



Skywriter...



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

June 2008



Al Botting's PA-17 sits poised for another spring adventure. Photo by Stu Simpson.

From The Cockpit

By Pat Cunningham

Well here we go into another summer... well maybe after the rain stops. Hopefully a few of have had a chance to do some flying between the showers. I've managed a couple of short flights myself doing some extra work on paved strips.

I was down in the Anaheim, San Diego area the last week of May and had a chance to head down to the harbour where the aircraft carrier Midway is docked and turned into a museum. We arrived too late in the day for a tour but standing right beside this structure puts its awesome size into perspective. Seeing these things on TV just doesn't do it justice. If you're ever down there looking for something to do make sure you take a tour of this aviation wonder.

Thanks to Stu Simpson for his information on internet weather at last months meeting, we can never have enough information on weather. Daryl Gillespie will be doing another demonstration on fiberglass repair work at the June meeting so bring your questions and he will do his best to give you a solution. The June meeting will be your last chance to purchase raffle tickets for our annual draw which will take place at the June meeting. Thank you to all who purchased or will be purchasing tickets, this is a great way to support our club. You need not be present to win. Good Luck!

COPA's affiliation with the Young Eagles program has been suspended as of June 1st 2008. COPA is awaiting a new agreement from the EAA in order to continue with Young Eagles flights, this means no Young Eagles flights or any other organized introductory group flights may be carried out under the COPA flight banner, COPA will not accept any responsibility or liability for these flights. We will keep you updated on any new information we receive on this issue.

See you soon! →



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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

Skywriter is the official newsletter of the Calgary Ultralight Flying Club - COPA Flight 114, published 12 times per year

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CAVU Dreams

by Ken Beanlands

June is finally upon us. Hopefully, it will produce more favourable flying conditions than last month. It seemed that whenever I was available to commit aviation, the weather had other ideas. This, coupled with a trip to Las Vegas, a visit from my parents and spending my weekdays here at the lake have conspired to keep me out of the air.

Another factor was at play this month. About a year ago, I purchased a set of coil spring gear legs to replace the bungee ones on Chrissy. The current bungee cords seem to need replacing every two year or so as they sit in the direct blast of the exhaust. Even with covers, exhaust gasses and oil have been working their way in.

The coil springs would provide a maintenance free solution to the problem that would hopefully be lighter and more streamlined than the current setup. The kit was purchased from Wag Aero (Part Number M-222-100, \$256.75) and is designed for use on their Sport Trainer and 2+2 aircraft. Given the similar geometry and design of the gear, it appeared that it would be adequate for the Christavia.



One gear leg removed. The upper rope was installed as a safety rope in case the lower one failed.

Work started by first removing one of the gear legs from Chrissy to use as a guide. I find that the easiest way to do this is to use a come-along between the axles to release the tension on the shock strut, then remove them one at a time. There must always be one shock strut in place at any given time or the landing gear will collapse.

One issue I found is that the tubes used in the Wag kit were 1/8" larger in diameter than called for on the Christavia. At the axle end, this wasn't an issue as the mounts were 1-1/4" apart and the tube was 1". However, at the upper end, the mount was only 3/4"

wide and the tube was 7/8". I decided that the easiest way to accommodate this was to slide a 3/4" tube into the 7/8" member. This also allowed for simplified fitting of the member to the plane. I completed both ends of the strut and then slid them together while on the plane in the correct position, then drilled and bolted the pair together to form one strut. The bolt could hold the legs together until I could weld them back in the shop.

Prior to that, the four ends were prepared by drilling a hole in each to accept the 5/16" bushing stock and then wrapped with plate to finish the ends. I was surprised to find that everything fit perfectly on the plane when I went to drill and bolt the struts together.



This shows the gear leg ends in various stages of completion. Note the draggy bungee gear above.

Once fully assembled, the gear was sent out for powder coating. They did a great job but it did cost \$75.00. Of course, the last step was the paperwork. In this case, an entry was made citing AC41.30-1B as the authority and a new weight and balance was created.

The total cost to swap the gear was \$331.75 and it took approximately 10 hours (not including several trips to the hanger)

Obviously, the maintenance free objective was met as the coil springs should have no problem with exhaust gasses or oil wearing them out. I did notice that one wing tip is about 1" lower than before. However, I'm



The new gear legs ready for installation. Don't they look shiney!!! This should net at least another 25 mph!



