



Skywriter...



Monthly newsletter of the Calgary Ultralight Flying Club - COPA Flight 114

September 2007



Troy, RV9 and Carstairs/Bishell airfield... enough said?

REMINDER!

The next general meeting will be held on Thursday, September 14.

From The Cockpit

By Garrett Komm

What a Summer

Now that the kids are all going back to school it is a clear indication that my summer is done. This was another season of great flying. Not an easy feat when you don't have an airplane. The highlights came during my trip to Florida where I had the opportunity to visit the Weeks Fantasy of Flight Museum and Wings Over Miami. Then there was the return flight that Troy and I made to Tofino which took only a day and a bit, but with many stops and adventures. I also took my staff to Vegas for a job well done.

The next thrill I had was doing a bit of instructing. It felt like such a natural step as all the vocabulary and explanations came back to me with little thought or effort. What I learned was that as pilots we think of stick flying often and rudders as an after thought.

When flying at low speeds in the flare the ailerons don't have the effectiveness that we have become accustom to with simulators and conventional aircraft. By using rudders as the control for directional stability many landings seem to become

less hectic. I have always felt that all rudders should be on a type of tiller so that as you push on one the other can't help but move in sync with the initial one. When cables are used there is a slight delay, and some students have the tendency to not release the free foot as they press on the active rudder pedal. Many a directional malfunction has been fixed by this simple procedure of letting off the opposite foot. The other bit of grief that showed itself is that we tend to hold the rudder longer than needed. The rhythm I recommend is on a touch then release, then a touch more if needed in whatever direction is required. Use the stick to compliment the turn and start with rudder to roll level when the heading is found. You should step on the ball to reduce the slip.

It is down to the wire with the Evening At Indus. Thank you in advance for those who can make it.

The meetings start again this month and I look forward to all the other adventures discovered this past season.

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Calgary Ultralight Flying Club

COPA Flight 114

Meetings are held on the second Thursday of every month, except July and August, starting 7:00 PM at the Northeast Armory, 1227 – 38 Avenue NE, Calgary.

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Skywriter

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CAVU Dreams

by Ken Beanlands

What the heck happened to our fabulous summer weather? It seems like August was pretty much a bust for flying. I had planned to spend the weekdays at the lake so that I could be in town for the weekends to enjoy the flying. It seems that the weekend weather simply sucked! Oh well, at least I got a good chunk of flying done in July.

I was able to get a little flying in including a couple of nice evening flights last week. Unfortunately, with school now in full swing and work still required on the cabin to prepare if for the freezing temperatures to come, September looks like it will be a pretty slow flying month as well. Fortunately, there are a few good events going on this Saturday morning that I should be able to partake, and the forecast looks good...

By the way, if anyone is interested in a Saturday or Sunday destination, I'd be happy to pick up folks from the Bashaw airstrip for a breakie run or even a round of golf. Be sure to give me a shout first to make sure I'm there. Also, I believe that Bashaw requires prior permission before flying in.

As I mentioned, last week I started back to school after an 18 year hiatus! Wow, what an experience. Unfortunately, it didn't get off to a great start. An orientation session was scheduled for Thursday, August 23. I showed up about 20 minutes early for the 9 AM start, only to find out I was 40 minutes late.

As I sneaked into the back of the presentation, I couldn't help but notice the eyes of all the instructors tracking me to my seat. JUST GREAT! I'm late, and every one knows it... after all, there are not a lot of 40 year old students to confuse me with. I double checked the postcard that informed me of the orientation and, sure enough, it said the start time was 9 AM.

Fortunately, the presenter later informed the group that there had been two sets of postcards sent out, one stating 8 AM and the other 9 AM which meant that those that arrived "late", were really on time.

Time seems to be a big deal at the SAIT Art Smith Aero Center. Transport Canada will remove 20 months of the 48 month apprenticeship if you complete the training with a 70% or better in all courses and a 95% attendance record. This means that attendance is taken at the start of every class and recorded. It amounts to a total of only 100 hours of time that can be missed over the four 16 week terms.

