



# Skywriter



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

## November 2003

### A Wing Man Lost

On Wednesday, October 15<sup>th</sup>, club member Jim Thomson crashed in his red Hiperlight near Okotoks. He died at the scene.



Jim Thomson with his Hiperlight. Photo by Brad Lawrence.

Everyone in the Calgary Ultralight Flying Club knew Jim well. He was well respected for his contribution to WWII as a flight instructor based at Vulcan and well liked for his sparkling sense of humour and the joy he derived from flying his Sorel Hiperlight biplane.

Jim was based at Indus and Wayne Winters remembers him this way:

"Jim was the kind of guy that FBO's love to have around an airport. He was always there, extremely friendly, and loved to chat up potential fliers as they would come around. He enjoyed showing them his airplane, hanger toys, and military log book. He was such an ambassador for the sport and always offered energetic input at our Calgary Ultralight Flying Club meetings and parties. His flying experience was unique

among us in that the last entry of his meticulously kept log book was June 20, 1945. That is until the next entry of November 17, 2000 when he started training for his Ultralight pilot permit. There was a "no flying" gap of 55 years and 5 months!

During that time he had a very successful career in the commercial agriculture sector with Cominco and had raised 3 daughters and 2 sons. His hobbies were

always his passion and over the years he had many. At

68 he bought a big Harley and rode down to the huge annual meet in Sturgess, South Dakota. In his class, out of thousands of bikes, he won second. Often in the Summer you could see his Harley sitting beside his open hanger waiting for him to return from his flight. His family and his toys were always well taken care of and he took pride in that fact."

The Transportation Safety Board is investigating

### Its Election Time

The club's annual election of officers will take place at the December meeting.

Positions up for election are:

- President
- Treasurer
- Director at large

Give some thought to volunteering for a position or ask someone you thing will do a good job if you can nominate them.

Jim's fatal accident. We extend our condolences to Jim's family. →



It flies! Bernie & Guy's VP2 makes its maiden flight. Photo by Guy.

# For Sale

**Spiral wrap** - 5/8" spiral wrap, nylon, approx. 100' available, \$0.25 per foot. Bob Kirkby 569-9541 (11/03)

**Flight computer** - Jeppesen CR-3 circular computer, new, 2 available, \$10 ea. Bob Kirkby 569-9541 (11/03)

**Avid Aerobat** - Advanced Ultralight, 102 hours since rebuild completed in January 2003, new Rotax 582 engine 3:1, Powerfin 2-blade 74" prop, new VFR instruments, new interior, new fabric and paint (red and yellow), wings rib-laced, new wide stance gear, new double tail spring with Matco tailwheel, tricycle gear option included, new cowling with twin rads, folding wings provide easy storage in garage, cabin heat, all maintenance logs up to date, cruise 95 to 100 mph, \$29,500.00, Troy, (403) 936-8424 or email for pictures [brancht@tsesteel.com](mailto:brancht@tsesteel.com) (10/03)

**SkyPup** - Plans built ultralight. 52 hours total time on frame and rebuilt 277 Rotax. Cruise at 55mph on 1 1/3 gallons per hour, climb at 450 fpm. Enclosed cockpit. Single seat. Endura paint. Asking \$4,000, Bruce Lange, 403-227-6577 or [langeb@rvvs.com](mailto:langeb@rvvs.com) (10/03)

**Cuby II** - 2-place, side-by-side, 65hp MZ202, low time. Beautiful yellow airplane I need money for my next project, \$19,000. Peter Wegerich, 403-862-7148, email [wegericp@telusplanet.net](mailto:wegericp@telusplanet.net) (09/03)

**Parts** - Set of 3 skies (tail ski), teflon bottoms, \$500. Arrow 500 engine, 65hp, 2 cylinder, horizontally opposed, 93 hrs, \$1500. Cuby fuel tank for left or right wing, \$100. Variety of flight and engine instruments, Alt, AS, Tach and more. Some other parts as well. Peter Wegerich, 403-862-7148, email [wegericp@telusplanet.net](mailto:wegericp@telusplanet.net) (09/03)

**Mini-Max** - TT173, 3 fuel tanks, 15 USG, Rotax 447, 40hp, enclosed cockpit, removable canopy, new tires, \$8300. Stan Sheriff 934-3460 (09/03)

*Notice: Classified ads are free to CUFC*

members. Call Bob Kirkby to place or renew your ad 569-9541 or email to [bob@skvwalker.ca](mailto:bob@skvwalker.ca) Ads will be dropped after 6 months unless renewed.

