



January 2018 Newsletter Volume 42, Number 01

THE STATIC LINE

Leroy Castle Memorial EAA Chapter 538 Phoenix, AZ

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Monthly meeting are the second Tuesday of every month starting 6:30 PM at Deer Valley airport restaurant

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2018 CHAPTER OFFICERS / DIRECTORS

President – Carlos Hernandez
 email: pazmany.ch@gmail.com
 Ph: (623) 810-5675

Vice President – Stuart Snow
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Treasurer and Secretary – John Gregg
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1 year Director – Cheri McGunagle
 email: cherimcgu@aol.com

2 year Director – Dave Biddle
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3 year Director – Tom Velvick
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Newsletter Editor – Alex Bodak
 email: cpucoach@yahoo.com

Webmaster – Alex Bodak
 email: ea538board@gmail.com

CALENDAR OF EVENTS

January	09, 2018	Monthly Meeting (MM)
January	27, 2018	Young Eagles (AZ National Guard)
February	13, 2018	MM
March	13, 2018	MM
March	24, 2018	Young Eagles (ROTC)
April	10, 2018	MM
April	21, 2018	Young Eagles (Tuskegee Airmen)
May	08, 2018	MM
June	12, 2018	MM
July	10, 2018	MM
July	23-29, 2018	Airventure
August	14, 2018	MM
September	11, 2018	MM
October	09, 2018	MM
November	13, 2018	MM
December	11, 2018	MM

EAA Chapter 538 President Report

January 2018

Happy New Year everyone! I do hope that you all had quality time with family, friends and flying over the holidays. We couldn't have asked for better weather and flying conditions were near perfect.

December was our annual Holiday party at Dillion's. We had 32 in attendance for the festivities. Door prizes were given (gift certificates to restaurants, Two chapter memberships and \$100 to Aircraft Spruce courtesy Tom and Katie Velvick) and the food was good as always. We also presented Service Awards to our Chapter Volunteers and Officers. Thank you for all that you guys do for the chapter!

Another year is in the books and 2018 is here and we are full throttle for the new year. EAA Chapter VP Stuart Snow made arrangements with Fred Gibbs to reschedule the BasicMED seminar. It has been scheduled for this month. Due to limited seating Fred made it by registration by invitation only. The registration is for Wings credit. You're more than welcome to attend the meeting even if you're not looking for the credit. Be advised though there may be standing room only available. Our meeting will start at 6:30 PM with this month's EAA Chapter video. The BasicMED seminar will begin at 7 PM

I'd like again welcome the 2018 elected board members. They are:

President	– Carlos Hernandez
Vice President	– Stuart Snow
Treasurer and Secretary	– John Gregg
1 year Director	– Cheri McGunagle
2 year Director	– Dave Biddle
3 year Director	– Tom Velvick
Webmaster and Newsletter Editor	– Alex Bodak

Thank you everyone who accepted their position. As always, your participation is truly appreciated. I look forward to working with you again this year!

We are currently filling in our monthly meeting schedule of presenters and also have activities planned for this coming year such as, Young Eagles Events, builder project visits, chapter projects, and more. To assist in our planning, I'm asking everyone to send in your ideas for meetings topics, speakers, projects, fly-outs and social activities for this year. *If there is anything of interest you'd like to have as a presentation, I invite you to submit your request.* The chapter meeting presentations are guided by your input. So start brainstorming and send them to us and we'll do our best to have your topic covered in one of the monthly meeting. I'd also like to mention if you have any stories, pictures and/or anything for sale/trade that you contact our Newsletter Editor Alex Bodak so we can include them with the next available publication. His email is CPUCoach@yahoo.com.

