



Skywriter



Monthly Newsletter of the Calgary Ultralight Flying Club

February 1999

Across the Wing

by Wilf Stark

The January Blaahhs hit folks in different ways. My business correspondence is shorter and more terse this month, and this article has the perspiration part down pat; all it needs now is inspiration.

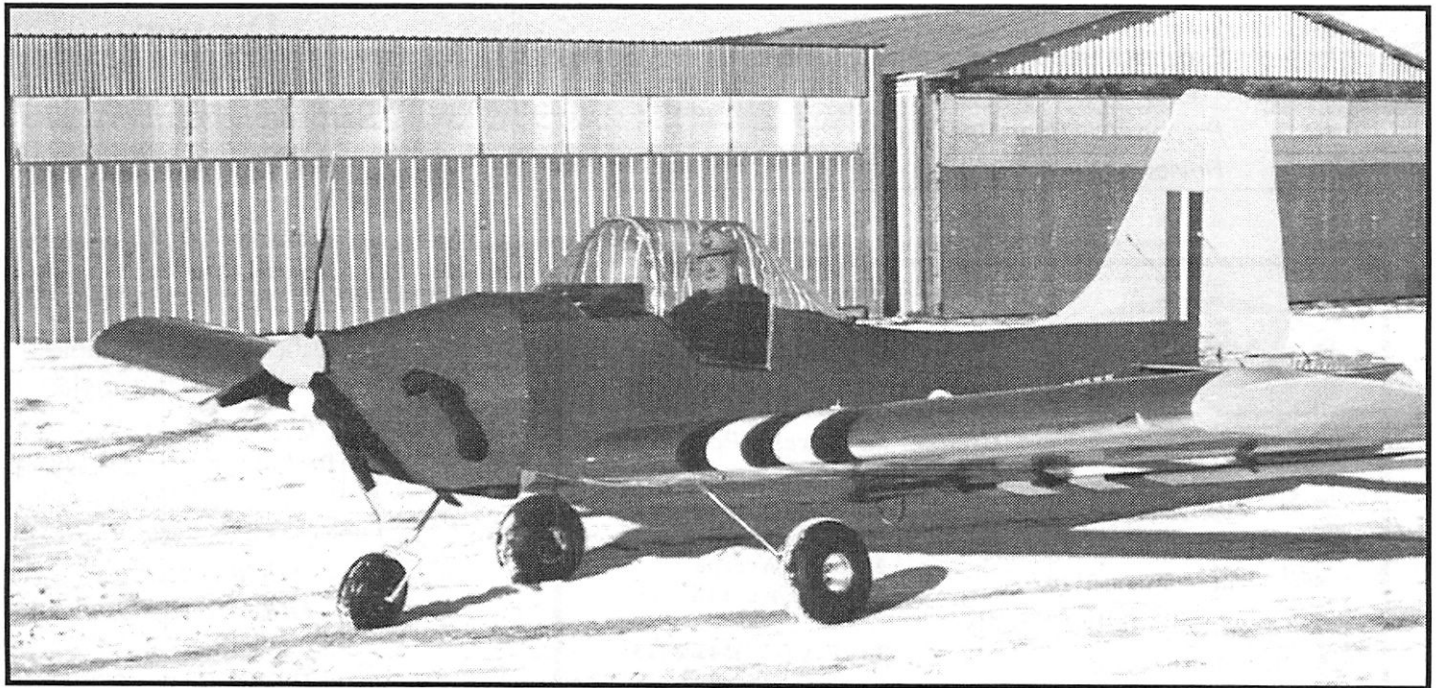
Our winner of the GPS at the January meeting was David Boulton of Okotoks.

Congratulations, David. Although your Quickie fits you like a glove, I'm sure you'll find room on that panel somewhere.

The Radio Procedures Seminar that Bob Kirkby held last Saturday was extremely informative. The examples used (High River, Red Deer, Springbank) were most appropriate. I know I learned a few new things that I intend to put to use. Many thanks, Bob. Ed D'Antoni will be holding a Navigation Seminar sometime in February; details at our next meeting.

