



EAA Chapter 648

Longmont, Colorado 80503

Monday, April 12th at the Innovation Center at 7PM

33 Quail Rd, Longmont, CO 80501

Thanks to all of you for reading our newsletter and I will keep on working to increase our readership and don't forget to patronize our advertisers if an aviation purchase is in your future.

Remember, "Nothing happens until somebody sells something"



Chuckle of the Month:

**WHAT WAS THE BEST THING BEFORE
SLICED BREAD?**

President's Message

As Covid-19 becomes less of an issue; opportunities to get back to normal in the aviation community are starting to peek out. Our last meeting was the first of what I hope is many examples.

Our next meeting will be at the SVVSD Innovation Center at our normal time and day. Read more in an article from Steve Kirchner in this newsletter. The Innovation Center is located at 33 Quail Rd. in Longmont. Chapter 648 is providing pizza and drinks, see Steve's story for arrival time and Covid requirements.

A Young Eagles event with the students of the Innovation Center

is scheduled for Saturday the 1st of May from 10:00 until 3:00 at the FBO at LMO. Rain day will be 8-May at the same time. Need volunteer pilots and support staff. Chat this up at the next meeting, or drop your fearless leader an email to rick648@zgtr.org with how you will assist. The Young Eagles program is a big deal to many aspiring young pilots, it's a huge deal to students at the Innovation Center. "Go ahead, make their day", I dare you.

Lastly, Haiko is taking a well deserved vacation * from pounding out three years of our newsletters, he says our May newsletter will be abbreviated and published earlier than normal. That said, our website will have breaking news. The URL is: <https://chapters.eaa.org/EAA648>
Stay safe, get the vaccine if it's in your mettle, and blue skies as always,

Rick

* Just a footnote to my "well deserved vacation". It will be at one of the Cay's in the Bahama's I had flown into 50 years ago with my family in a rented Cessna 182 from Judson. (For you young whippersnappers, that used to be the Longmont Flying Service operator). The little 3 mile long island is **Green Turtle Cay** and 50 years ago it had no tourist amenities whatsoever, we had to bring our own food in a cooler if we wanted to eat for a week. Today, there are two luxury hotels (nearly \$300/night) and about 10 restaurants on the Cay. Back then I flew the 182 to a little airport on the larger Island Abaco named Treasure Cay, about 1800 miles from here. I



am really looking forward to a little “deja vous” and hopefully not be disappointed by the “progress” it has undergone. We’ll be doing some scuba diving, snorkeling and other touristy stuff for three weeks. (Haiko)

Steve Kerchner introduces our next meeting speaker:

Gary, aka 'GAR', is a 1978 graduate of the United States Air Force Academy. He immediately went to pilot training to start his career as an AF 'fighter jock'. He excelled at UPT as a distinguished graduate and landed his first fighter, the F-4 Phantom. He was fortunate to fly fighters his whole career to include the F-4, A-10, A-7, AT-38, and was the 40th pilot selected to fly the stealth fighter, the F-117A Nighthawk. In addition he added an AOC tour at the USAF Academy where he trained new pilots in the T-41 and T-3 trainers. He finished his career as Commander of the 98FTS Parachute Squadron, flying the UV-18 and getting paid to do freefall parachuting (sweet!). He has over 5000+ hours flying time and is an FAA Certified Flight Instructor (CFI). He currently teaches aerobatic skills through his company Aces Up Aviation (www.AcesUpAviation.com) @ Meadow Lake Airport and helps cadets hone their skills in his 1994 Moravan Zlin 242L before they head to pilot training.

Found this article in some of the emails I get every month(by Haiko):

Slips: Forward Or Side, What’s The Difference And Why Care?

Paul Berge

This article’s title would’ve been killer material in the third grade, and since pilots never grow up, let’s consider what is barely whispered in polite aviation society: Slips. Forward or side, the

terms are casually interchanged while illustrating uncoordinated maneuvers with ambiguous hand gestures that compound uncertainty. So, after decades of teaching them, I'm determined to attempt to learn the difference.

For legitimacy I'll reference the FAA's Airplane Flying Handbook (AFH, FAA-8083-3B), the grandest of government manuals with a hint of 1930s British whimsy. Although, I'd suggest renaming it the Aeroplane Flying Handbook. Not as dull as the AIM or as incomprehensible as FARs, the AFH is an unsung tome, moldering in public domain.