The final product! Unfortunately, the powder coating shop didn't have anything to match the blue, so I went with black.

not sure that the plane was perfectly level to begin with. Certainly, it's not something I'm going to worry about.

Unfortunately, the gear came out a bit heavier than the original by 2.5 lbs. This I can live with. As for being more streamlined, time will tell. I have yet to fly the plane with the new gear. I'll be sure to follow up next month with a flight report.

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St. Albert Airport Closure

by Ken Beanlands

Earlier this month, Bob Kirkby forwarded me an e-mail from Marty Slater, Secretary of the St. Albert Flying Club, COPA Flight 61. In it, Marty informed COPA that the Fred Herzog Memorial Breakfast scheduled for August 24th has been cancelled!

This in itself is disappointing, however, the shocking news is that the the owner of the St. Albert Airport informed the tenants that the airport will be closed – possibly as early as June 15th. So everyone (including the aviation related businesses that operated out of the airport) is scrambling to move elsewhere.

I'm not sure what, if anything, can be done to stop such closures. I'd be interested to know if the property has been sold to developers or if other factors such as insurance or municipal zoning, had anything to do with it.

In any case, Please keep this in mind when making travel plans.

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Short and Soft Field Takeoffs and Landings

*by Douglas H. Norrie
Photos by Pierre Remus*

Recently, in an XAir, I was doing a soft field takeoff from a rough tufted-grass bumpy strip in the Philippines with a 10 knot crosswind rolling in over adjacent trees causing swirling gusts. After several false liftoffs, a sudden gust boosted the aircraft out of ground effect 12-15 feet high before I had the stick forward enough to pick up speed. The 'copilot' afterwards reported that airspeed hovered a few mph above stall for near three seconds, too close 'to the edge'. For situations such as these, you need to know not only the technique to use but you also need much practice to sharpen reaction times and to build instinctive correct reactions. The margins for error with short and soft takeoffs and landings can be small and the unexpected can suddenly push the unprepared and unwary pilot 'over the edge.'

These cautions are important because in some situations you can be getting out to 'near the edge' i.e. close to the limitations of the aircraft and the pilot. The uncertainties in the ground surface, the winds and gusts, and the peculiarities of your own aircraft can move the situation from 'doable' to trouble and even tragedy. So you really do need to know what is possible here and to build experience in easier situations before attempting those that are more difficult.

I have some modest flying experience: six GA aircraft; a dozen ultralights; commercial and ultralight instructor ratings. Even so, for a recent set of flights to half a dozen short or soft 'strips', I made sure to do over 50 such practice takeoffs and landings in the prior days on a more than adequate grass field, until I had brought my skills up sufficiently.

Here then are the techniques for short and soft field takeoffs and landings. When writing this I was thinking particularly of an XAir tube-and-fabric aircraft (Standard model, tricycle, no flaps, Jabiru 2200A 85 hp engine). The principles given here, however, are basically applicable to any land aircraft, even tail draggers, though differences that may seem small can, in practice, be quite significant. STOL aircraft, for example, use unusually high-attitude, high-power approaches that provide some further complexities. So, for any aircraft other than the XAir above, seek out more information and at the least consult the Pilot's Manual for your aircraft. Best of all, take lessons with an experienced and knowledgeable flight instructor, preferably in the same type of aircraft.

Why Use Short or Soft Takeoffs and Landings?

A short field takeoff or landing is used when the available runway length is too short for normal takeoff or landing or the obstacles in the flight path are too high for the normal techniques or when both situations apply.

A soft field takeoff is used when the runway surface is such that the drag on the wheels would prevent the aircraft reaching liftoff speed if normal techniques were used. This is the situation with soft earth, mud, sand, wet grass even if mown, long grass or weeds or bushes, or snow. A soft field takeoff is also used when the strip is so stony, bumpy, rutted, or potholed that it is imperative to reduce the load on the nose wheel as soon as speed builds up, to prevent damage to the front wheel and strut. The soft field technique also reduces the load on the main wheels so this is a plus in this same situation.