Be sure to attend our Annual Dinner, on Sat. Feb. 27th at the Armoury. Great food and dessert for \$20/couple, a Silent Auction for both Boys' Toys (Airplane Stuff) and Ladies' Stuff (which Boys are allowed to bid on as well). It will be a fun evening.

By now even the Speed Reader should have figured out that the 'inspirational' part of my monthly message still eludes me. So, without further ado See you on Feb.11th, at our next meeting ! →



Jack Barlass in his new King Cobra, designed and built by Wayne Winters.

Photo by Graham Millington

Calgary Ultralight Flying Club

Balance Sheet

as of December 31, 1998

Assets		
Bank Balance Total Assets		4276.63
Fund Balance		
Opening Balance January 1, 1998		2790.86
Closing Balance December 31, 1998		4276.63
Receipts		
Membership Dues		1960.00
New Years Party		285.33
Raffle Receipts		454.23
Skywriter Ads		250.00
Caps and Crests		84.00
Donations		100.00
Total Receipts		3133.56
Disbursements		
Postage		667.87
Printing		471.92
Meeting Rental		500.00
Registry charges		8.00
Total Disbursements		1647.79
Excess of Receipts over Disbursements		1485.77

Prepared by Brian Vasseur

Reviewed by Wilf Stark

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:

Editor: Bob Kirkby 569-9541
e-mail: kirkby@accinc.ab.ca

Assistant-editor: Bernie Kespe (see below)

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 7:30 pm, at the Northeast Armoury, 1227 - 38 Avenue NE.

President: Wilf Stark 935-4248
e-mail: wstark@compuserve.com

Vice-President: Stu Simpson 255-6998
e-mail: simpson@cadvision.com

Secretary: Bernie Kespe 255-7419
e-mail: kespeb@cadvision.com

Treasurer: Carl Forman 283-3855
e-mail: formanc@cadvision.com

Director: Jim Creaser 226-0180
e-mail: creaser@cybersurf.net

Past President: Ed D'Antoni 247-6621
e-mail: ed.dantoni@logicnet.com

Annual New Year Dinner

Saturday, February 27
at the Northeast Armory

Bar opens 6:00 pm
Dinner starts 7:00 pm

Members: \$20.00/couple
\$10.00/single

Non-members: \$25.00/couple
\$13.00/single

*Silent Auction
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A Tail-Dragger Experience

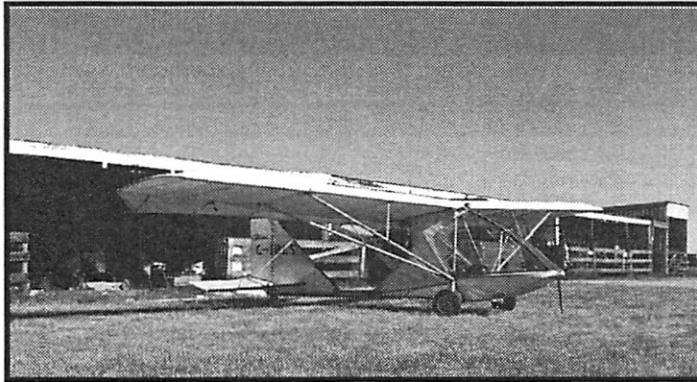
by Mike Sadowinski

Having completed my training at Indus on Wayne Winters' Easy Flyer (IREZ), it was time to shop for a plane of my own. Here in Medicine Hat there is no one to rent from and Indus is just a bit too far. I found and purchased an older single seat Chinook that was still in excellent condition. The Chinook being a tail-dragger (a more manly airplane) was a new experience for me and the transition was similar to taking the training wheels off a bicycle.

Racing down the runway on two wheels requires a certain fleetness of foot. Lacking this "fleetness" may well result in the infamous ground loop. Now for those non-pilots and those that nodded off during that part of ground school, a ground loop is NOT an aerobatic maneuver. A ground loop is also something you'll not want to perform on a busy Sunday afternoon at your local airfield.