## Ads reprinted from the St. Albert Flying Club Newsletter

**Team Airbike plans** - complete set, manuals, excellent condition, \$200 including shipping, OBO. Reg Lukasik 780-459-0813.

**Rotax 447** - CDI, B-drive, overhauled. Dan Pandur 780-418-4159.

**Puddlejumper amphibious floats** - used, \$2500. Dan Pandur 780-418-4159.

**Gas tank** - plastic, US Coast Guard approved, 11.5 US gals., new in box, \$75. Ron Swan 780-477-6112.

**Modified Team Himax** - and portable grey canvass quonset hangar. Single seat, taildragger, Rotax 503, DCDI, oil injection, 177hrs on engine, decoked at 100hrs. Fuel 12g, cruise 70mph. Ivo in-flight adjustable prop. Strobe, wing lights and landing light. Skis, Clark headset, handheld GPS and Icom A22. \$19,800. Len 780-436-1928 or email to [lennegreenwood@hotmail.com](mailto:lennegreenwood@hotmail.com).

## Medical Certificates

*Reprinted from Aviation Safety Letter Issue 4/2003*

During recent investigations of a number of ultralight aircraft accidents, it was discovered that some pilots did not have a valid medical certificate. Ultralight pilots are required to hold a valid medical certificate when exercising the privileges of a pilot permit. Medical certificates for ultralight pilots are valid for a 60-month

### Skywriter

Skywriter is the official newsletter of the Calgary Ultralight Flying Club and is published 12 times per year. Forward your articles and letters to:

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**Assistant-editor:** Bernie Kespe  
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### Calgary Ultralight Flying Club

Meetings of the Calgary Ultralight Flying Club are held on the second Thursday of every month, except July and August, at 7:00 pm, at the Northeast Armoury, 1227 - 38 Avenue NE.

**President:** Bob Kooyman 281-2621  
e-mail: [kooyman-eng@shaw.ca](mailto:kooyman-eng@shaw.ca)

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Visit the CUFC web site: [www.cufc.ca](http://www.cufc.ca)

period and must be renewed thereafter. As a reminder, the monetary penalty for a first offence is \$1000; it increases with any subsequent offences. Holders of a pilot permit-ultralight aeroplane may renew their medical certificate by completing the medical declaration form located at the following web site:

[www.tc.gc.ca/civilaviation/general/personnel/26-0297.pdf](http://www.tc.gc.ca/civilaviation/general/personnel/26-0297.pdf)

and forwarding it to the nearest Transport Canada Civil Aviation office for processing.

*When you only have to renew every 5 years it's easy to forget, so check your medical certificate today. - Editor*

A good source for Urethane tubing and Lexan is Norwesco Industries 6808L - 6 Street SE, Calgary

## Machining an Instrument Panel... Without a Machine Shop

by Ken Beanlands

As most of you know, I've been building a Christavia MK 1 over the past few (14!) years and finally arrived at the point where I needed a panel. After much contemplation, I stumbled upon an interesting method of building an instrument panel, which is the subject of this article. But first, here's a quick update on the project so far.

It's progressing nicely, although not as quickly and I had hoped. The wings and tail are completed and the fuselage is mostly done. The prop has been overhauled and the Franklin 4A-235 is installed and close to being ready to run. I'm now working on the baffles and waiting for the carb overhaul to be completed so I can finish off the firewall forward.

The boot cowls and the windscreen have been built and temporarily installed. The trim strips at the top and bottom were quite a challenge to fabricate. I also had to build my own fiberglass nose bowl as the commercial one I bought wouldn't fit. Anyone need a nose bowl? The trim strips and nose bowl were the first real fiberglass parts I've made and it worked quite well. However, I've decided that a glass plane is NOT in my future. I've now started on the cowls. After that the only things left to fabricate will be the wing root fairings, electrical wiring and tail brace wires. The plan is to have it flying in the fall (I'm not necessarily committing to THIS fall).