Upcoming events for January 2018:

1. Monthly meeting on Tuesday January 9, 2018 at 6:30 PM, at the Phoenix Deer Valley Airport Restaurant.

EAA Chapter 538 President Report Continued

- Featured guest speaker is Fred Gibbs. He will be presenting his seminar on BasicMED. We will have a short video presentation from EAA Chapter video magazine which will be used in place of this month's presenter.
2. Chapter 538 will host a Young Eagle Event, at Glendale Municipal Airport on Saturday January 27, 2018. This event will support the dependents of our currently deployed AZ National Guard members. We have approximately 75 young people attending. Yes, 75. We hope you will be able to participate. A ground crew and pilot volunteer sheet will be passed around at the meeting to sign up.
 3. Chapter Board meeting - TBD

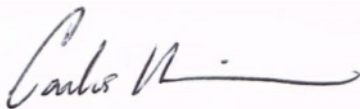
Chapter membership reminder:

2018 Dues are now due!

Please bring your \$20 cash/check/first born for your 2018 membership renewal.

I look forward to seeing YOU on Tuesday January 9, 2017 at 6:30 PM at the Deer Valley Airport Restaurant. Come early if you are hungry, and enjoy the Social Hour starting at 6:00 PM Please plan to attend, and bring a friend!

Thank you for being a part of our Chapter 538!



Carlos Hernandez

www.eaa538board@gmail.com

www.538.eaachapter.org

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SECRETARY-TREASURER'S REPORT

Due to the Christmas party last month, I did not make up a secretary report. Perhaps you can mention that:

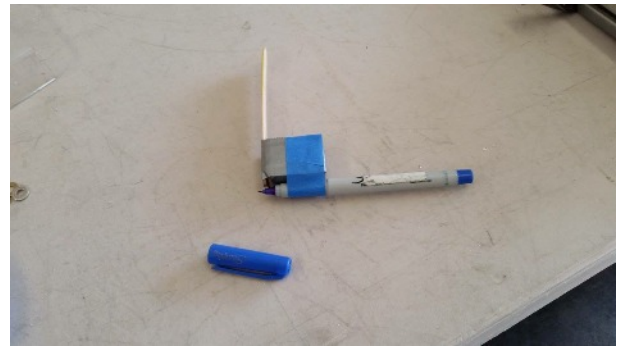
At the Christmas party, David Evans and Chris Hummel won the drawings for free 2018 Chapter memberships.

MEMBERS SPOTLIGHTS

Carlos Got some time over the holidays to work on his RV-7. Finishing the horizontal air filter installation for the fuel injected engine. Standoff made from scrap wood. I made 4 of these.

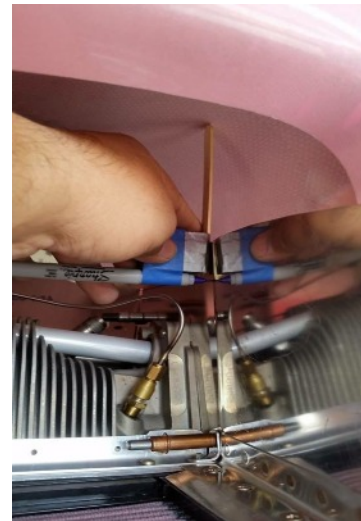


Trim line marking tool assembled.



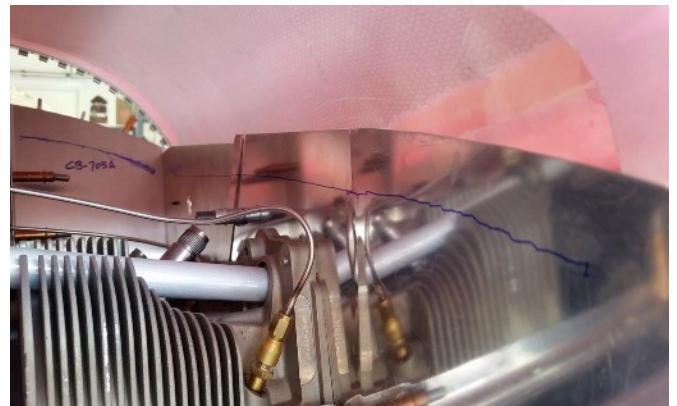
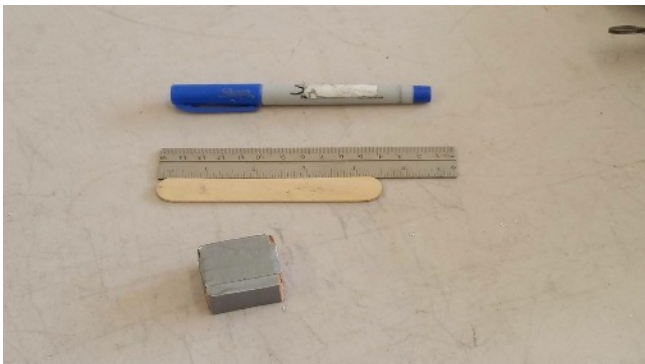
Trim line marking tool in use. This allows me to follow the contour of the top cowl for even spacing of the baffles to the top cowl.