After only a week of school, we're already into sheet metal and machine tools projects. The instructors seem to be a great crew and are very interested in helping students succeed. This is quite a difference from my experience at university, where they simply don't seem to care. With small class sizes, the instructors are keen to learn everyone's names and backgrounds. It certainly fosters a feeling of teamwork.

The course is a fairly even mix of hands-on and classroom work. There are 10 hours of sheet metal and composite labs per week, as well as a 3 hour lab on metal working (we're building a C-clamp) plus a 2 hour electrical workshop.

The air regulations course and applied mathematics are self paced, computer training courses. The courses are well designed to provide the skills needed to work on aircraft.

In addition to the book list (which amounts to about \$400) there is also a tool list. To help with the tool requirement, SAIT hosts a "tool day" which occurred last Wednesday. Vendors such as MAC and Snap-On come on-site with special deals available to students to help outfit their kits. Although I have plenty of tools to meet the requirements, I didn't think it would be practical to truck the tools back and forth to school. MAC had put together a nice package that met all the course requirements at a very reasonable cost, so opted to go that route. Besides, it's always fun to buy new tools.

Safety is also a big part of the training. The school provides all students with their own coveralls, respirators, ear plugs and safety glasses at no cost (OK, I'm sure we pay for it in our tuition).

We also do a course dedicated to shop safety including WHMIS (Workplace Hazardous Materials Information System).

To say that I was a bit nervous going back to school with a bunch of kids would be an understatement! Although I am the oldest person in my class, there are a number of other mature students in the school. After only a week, I'm already starting to get into a comfortable routine. In fact, last week was the first time in over two years that I worked a 5 day week, so the transition will take a bit to get used to...

As you may have noticed, we're a bit light on articles this month. It's been a busy month for everyone, but I hope that we can get some interesting articles and stories covering the summer's flying season in the next few issues. See you all next week for the September 13 meeting!

→

Building a Steel Tube Fuselage

Photos and story by Ken Beanlands

There are a number of ways to build an aircraft fuselage: wood, aluminum monocoque and semi-monocoque, aluminum tubing, and, the subject of this article, steel tube.

In fact, there are two types of steel tube fuselages, the Pratt Truss and Warren Truss. The Pratt Truss uses tubing for the longerons (long, fore/aft members that



This photo shows two types of joints. The two tubes on the right were joined with a butt weld from a bevel cut. The other two tubes have fish mouths cut in the ends.

plans will come with drawings that show the fuselage structure in profile as well as from top and bottom. These will be the starting point of the fuselage construction.

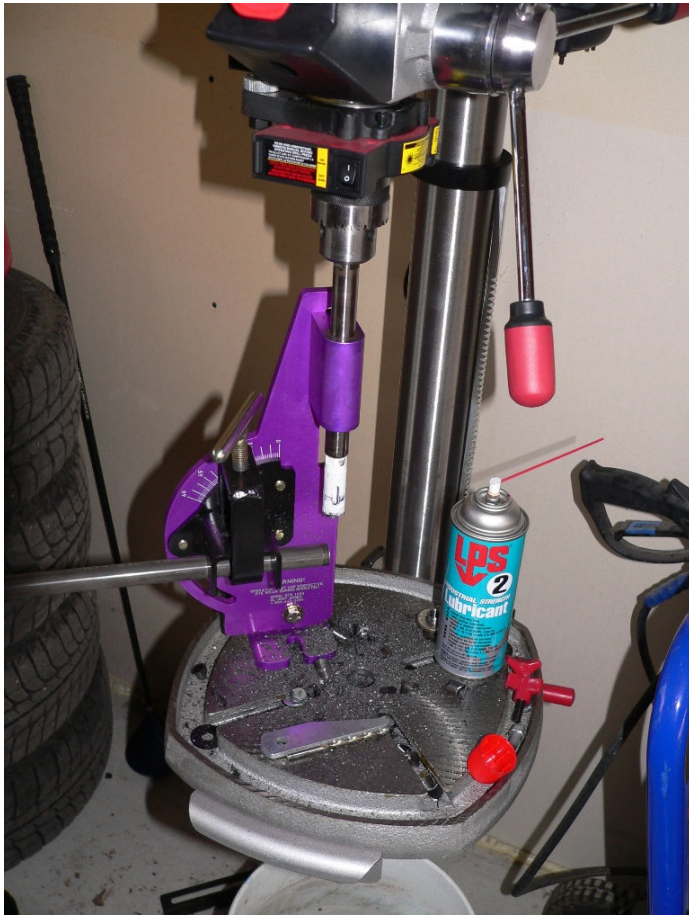
Once you have looked over the drawings you can determine the size of workbench you will need. In my case, the Buttercup required a 16' x 4' table. To ensure I could reach the top of the fuselage, I made the table about 30" high, a bit lower than I normally like. With a nice level working surface, I laid out the fuselage profile on the table top by lofting the tubing centerlines at full scale.

