



# The ThunderWord

Thunderbird Field EAA Chapter 1217 July 2019

Scottsdale, Arizona

## PRESIDENT'S CORNER

Greetings from my corner of the hangar. At last month's meeting we had Chapter member Micah Martin gave a great presentation on making an electric airplane. He also touched on three dimensional printing and had several model planes that he 3D printed. It was nice to physically touch the components that are going into Micah's new plane.

July historically is the hardest month to track down a guest speaker with people on summer vacation or on their way to Oshkosh for the big show. Brian Mitchell has agreed to do a talk on operating Lycoming engines that everyone can learn something from.

See you at the July meeting!

*Curtis*

## JULY CHAPTER MEETING

The July meeting of Thunderbird Field EAA Chapter 1217 will be held on Thursday, July 18th, beginning at 7 pm.

This month's guest speaker will be Chapter member Brian Mitchell who along with the emcee Curtis will talk about the proper operation of Lycoming engines,

Guests are always welcome!

## MEETING LOCATION

The location is The Scottsdale Airport Terminal Building, 15000 North Airport Drive, upstairs in the Thunderbird room. This location will be our permanent location through the remainder of 2019.

## NEW WEBSITE ADMINISTRATOR

Steve Thompson has stepped up and said he would like to lend his talents to modernizing our website. Jack Pollack has been the



**Micah Martin speaks about electric propulsion for aircraft**

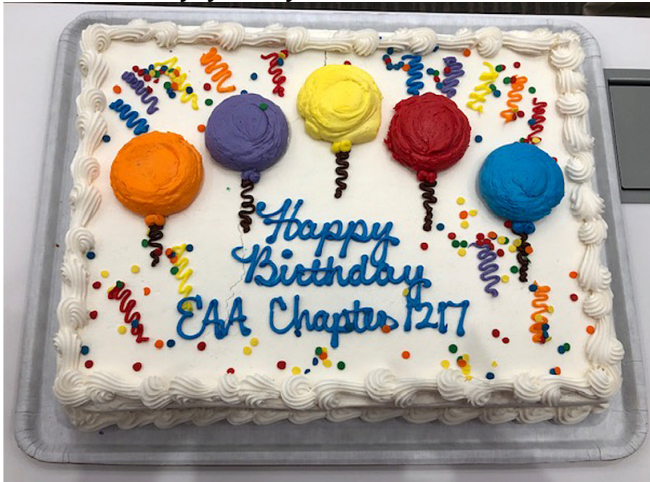
website administrator as long as we have had one. Jack has done an outstanding job and we thank him for his service, and look forward to the new look Steve has planned.



**Bernie Gross shows two of the 3D printed models Micah Martin has created**

### **BIRTHDAY BASH**

Last month was the 21<sup>st</sup> anniversary of Thunderbird Field EAA Chapter 1217. In recognition of our “coming of age”, we had a party during our June meeting. The birthday cake was enjoyed by all.



### **RICHARD DEWITT FLIES WEST**

Longtime Chapter member Richard DeWitt has made his final flight. Richard was 79 years young and had been actively flying his RV-6 until he went in the hospital. Richard personified what EAA is all about, his first plane was a Kitfox that he built from a kit (like all Kitfoxes). I had the opportunity to fly with him in it probably 35 years ago and it had great performance with two big guys and a Rotac snowmobile engine.

Richard then built an RV-6 that he flew the wings off of putting well over a thousand hours on it. Richard loved to do things himself and liked to do the hundreds of modifications and improvements he did to his plane.

We will keep everyone updated when services are planned.

## AIRVENTURE HAPPY HOUR

It has now been a 21-year tradition of Chapter 1217 members attending the Oshkosh AirVenture Fly-In to get together one evening and compare sightings and stories. This year on the first day of the Fly-In, we will have our annual AIRVENTURE HAPPY HOUR AND FISH FRY at WENDT'S ON THE LAKE. Come and join us for some traditional

Wisconsin food and libations. That's on Monday, July 22, 2019, around 7 pm.

If you want to plug it into your GPS the address is N9699 Lake Shore Road, Van Dyne, WI 54979-9703, phone (920) 688-5231; [www.wendtsonthelake.com](http://www.wendtsonthelake.com). They are located 3.8 miles south of the seaplane base.



**Stratolaunch – World's largest airplane**

## STRATOLAUNCH FOR SALE

Stratolaunch, the world's largest airplane made its first flight on April 13, 2019, at the Mojave Air and Space Port in California.