A tricycle gear aircraft has the main wheels positioned aft or behind the center of gravity and the pilot cradled between the mains and nose wheel resulting in a very stable situation. In the tail-dragger the mains are forward of the center of gravity and the pilot is then required to balance the plane as it races down the runway making minor adjustments using the rudder. I find this difficult to explain to some one who hasn't yet experienced taxiing a tail-dragger aircraft. An analogy that comes to mind is the wheel barrow. Imagine your self pushing a wheel barrow full of manure down the runway as fast as you can possibly go. It becomes readily apparent that you are at the C. of G. and the directional control of the wheel barrow

(plane) is in front of you and to maintain this directional stability many steering adjustments must be made. Failing to correct as you race down the runway will cause the wheel barrow (plane) to veer off to the left or right while your momentum will continue to carry you down the runway, in other words you try to pass the wheel barrow (the ground loop). The wheel barrow flips - you trip over the wheel barrow and we all know who ends up in the manure. In the tricycle gear configuration it would be more like you, at



Mike's Chinook

the center of gravity are now pulling the wheel barrow and your only concern now is not to trip or taxi through a gopher hole.

After several hours of practice, taking off became easy. Once the tail came off the ground, a little rudder input was required to overcome the 'P' factor (for you non-pilots this is not the number of times you have to go per 6 pack) along with some minor adjustments to maintain directional stability and I was off.

It's sort of ironic, you concentrate so much on getting yourself and the plane in the air safely that it isn't until you are several hundred feet off the ground and start to relax that it finally sinks in. "You're alone, you're aloft and flying, the view is magnificent and my god - how do I land this thing". This was reminiscent of the time I climbed my first tree. I was concentrating so much on getting to the top that when I got there and looked down only to realize I was afraid of heights and had no clue as to how I was going to get back down. Fortunately for me I've lost my fear of heights and with Wayne's

training the task of landing my new plane came easily, but not without some minor problems.



Mike Sadowinski

My biggest problem with the

Chinook was dealing with its low stall speed and cross winds. When I tried to hold the plane off the runway just prior to stalling I found that I would run out of rudder authority before the plane stopped flying. If I tried to get the tail-wheel on the ground a little too early the increased angle of attack would keep the upwind wing flying. Since the Chinook warping is not known for its aileron authority, loss of control is imminent. In both scenarios the smell of manure becomes very strong. The solution to this problem for me is to use the tail up method. Approach normally, round out with a little power and wait until the plane loses some airspeed a few feet over the runway, then at about 40 mph I set the main gear down keeping the tail off and holding it there. As the plane slows I increase up elevator, cut the power to idle and let the tail come down by itself. This gives me maximum rudder authority when I need it the most and keeps the upwind wing from flying.

After nearly 10 hours of practicing in the calm of early mornings and late evenings and many circuits later, I am now comfortable with the Chinook. At this writing I have over 40 hours of incident free flying and hope to have many more in the years to come.

The point of this article is to stress the need to become familiar with your airplane, to do so in calm weather and to gradually venture into wind conditions other than calm. To press this point further, another Chinook owner with 0 hours tried to fly in gusty conditions this past year and ended up clipping a fence post, damaging his plane substantially, but luckily walking away unhurt. →

FABRIC COVERING

compiled by Bernie Kespe

Everyone knows Leroy, he's your local expert on fabric covering. Been around the airport as long as anyone can remember. Probably helped dope the Wright Flyer. Always ready to give advice or pass on tidbits of knowledge to the uninitiated - Good old Leroy.

Leroy loves to tell you how difficult it is to cover an airplane. He says it took him years of apprenticeship before he got any good at it. "The hardest part is the rib stitchin'", he explains. According to Leroy, it takes forever to learn the knots. Almost beyond mortal man.

