrosive effects of water, particularly salt water," he explained.

Rutan addressed those issues with a number of innovative solutions. He

created two skis that use a pneumatic extension and retraction system from the tri-hulled sponsons. The skis allow the aircraft to take off with less effort than a standard seaplane.

The pneumatic extension and retraction system also provide shock

absorption on the water, a feature missing from all current seaplane designs.

The noise issue was addressed with a quieter engine and an improved propeller design. Two small wheels on the skis allow for operation on traditional runways.

More range and efficiency were inspired by Rutan's experience designing the Voyager and the Globalflyer both of which flew around the world unrefuelled and nonstop. The SkiGull's wings bear strong resemblance to those airplanes.

A composite airframe, assembled without the use of metal fasteners solves the water corrosion problem and, all metal parts of the airplane are replaceable should corrosion become an issue.

The aircraft is almost complete, and Rutan wanted to fly it to AirVenture, but while addressing some of the typical challenges associated with any new design, and the need for a structured flight test programme, Rutan decided not to do so this year.

OTHER NEWS

At a media briefing in advance of AirVenture Oshkosh 2015, Epic Aircraft announced it had revised its certification schedule for its E1000 single-engine turboprop and now plans first deliveries in the first half of 2016.

ICON Aircraft delivered the first customer A5 to EAA Young Eagles on the Monday. The light sport amphibian has been under development for almost seven years and was issued a weight exemption to accommodate the heavier structure required to make it spin resistant. It is allowed to weigh 762 kg gross, 113 kg more than other LSA amphibians.

ICON CEO, Kirk Hawkins, said part of the impetus behind the development of the aircraft was to encourage new pilots into aviation. The airplane is spin resistant and reportedly easy to fly, and its versatility is a major selling point.

The company says it has about 1 200 position holders for the plane, which has a base price of \$189 000.

Sensenich Technologies Inc, is growing in many directions and across industries, according to Steve Boser, president of the company. "Of course, we're well-known for propellers and prop design, which has given us a major lead in new industries, where we supply industrial cooling fans, prepreg carbon fibre parts, and specialised design work, but that we can't talk about," said Boser.

The F-22 Raptor's afterburners let it be known that it was at Oshkosh...



The busiest control tower in the USA during the AirVenture week...



Sparkling night aerobatic display...



In concurrence with AOPA, Wichita-based Yingling Aviation announced that the Ascend 172, will be a ground-up remanufacture of the popular Cessna Skyhawk. Yingling is restoring older

airframes, such as 172Ns that are used, but serviceable, to near new condition with renewed engines, paint, upholstery, and upgraded with avionics packages.

Yingling is funding the restorations

while AOPA will promote and insure the aircraft.

"This programme is designed to bring low-cost flying back to where it is within reach," said Yingling CEO, Lynn Nichols. "The market is right for it particularly when you compare the price of this to new aircraft prices."

The entire frame is stripped and inspected. Any corrosion or other potential issues are addressed. The engine is sent out for a complete overhaul. Engine truss and propeller are overhauled or replaced. The base price is \$159,900.

American Legend is offering a 100-hp Gemini diesel engine as a factory option on the Legend Cub LSA, the two companies announced.

"With its high torque, very efficient fuel burn and the ability to run on Jet A, diesel or bio-diesel fuels, the 100-horsepower Gemini will be an extremely popular engine option for Legend Cub buyers around the world," said company president, Darin Hart.

BIG NEWS

Perhaps the biggest news in aviation circles was the fact that Lockheed Martin has entered into a "definitive agreement" to acquire Sikorsky Aircraft for \$9-billion.

"Sikorsky is a natural fit for Lockheed Martin and complements our broad portfolio of world-class aerospace and defence products and technologies," said Marilyn Hewson, CEO of Lockheed Martin.

The sale is not good news for Boeing. "Lockheed will become an even more formidable challenger to Boeing in the defence sector," according to the *Seattle Times*. The deal firms up Lockheed's position as the world's largest defence company by revenue.