After attending numerous fly-ins and visiting lots of airports, I've noticed something. The first thing most pilots do when they walk up to a plane is to take a peek at the panel. If the panel looks good, then most of the other problems with the plane are somehow overlooked. If the panel is questionable, then even a show plane won't make up for it. Even in my own experience, I find looking at a

shoddy looking panel for a couple of hours can be quite annoying. At Oshkosh '92, I found a company selling replacement panels for certified planes and custom panels for homebuilts. They looked great in their simplicity. A thick slab of aluminum carved with crisp clean instrument holes and painted flat black. I figured that I had found my panel...until I saw the price tag. Let's just say that paying 4 figures for a panel was not in the budget. I finished my panel earlier this summer and I must say, I'm very proud of it. Best of all, the only real costs were \$90 for a piece of 0.090" 2024-T3, \$20 for paint and \$25 for one tool.

I am a member of the Bearhawk list and plan on building one as the next project. The all metal wing has some 168 ribs (nose ribs, main and end ribs for wing, spar and ailerons). One suggested method to cut the ribs is to stack several "blanks" under a plywood template and cut them out using a router installed in a table to mill the ribs. The bit used is a straight fluted tracing bit (sometimes called a laminate). It has a bearing mounted in the end that will run along a template and cut the material flush with the template. It was mentioned that the results were quite good using that method.

Since I had a router, router table and even a 3/8" and 1/4" tracing bits, I decided to give this a try. I started by designing my panel in CAD. And...yes, I did BUY a CAD package for home use. I have found it extremely useful especially since I have an engineering and CAD administration background. Hmm... that may be the subject of a future article. The drawing was plotted out on letter sized paper and taped together using the cut-lines I added to the drawing. After the drawing was cut out, I traced it onto the 3/4" plywood template. The template was cut out

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roughly using a band saw and finished using a sanding disk in the table saw. The 2' x 4' aluminum blank was bolted to the template using holes drilled through the center of future switch, fitting and instrument holes. You will need to countersink the mounting screws so they don't interfere with the router table. Then came the moment of truth. I tried cutting a corner using the router and it seemed to go well so I got my wife and we threw the blank onto the router. Liberal amounts of oil were used to keep things moving along well. About 10 minutes later, we were done and, as advertised, the results were great.

The next part was cutting the holes. I made 2 templates from 3/4" plywood, one for the 3-1/8" instruments and one for the 2-1/4". 5 holes were initially drilled in each template, the 4 mount holes and a 3/16" centering hole. This 3/16" center hole was used as a guide that was matched up with center holes I drilled in the panel, using the cad drawing as a template. I made the templates from an accurate plywood square with the instrument hole exactly in the center and the mount holes square to the edges. This allowed me to line the edge of the template up with a reference line on the panel to ensure the instruments were all level. A punch was used to mark the mount hole locations for all the instruments. Once these were drilled, I used a hole saw to drill the 3-1/8" and 2-1/4" holes in the template and a 3/4" blade bit to auger out the center holes in the panel to fit the router bit.

(Continued on page 4)