He regales you with tales of shrinking cotton with distilled water and sanding 40 coats of dope to completely hide the weave of the fabric and the tapes. Often, he continues, blush ruined the whole job and he had to rip the whole thing off and start all over again. "Six months down the drain! But, that's fabric covering," according to Leroy. "Happens all the time."

His other thing is to tell you about all the substitutions he has come up with over the years for those expensive covering systems the salesmen are always trying to pass off on the unwary. Heck, he has techniques they haven't even thought of. If you are lucky he might show you sometime. But you will need a lot of extra time, could take months.

I have found that any FAA approved system works fine if you follow the manufacture's instructions and don't improvise. Each system has its differences, but they all work. More on how to pick a system in a minute.

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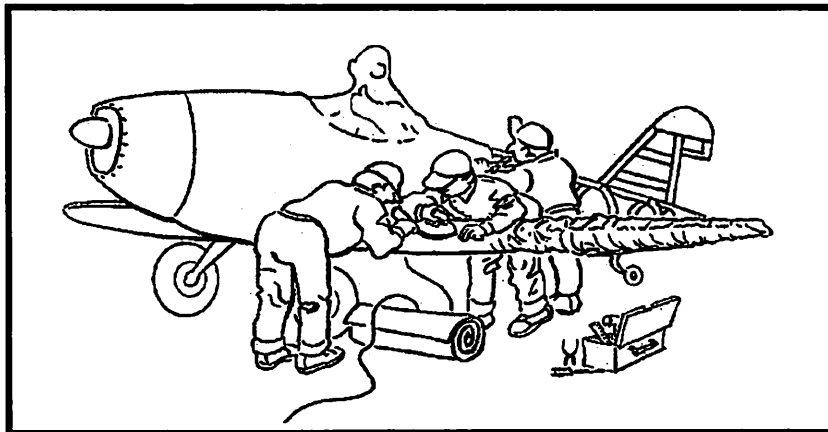
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Let's also put the cost question to rest right off. All the systems today basically cost the same. you will spend about \$1800.00 (these costs are based on covering a full airframe, tail feathers, wings and cowls using two to three colours) in raw materials to cover an airplane no matter what system you choose. Although different quantities of products are required for different systems, when the smoke clears they all

I'm sure that most of us who are experienced in fabric covering would be more than happy to assist you with your project, after all this is the part of the project that every one gets to see. Plan to stay with a complete system, don't mix and match without consulting your supplier. As an example: AIRTECH fabric adhesive work well with the AIRTECH paints but if used in conjunction with ENDURA the paint will quickly soften and melt away, so beware.



Let's pause for a quick review of dope and fabric history. This will help you sound like an old hand when you next see Leroy.

Prior to the mid 1960's, all covering was done with either cotton or linen fabrics. Grade A cotton was the fabric of choice. Highly flammable nitrate dope was primarily used in the years

cost about the same. Beware of quotes that are less than \$1800.00 you are being low-balled.

How about your lack of experience in covering and painting? Find some one who has covered and painted before, preferably some one who is familiar with the system you are about to use. Ask him before you start if you can do the fabric covering under his periodic supervision.

from WW I to WW II to seal and tighten the fabric. Nitrate dope was generally replaced in WW II with butyrate dope which burned less readily. Covering in those years involved sewing grade A cotton to the airframe, shrinking first with distilled water, then adding butyrate dope. The first coat of dope contained a fungicide to protect the cotton from rot. Additional coats of clear butyrate were
(continued on page 5)

Covering - continued from page 4

sprayed on to build the coating. Silver butyrate was added to protect from UV radiation. Finally, colored butyrate was sprayed. In those days, dope was dope. There were many competing dope manufacturers and surplus or home made dope was often used, with less than satisfactory results. Lots of sanding was necessary between coats. The finished product lasted for six or seven years if left outside, more if stored inside. But generally airplanes were covered every five years or so.