Stratolaunch has flown only once, and is up for sale. Holding company Vulcan is seeking to sell Stratolaunch for \$400 million. Vulcan is the investment conglomerate of late billionaire Paul Allen, a Microsoft co-founder. Allen died last October following complications of non-Hodgkin's lymphoma.

The hefty price tag includes ownership of the airplane as well as the intellectual property and facilities.

Stratolaunch is the world's largest airplane by wingspan, which stretches 385 feet — longer than an American football field. The plane is powered by six jet engines salvaged from Boeing 747 aircraft.

Allen's vision of a massive plane that can launch rockets from the air was at least

partially fulfilled in April, when Stratolaunch flew for the first time after about eight years in development. Based at the Mojave Air and Space Port in California, the giant airplane flew for more than two hours before landing after what was deemed a successful first flight.

Stratolaunch Systems has had various partnerships, as well as internal plans, for the rockets the Stratolaunch aircraft will carry. SpaceX was one of the company's earliest partners, but Stratolaunch later switched to a contract with Northrop Grumman-owned Orbital ATK to fly the Pegasus XL rocket. Stratolaunch's plan to develop its own fleet of rockets was scrapped in January.

While neither Stratolaunch nor Vulcan would comment on the sale discussion, a company representative told CNBC that "Stratolaunch remains operational". Stratolaunch has been steadily downsizing this year, with much of the workforce laid off already, despite plans to

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launch a small Northrop rocket in 2020. The company is in the process of closing operations, Reuters reported last month.

One item holding up the sale of Stratolaunch, is an internal disagreement between CEO Jean Floyd and Paul Allen's sister Jody Allen, who serves as the chair of Vulcan as well as the executor of his estates. While Floyd appears to be petitioning that Vulcan keep the Stratolaunch program alive, especially by retaining the company's intellectual property, Jody Allen would like to sell the company outright.

There are number of possible suitors for Stratolaunch, especially the most active space industry trio of billionaires: Elon Musk, Jeff Bezos and Richard Branson.

While it's unknown if either Musk's SpaceX or Bezos' Blue Origin is pursuing a purchase of Stratolaunch, people familiar told CNBC that the company has spoken to Branson about selling to his Virgin Group. Branson's conglomerate owns three space companies: Virgin Galactic, The SpaceShip Company and Virgin Orbit. As the former two were built using technology similar to that of Stratolaunch — all three have a similar manufacturing heritage, as they all originated from designs by prototype aerospace manufacturer Scaled Composites — Virgin may be an ideal destination for Stratolaunch.

But Branson was hesitant to pay full price for Stratolaunch, a person familiar said. Instead, the person said, Branson countered Vulcan's offer in a way similar to his lowball offer for the supersonic Concorde fleet in 2003. British Airways had been planning to retire the airplanes, and Branson had offered the airline \$8.30 million to take the planes off its hands and continue flying the Concordes for Virgin Atlantic.

Branson pitched Vulcan that he would buy Stratolaunch, the person said, for \$1 million.

## **OLD TURNBUCKLES ON YOUR PLANE**

A Special Airworthiness Information Bulletin (SAIB CE-19-13) has been issued to alert owners, operators, maintenance technicians, and inspectors of an airworthiness concern; specifically cracking and fracturing of flight control cable terminal attachment fittings connected to turnbuckle barrels on **all 14 CFR part 23 and CAR part 3 airplanes with mechanical flight control cables**. SAIB CE-19-13 was issued on July 2, 2019

With the exception of AD 2013-02-13, which addresses specific turnbuckle connections in the stabilator control system on certain Piper Aircraft Inc. airplane models, at this time, the airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Regulations (14 CFR) part 39. However, the FAA continues to monitor this concern, and may take additional action based on data received from operators, and/or further examination.

### **Background**

Turnbuckle connections are widely used in flight control systems on a multitude of airplane models that utilize mechanical flight control cables. The FAA has, over the years, received numerous reports of failures of the cable/turnbuckle attachment fittings, which have caused or have the potential to cause loss of flight control in one axis. In many cases, the failures have been discovered during inspection or ground operations. For those that occurred in flight, the pilot was often able to land the airplane without damage, although this can be very challenging. Accidents with substantial damage have occurred in some cases.

The specific focus of this SAIB is on the connecting fittings that are attached (swaged) to the flight control cables and threaded onto the turnbuckles. These fittings are typically manufactured from a type of stainless steel that is susceptible to stress corrosion cracking

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under certain conditions over time. Based on multiple part examinations, the stress corrosion cracking originates at general corrosion pits on the surface of the parts. Because the cracks are primarily below the surface, they can be extremely difficult to detect. Because stress corrosion cracking is usually preceded by or accompanied with visible corrosion, any presence of even light or moderate corrosion on these fittings is cause for concern.