*Panel - continued from page 3*

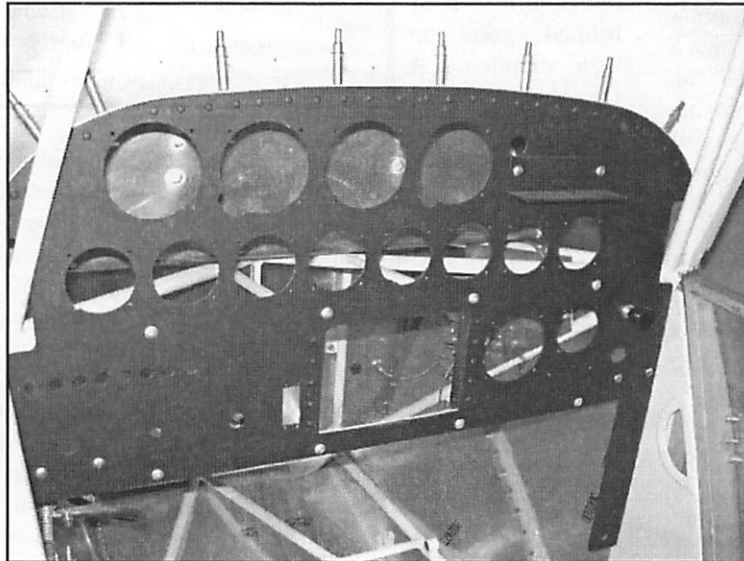
Since I didn't want my mount screws countersunk in the panel, a second template for each hole was made from 3/4" ply with the aluminum panel sandwiched in between. This allowed me to countersink the mounting screws into the lower template so they wouldn't interfere with the routing. With everything in place, I started cutting out the holes.

A few words of warning here. First, when you're doing the cutting, be sure to wear coveralls and button up the top as best you can. Gloves should also be worn, but at the very least, use some duct tape to seal up the ends of the sleeves. Obviously, the normal eye and hearing protection should be worn. Ear-muff style ear protectors are preferable to the foam plugs in this case. The oil-soaked chips from the cutting process fly off very fast and extremely hot. The first cut I made had me jumping as those chips flew down on my chest and up onto my forearm! The other thing to be cautious about is the small disk of waste material that's left over from each instrument hole. When these things let go, they can do a lot of damage as the router whips them out. After the first couple of holes, I cut the hole in concentric circles to avoid producing the disk at all. It was a little longer, but a lot safer.

Second, do not attempt to free-hand cut the aluminum even for a rough cut. It won't work...I've tried. The bit becomes very unpredictable. In fact, when you are cutting with the template, you will find that the bit will pull into the template when cutting in one direction and away from the template when moved the other way. Experiment first as you definitely want the router bit pulling INTO the template.

Finally, be sure to spring for a good quality router bit. I had a cheap one that I

decided to use as I didn't want to damage a good sharp bit. As I finished up cutting the second 3-1/8" hole, there was a loud bang as the center disk whipped out of the hole. I immediately pulled the panel away from the router, but the damage was done. There was a 1/4" gouge in the panel at the edge of the hole. After shutting everything down, the problem



*The finished panel. Now for the instruments. Photo by Ken Beanlands*

became apparent. The top of the bit had snapped off taking the tracing bearing with it. With nothing to guide it, the bit slipped into the good side of the template. Oh yeah, I later found the end of the bit... stuck in the wall

After a couple of choice words, I examined the damage to see if the panel could be salvaged. That's when I realized my good fortune in that the gouge was in the bottom left corner (the mount screw actually prevented it from going further). I had 2 instruments that required the lower left corner to be cut out! So, I decided to continue on and cut the rest of the normal holes with a new, high quality bit. Then the template was modified to cut out the lower left corner and the last two holes were cut removing the gouge.

The end result was a very professional looking panel. The cuts are so clean, you can pretty much ignore the filing. Edges are crisp, but not sharp enough to cut.

Personally, I couldn't think of a better way to accomplish this.

Holes for the switches, radio, etc were added. I decided to use switched breakers rather than separate switches and breakers. Switched breakers are about the half the cost and take up half the panel space as separate switches and breakers.

There has been a concern in the trade magazines that, over time, the switched breakers will malfunction prematurely, but the numbers of cycles they talk about are well above anything I have to worry about.

A short piece of aluminum angle was added to the upper right corner of the panel to mount the Garmin GPS Pilot III on using the supplied mount. The handheld radio was a little more interesting to mount. Eventually, I plan to add a panel mounted COMM and XPDR, but they can wait. I made a hole in the panel measuring 6.25" x about 4" for the future radios

and added a blanking plate. I decided to mount the handheld to the plate. The radio is a Yaesu that came with a NiCad battery pack. The intention is to run the radio from on-board power. Fortunately, the radio works without the battery while plugged into external power. So, I purchased the available alkaline battery pack. The battery pack makes up the back half of the radio and is flat, except for a belt clip. The clip was removed using a Dremel and 4 holes were drilled into the back. This allowed me to mount the pack to the blanking plate over the avionics bay.