Lockheed's Mission Systems and Training business segment is Sikorsky's current partner on a number of programmes, including the VH-92 presidential helicopter, a combat rescue helicopter and the Navy's MH-60. The deal is expected to close by early 2016.

SALE TO CHINA

CubCrafters has sold its Type Certificate for the CC18 Top Cub to the Liaoning Cub Aircraft Corporation, of China, the company announced at AirVenture.

Under the deal, which took four years, CubCrafters will retain a licence to continue manufacturing and marketing for non-Chinese markets, and will provide worldwide fleet support.

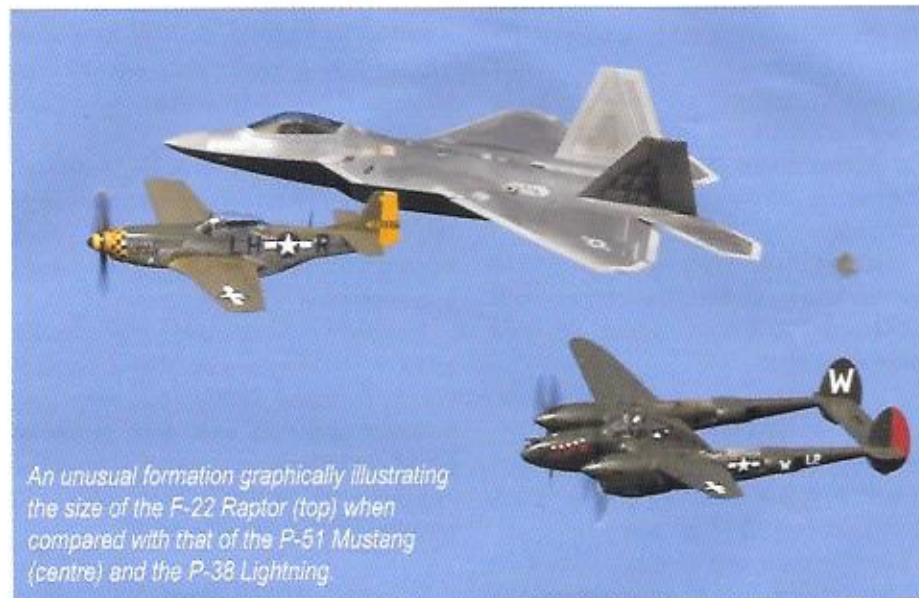
The sale of the TC, plus the support



A P-51 Mustang in all its glory...



Those were the days...



An unusual formation graphically illustrating the size of the F-22 Raptor (top) when compared with that of the P-51 Mustang (centre) and the P-38 Lightning

contracts, will provide funding for CubCrafters to develop "an ambitious line-up of new-generation aircraft projects," the company said.

The Chinese plan to use the airplane for flight training, aerial photography, mapping, agriculture, and personal flying.

"This new agreement helps position CubCrafters for the future," said Jim Richmond, CubCrafters' founder and CEO.

"Though CubCrafters and LCA remain independent entities, opportunities to cooperate in the Chinese market together look promising."

The two-place Top Cub can carry a useful load of more than 1 000 pounds.

Liaoning Cub Aircraft was formed in 2011 by CEO Zhijun Qian with a goal to bring general aviation to the Chinese market.

SUN FLYER PROTOTYPE

The first of Aero Electric's Sun Flyer training aircraft is on the assembly line, the company announced at the show.

Aero said it had contracted with Arion Aircraft of Shelbyville, Tennessee, to build what will be the first FAA-certified, all-electric aircraft. Arion produces the LS-1 Lightning LSA.

"After extensive analysis of the options available for this critical phase of the development process, we have selected a company that offers a flexible, high-quality process for the assembly of this first two-seat prototype," said George Bye, CEO of Aero Electric. "Our current schedule has initial R&D flight test operations beginning before year-end."

PRO FUSION DEBUT

Textron Company, announced that it had received type certification for the latest version of its new production Beechcraft King Air 250 turboprop, allowing deliveries to begin this quarter.