Factors that contribute to stress corrosion cracking for stainless steel fittings of this type are exposure to contamination (chlorides) along with being under sustained tensile stress. Heat is also a contributing factor. It is therefore likely to occur more quickly in a warm, humid, salt air environment, and progresses based on calendar time rather than flight time. A number of failures have occurred in areas of the airplane adjacent to heating and ventilating ducts, thus raising the possibility that elevated temperatures and/or condensation associated with the ducting was an aggravating factor. Owners and operators of certain Beechcraft Bonanza and Debonair airplane models should be aware that multiple failures of an aileron cable terminal have occurred in a location just forward of the rear spar and underneath a ventilation/heating duct. This applies to most airplane Models 33, 35, and 36 manufactured between approximately 1964 and 1977, after which the aileron turnbuckles were moved to a location in the wheel well (although there may be exceptions falling outside those years). Being located in close proximity to the airplane battery can also be an aggravating factor. Based on reports received to date, the FAA would not expect failures to occur on parts with less than 15 years time in service.

Another aggravating factor is the presence of sleeving or tape that is sometimes installed on the fitting shank for identification as an aid during initial airplane assembly. Corrosion can form more quickly underneath this material and be hidden from view during an

inspection. This material has no functional purpose on an assembled airplane.

Again, because stress corrosion cracking is usually preceded by or accompanied with visible corrosion on the fitting, any corrosion visible in the area of the fitting is cause for concern.

Pictures from a recent incident involving failure of such a fitting is shown in the photographs below. Note the small amount of corrosion adjacent to the fracture location.



**Turnbuckle Failure**



**Close Up of Turnbuckle Failure**

### **Recommendations**

For all airplanes certificated under 14 CFR part 23 and CAR part 3 that utilize mechanical flight control cable systems, the FAA recommends that owners and operators perform the following:

1. Upon any annual or other general inspection of the flight control cables, carefully examine all cable terminal fittings that attach to all turnbuckles for corrosion and/or

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cracking (in addition to inspecting the turnbuckles and the entire length of the cables as you normally would). Use of a 10X magnifier is recommended.

If safety wire is installed such as to prevent examination of the fitting surface, the safety wire must be removed.

**Caution:** Care should be taken to avoid any adjustment of the turnbuckle relative to the fittings. Otherwise, re-rigging of the affected flight control cables per the manufacturer's instructions should be done before further flight.

Examine underneath any sleeving or tape that is installed on the fitting shank.

Remove and discard any such tape or sleeve material while exercising care not to gouge or scratch the fitting surface. Removal of this material is considered a minor alteration to the airplane and should be documented by an appropriate logbook entry.

Replacement of any identification marking can be accomplished using normal airplane metal marking techniques such as paint stencil or low chloride permanent marker. Avoid using generic permanent markers, as

they may contain chlorides. Low chloride markers are commercially available.

2. If no corrosion or cracking is present:

a. Apply a corrosion preventative to the swaged fittings if recommended by the manufacturer.

b. Replace any removed safety wire with new safety wire in accordance with normal procedures.

3. If any sign of corrosion, pitting or cracking is present on any fitting, replacement of the associated fitting and/or cable assembly is recommended.

4. For those airplanes with a history of significant exposure to warm, humid, salt air environments, replacement of all primary flight control cables that have been in service for 15 years or longer is recommended. Additionally, replacement of any cable that has a turnbuckle fitting located in an area of the airplane subject to elevated temperatures, the prevalence of condensation, or in close proximity to the airplane battery, and has been in service for 15 years or longer is recommended.



**New Delta Wing Amphibian Undergoing Testing in Wisconsin**

## **50<sup>th</sup> ANNIVERSARY OF THE BOEING JUMBO JET**

UPS 747-8F is heading to AirVenture to help celebrate the 50th anniversary of the Boeing jumbo jet. United Parcel Service, more commonly known as UPS, is bringing one of the world's most iconic commercial aircraft, the Boeing 747, to EAA AirVenture Oshkosh to celebrate the airplane model's 50th year in flight. The year this revolutionary aircraft took to the sky also marked the same year that the world's largest fly-in convention, EAA AirVenture, declared its permanent home in Oshkosh, WI.

With over 10,000 aircraft and more than 600,000 people attending, EAA AirVenture Oshkosh will once again transform Wittman Regional Airport into the world's busiest airport from July 22-28.