An external antenna will be used to increase the radios range so a bulkhead BNC connector was installed in the blanking plate. This was partly the result of a tip from another local builder, Joel Meyers. He suggested that since the handheld radio would be removed and installed frequently, that it may experience damage over time. If there  
*(continued on page 7)*

**The Air Adventure Tour  
2003 - Part 3**  
by *Stu Simpson*

When we landed at Cold Lake Regional after Carl's near disaster the first thing on our minds was his condition. We learned he'd been taken to the local hospital and would soon be airlifted to Edmonton.

Next, we had to worry about his plane. The Cold Lake boys really came through for us. One fellow offered up a trailer and a place to store Carl's bird for as long as we needed. Still others approached us offering to help in anyway they could. Kirkby, Botting, and Bishell headed out to recover and secure Carl's Max.

Despite Carl's tragedy the Tour continued. We spent the next morning at AETE, the Aerospace Engineering and Test Establishment at CFB Cold Lake. This was definitely one of the highlights of the Tour.

Ms. Krista Rivet of 4 Wing's Public Affairs office went to great lengths to arrange the AETE Tour for us. We first watched a video outlining AETE's mission and capabilities. It's clear that the unit provides world class expertise and ability in flight testing, aerospace engineering, and analysis at a fraction of the cost of other flight test outfits. The video made it clear that AETE is trying hard to market it's services to other air forces and aerospace firms in the world.

We then toured the building, seeing where engineers and technicians conduct equipment testing and development. The best part, though, was the hangar where we got up close to some really cool stuff like CF-18s, a CT-33 and a Griffon helicopter.

We left Cold Lake Regional shortly after

lunch. Walking to the airport office I saw a sign that Gerald Fehr hung on the railing outside. It proudly proclaimed, "Welcome Visiting Ultralight Flyers, the Greatest Ultralight Flying Circus in the West, From Cold Lake Regional". It was a deeply touching gesture. Regular readers might recognize Gerald as the one who bought Kirkby's Murphy Renegade after Kirkby, Bishell and I flew to Cold Lake in the spring of 2002. Gerald's having a ball flying it.

We departed westward for Vegreville where perogies and a traditional Ukrainian lunch awaited us. We cleared Cold Lake's control zone and turned southwest toward Bonnyville when Hans spotted a pair of Hawk trainers. They zoomed across our nose in a tight echelon a mile away and maybe a thousand feet higher. It was fun to watch and I wondered if they saw us.

We decided to forgo a stop at St. Paul because we all had the range to reach Vegreville comfortably. We noticed the haze worsening as we cruised along, no doubt a result of the fires still raging in Alberta and B.C. We had to spend a lot of time dodging the various lakes that dot the countryside in that region. At least we were able to fly a reasonably straight course to Vegreville. The ground crew were cursed with many highways that ran perpendicular to the course they wanted.

Vegreville was a magnificent treat as

Dale Warawa, Tom Wharton and a terrific array of Ukrainian cooking experts served us up an incredible feast of borscht, kubasa, cabbage rolls and perogies. Mmmm, I can still taste those perogies in butter and onions. To this day I won't let



my wife cook perogies in any other fashion. I was again deeply impressed by the depth of talent and experience in Vegreville's recreational flying community. We left Vegreville several pounds over-gross (the pilots, that is, not the airplanes), but not in a really big hurry because we were having such a good time.



*A Ukrainian lunch is enjoyed at Vegreville.*

It was on to Wetaskiwin, then, where another dinner and reception awaited us. The flight there was fun as Kirkby and Inkster tried their air interception techniques on Bravo Flight. We had to talk them right in to our location because the visibility was dropping so rapidly in the haze and smoke. I playfully voiced my doubts about their fighter pilot prowess if the target had to provide directions for interception.