Standoff in use. This allows the top cowl half to stay above engine so I can mark the trim line inside.



Trim line marked on left side.

Parts and pieces of my trim line marking tool.



MEMBERS SPOTLIGHTS

Michah Martin Finishes his Sonex.
The Onex is Done! Time for champagne!
Here's a quick walk around of the finished plane:
Click On the first picture to go to his web site.



Sonex Continued.



Weighing

A required step in applying for airworthiness is calculating weight and balance. Fellow EAA chapter 538 member, Chris Rute, has some precise scales meant for race cars. He was kind enough to bring them over and help me out. Each wheel goes on a separate scale and the main display shows you the weights. It's was so sensitive that slight breezes would change the numbers. Results:

Right Main Gear: 294 lbs

Left Main Gear: 294 lbs

Tail Wheel: 30 lbs

Total Weight: 618 lbs - just 18 lbs more than the plans claim. I got a GoPro so I can film my first flights and I will post videos on this blog.

MEMBERS - SPOTLIGHT

Ask ATC

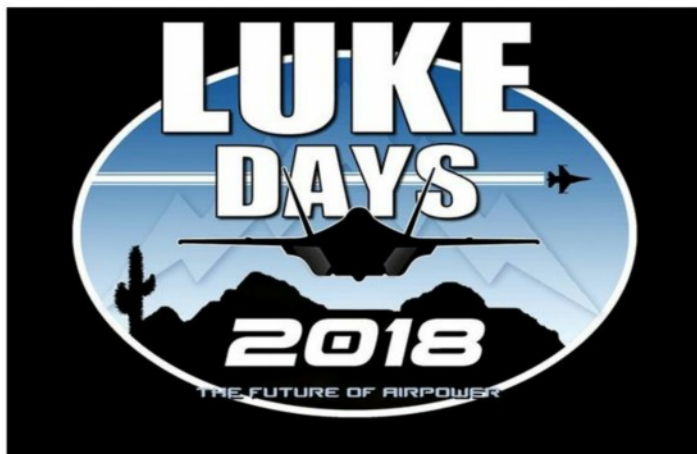
Steven Stenstrom who works for the FAA as a controller for Sky Harbor International Airport has set up an email account so that you can ask him questions. It is: eea538atc@gmail.com

Carlos Hernandez RV-7 Progress

A 72" diameter x 85 pitch Sensenich Propeller arrived! This is the last large (physically) item for My RV7 plane build. Finishing engine baffles and firewall forward soon. Instrument panel and wiring right around the corner. I may actually finish and fly this build! — feeling optimistic.



Luke Air Force Base March 10-11 for Luke Days 2018 featuring the U.S. Air Force Thunderbirds!!



JANUARY 2018 WALLPAPER

January 2018 Wallpaper can be found by clicking photo:



January 2018 Sport Aviation Magazine

January 2018 SA can be found by clicking photo:



YOUNG EAGLES DECEMBER 2, 2017 WITH STELLER AIRPARK ASSOCIATION.



Jack Norris Info for Geronimo Fly-in.

On the 27th of January, Geronimo Experimental Aircraft is hosting a Fly-In!

