FARTHEST NORTH

CHAPTER BULLETIN

February | Chapter 1129 | 2013

Calendar

February

7 EAA Chapter 1129 **Regular Meeting.** Tamarack Air Hangar, 6:30 pm

22 EAA Chapter 1129 **Annual Banquet**, Pikes Waterfront Lodge, Syd Stealey is the speaker! Tickets now available at Tamarack Air Parts Store

March

7 EAA Chapter 1129 **Regular Meeting.** Tamarack Air Hangar, 6:30 pm

REMINDER for Winter Meetings:

The meeting is **CANCELLED** if the temperature at the airport at 5 p.m. is **–30°F** or lower. Call **458-3745,** then enter **1113**.

EAA Chapter 1129 Web Site:

http://1129.eaachapter.org

Or check us out on Facebook!

http://www.facebook.com/EAA1129

Next Meeting:

When: **Thursday, February 7 at 6:30 pm.**

Where: **Tamarack Air Hangar at 3900 University Ave S.**

What: **Jack Schnurr, Ground Adjustable Prop**

President's Hot Seat

Rick Crisenbery

Our annual banquet continues to be the focus of the board right now. Tickets are available at Tamarack Air and will be available at the February meeting. Syd will be presenting a talk on a trip he made while working for the Alaska Department of Rehabilitation in the late '50's. This was primarily down the Yukon and along the western coast. I am sure it will be interesting and he has quite a few pictures. We will also a have a slide show running during the social hour before the dinner, which will feature many of the pictures Syd has taken over the years. Our best advertising for this event is you. So talk to those friends of yours in the aviation community and invite them to the banquet.

The strategic planning committee met for the first time recently and has made several suggestions to increase our membership. If you have followed this issue you may remember that our long term goal is to become the organization that homebuilders in the interior come to. To do this we must increase the number of members in the chapter to be sure those who are considering an amateur built aircraft or have begun construction have a source of information and help to turn to. While there will be actions taken based on the strategic planning committee, all of our members can help by getting the word out to your friends to join the chapter or rejoin us if they have drifted away.

Hope to see all of you at our next meeting on February 7th.

Experimental vs. Certified—One Pilot's Experience

Jack DiMarchi

I earned my pilot's license in 1984, learning to fly at the Lake Hood strip in Anchorage. I've owned 4 airplanes so far; three certified and my last one was an experimental. I bought my first plane in 1988, a Citabria 7ECA, and moved up to a 7GCBC in 1992 and flew it for a few years before buying a Maule M-5 in 1997. I bought the Maule believing I needed a station wagon for the trips that my fam-

EAA Chapter 1129 Mission Statement:

Build, restore, innovate and educate to preserve Alaska's aviation heritage, and to promote Alaska's aviation future.

ily and I were going to take. When we didn't go on those trips, the cost of flying the Maule for one-man missions was not sustainable and we parted ways in 2001 (the plane, not my wife). They were all "good" planes. I didn't fly for two years after I sold the Maule, and when the flying bug hit me again I wound up in an experimental airplane. I fell into it really. I liked a particular Sportsman 2+2 (aka PA-14) that was for sale and it happened to be an experimental. I liked it because I was looking to get back to basic "stick and rudder", "low and slow" flying, and the Sportsman had the right combination of performance (35mph stall speed – actually only cruises a tad faster than that too!), room (4-place), useful load (~1,000 lbs.) and fuel economy (7gpm, 0-320). I did a bit of research on the aspect of the "experimental" designation and aside from not being able to fly passengers for hire I could not see any downside to owning an experimental. I put my money down on the plane as-is, where-is, which meant in pieces and under a blue tarp. Eventually I was to learn that the airplane was mostly production PA-12 parts (empennage, wings modified with flaps and extended) with modifications to the fuselage to widen it across the front seat to make it a 4-place, with PA-18 gear and tail feathers. This was all approved as an experimental Wag Aero Sportsman 2+2 by the FAA in Juneau. When I put my money down I thought I was buying a scratch-built Sportsman 2+2 that started life in 1986. Oh well.

The advantages to "going experimental" became apparent almost immediately. It needed cylinders, recovering, some rust removal, and painting, tires and brakes. Working with a well-known local IA/ mechanic the plane started going back together. The first place I enjoyed the benefits of an experimental was parts. My seaplane doors needed latches to close them snugly – off to Miller salvage where I scrounged a pair of vent-window latches off an Isuzu Trooper which I welded to my door frames before painting them and riveting on new Plexiglas. It was an elegant and functional solution that cost $5 for the latches and did not require a Form 337. Next we decided to add Crosswind leading edge cuffs to the wings. I got a reduced price because they were going on an experimental airplane and again, no 337's, just a log book entry. The plane had an electric elevator trim which consisted of a windshield wiper motor and belt connected to the jack screw via a pulley. Likely pretty difficult to get that approved on a certified plane. Next I wanted to get away from the rubber bungees on my landing gear and extend the gear at the same time. I was able to buy a die steel spring shock strut kit from Wag Aero and with some good local help determined how to preload the springs for my plane weight and had the shock strut fabricated to the proper length. I bought non PMA's extended gear legs which came out the same jig as the PMA'd ones, but for less money.