It was starting to get hot in the cockpit as we flew toward the falling sun. At one point I challenged anyone else in Bravo Flight to name the little village to our left. (Continued on page 6)



*Dan Mitchell inspects a CF-18 at AETE*

*Tour - continued from page 5*

I thought I had them all since I was using the map and everyone else was using GPS with only course and speed readout. To my surprise Robin, flying in Andy's Merlin, came up with the name. But then I recalled Andy has a full moving map GPS, so I'm still a bit suspicious.

Tuning in Wetaskiwin's ATF we got a nice surprise when we heard a Murphy Renegade doing circuits at the airport. The Renegade jock helped us out by providing the wind and runway information.

On the ground we met airport manager Brett Binnie, and Ed Saulou the local COPA Flight captain. Both were incredibly welcoming and justifiably proud of the airport. Their terminal is the best kept one I've seen, with neatly manicured grounds and beautiful flowers all over the place. The Wetaskiwin crowd threw us a wonderful barbeque with burgers, chips and beers. I just couldn't get over the magnificent hospitality of all the airports and flyers at the places where we landed.



*The "barn" at the Reynolds Alberta Museum in Wetaskiwin*

The next morning was our tour of the Reynolds Alberta museum, the highlight of which was the special tour of the warehouse. It's something that the general public rarely gets to see anymore and we owe our thanks to Ed Saulou and Leanne Wright of the R.A.M. for helping to make it happen.

The warehouse contains a simply unbelievable conglomerate of old airplanes of every sort. There are light aircraft like the Fleet Canuck and Stinson Reliant; warbirds like a Fairey Swordfish and Bristol Blenheim; transport planes like the Barkley-Grow and Beech 18; and even a full scale mock-up of the CF-105 Arrow. One particular treat was seeing a J-3 Cub that was actually four years younger than the J-3 Cub that Kay and Glen Clarke were flying on our Tour! There was also an Aeronca Chief there, in pieces, that was only a few years older than Freddy's Chief.

Next we moved on to the museum proper and Canada's Aviation Hall of Fame. It was real kick to see this place again and it was a special treat for me to give a radio interview to the CBC in Calgary while I stood at the nose of the museum's hanging DC-3.



*Enjoying another BBQ at the Wetaskiwin airport terminal*

Then it was time to make like a baby and head out. Our next stop was Red Deer, home 'drome for Alpha Flight's Bert Lougheed and his Sea Rey. We left Wetaskiwin behind, but carried a great many pleasant memories with us as we winged our way south.

The area north of Red Deer is always a pleasant place to fly. It's scenic and familiar with numerous airports and a stable climate. This time it was a bit more fun looking out the window to see Mac Harrison's van keeping pace on the ground. It was easily visible because of the bright yellow door signs he devised for our ground vehicles. I told him I was

really looking forward to him being part of an all-Challenger flight for next year's Tour.

The last time we got near Red Deer on an Air Adventure Tour was in '99. That time the Flight Service specialist was somewhat less than friendly as we over flew the airport enroute to Bishell's. But Lougheed had assured us the night before that the fellow had since left the airport and the Dragonflies would be most welcome there. Boy, was he right. Flight Service Specialist Mike Sutherland was on duty and skilfully assisted the Dragonflies as they arrived one by one.

Red Deer received us wonderfully with a set of snacks and a warm welcome from the Red Deer Flying Club. Out front of the Club's building sits a magnificent old Harvard. You can imagine Mitchell's glee as he rolled up and shut down right beside it. It was the photo op of the trip and no one missed it.

There were numerous other old round-engined airplanes all over the airport. Things like PBYs, DC-3s, A-26s and CL-215s. They belong to Buffalo Airways and Air Spray, respectively. Both are air attack contractors who base at YQF. I vowed to soon make a special trip back to see these airplanes up close when we had more time.