A soft field landing is used when the surface condition is the same as described for a soft field takeoff. In landing on soft earth, mud, sand, etc, the drag on the wheels brings the speed down quickly but the accompanying deceleration unduly loads the front wheel and strut unless the soft field technique is used. If the surface is not truly soft or muddy or wet or snowy etc but just stony, bumpy, rutted, and so on, using a soft field landing technique can be used to similarly prevent damage to the nose wheel and strut.

How To Do Short and Soft Field Takeoffs and Landings

The following are the basic techniques for short and soft field takeoffs and landings. If there is a crosswind, then in addition apply the well-known crosswind control movements. Note, however, that these takeoffs and landings become much more difficult and problematic if the crosswind is significant, as the incident earlier related shows. It is common sense to not try them under these conditions and to go somewhere better if that is an option. If the aircraft has flaps, use these as appropriate to the maneuver (see your Pilot's Handbook).

The Short Field Takeoff

Here is the technique for a short field takeoff. Position the aircraft as far back as possible to take advantage of all available distance; hold brakes then move throttle smoothly to full power; check gauges for full revs etc; release the brakes: move the stick back modestly as roll begins to ease load on nose wheel; as soon wheels leave ground, move stick forward sufficiently so aircraft flies in ground effect (wheels about a foot off ground) to accelerate; at best angle airspeed bring stick back smoothly so aircraft climbs at best angle; transition to normal climb speed when clear of obstacles.

The Short Field Landing

For short field landings, use a powered final and short final using the appropriate speed (see Pilot Handbook). When there are obstacles e.g. trees, fences, power lines near the 'threshold' of the strip you want the steepest final approach available, hence use flaps if you have them as well as the slowest appropriate airspeed; if there are no obstacles you still want this steep approach for the slower airspeed that goes with it, to reduce the ground run; set up this approach

early and trim for the airspeed; don't be afraid to use power to stay on the approach path as it is power that 'controls your altitude' ; you are trimmed for the desired airspeed so you do not want to alter this by significant movement of the elevator (gusts may necessitate such elevator movements but these are temporary); because of the short distance available you want to touch down soon after the 'threshold' so you have set up the approach path for this; flare and touch down; just before the wheels touch, ease back on the power, then as soon as the wheels are down use hard braking with the stick as far back as will keep the nose wheel almost off the ground. Too much stick back will unload the main wheels and deteriorate the braking, and worse, may also lift you back into the air. If the aircraft has flaps, bring them up after touchdown to increase weight on main wheels and allow stronger braking. If a crosswind exists, the nose wheel may need some more weight for directional stability as the aircraft slows and the rudder loses its effectiveness.

The Soft Field Takeoff

For the soft field takeoff, the aircraft shouldn't be allowed to stop once you start taxiing (hopefully off a more solid area); at the start of taxi bring the stick right full back and hold it there; keep the aircraft rolling through the turn onto the 'threshold' bringing up the power near the end of the turn; desirably you quickly glance at the gauges to check for full revs etc (you are probably too focused elsewhere for this, so a copilot or trained passenger calling 'All OK' is good to have); the stick remains full back while ground speed increases but as soon as the nose wheel lifts off bring the stick smoothly forward so as to fly in ground effect a foot or so off the surface; let the aircraft accelerate to normal climb speed and continue to climb as usual. Sounds basically simple but getting it all sequenced and synched properly requires a great deal of practice.

Figure 1



Here are some 'gotchas' to watch out for:

- false liftoffs (watch for these in short field takeoffs too) where a gust or a bump puts the aircraft momentarily off the ground but it isn't ready to fly yet (airspeed too low).

- not moving the stick quickly enough forward after you have true liftoff so the aircraft climbs up too far (ground effect drops off quickly over a height of approximately half the wingspan) and the aircraft can sink back down and hit hard or bounce or even porpoise.
- moving the stick not far enough forward or too far forward just after liftoff (climbs too slow too high in first situation and descends back to earth in second situation, neither what you need).
- gusts adding or subtracting momentary lift in the critical liftoff, ground effect and initial climb phases.