The upgraded King Air 250's Pro Fusion flight deck features three 14-inch cursor control displays, as well as cabin improvements to enhance the passenger experience.

The "personal device-centric cabin" as Textron calls it, includes international or domestic Wi-Fi as standard, and window shades that electronically dim with the touch of a button.

"EAA AirVenture is a great venue to experience firsthand the investments we are making in this proven platform," said Textron senior vice president Christi Tannahill.

But that could apply to all the aircraft Textron had on display. The aircraft made its North American debut at EAA AirVenture 2015.

GIFT OF FLIGHT

EAA has announced its "Give Flight" project that is a follow-up on the hugely successful project of last year.

Five complete sets of wings, to be built by volunteers, were donated by the Zenith, Sonex and Van's Aircraft Companies. Three of the five sets will be for Zenith kit aircraft: two Zenith CH 750 Cruiser wings, and one Zenith CH 650.

The finished wings will go to five EAA chapters which have committed to finish the airplanes and fly them back to Oshkosh in two years.

One set of Van's RV-12 wings will be built by volunteer teens under the age of 18 years.

Beechcraft's new King Air 250 made its debut at AirVenture following the receipt of its Type Certification



"We're excited and privileged to be involved with the 'Give Flight' project," Zenith Aircraft Company President Sebastien Heintz said. "Last year we successfully completed one aircraft in a week. This year we'll be giving a big head start to three new aircraft builds with the construction of the wings."

COCKPIT ECOSYSTEM EXPANDS

Garmin/Jeppesen announced an expansion of the Garmin Connex ecosystem, which broadens compatibility to include Jeppesen Mobile FliteDeck.

With compatible Garmin avionics, customers can wirelessly receive ADS-B weather and traffic, as well as display precise GPS position data and back-up attitude information within compatible products and devices.

"We're excited to have the Jeppesen flagship app join the Connex umbrella of tablet connectivity," said Carl Wolf, Garmin's vice president of aviation sales and marketing.

"Expanding the Connex ecosystem also gives aircraft owners additional options when pursuing ADS-B solutions and avionics upgrades and now, Jeppesen Mobile FliteDeck customers will have the capability to display ADS-B traffic and weather on their iPad," he said.

ROTAX 915 IS

Meanwhile, for those markets where JP4 or diesel fuel is cheaper or more prevalent, there is now on offer a plethora of new diesel engines for general aviation aircraft.

The first one is the Rotax 135-hp 915 iS turbocharged engine first hinted at last year. This new engine is a follow-up to the 912 iS introduced in 2012. Although the new engine shares similarities with the 912 iS, it has a reinforced crankshaft,

newly designed pistons and, of course, a turbocharger. To handle the higher torque, the 915 iS will also feature a new gearbox.

Complete dry weight is expected to be about 84 kg or 185 pounds. With a turbocharger compressor ratio of 1 to 3.5, the 915 iS will have a critical altitude of 15 000 feet.

Rotax's Marc Becker said the new engine would also operate on high-octane mogas and will eventually be available in both experimental and FAR 33 versions.

Although it has not flown yet, Becker said the 915 iS had accumulated about 2 000 hours in the test cell and Rotax was making arrangements with airframers to begin flight tests.

Like the 912 iS, the 915 iS has a dual channel ECU, but with the addition of an integrated turbo controller. It has dual electronically controlled fuel injection with dual spark plugs.

As with the 912 iS, the ECU will be provided by Rockwell Collins. The engine will have a 2000-hour TBO and is expected to be available in two years.

SKYDIVING RECORD

During AirVenture, the Skydiving Hall of Fame team, known as the Eagles, set a Wisconsin state large formation skydive record with 108 skydivers from 50 nations in 23 states represented.

An event of this size has never been staged at Oshkosh before. They jumped from as high as 20 000 feet from a Short SC.7 Skyvan and de Havilland DHC-6 Twin Otters.

Any record must be confirmed by FAI and its U.S. representative, the National Aeronautic Association (NAA).

Jump suits for big-way skydiving have special "grippers" on the upper legs and arms to assist the skydivers. →