Our next stop was Bishell's which would be the last stop for the trip this year. Adrian Anderson flew with me and it was a tough go getting off the runway at gross weight with a 6000' density altitude. But the Giant came through beautifully. The *(continued on page 7)*



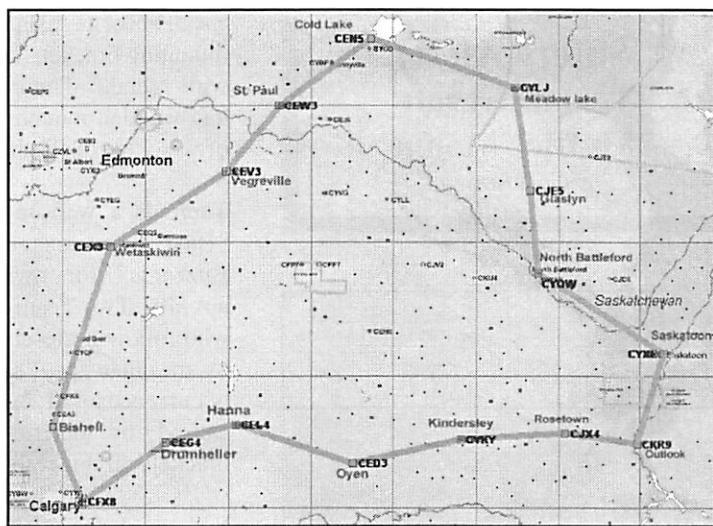
*Tour - continued from page 6*

ride was still hot and bumpy, but ironically, Anderson's extra weight helped smooth out the bumps. It was getting hazier, too, as we went south, with the smoke almost as thick as the day we started.

Landing at Bishell's was bittersweet as it marked the official end of the Tour. From here, everyone would go on to their own home bases and put the trip down as a memory. It was nice that Lougheed flew down to Bishell's to be there for the wind-up.

As is our usual practice we conducted a de-brief where we all picked the trip apart and talked of what we liked and didn't, what went well and what ought to be

out for home. The Bravos were no exception. Dan, Hans, Andy and I took off on runway 16, pointing our noses toward Kirkby's. Kirkby caught up to us and made a few passes down the side of our formation before he too accepted the inevitable and turned the 'Duster for home. Andy peeled off beautifully when we got to his strip and Dan just kept going for



*The 2003 Air Adventure Tour route.*

Indus, ten miles south of Kirkby's. Hans and I landed in sequence, thus putting the final touch to another CUFC Air Adventure Tour.

As I hugged my wife and kids, who were there to greet me, I couldn't help thinking of all the adventure the Dragonflies had that week. We faced the elements, danger and nearly death. We learned much about our planes

and perhaps even more about ourselves. We became closer friends, better pilots, stronger people. When it's all said and done, isn't that what a good adventure is all about? →



*Dan Mitchell's Harvard replica parked next to the real thing at Red Deer.*

changed. We generated a number of good ideas for 2004.

All too soon it seemed, pilots and ground crews stared mounting up and bugging



*The 2003 Air Adventure Tour wrap-up at Bishell's.*

*Panel - continued from page 4*

wasn't enough extra cable, then the whole cable would need to be replaced from radio to antenna. By using a short cable from the radio to a bulkhead connector, the damage is isolated to the easily replaced cable or, at worse, the bulkhead connector; both of which are easy and cheap to replace.

The final piece to be added was an angled aluminum strip along the top edge of the panel to attach the upper boot cowl. I had made a piece for this purpose using a metal shrinker to curve the angled piece. However, it was made for an earlier panel I cut that had a different shape and needed to be fluted to match it to the new panel. The flutes ended up causing some problems as their location prevented me from getting even spacing on the rivets that attached it to the panel. Hopefully, I'll be the only one to notice that flaw. If I were to do it again, I think I'd just use a few short angled fittings rather than the full-length strip.

I've accomplished what I had planned to do and now have a very nice looking panel for my troubles and saved a bundle over buying a custom job. →

## Safety Alert! Team Aircraft Muffler Mount

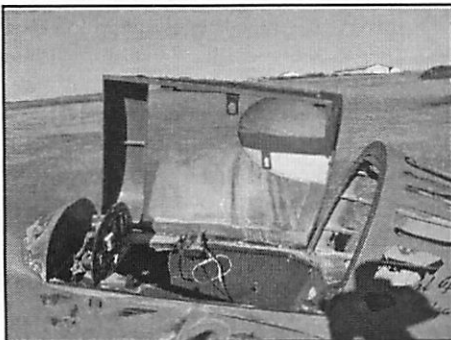
by Carl Forman



Carl's MiniMax before

Team Minimax and Himax aircraft muffler mounts are prone to charring and deterioration over time. If sufficient charring takes place, the muffler will come into contact with the side of the fuselage. With exhaust gases at 1150 to 1200 degrees F, the muffler will burn through the plywood fuselage. An in-flight fire can take place. This is exactly what happened to me.