The first heat shrunk fabric, Ceconite, came along in the mill 1960's. This all-polyester fabric was a great time saver. The fabric was glued on rather than sewn, then shrunk with heat. Nitrate dope was resurrected as the initial coat over Ceconite but first time users were horrified to learn that butyrate would not stick directly to slick polyester fabric. The paint literally peeled off in sheets.

A new kind of "non-tautening dope was developed for polyester fabric. Since the fabric was shrunk partially with heat, full shrinking dope was not necessary.

The big advantage with polyester fabrics was longevity. Ceconite jobs easily last twenty years when properly done. Unlike cotton, polyester did not rot and, if protected with silver dope, lasted far longer.



Fred Wright's and Stu Simpson's HiMax's rest in the sun.

Photo by Stu.



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Ray Stits developed the Poly-Fiber system over thirty years ago. Like Ceconite, it used heat shrunk polyester fabric but used no dope at all. Poly-Fiber coatings are all flexible vinyl. By the Eighties, the Poly-Fiber and Ceconite systems dominated the market.

Complete 100%, polyurethane systems were introduced about ten years ago. Both Cooper Superflite II and Air Tech systems utilized high build polyurethane coatings over heat shrunk polyester fabrics to give wet look, high-gloss finishes. These polyurethane's were based on automotive technology with additives to make them flex.

Finally, the water based Ceconite 7600 system was introduced about the same time as the polyurethane's. Water based systems have had their ups and downs but show promise for the future.

A couple of systems have fallen by the wayside. Grade A cotton is almost impossible to find today. It seems that in our "I'll sue you" society, nobody wants to make cotton for airplanes anymore.

Now let's look at the specific systems on the market today.

1. **CECONITE AND DOPE:** Ceconite fabric comes in three styles for different speeds and wing loading. The fabric is cemented to the airframe with nitrate Seam Sealer cement and heat shrunk. Three coats of nitrate dope are initially applied to the fabric followed by about three coats of clear, non-tautening butyrate for fill. Three coats of silver butyrate follow for UV protection. Two to three coats of colored butyrate dope are sprayed for topcoat. All coats except the first nitrate are sprayed.

ADVANTAGES: Any brand dope may be used over Ceconite. Randolph, and ClassicAero coatings (by Poly-Fiber) are the predominant names. ClassicAero offers a 42 page manual for step-by-step instructions. Ceconite has a small STC manual. Randolph also offers a pamphlet Dope may be rejuvenated to restore flexibility over years and repairs are easy.

DISADVANTAGES: Dope is susceptible to temperature and humidity changes when
(continued on page 6)

Covering - continued from page 5

it is being applied. Funny things happen when the weather changes. Dope is also pretty flammable and gets brittle over the years. Note that lots of coats and sanding are required for a good finish. Solvent exposure requires precautions.

2. STITS POLY-FIBER: Poly-Fiber offers five fabric styles. Fabric is cemented to the airframe with Poly-Tak fabric cement. One coat of vinyl Poly-Brush is brushed on followed by one more spray coat. Three coats of silver Poly-Spray are sprayed on next for fill and UV protection. Two coats of Poly-Tone colored paint are then applied. As an option, AeroThane polyurethane may be used for the color coat to give a wet look, high gloss finish.

ADVANTAGES: Only seven coats. Does not burn. Little sanding and finish. Smoothing is done with an iron. Vinyl remains flexible over the years. All coats are the same generic chemical, so all bond together. May be rejuvenated to extend service life. Repairs are easy. Complete manual and toll free customer support phones available. Learn-to-cover seminars offered throughout U.S. and Canada. Free workshops at Oshkosh and Lakeland.

DISADVANTAGES: Solvent exposure requires precautions. Fresh air breather mask required for Aerothane.

3. POLYURETHANE SYSTEMS: The major brands here are Cooper Superflite II and Air Tech. One fabric is offered. Fabric is cemented to the airframe and heat shrunk. Three coats of primer coat are sprayed. Two coats of polyurethane follow for the color coat. Polyurethane systems rely on flex agent additives.