Geronimo Experimental is home to the largest experimental/amateur build center in the Southwest US. Seeing the facility is worth the time and 100LL burned during the flight. Geronimo Experimental was the organizer for the US Flight Expo in May 2017 at KAVQ. If you fancy a Lightning Kit or want to explore rapid build, reach out to Greg to discuss.

For the adventuresome campers, you can fly in Friday afternoon and hang out for the barbecue scheduled at 6:00pm. There is no lighting for the strip, so plan to land before sunset!

Highlights include an opportunity for training with HL Cooper, www.azsportflying.com ((520) 682-7504) for ultralight and light sport transition or bi-annual.

Geronimo is located~ 32.38 deg N/11.37 degW @ 2165 AGL. The build center dirt strip is 2800 feet and a width of ~75 feet.

The build center area will accommodate 20 aircraft. Please contact Greg Hobbs on e-mail at hobbs28@gmail.com or 520-405-6868. Please RSVP for flying into Geronimo to affirm a parking space. Please identify your name, phone number, approximate arrival time and the type of aircraft.

For those of you that would like to attend, but not land onto a dirt strip, we will arrange transportation from/to the Marana Regional Airport.

Greg and Crystal Hobbs will host a lunch at the build center at noon. Donations will be accepted.

For those of you driving in the address is 18750 W. Avra Valley Road, Marana, Arizona 85653 (Tucson Area). The access to the parking area is via the Gasline Track just beyond the gate to the build center complex off Avra Valley Road.

For more info on Geronimo Experimental visit <http://www.lightningaircraftwest.net> on the Internet!

Greg will make space available for any Chapters who would like to host a meeting on Saturday.

We look forward to seeing you there.

Jack Norris
Chapter 538
703-307-6775

Thanks to Chuck Peterson for this Information:

Choosing & Installing an ADS-B In/Out

Why buy an ADS-B Out when the deadline is more than 2 years away? Can't we see lots of traffic with just ADS-B In? Yes, some. But it only takes one close call to make me put out \$1400 to maximize my safety and never look back!! Plus having in-flight weather for cross-country use is nice.

On my initial flight, there were five airplanes that the ADS-B pointed out within 2 miles ahead of us and 2000' altitude that neither my wife nor I ever sighted, even with the cues. And despite having Flight Following, none of those were pointed out by ATC. All were crossing, so they should have been more observable.

Which One? – The current panel in my RV-9A is 2005 vintage, so doing a Garmin or equal solution was \$4 K or more. The lower priced units provide only the Out function. Instead, I chose the uAvionix echoUAT, currently only approved for experimental aircraft, based on a referral from a knowledgeable friend. The unit is priced at \$999 and requires a WAAS GPS for position input. If you, like me, don't have that GPS, you can get the echoUAT and skyFYX-EXT GPS for \$1399 plus shipping. Apparently lots of folks are thinking as I was; when I tried to order, all the distributors like Aircraft Spruce were out. But a call to the company rep got me one in 2 days.



An amazingly small box arrived with the items below well-packaged in it. In the top row (L-R) are the skyFYX-EXT GPS with harness, the echoUAT Receiver/Transmitter (R/T) unit, and the ADS-B Antenna which looks just like a Transponder antenna. At center, the multi-color coiled wires with the black rectangular connector is the harness to connect to the R/T. At lower right is an adapter cable. The SMA connects to the R/T. The BNC on the other end connects to an extension cable (not included) which attaches to the antenna.

Documentation - A 47 page User and Installation Guide for the echoUAT and a similar document for the GPS had to be downloaded. They're obviously written by someone with English as a first language in a logical fashion that left no questions as you read.

The GPS model shown above is the SkyFYX-EXT, suggested by the company rep at Copperstate. The antenna and processing are all contained in this unit. Another model, SkyFYX, has two assemblies: a processing unit meant to be inside the aircraft and a separate antenna.