A slip is an uncoordinated turn, that may or may not be turning and should be intentional. It's not complicated but intimidates those who believe the slip/skid indicator's coordination ball must remain welded to the base of the inclinometer's curved tube, lest all onboard die from inevitable stall/spin embarrassment. Except without slips, landings in even the mildest crosswind will stink (ignore Ercoupes). More important, slips add to the full measure of aeronautical satisfaction, an unreachable goal, constantly sought. We've previously covered slips in crosswinds, but nothing succeeds in education like repetition.

Most single-engine airplanes land smoothly in crosswinds with aileron input into the wind plus appropriate rudder to keep the spinner pointed down the centerline and the tires on their rims. That intentional, and necessary, cross-controlling is a slip. But what flavor, side or forward? And what's the difference?

They're the same thing. End of lesson. Class dismissed.

Except they're not so back in your seats. Both forward and side slips involve aileron input and opposite rudder. The coordination

ball slips to the lowered wing. In a skid—the slip’s demented roommate—the ball skids opposite to the turn, like SUVs skidding off freeway exit ramps, when drivers put blind faith in cruise control. Intentional slips are good; skids, though, should be avoided at low altitude but can be fun and enlightening higher up.

Boilerplate disclaimer: Review spin procedures before experimenting with skids and discontinue use if crash results. Consult your instructor if skids last more than three hours.

To correct for a slip, apply less aileron and/or “step on the ball” with rudder. The wayward sphere returns to center for coordinated flight. Release aileron and rudder input entirely, and most airplanes with positive static directional stability will sigh in relief and seek relatively Zen-centric flight. In leaky old airplanes like mine, wind noise increases when entering a slip and decreases on exit. Those sounds are from the relative wind no longer flowing smoothly about the fuselage but, instead, smacking its side, which increases drag that’s desirable for steeper descent. Slipping in a climb, glide, or cruise is sloppy pilot technique and inhibits performance. Antidote: Keep the ball centered.

Side slips are what all good pilots of good airplanes do when correcting for crosswinds in landing. Forward slips are what good pilots of great airplanes do to lose altitude, generally after power is reduced, and with the glidepath still too high, the pilot wonders, “Now what?” Yes, flaps steepen descent, but many airplanes lack flaps, don’t need them; think 7GCAA Citabria (Adventure). A forward slip steepens descent enough to clear the trees and keep the runway aiming point from sliding too far behind.

Forward slips with flaps deployed are legit, depending on what the POH advises. Once in position to land, the pilot gracefully transitions from forward to side slip by raising the lowered wing with aileron and simultaneously adjusting rudder to align the longitudinal axis with the runway. As with applying top English in billiards, success comes with experimentation. Unlike billiards, whisky should not be involved.

Lacking a crosswind, no side slip may be needed. If you can't remember whether you're side or forward slipping, don't sweat it. Terminology is irrelevant, mere labels created by humans who insist upon cataloging everything, making skills testable rather than learnable. The airplane doesn't care. Although, DPEs might. Think about them as two forms of the same thing: Slips for descent (forward, as in "I'm determined to go forward with this approach") or slips for touchdown (side, as in "the wheel on the upwind side touches first").

Forward slips might feel awkward when first employed with any gusto. The airplane falls catawampus from the sky as the instructor insanely calls like the Titanic captain for "More rudder!" Properly executed, you won't die but, again, check the POH. It is possible—and likely—to "run out of rudder," a term pilot-loungers love to use while waving our hands. The AFH prefers "practical slip limit."

In a slip, the more you bank, the steeper you descend. Forward slips are usually steepest, but at some point, you reach that limit with rudder hammered to the stop while opposite aileron is still available. You've run out of rudder. Gad-zooks! If you add more aileron the airplane turns, probably not what you wanted. You can lower the nose a bit to gain airspeed, which increases rudder effectiveness, allowing you to slip even more dramatically.