Inside the airplane I moved the throttle to a more comfortable place on the panel – no limitations on doing this because it was an experimental airplane. The plane came with 4 notches of flaps, the last notch gave me 60 degrees of flaps! Initially I thought that was excessive and potentially dangerous, but I learned that they worked really well on calm days. The plane would be real stable, float in at 38 mph with a touch of power; perfect speed and sink rate, and still have enough left for the flare, touch-down and a quick stop. You cannot modify your flaps like this on a certified plane.

If you build your plane you can also do virtually all of the maintenance which lowers cost of ownership even more. As a practical matter I had to get my experimental airplane inspected every year but it's a "compliance" inspection which is a bit different than an annual inspection. It's as much about whether those mods/repairs comply with FAR part 43 rather than whether they were a good idea or not. I have found most mechanics are more open-minded about owner-assisted compliance inspections than they are about regular annuals. In my case I typically showed up for my compliance inspections having already completed all the routine maintenance (oil, filters, screens etc.) and making a log-book entry to that effect, so the mechanic literally did an inspection, but no maintenance. This saved money.

So for me the advantages of owning an experimental airplane are mostly about choice. Sometimes it's about making a choice that lowers the cost of ownership without compromising safety like buying a non PMA'd part that is functionally equivalent to an approved part. Sometimes it's about choosing to make a modification that improves your plane without compromising safety, and without having to go through rigorous approvals – which are hard to get anymore anyway.

Experimental or not, we all have a responsibility to modify, maintain and fly our planes in a safe man-

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ner. But you can still meet those obligations and enjoy the freedom of choice that comes with owning an experimental airplane.

Thoughts About Wings

Michael Armstrong

The traditional wing design that most of us are familiar with is the Truss Type Wing. Like the wing on your Supercub, it consists of two parallel spars of wood or extruded metal. The spars are separated by compression struts or compression ribs. The spars are held rigid by drag and anti-drag wires installed in an "X" shape in the bays formed by the spars and the compression struts. Ribs are then attached to the spars to give the wing its airfoil shape. The wing is then covered with fabric, which does not add any strength to the assembly. When the wing is attached to the aircraft, lift struts add strength and allow the setting of dihedral and wash out.

Modern wings for higher speed aircraft are usually all metal. They consist of multiple spars, and spanwise stiffeners. These wings are held in a fixture that sets the washout while thick stressed skins are riveted on. These wings are strong enough to be cantilever (strut less).

An unconventional wing was designed for the Junkers W-34. The W-34 was a low wing monoplane from the early to mid 1930's. The W-34 had an all metal cantilever wing with NO main spar! The wing consisted of four aluminum alloy tubes on top of the wing, four tubes on the bottom, and one tube for the leading edge. The tubes were held together in their required positions by light "Z" metal sections. The corrugated, airfoil shaped wing skins were riveted to the spar tubes. The spar tubes tapered in diameter and gauge toward the wing tip. Junkers designed a tool attached to a long rod that fit inside the spar tube. The tool was positioned, and then expanded to buck the rivets. They also designed a tool that would allow the mechanic to view the just made shop head of the rivet. A great description of a repair to a W-34 wing is described in Bent Props and Blow Pots, by Rex Terpening.

Another unconventional wing design from the 1930s was the "sesqui-spar" wing of the Stinson Gullwing Reliant. This beautiful wing is double tapered in plan and thickness. The thickness and cord are greatest where the lift strut attaches to the wing. The main spar is a welded 4130 chrome molybdenum warren truss. Two tapered truss arms stretch from the fuselage out to the lift strut attach point. From there out to the wingtip is a single tapering truss of heat treated chrome molybdenum. This tubing is big and thick walled, particularly at the Lift strut attach point. From the main spar, a number of tubes (torsional bracing) extend back to the "auxiliary spar". The auxiliary spar is built up from aluminum sheet and bulbed angle. The ribs are built up from square aluminum tubing riveted together with small gusset plates (just as a wooden rib would have been built). This wing was built in a jig that ensured that the correct wash out was built in. These wings were very strong and rigid, and fairly heavy. During flight testing of this new wing, an unprecedented of fifty hours of spin testing were required to get the design right.

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*Newsletter Editor (**NOT** for life):*
Pat Crisenbery (907) 474-3971 (voice)
(907) 474-8240 (fax)
crisen39@gmail.com

Chapter Officers:

President	Rick Crisenbery	(907) 474-3971
Vice-President	Vickie Domke	(907) 479-6751
Secretary	Mark Morlino	(907) 460-9663
Treasurer	Jack DiMarchi	(907) 378-1119

Join our Chapter! Membership is only $15/ year and there are many benefits. Interested? Call or email Pat Crisenbery.

EAA Chapter 1129
P.O. Box 83913
Fairbanks, AK 99708