The wooden mounting bracket holds the muffler about one and three eights inches from the fuselage. My bracket deteriorated to almost no clearance over a



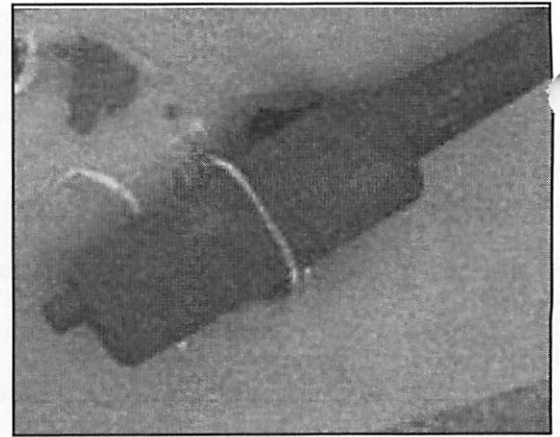
After the fire.

five year period that included 300 flying hours. The deterioration averaged less than five thousands of an inch per hour of flying. It is very easy to overlook. There are seven Team aircraft in the Calgary

area. Four of these aircraft had modified mounting brackets which were built with metal. The remaining three had wooden mounting brackets, all of which were charred.

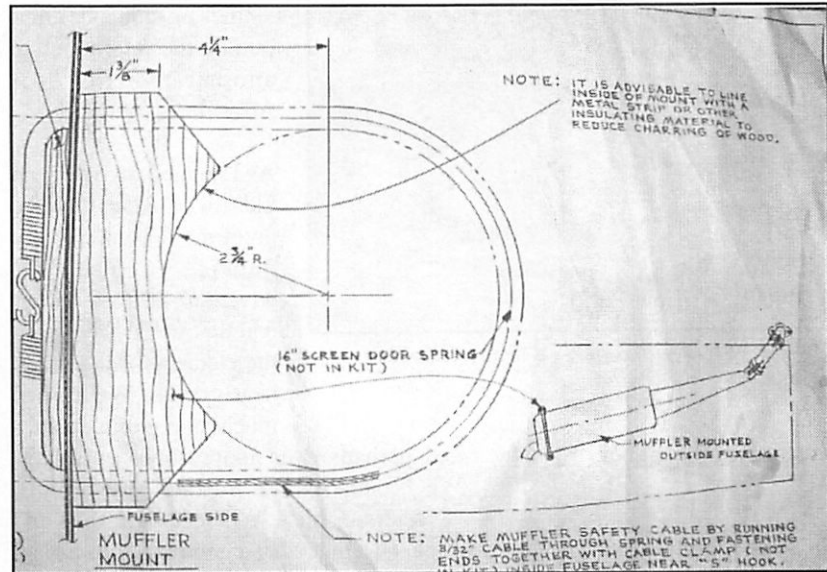
There is a website known as the "East Tennessee Lonesome Buzzards" for owners of Team aircraft. Two Team aircraft owners who follow it closely both reported to me that they had read about occurrences of in-flight fires caused by deteriorating muffler brackets on this website.

Wayne Ison of Ison Aircraft (current supplier of Team products) reviewed pictures of my aircraft. He noted that I had installed the muffler mount half way up the muffler. The plans



The culprit. Note burn hole in side of fuselage.

muffler mount and the muffler. I had installed a piece of metal as specified but it had fallen off after the first flight. →



Drawings show placement of mounting bracket at end of muffler.

call for it to be mounted near the end of the muffler. He explained that the end of the muffler is cooler than the mid section. He also noted that the plans call for a piece of metal or insulating material to be placed between the

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