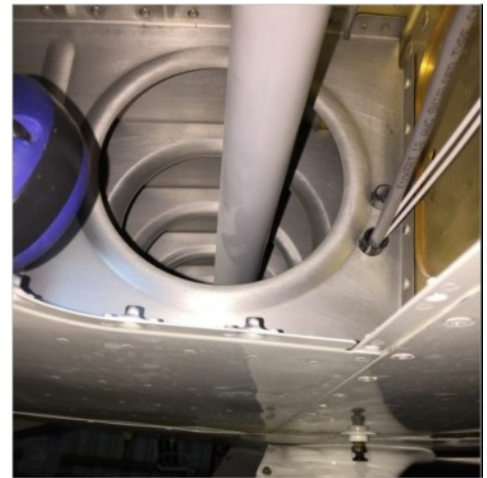
INSTALLING ADS-B CONTINUED

installation - The uAvionix rep suggested mounting the GPS under the cowl, never mind the electronic radiation from the magnetos and spark plug wires, or the heat. Below is a picture of the installation where it is mounted on an L-bracket fastened to the firewall. Other than drilling the hole for the wires through the firewall, this was easy.

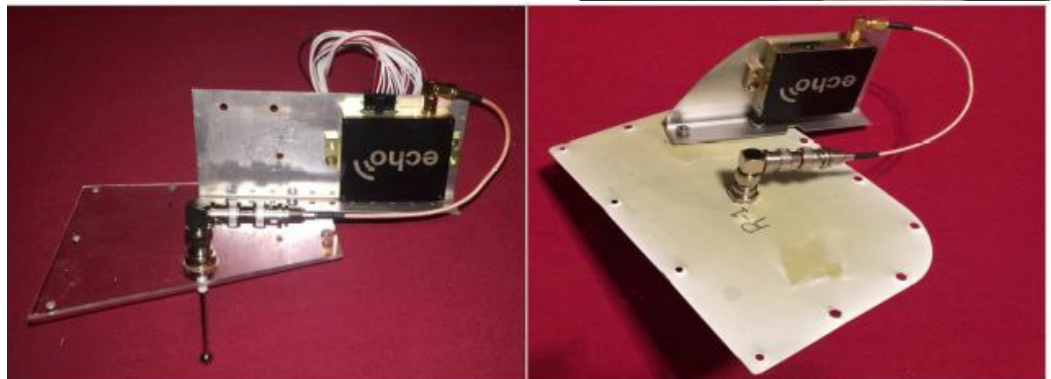


Locating the Receiver/Transmitter (R/T) unit was the next consideration. uAvionix says the R/T is "designed to be mounted in the cockpit, cabin or an avionics bay." But an A&P friend said he'd mounted his R/T in the RV-6 wing, using the inspection plate on the bottom of the wing closest to the fuselage, and it has worked fine. Hopefully the inspection plate seals well enough to keep any serious moisture out! If not, sealant or a gasket should work.

When I removed the plate, the view back toward the fuselage where the wiring and WI-Fi signal have to go is shown below. The aileron pushrod goes through this area, but is ~3" above from the inspection plate.



To check for interference. I made a copy of the inspection plate out of Plexiglas and mounted the R/T on some scrap aluminum (above left). The wiring harness is shown plugged into the R/T. The only change in the finished mount was rounding off the front edge of the aluminum bracket (above right). Because of the close proximity of the R/T and the antenna, no extension cable was required; only two coaxial adapters. This minimizes both transmit and receive RF signal loss. The RT has a non-metallic cover to allow radiation of the Wi-Fi signal. This side was oriented toward the holes in the ribs shown above. This provided full indicated signal strength to the iPad Air 2 used for display.