With 16 percent more cargo capacity than the previous largest UPS aircraft, the 747-400,

the 747-8F is the largest plane UPS has ever flown.

The 747-8F will be flying to AirVenture on Tuesday, July 23 and remain on the grounds through Thursday, July 25. The nose of the aircraft will be open and tours will be available with UPS staff and flight crew members on board to further educate attendees about the features and functions of Boeing's newest 747 model.

"This is our third year bringing aircraft to AirVenture, and we're very happy to participate and give back to the aviation community that's treated us so well." said Dennis Faulk, director of ground services and airline flight operations at UPS.

The UPS 747-8F will make its grand exit from the AirVenture grounds at the conclusion of Thursday's airshow with a high speed pass over the Wittman Regional Airport flightline, then depart to begin delivering cargo to more than 770 destinations around the world.



**Klaus Plasa sent this picture of his newly restored Cessna Airmaster in Germany. Klaus talked at one of our meetings about flying German WW2 aircraft**

# ThunderAds

## LONGEZ AND SONEX

Tom Partin has decided to stop flying and has two airplanes for sale at Thunder Ridge air park (AZ28), a 180hp LongEz and a 120hp Sonex. Anyone interested can contact Bertha Partin at [bmpartin@gmail.com](mailto:bmpartin@gmail.com)

## GLASAIR III

Lynn Babcock has decided it's time to sell his Glasair III. This aircraft has every upgrade from speed brakes to airconditioning and cruises at 220 kts. He is asking \$215,000. Lynn is the original builder and the plane has been based at Scottsdale Airport its entire life. 480-227-5945.

## THATCHER CX-4 PLANS & BUILDERS MANUAL

New, never used, donated to our Chapter.  
Curtis 602 710-4494

## ONEX, WELL-EQUIPED LSA FOR SALE

ONEX, folding-wing, fighter-like, single-seat, tricycle-gear LSA, an 85%-scale Sonex. Powered by 100 HP, turbo-charged VW engine. Dynon SkyView, 2020-compliant ADS-B Out avionics. Ipad for navigation fits in center console. With wings folded, Onex shares space in small T-hangar behind one wing of RV-12. Offered at \$21,500. Denny Myrick 480-213-4906. [Dennymyrick@me.com](mailto:Dennymyrick@me.com)...

## COOL PLANES FOR SALE

Only flown by little old ladies to church on Sundays. <http://captainbillywalker.com/aircraft-for-sale/aircraft-for-sale>

## CESSNA 172'S FOR RENT

Two IFR Cessna 172s for rent at Chandler. Owned by Chapter member Pat McGarry. Contact Chris Hoel for more information and to schedule [birdganqft@gmail.com](mailto:birdganqft@gmail.com)

## RV-4 PARTIALLY BUILT KIT

\$13,500 Lycoming 0-290-D2, kit for \$3,000 or \$16,000 for both. Bill Refrow 602-843-9862 [w7lov@cox.net](mailto:w7lov@cox.net)

## LYCOMING 0-360 A1A

Engine built up for RV project never completed. Invested \$50,000. Price very firm at \$25,000. Martin Del Giorgio [delqiorgiopels@gmail.com](mailto:delqiorgiopels@gmail.com)

## GARMIN GDL39 PORTABLE GPS

ADS-B Receiver with free Weather and Dual-Link Traffic. Battery Pack with extra Battery included. Works with all Apple Products. Brand new in the box, \$400. Ken Roth 602-228-5000, or e-mail: [RothDevCor@aol.com](mailto:RothDevCor@aol.com)

## SERVICES, ETC.

### High-Perf Tailwheel & Akro Instruction

Pitts, Skybolts, all experimental tailwheel aircraft. 46 year's experience. Scottsdale Airport Budd Davison, Plus-5 Aviation, 602-738-2045, [www.airbum.com](http://www.airbum.com), [buddairbum@cox.net](mailto:buddairbum@cox.net)

### OIL COOLER REPAIR AND SALES

Chapter member owned. R & E Cooler Service 800-657-0977 [www.oilcoolersvs.com](http://www.oilcoolersvs.com)

### FLIGHT INSTRUCTION, ETC.

Fred Gorrell Designated Pilot Examiner: Airplane: Private, Commercial, Instrument, ATP, ME and Lighter than Air: Private and Commercial. 602-942-2255, 602-418-2045, [fgorrell2@cox.net](mailto:fgorrell2@cox.net)

### HOME BUILT AIRCRAFT CERTIFICATION

ABDAR Gary Towner 928-535-3600

### ANNUALS, RESTORATIONS, FABRIC WORK

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