The drawings typically give dimensions using the centerlines of the tubing only. Be sure to accommodate for the tubing diameter when laying out the fuselage.

Starting with the longerons, tubing is bent to match the centerlines. Small wood blocks are used on either side of the tube to position the longerons in place over centerlines.

Now you're ready to start your first joints (no, not those joints). There are three basic ways to form a joint. First, at the outside corners, a simple bevel cut can be made at the ends of the two tubes and a butt weld can be performed.

In some cases, you'll have a requirement to reduce the diameter of the tubing such as along the longerons. In this case, a smaller diameter tubing is slid into a larger diameter one and welded where they overlap. To increase the strength of the weld, the larger tubing is typically cut at a 45° angle. In addition, holes can be drilled in the outer tube along the overlap and welded in what's called a rosette weld.

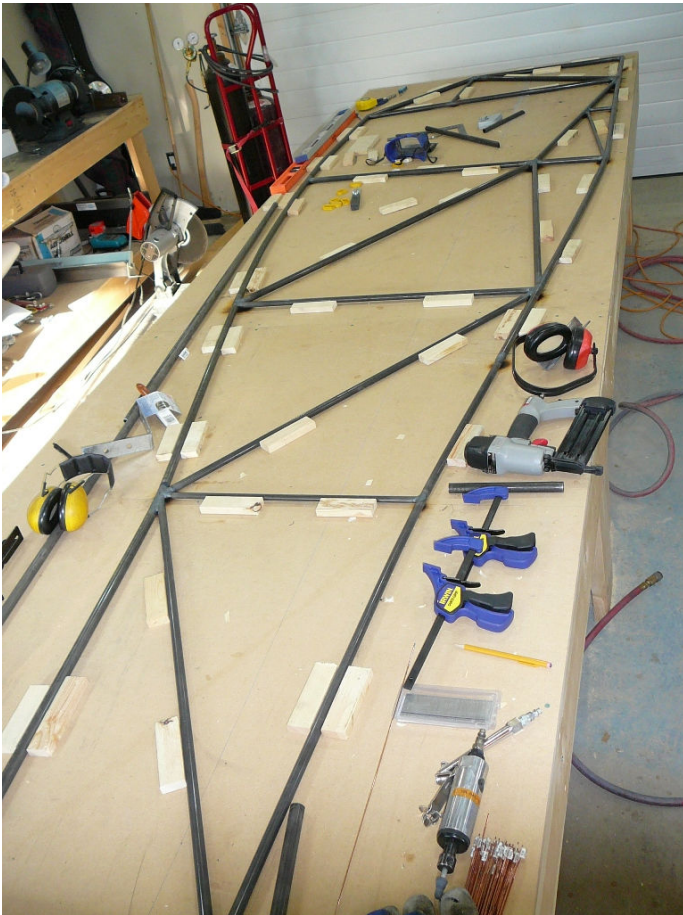


The Ol' Joint Jigger shown here with a length of tubing ready to cut. Plenty of cutting fluid should be used.

form the corners of the fuselage) and cross members. However, the diagonals are formed using cables in tension. A number of aircraft used this method between WW I and WW II.

Most modern steel tube fuselages use the more familiar Warren Truss. In this design, all the members are formed by steel tubing, which is capable of withstanding forces both in tension and compression.

Regardless of the method, there are a number of basics required in building a tube fuselage. Most



The first side is now framed up. The blocks hold the tubes in place while tacking the fuselage together. They also serve to duplicate the layout onto the second side. The well-used grinder and cut-off saw are also visible behind the table.