The Soft Field Landing

Now here is the technique for the soft field landing. Up to the touchdown, it is basically the same as for the short field landing. At touchdown, you want the aircraft to alight gently with its weight coming onto the surface gradually, so the stick comes back to keep the nose wheel off the surface and the weight light on the main wheels, and then continues all the way back as quickly as possible (without lifting off again) to get the maximum attitude you can. Braking also begins at touchdown; generally it is best to not quite lock the brakes. With wet snow or mud on the surface, for example, locking the brakes could just cause hydroplaning. On soft sand, however, locking the brakes might “dig the wheels in” whereas keeping the wheels rolling may have much less braking effect (but more progressive deceleration). The stick is kept back as the aircraft slows and the nose wheel finally touches down.

Note that it is not good practice to ground the tailskid in the soft field landing or the soft field takeoff, because of possible damage and even pitching oscillations. Also, in the soft field takeoff it increases drag which you don't want. With the XAir, I think a tail strike is possible under the right conditions of weight and balance, although I have not had it happen so far. I know it is possible with a Cessna 172, as I did do this once in my student days much to the disapproval of the flight instructor.

Here are some 'gotchas' with soft field landings:

- don't wait till the aircraft stops before easing the nose wheel to the ground (as the aircraft comes to a quick final stop the nose wheel can come down hard if you wait till then)
- if there is a crosswind, the nose wheel needs to come down earlier for directional stability as the aircraft slows and rudder effectiveness is lost
- if the aircraft has flaps, leave these down after landing to continue the extra lift (and the drag) they provide.

In a soft field approach to the strip in the Philippines mentioned earlier, liberal and continuous power variations were needed to keep the squirrely approach in the gusty crosswind within bounds. For the XAir, a mean airspeed of 55 mph was used, this being 50 plus 5 for the gusts. If it had been calm, an airspeed of nearer 50 mph would have been used since the field was also short so minimum roll was desired. At this strip, there was no go-around possible in short final because of trees at the far end, so you had to be sure you were on the right approach path early and then stay on it

Aborting Takeoffs

For all types of takeoff, the abort point on the strip should be half way down the available distance. If two-thirds of liftoff speed has not been reached by then, it is best to abort. Pacing off the available distance beforehand and putting a marker at the abort point can be a very good idea.

With Practice ...

The first photo shows the XAir just about to touch down for a short/soft field landing over trees during practice at a more than adequate grass field. The trees dictated a short field approach hence the slowest appropriate speed, about 50 mph, allowing for the light crosswind and gusts. If it had been calm, the approach speed could have been taken down to even 45 mph. The grass was not draggy enough to require a soft field landing, but it was done like this for practice. The distance from the white mark in the foreground to the back fence and trees is about 85 meters (about 280 feet) and the aircraft was stopped within this distance.

The second photo shows the XAir climbing out from a soft field practice takeoff at the same field. As can be seen, the aircraft is already climbing out by the 85 meter mark.

Figure 2



References

An excellent reference to these techniques is “Mountain Flying Bible – Revised” by Sparky Imesen, Aurora Publications, Wyoming, 1998.

[Doug Norrie lives in Calgary, Alberta where he is currently building a Savannah STOL all-metal aircraft. He also flies in the Philippines where he shares an Xair]

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Christavia MK1 – SOLD!!! For sale or trade up; 0-235C Lycoming 115hp. 500hrs ttn Engine 0 timed at that time. Compressions good, very low oil consumption. Warp drive prop. Quick, sharp, economical taildragger. Asking \$26000.00 Can be seen at Bishell's airstrip at Carstairs. alfox@xplornet.com ph 403-337-0126. (06/08)

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Flying Events

June 6th – 7th, Cardston – (CEA6) BBQ Friday evening (6.30 to 8pm) “Theatre in the hangar”. Camping on the field (limited power) Pancake breakfast Saturday morning (8am to 10am). \$5.00 per person per meal. contact Doug Murray 403-653-2087 or email dgmurray@toughcountry.net.

June 7th, Calgary – COPA Flight 14 presents its annual Young Eagles rally located at CYBW. WX alternate Jun 14. We need volunteers in several positions on the ground and in the air. Contact Young Eagles Leader Chad Conrad 403-590-0577 / captain@copaflight14.org.

June 7th, Villeneuve (CZVL) – Villeneuve open house & Fly-In. Edmonton Airports are pleased to be hosting the 4th annual open house & FREE fly-in BBQ from 11 a.m. to 2:30 p.m. For more information please contact Edmonton Airports at fly-in@edmontonairports.com.