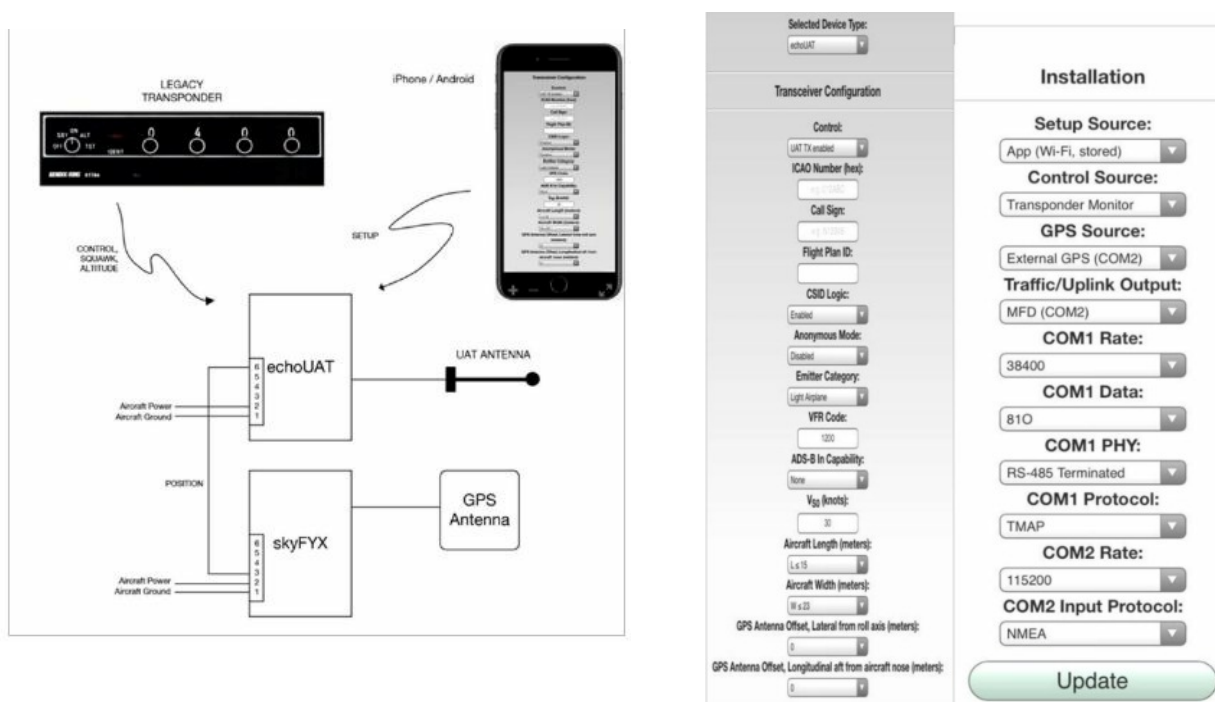


INSTALLING ADS-B CONTINUED

Wiring came next. The User and Installation Guide provides interconnections for major WAAS GPS units, plus connections to various Electronic Flight Information Systems (EFIS) including Dynon, MGL, GRT, and AFS, which contain their own WAAS GPS.

Install ADS-B Continued

For simple systems with “Legacy Transponders” (meaning older Mode C) like my Garmin 320A, there is no wiring connection to the Transponder. The R/T “learns” the Control, Squawk Code and Barometric Altitude information by receiving the Transponder transmission. As the diagram below shows, the only signal wire between the R/T and GPS is the GPS data. Power and Ground are the only other connections required.



Setup – The R/T is programmed via Wi-Fi from either Android or IOS devices. After downloading the Installation app and powering the system on, you connect to the echoUAT. First you select the uAvionix product you have, and then you set up the R/T (here called Transceiver) via the menu below left. You must enter an ICAO number which is easily looked up and the registration number. Then you use the Installation menu (below right) to tell the R/T what to expect from the EFIS or GPS.

Operation – Once setup via the menus, both the ADS-B In and Out operation is fixed. The ADS-B In processes all the information received via both the 978 MHz UAT and 1090MHz ES frequencies. This includes ADS-B, ADS-R, TIS-B and FIS-B data. The information displayed is selected via the Electronic Flight Bag (EFB) app (FlyQ shown). An example of a screen display is shown below.

