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Pittsburgh-Butler Region Experimental Aircraft Association - Chapter 857

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# EAA 857 NEWSLETTER

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**Doc, one of only 2 airworthy B-29 Superfortress bombers from WWII, performs its flyby of the field at Lakeland airport during this years Sun n Fun aviation showcase.**

**Photo by Frank Szczerba**

## Presidents Message

EAA 857 Members,

Howdy EAA Chapter 857 members!

I'm close to wrapping up the repairs to my plane as the weather is finally starting to warm up. Making fiberglass repairs in an un-heated hangar is a real PITA. I've had to make heat tents over the parts being worked on, but at least the repairs are almost done. My mechanic hung my prop (I helped) and I made a good repair of the canopy lift attachment this week. With any luck I'll be able to fly to KOSH April 22 instead of driving...we'll see. I'll be at the EAA headquarters to attend a weekend-long leadership training seminar which was postponed from last month. I hope to see many of you at the April 19 meeting so we can start prepping for our first event, June 11, the international Young Eagles day fly-in and pancake breakfast.

More Great news! Our chapter has been awarded a new Gold Medallion for the years 2020 and 2021 as shown above at right. This is awarded as a result of EAA 857 meeting or exceeding 9 of 11 quality earmarks of successful EAA chapters by our national organization. Congratulations and thanks to you our members for your contributions to this award!

Phil Kriley

EAA Chapter 857 president

Please remember that your 2022 dues are now due! Please mail them to Frank Szczerba, the chapter's treasurer as soon as possible to maintain your active chapter membership.





## Pittsburgh-Butler Region Experimental Aircraft Association—Chapter 857 Minutes of March 15, 2022 Regular Chapter Meeting

**Opening:** Vice- President Kyle Riedel called the meeting to order at 07:05 P.M. and led the members in the Pledge of Allegiance.

**Meeting attendees:** 9 members and 1 guest were present; this was a minimum quorum. The Martin family joined the chapter

**Previous Meeting Minutes:** The minutes of the February 15 meeting were published in the March newsletter. Motion to accept the minutes was by Bob Tedesco and seconded by Mark Beighey, with members present voting to approve.

**Treasurer's Report:** The bank balances were reviewed by the Treasurer. Motion to accept the report was by Ted Merklin and seconded by Mark Beighey, with members present voting to approve.

**Newsletter:** The newsletter was distributed on 3/13 and uploaded to the chapter website. Thanks to Frank Szczerba for his concluding article regarding his Mooney Safety Seminar in Kansas, and an update on aviation unleaded fuel development.

**Website:** Enter <https://chapters.eaa.org/ea857> in your browser to view the site.

**Tech Advisor:** No report

**Next Regular Meeting:** Tuesday April 19<sup>th</sup>, 2022.

**IMC meeting:** No meetings currently planned. Potentially the next meeting will be in April.

**Young Eagles/Air Academy:** Digital signature capability is implemented using the iPad tablet. Ted Merklin to set up a test case for this new process. Leah Martin, present tonight, is registered for the Air Academy Advanced Camp. Our other attendee is Robert Brueggemann for the Basic Camp. A breakdown of the fees paid and remaining due for each attendee and their due dates were discussed. 2019 credits were evenly split between Leah and Robert. The Brueggemann's had paid their own application deposit which we should reimburse.

**Business:** The following items were discussed:

- The airport manager position is still currently open to fill.
- Current Membership: We have 36 total numbers. 24 members are paid. 12 members are unpaid. Murray Steinberg indicates he is unlikely to renew for 2022. The Martin family joined us at this meeting.
- Ray Aviation Scholarship Chapter Application was submitted on January 24<sup>th</sup>. The chapter has been awarded the opportunity to manage an award for 2022. The next step is to identify a scholarship candidate and direct their application to the EAA. This must be completed before October 31 2022. The scholarship candidate should become a member of the chapter and there is an expectation of service to the chapter of 2 hours per month. Gary Marsico has volunteered to be the candidates mentor which includes progress reporting to the EAA over the course of the flight training. Funds are distributed to the chapter to use for expense payments and are split into three payments delivered as initial training, solo, and written exam goals are accomplished.
- Kyle Riedel referred to drafting of donation request letters and inquired about availability of a chapter letterhead. We will need to create one. we do have logo art available.
- Member projects and activities were discussed.

**Closing:** The meeting was adjourn at 08:12 P.M. Motion made by Ted Merklin and seconded by Bob Tedesco.

**Program:** Member Project reviews.

Respectfully submitted:

Theodore L. Merklin

## BE AWARE OF CLOSED BOTTOM, OPEN-ENDED, UPTURNED TUBES

Chuck Warren, A&P 3484644

General aviation airplanes have long careers, with many flying 50 years and longer. The downside to this long service life is time itself, during which corrosion can slowly occur. This may happen in hidden locations. An awareness on the part of pilots and mechanics can help spot potential trouble spots and deal with the issue before it becomes a problem. One such potential trouble spot is the interior of certain types of tube structures.