June 8th, Innisfail – Annual fly-in Breakfast from 7 a.m. to 11:00 a.m. located at the Innisfail Airport (EM4). For more information please contact Herluf Nielsen at 403-728-3457.

June 8th, Bonnyville – Fly-in Breakfast and Young Eagles Fly Day, breakfast from 7:00 a.m. to 11 a.m. located at CYBF. For more information please contact John Vardy 780-826-2132 or email jvardy@telusplanet.net.

June 14th, Taber – COPA Flight 24/Lethbridge Sport Flyers is hosting a fly-in breakfast at the Taber Airport 8:00 a.m. to 10:30 a.m. Everyone is welcome! Located at the Taber Airport. For more information please contact Joe Harrington 403-308-8343 or email Lethbridge Sport Flyers@telus.net.

June 14th, Cold Lake – COPA Flt 90 and the Cold Lake Regional Airport Association is hosting a Young Eagles Day and Fly-in Lunch from 8 a.m. to 2 p.m. located at the Cold Lake Regional Airport (CEN5). Please contact Cliff Conrad 780-594-5707 or email cbconrad@incentre.net.

June 14th-15th, Morinville – Mike’s Father’s Day Fly-In and Antique Cars. Fly-in breakfast on the Sunday from 8:00 a.m. to 11:00 a.m.. Coordinates: N53-50 W113-33 Runway length: 2600 ft. North/South orientation. 60 foot wide groomed grass. Caution: Wires at south end. For more information please contact Ben Strafford 780-458-1606 or email larandben@cruzinternet.com.

June 21th, Carstairs – Carstairs/Bishell (CGB2) 12th Annual Fly-in Breakfast. 8AM until noon. For more details please contact Glenn at (403) 337-2564

July 5th, Chestemere – Chestemere/Kirkby (CFX8) 17th Annual Fly-in Breakfast.

July 19th, Cayley, AB – Ninth Annual Invitational Fly-in. Pancake breakfast starting 8AM. Lunch. 4 miles East of Cayley, co-ordinates N 50 27 32 W 113 45 46, 4400 foot paved. Underwing camping or Accommodations at High River or Nanton. Tour the Lancaster Air Museum. Please contact Bob at 403 646-2270 or email nlscurator@lancastermuseum.ca.

July 20th, Vulcan – Annual Fly-in Breakfast commencing at 8:00 a.m. to 11:00 a.m. at the Vulcan Airport. For further information call Don 403-485-2970 or Cody 403-485-2083.

July 26th to July 27th, Wetaskiwin – Airport and Identifier CEX3. Wetaskiwin Air Show, featuring the Canadian Forces Snowbirds located at Reynolds-Alberta Museum & Canada's Aviation Hall of Fame Event. Show Contact Person and telephone number Brett Binnie 780-361-135, E-mail Brett@AV8solutions.com or web site www.wetaskiwinairshow.com

July 28th to August 3rd, Oshkosh WI - EAA AirVenture 2008, the World's Greatest Aviation Celebration. Visit www.airventure.org for more information. Anyone interested in a group flight to Oshkosh, please contact Ken Beanlands at 295-2079 or kbeanlan@telus.net

August 22nd & 23rd, Nanton – Nanton's (Alberta) annual event. Friday eve. reception, Saturday full of activities started by a pancake breakfast, Merlin engine run-ups, flypasts and much more followed by a hangar dance in the evening. More details at www.lancastermuseum.ca or phone 403-646-2270.

August 23rd, Cooking Lake (CEZ3F) – Cooking Lake Airport open house & Fly-In. Edmonton Airports is pleased to be hosting the 4th Annual open house & FRE fly-in BBQ from 11 a.m. to 2:30 p.m. For more information contact Edmonton Airports at fly-in@edmontonairports.com.

September 1st, Stettler (EJ3) – Stettler Flying Club/COPA Flight 135, labour day Monday. All you can eat, pancakes, eggs, ham, sausages from 8:00 a.m. until 11:00 a.m. For more information please contact Dwayne Sutton at 403-742-4354, email d_sutton@telus.net, or Kevin Falkenberg: 403-742-8058, email autox@telus.net.→