Finally, the most common joint is a fish-mouth joint, where the end of one tube is cut to match the profile of the other tubing it intersects. There are several methods to make this cut, but the one thing they all have in common is that there will be a bit of trial and error to making the tubes fit right.

The simplest method is to cut the tubing at close to the right size, then filing the end to match the other tubing. Cutting can be done using a hacksaw, metal bandsaw, pipe cutter, plasma cutter, or my favorite, the cut-off wheel. Forming the fish-mouth end can be done with a file or die grinder, a bench grinder with the wheel dressed out to a round edge (use a wheel dresser for this), or a tube notcher. Tube notchers, like the "OI' Joint Jigger" typically attach to a drill press using a clamp to hold the tube and a hole saw to cut the end to shape. The hole saws come in numerous sizes to match the tube sizes. The tube clamp allows the tubing to be set at whatever angle you need.

Once the tubes are cut to the right shape, they can be tacked in place. I find that using a small steel plate under the joint as I tack the joint prevents the table from getting too badly burned. Be sure to use blocks

to position each of the tubes in place as you go since they will be used to build the opposite side to match the first side.

Once you've finished the first side, use the jig you've created to build the second side. Be sure to check for differences between the two sides. For example, one side may have a door but not the other.

With both sides tacked together, it's time to stand them up and weld them together. Usually, there will be a section of the fuselage where the sides are parallel. On the Buttercup, this was within the cabin area. I built up two vertical frames to support the sides on top of the table. Once I was sure everything was square and straight, I welded in the cross members between the sides.

Once this is complete, you can bend the sides back using heat to help form the bends. The rest of the cross members and diagonals can be installed between the sides. Be sure to continue checking that everything remains straight and square.

Now comes the best part. Throw in a crate approximately the height of the seat and sit yourself down in your newly minted airplane fuselage! Be sure to clean the drool off the tubing from making all those engine noises!

Once you have completed tacking up the fuselage, it's time to move on to finish welding and installing fittings, but that's for a later article.

By the way, the time required to get to this point is about 40 hours. This is definitely a project with significant visual progress and one that's very satisfying! →

The fuselage is now standing with the first few cross members installed. At this point, the frame is ready to have a temporary seat installed so you can get a little stick time...



Flying Events

Time

by Guy Christie

September 8, Indus, AB, Fly in supper and neighborhood appreciation day. Pot luck and deep fried turkey. Indus Airport. Starting at 5:00 pm. Dinner at 5:30 Bring lawn chairs and enjoy the taxi ways. Five volunteers needed for crowd control. Please contact Garrett Komm at kommair@telusplanet.net for more information or if you can volunteer.

September 8, Lethbridge, AB – Lethbridge Sport Flyers, COPA Flight 24 annual Fly-In Breakfast at the Lethbridge County Airport, CYQL, AirWest Hangar 8:00 a.m. to 11:00 a.m. Everyone is welcome! For more info contact Joe Harrington 403-308-8343 or visit www.lethbridgesportflyers.com. Contact Person and Phone Number Joe Harrington 403 308-8343, Lethbridge-Sport-Flyers@telus.net.

September 8, Calgary, AB – Calgary Springbank Airport, Flight 14 Young Eagles Rally. Free flights for youth aged 8 through 17. Last year's event was a blast. Please help us make this year's event even better. Airplanes, pilots and ground personnel needed! Contact Captain Chad Conrad 403-590-0577 or email captain@copaflight14.org

September 8, Rocky Mountain House, AB – Rocky Mountain House Flying Club is having a Fly-in Breakfast from 8 AM to noon at Rocky Mtn House AB. Rain date Sunday Sept 9. Everyone welcome. Contact Fred Nash 403 845-6247.

September 15, Okotoks, AB – Okotoks Air Ranch CFX2, N50 44 07 W113 56 05. Okotoks Flying Club COPA Flight 81 Annual fly-in breakfast from 8 a.m. to 12 p.m. Adults \$5, children under 12 yrs \$2. Contact Mark Ballard 403-203-2443 or mkbcorp@telus.net. Also please visit our web site for more details, <http://ofc.homelinux.org>.