Traffic is displayed as arrows inside a colored circle. A gray circle indicates no factor traffic, an orange circle indicates traffic within 5 NM and $\pm 3000'$ in altitude, and a Red circle and Red text box indicates traffic within 1 NM and $\pm 1000'$ in altitude. The end of the black line projecting from the arrow point indicates where the traffic will be in 2 minutes. The numbers inside the text boxes are the altitude difference between the traffic and your aircraft in 100's of feet while the up or down arrow in the box indicates whether the traffic is climbing or descending.

INSTALLING ADS-B CONTINUED

The White Circle represents 15 NM radius. It can be turned On or Off. Similarly, traffic can be filtered to only display aircraft within the circle or show everything in range as below.

Various weather products are available in-flight. These are overlaid over the map. Most basic are the METAR Green circles indicating VFR conditions shown. Other products include Radar, Airmet/Sigmets, Winds Aloft, and Satellites (not shown).

Summary –The uAvionix echoUAT provides the lowest cost solution for meeting the 2020 ADSB mandate in the U.S. At present, it is for Experimental aircraft only. Certification for the echoUAT product is projected for early 2018. It is limited to altitudes below 18,000’, not much of a limitation for most of us. The transmission on the UAT 978 MHz frequency is only usable in the U.S.



ANNOUNCEMENTS

REMINDER

Yearly dues are from January 1 until December 31 of the year. Dues are \$20 per year. Make checks payable to EAA538 Chapter.

WEBINARS

- Books
- DVDs
- Webinars
- Discussion Boards
- Desktop Wallpaper
- EAA Radio

See Download GoToWebinar for your download options. You can also check your system's compatibility automatically.

Some EAA Webinars qualify for credit in the FAA's WINGS or AMT awards program. Visit www.faa.gov for details.

[View Webinar Video Archives](#)

EAA gratefully acknowledges the support of Aircraft Spruce and Specialty Co. for their generous sponsorship of EAA webinars.

Registration is required, and space is limited.

Date	Time	Title	Presenter(s)
1/3/18	8 p.m. CST	Liticaphobia (fear of being sued) Qualifies for FAA Wings and AMT credit.	Mike Busch

The litigious nature of aviation has created a siege mentality on the part of many aircraft mechanics. Terrified of being sued, they often engage in "defensive maintenance" in which they do work far in excess of what is necessary to make the aircraft safe and legal, and are reluctant to admit making mistakes for fear of legal consequences. Mike Busch discusses the chilling effect this has on aviation maintenance, and explores the question of whether the actual risk of being sued matches the perception of risk that most mechanics have.

1/10/18	7 p.m. CST	Preflight Delight: Look Before you Launch Qualifies for FAA Wings and AMT credit.	Prof. H. Paul Shuch
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FAR 91.3 states that responsibility for the safety of flight rests solely on the shoulders of the pilot in command. That means it is up to the pilot to make sure the aircraft is in a condition for safe operation. In this FAA Safety Team WINGS and AMT award qualifying webinar Prof. H. Paul Shuch will show you how.

1/18/18	7 p.m. CST	U.S. Unlimited Aerobatic Team	Jim Bourke
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Jim Bourke talks about his experience rising through the ranks to become a U.S. Unlimited Aerobatic Team member. Jim discusses aerobatic competitions from the regional to the world level and highlights all the latest from the U.S. Unlimited Team.

1/24/18	7 p.m. CST	When the Engine Goes Quiet Qualifies for FAA WINGS credit.	John Townsley
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FAA Team representative John Townsley will lead us through an in-flight engine failure he experienced on a 2013 nighttime cross-country flight. He will discuss performance issues and share some lessons from his experience. John also discusses NTSB accident statistics and other information that sheds light on the number of loss of power events that don't result in accidents.

1/31/18	7 p.m. CST	Midair Collision Physics, Gambles, and Myths Qualifies for FAA WINGS credit.	Robert Patlovany
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Robert Patlovany will discuss midair collision safety and zero-cost techniques for stopping the triple-failure sequence that causes every collision. Robert will relate his extensive research on midair collisions and show analytically how it is possible to reduce the likelihood of a midair collision with another aircraft.