ADVANTAGES: Extremely high gloss, wet look finish. Only five coats. Little sanding required.

DISADVANTAGES: Although fewer coats are required, coats are generally thicker. System can be heavy. Cannot be easily repaired. Cannot be rejuvenated. Since all coats are urethane, a fresh air breather mask system is required for all spraying.

4. CECONITE 7600 (WATER BASED): Ceconite 7600 was formerly known as the Blue River system. Two styles of fabric are offered. Fabric is cemented to the airframe with a water soluble cement, then heat shrunk. Two coats of filler coat are applied with a pad. No color coats are offered by butyrate dope. Poly-Tone, or polyurethane's may be used.

ADVANTAGES: No solvent exposure problems. Only five coats. Filler coat is easily applied with the pad. No HAZMAT shipping charges, no solvent fumes. Sub coats not flammable.

DISADVANTAGES: No color coats are offered. Past problems with color coats and sub-surface corrosion have made some skeptical of water based systems. All previous problems with the systems appear to be fixed.

So how to choose?

Ask reputable covering veterans who have recently completed a project using a whole system. If your advisor says he used mixed systems or substituted something, pass his opinions right on by. Talk to the guys in your club who followed the manual to the letter. Go to fly-ins and talk to the owners.

Choose a system as if you were going to have to do the job alone on a desert island. In other words, how complete are the instructions? Is there a manual? Can you reach the manufacturer by phone when you need to? Is there a video available? Can you get products easily?

What kind of equipment do you have available or are you willing to purchase? Do you have a spray rig? Can you borrow a good one? If you are considering a polyurethane system, you need a fresh air breather mask. The catalyst in urethanes are polyisocyanates, as in CYANIDE. You cannot use a standard charcoal mask. If you don't use a fresh air breathing mask you risk serious health problems. Do you have a good place to work? Can you spray solvent based products without risking divorce or arrest?

Most importantly, avoid Leroy. →

Ultralight Aircraft Web Page by Dan Mitchell

www.cadvision.com/mitchell

During the Christmas break my son Kevin taught me how to create a web site and post it on the Internet. The web site we built, is primarily a photo gallery of some of the pictures I have taken during my two year involvement in the sport of Ultralight flying.

The web site consists of four pages. The first page is the home page, with a link to the photo gallery, as well as links to a number of other sites of interest to the Canadian Ultralight Community. Links to the Calgary Ultralight Flying Club and Blue Yonder Aviation are obvious requirements for a Calgary-based Ultralight web site. In addition, I have included a link to 'The Weather Network' for Calgary's latest weather forecast. Transport Canada's aircraft registration data base (great for identifying aircraft and their owners), and finally Kathy Lubitz provides a wealth of information regarding Canadian Ultralight regulations at her site at Bright Aviation.

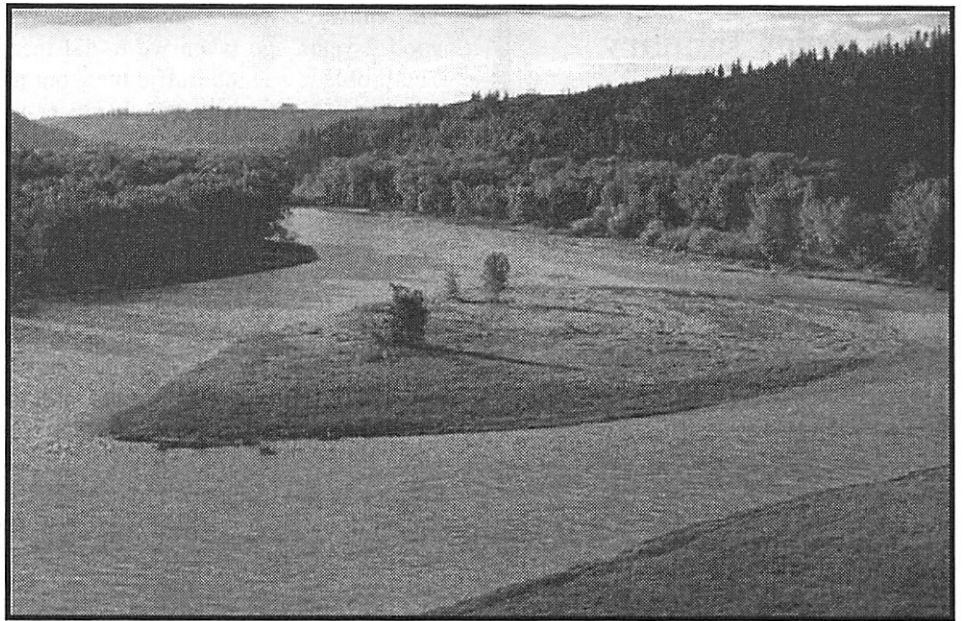
The photo gallery is divided into three pages. The first includes photos of some of the pilots, and their planes, who fly in and around the Calgary area. I apologize for the quality of these images, but there is only so much you can do to make these people look good.