September 13, Calgary, AB, 7:00 PM CUFC General meeting at the Northeast Armory, 1227 – 38 Avenue NE, Calgary.

September 15, Strathcona County, AB – Strathcona Flying Club will be hosting a fly-in open house to celebrate the completion of the construction upgrades. We will provide free hamburgers, hot dogs and refreshments on Saturday, September 15 from 10 a.m. to 2:30 p.m. at the Strathcona Airport (Josephburg), For further information call 780-417-7100.

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I regularly get a newsletter called Nordo News from Lee Bottom Field in the States. One of the story titles in this month's newsletter is 'Deadly Disease Sweeps Through Pilot Population' and boy did it hit home.

Well this disease the article discusses is called; Too's Disease and here is an excerpt from that article.

'I'll tell ya what's wrong with these people; they all have Too's Disease. It's too cloudy, its too hot, gas is too much, I'm too busy, the stock market dropped too much, its too late, its too early, maintenance is too much, too many planes in the pattern, it takes too long to get the plane out, I'm too tired. Damn it, nobody around here is flying anymore".

It seems now that I have my own airstrip I'm flying less than I have since I started the sport. The number of excuses I can come up with is endless but I think there's something else that is holding me back and that's called 'building and maintaining a runway'. You folks out there who have their own airstrips know how much time it takes to do this (and everything else on an acreage).

I guess there are other things to do to enjoy the flying experience without actually flying and one of those things is building my pilots lounge. It's also one of those things that have taken up a fair amount of my time since I bought this acreage.

My wife (who has been great about my passion) told me the other day that it was time I started putting the same effort into our house reno's that I have been in developing my little "flying empire". Well, she is right but now I would like to see my pilots lounge become what it was intended for and that's for pilots. I've got power, a small fridge, water cooler, ceiling fan, wood stove, couch & chairs and maps on the walls.

I know lots of you don't have the Too's Disease and I expect to see lots of you this fall but those of you who may have been afflicted, come for a visit and get back to what you love doing and that's punching holes in the sky.

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For Sale

1991 Macair Merlin, STOL, 705 TT , 35 SMOH on Rotax 582 DCDI, Wing Tanks, Center stick, Upgraded wing struts with speed fairings, recovered and painted in 2002, Wheel pants, ski's, Cargo pod, Portable Intercom, ICOM A5 radio, external antenna, \$25000.00. Contact Pat Cunningham 403-276-2617e-mail patcunningham@shaw.ca

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1998 Lil buzzard - Rotax 582, 181 hours, 3- blade ground adjustable Ivo prop, tundra tires, hydraulic brakes, skis available. Contact Russ: umm48611@telus.net (07/07)

GSC Tech Prop - Wood - 64 X 36 RH Pusher - 2 Hrs run Can be seen at 167 Cove Place, Chestermere, AB Day - 403 769 7019 Eve 403 226 7224 – Jerry Bruce Freestone Gull Lake SK 306 672 4124 \$275.00 firm. (05/07)

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Beaver RX 550, 422 hr TTAf, 90 hr since total rebuild. 100hp Subaru, 3 blade warp drive prop, Mono 2000 amphib floats with electric retract, all surfaces in Cenconite with Polytone, extra wing tanks, carb heat, radio intercom, GPS, full gauges. Will consider interesting trade for single seat UL. Always hangered in Kaslo B.C. \$14,000.00. Contact: Russ White - umm48611@telus.net (09/06)

1998 Challenger II - Professionally built, only 170hrs on LES maintained & chromed exhaust recently installed. Beautiful paint, custom seats, ICom3, always hangered, \$27,000. Call Trey @ 698-4820 or email for photos - trey.petty@gmail.com (02/06)

89 single Seat Chinook; 447 rotax 348 TTSN 76 SOH. new wings and tail. John 239-0289 (11/05)

Volvo aluminum block V6 DOHC, supposedly rebuilt. Offers or \$250 delivered. Doug Fortune pentam@shaw.ca 284-3945 (11/05)

TEAM Tandem AirBike - pre-welded fuselage, c/w full set of plans and manuals for Single Place including welding plans and partial plans for Tandem. \$2000.00 obo. Dave Goldsmith, Calgary, (403) 289-9310 (09/05)→

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