But, as Orvil Newton's First Law of Unintended Consequences states, "for every solution there's an opposite and annoying problem." If you abruptly release the slip to land, the airplane quits flying sideways, becomes less draggy and floats in ground effect past the orange dot that the Oshkosh tower told you to hit. Plan accordingly, knowing that when you throw your Cub into a hairy forward slip on final the airport community will remark how cool you look but snicker like third graders when an unruly slip exposes your deficiencies.

Forward and side slips are vexing terms, but one could go a whole flying life without keeping the terminology straight—I have—provided you understand and enjoy their benefits. Next semester, the Aeroplane Flying Handbook will unmuddy the stalactite vs. stalagmite, counterintuitive waters of Movement vs. non-Movement areas.

Fly'em and Fix'em Tech Tip by Dan Berry

I am not an A&P, rather an EAA Technical Counselor and I am simply sharing some information I use. Always research the needed resources for your brand of equipment.

New Hoses every 10 years?

outdated rubber hoses as they exceed the recommended 10 year life regardless of time in service.

As with most things related to our planes, I found conflicting information.

FAA Advisory Circular 20-7N(superseded and hard to find) suggests visual and pressure tests for engine hoses each 100 hours of operation and replacement at engine overhaul or every 5

years for fuel lines, whichever comes first. It mainly applied to H8794 hose (Aeroquip 303, Stratoflex 111 and others). Teflon is considered non-life limited under normal operating conditions.

Parker Publication No. 106-SG1 C.2.3.1 Rubber Hose in Engine Compartment or in Fire Zone: FAA document AC20-7A states that Rubber Hose used on aircraft in the engine compartment or fire zone should not be used after 5 years following the in service date indicated in section C.2.1 above.

I finally called Tom Swearingen at TS Flightlines LLC and he sent me to his VanAirforce forum post, here it is.

While this old AC serves as a guideline that we've used for years, we know that many have not. And not just in experimentals (where there ISN'T an actual criteria, but does have acceptable standards taken from GA aircraft), but in GA aircraft as well. We've seen many hoses that had date codes more than 20 years old that finally were taken off aircraft. Looked ok visually, until you did the 'Rice Krispies' test---you know that snap, crackle, and pop sound of the rusted steel (not stainless) braid breaking under the cotton outer cover. Liners cracked both externally and internally, and honestly was a failure that was waiting to happen.

What is even more puzzling to me is that very few wing supply hoses on GA aircraft get changed. Same deal, although they aren't under pressure only suction, but fuels still flow through them. I've seen some on planes built in the 70's where the tank hoses were the originals. So 45-50 years +- of fuel, with In my February article, I shared information about a great EAA Webinar I attended regarding the FAA's on-line Airworthiness Certification process. The webinar, "FAA Certification Basics" was

presented by DAR and Kit Planes author Dave Prizio and hosted by Charlie Becker.

One of the many things that stood out from me was Dave's comments regarding our aircraft Oil and Fuel lines or hoses. Dave mentioned, as a DAR, he often comes across projects that are a decade or more in progress and the builder purchased rubber hoses early in the build. He has the builder replace

different additives over the years that have affected the hose liners, and they don't warrant replacement? And--supposedly the planes go through an annual inspection AND sign off?

We've taken the position (some agree, some don't) that 8 years in service for rubber lined hoses and they should be replaced. I personally think that AC20-7N was set up for planes that flew A LOT, thus their replacement cycle of 5 years or at engine overhaul whichever came first. 400 hours average per year based on a 2000hr TBO is a lot of flying. I don't know of many experimentals flying that much per year ---maybe some are. But, I say most have replaced theirs with teflon anyway, and the normal service life replacement time goes away, but still inspect them. Just did some that had 2006 date codes.

Since there wasn't a guideline for experimentals, we adopted the position of the GA industry. We took it a step further and were proactive in using teflon assemblies to provide a arguably safer, more cost effective alternative for hose assemblies. Lets face it, changing hoses every 5-8 years can get expensive, and even upgrading to teflon can be expensive too, generally 1 time. Some builders make their own from 'race car' products. Nothing against that, except that EVERY race car hose manufacturer (Specifically Earls and Russell) have disclaimers about using their products on

any aircraft. When you purchase these products from the online race car parts stores, they don't know what you're putting them on.