Many general aviation planes are constructed of steel tube structures. Usually, continuous welds are employed to assemble the structure, creating a strong space frame that is impervious to the entry of moisture. However, this is not always the case.

For example, Piper once used welded steel wing lift struts on several models of their high wing aircraft. The struts were not completely sealed assemblies, and were prone to slowly collect water from rain and other moisture during years of service, causing the interior of the tubes to corrode. In a few cases, the struts actually failed in flight.

The FAA issued Airworthiness Directives (AD 99-01-05, and 93-10-06), entailing rigorous periodic inspections of the lift struts on all high wing Pipers. Replacement of the struts with new, redesigned, completely sealed units was an alternate means to comply with, and terminate, the periodic strut inspections required by the AD. See Figure 1, below.



Figure 1 – High wing Piper lift sealed lift struts.  
Installation of these will terminate AD 99-01-05.

The original design Piper wing strut is an example of a “Closed-bottom, open-ended, upturned tube” structure. This type of part is not extremely common, yet there are examples found on many airplanes. The history of the lift strut illustrates a potential hazard in these types of parts after years of service.

Airplane designers employ steel and aluminum tubing for other parts that are open-ended, upturned tubes. They can be used in brackets, control linkages, bell cranks and torque tubes. Sometimes, the bottom end of the tube also has a “weep hole”. When such holes are provided, they permit moisture to exit, until insects, or dirt accumulation obstructs the hole and effectively closes it to close, creating a closed bottom for moisture to collect.

As an example, Beechcraft Hawker has an active service instruction (SI 1077 – See Figure 2, below). This instruction is to inspect, clear out, and enlarge the drain hole found at the bottom of the rudder torque tube assembly on Baron aircraft, since it can entrap water and corrode internally if the hole is blocked. The same precaution could also be applied to several other airplane makes and models.

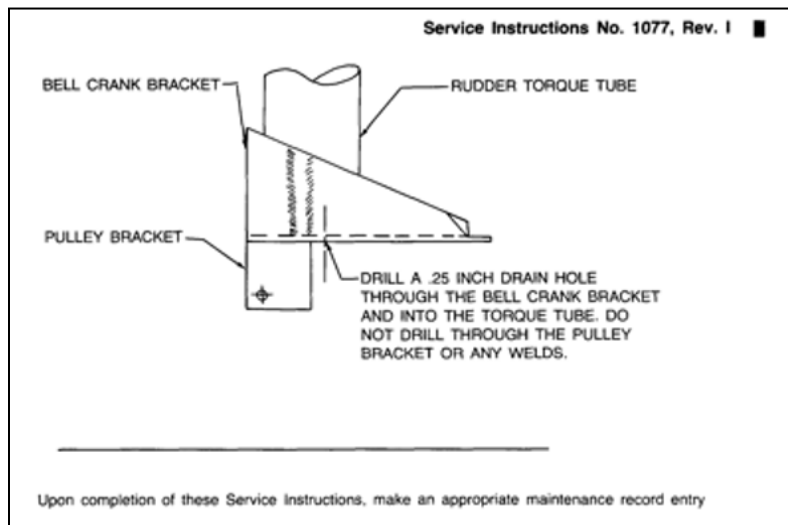


Figure 2. From Beechcraft Service Instruction to inspect rudder torque tube drain hole

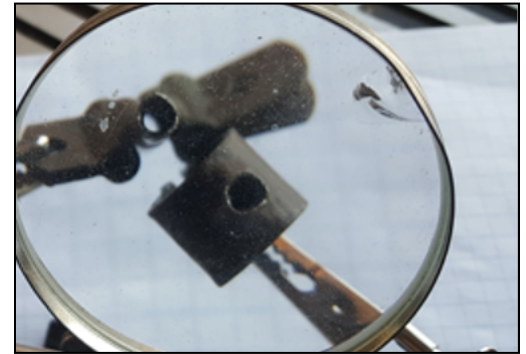
Another example is the welded steel tube bracket assembly, shown in Figure 3, below. It is a small, stationary bracket, to guide and stabilize the throttle and mixture control cables to the carburetor of a single piston engine plane. It is installed on the engine mount, near the carburetor beneath the engine. The bracket itself is an open-ended tube, which lives in a location where water can spray from the nose wheel, or rain droplets can impinge. The open mouth of this tube bracket, where the moisture can enter, is upturned.

Note that the bracket in Figure 3 has a jagged separation in the tube, where the end with two small cable clamps has parted with the base end. A magnified view of the fractured ends shown in Figure 4 reveals that the tube wall has corroded and thinned, significantly weakening the part. (This is exactly the same type of failure as in the Piper lift strut example, but on a much smaller part. Fortunately, this part did not fail in flight, but rather, it simply snapped off during an engine removal.)



Fig 3. Throttle and mixture cable bracket assembly removed from light single engine airplane. The bracket tube has broken and separated near a clamp at the bottom of this photo, which attaches to the engine mount.

Fig 4. Magnified end view of the bracket tube where it fractured, showing how the tube wall has corroded internally and thinned noticeably.



A replacement part was obtained and installed, as shown in Figure 5. However, the mechanic applied some sealant and a plastic cap on the tube mouth before installing it.

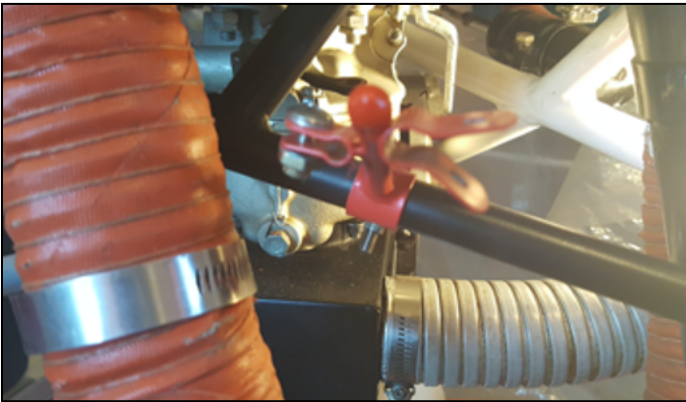


Figure 5. New replacement throttle and mixture cable bracket (painted red), installed on engine mount. The carburetor throttle arm can be seen beyond the right bracket clamp. The open-ended tube on the new bracket has been covered and sealed.

During all inspections, pilots and mechanics should be alert for any sign of corrosion, and be diligent in addressing it. Mechanics and pilots should be aware that water can sometimes collect, and remain trapped, leading to hidden internal corrosion. This is particularly true in CLOSED BOTTOM, OPEN-ENDED, UPTURNED TUBES.

Watch out for these on your airplane. If you find one, carefully inspect it during each preflight and mention it to your mechanic during the annual inspection. Make certain that any weep holes provided on these parts are not plugged with dirt or insect debris. If corrosion is suspected, ask a mechanic to look it over and probe it further for signs of internal damage, or weakening.

## Selected Sun n Fun Photos

by Frank Szczerba



Curtiss P-40 Warhawk



Douglas A-26 Invader



Cessna 195 Businessliner



Vans RV-12

Cessna 210 Centurion





Boeing KC-46 Pegasus



USAF Heritage Flight  
P-51D Mustang  
A-10C Thunderbolt II



USAF Thunderbirds



Team Photo Pass



Bomb Burst Break





## EAA 857 - Chapter Meetings and Events for 2022

Meetings are held on the third Tuesday of the month at 7:00 PM in the Conference Room at the Pittsburgh-Butler Regional Airport.

<b>Chapter Meetings</b>	Tuesdays	January 18 February 15 March 15 April 19 May 17 June 21 July 19 August 16 September 20 October 18 November 15
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<b>IMC Club -</b>	3rd Wednesdays,	April 20	<b>CANCELLED</b>
<b>International Young Eagles Day -</b>	Saturday,	June 11	
<b>EAA 857 Fly-In and YE -</b>	Sunday,	August 14	
<b>EAA 857 Fly-In and YE -</b>	Sunday ,	September 11	

### 2022 National Events

<b>Sun 'n Fun -</b>	<b>April 5 - 10</b>
<b>Sentimental Journey -</b>	<b>June 21 - 25</b>
<b>AirVenture Oshkosh 2022 -</b>	<b>July 25 - 31</b>

### EAA 857 Chapter Officers for 2022

Use [contact@eaa857.org](mailto:contact@eaa857.org) to email the Chapter President. Your request will be forwarded to the appropriate individual.

<b>President</b>	<b>Phil Kriley</b>	
<b>Vice President</b>	<b>Kyle Riedel</b>	
<b>Treasurer</b>	<b>Frank Szczerba</b>	
<b>Secretary</b>	<b>Josselyn Slagle</b>	
<b>Board Members</b>	<b>Ted Merklin</b>	<b>2022-2024</b>
	<b>Mark Beighey</b>	<b>2022-2023</b>
	<b>Dan Hood</b>	<b>2022</b>
<b>Website / Newsletter</b>	<b>Ted Merklin</b>	