The other option was to use certified assemblies, either H8794 (303/111 hose) or teflon, with the higher cost involved, and supposedly the service life replacement criteria. Rotax has/had a 5 year replacement cycle on its rubber assemblies, and has changed a lot of them to teflon. We've been advocating the use of teflon assemblies for years, not because it's cool or sexy, but because of the safety and performance advantages. Of course, that is an arguable point, that I won't go into here.

Experimentals don't have a set criteria, but use accepted standards, and that would be 5 years in service for rubber lined hoses per AC20-7N.

Tom Swaengen, TS Flightlines LLC, AS Flightlines

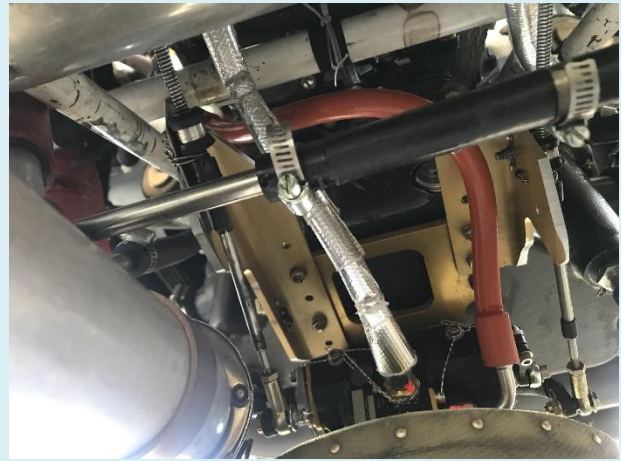
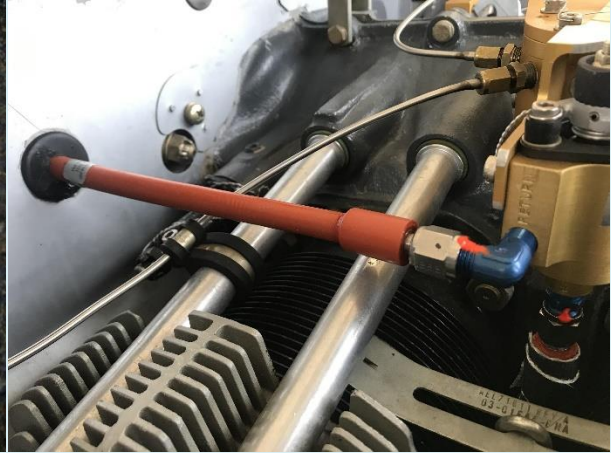
Joint Venture with Aircraft Specialty

Teflon Hose Assemblies for Experimentals

Ridgeland, SC

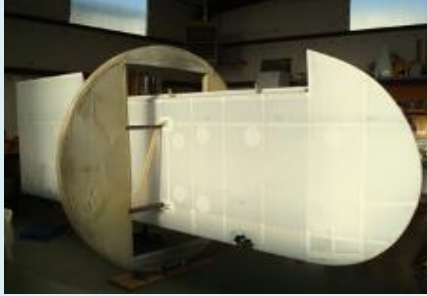
www.tsflightlines.com, www.asflightlines.com

So I finally had Tom at TSFlightlines replace my 15 year old hoses with the very sleek integrated fire sleeve hose. Another local option to consider is Tubes n' Hoses Of Loveland Co. (970) 593-6988. 2650 N. Lincoln Ave, 80538.



Don't get hosed, do your research.

Dan.



Wing Rotisserie for Free

(wing shown not included :)

Contact Mike Duggan email - dugganboulder@msn.com

Call or Text - 303-912-9038

EAA 648 Chapter Officers:

- **President:** Rick Hall 303-747-2042 rick648@zggtr.org
- **Vice President:** Bill Kastenholz
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- **Treasurer:** Dan Berry qtcdberry@comcast.net
- **Newsletter Editor:** Haiko Eichler 970-344-4599 heritmail@aol.com

Tech Counselors:

- Dan Berry qtcdberry@comcast.net
- Doug Sykes 720-684-8699 taildraggers4cd@hotmail.com
- Brent Olsen 303-241-7884 brent.olsen.co@gmail.com
- **Flight Advisor:** Bill Mitchell 303-427-4025 billyav8r@yahoo.com

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