The second page is a collection of many, but certainly not all, of the aircraft seen regularly in the skies and at the airfields around Calgary. The first set of pictures are of Ultralights that fly out of Indus. Below these I have included a few of the conventional aircraft that are also hangered at Indus, and finally a few photos of the regular visitors to the Indus airfield.

The last page is the one I am most pleased
(continued on page 7)

with. In it I have included some photos of the places we fly, some seasonal shots, the prairies, the Bow River Valley and the Rocky Mountain foothills. Also included are a few of the airfields we frequent. This page best illustrates the experiences we enjoy when flying low and slow in the wide-open spaces in an Ultralight aircraft.

Building this web site once again gave me an opportunity to go through my photo albums to reminisce and ponder over which photos I would select to include on the web site. Unfortunately computer storage space is limited and I didn't have room for all the pictures I would like to have included. I invite you to visit my web site and hope you enjoy it. Any comments or feedback would be greatly appreciated, especially if you find errors or typing mistakes etc. And thank you for visiting.



Looking east along the Bow River, south east of Indus, AB. Photo by Dan Mitchell

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Classified ads are free to CUFC members. Forward ads to Bob Kirkby.

Classified Advertisement Terminology

SMOH	Time Since Major Overhaul
STC	Standard Type Certificate
TTAE	TT of Airframe and Engine
STOL	Short Takeoff and Landing
RMFG	Re-manufactured
RC	Rate of Climb
NDH	No Damage History
ANN	Annual Inspection
C/S	Constant Speed Propeller
C/W	Complied with
FGP	Full Gyro Panel
FWF	Firewall Forward
INSP	Inspection
XPDR	Transponder
TSN	Time since New
TC	Turbo Charged
TBO	Time Between Overhauls
STOH	Since Top Overhaul
SPOH	Since Propeller Overhaul
SFN	Since Factory New
SN	Since New

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Spicy January Meeting

by Wayne Winters

One of the benefits of belonging to the CUFC is the variety of people and backgrounds that make up the membership. For anyone who did not enjoy the controversy that arose from the January meeting - get used to it because once and a while we need to have some excitement to keep us keen and enthused.

My hat is off to Wilf Stark, our revered President, for maintaining order and keeping the topics moving and keeping members' emotions from running too hot. It is a good thing that we are all among friends and that the cooling down process happens quickly.

Without belaboring the issues I just wanted to take a little valuable space in the Skywriter and clarify a few points. I am a believer in making my thoughts crystal clear, and making sure everyone knows exactly where I stand. I don't like being misquoted or misinterpreted. I like to be liked by everyone, however, it is not essential to my survival.

At Indus air park Dad and I sincerely want everyone to feel welcome, and I don't think there is anyone out there who does not feel that way. The people from our strip who wanted to have the meeting that was discussed, intended to invite everyone and get as much input as possible. As it turns out their intention was not really to form another Club, which I for one was not in favour of, but to develop more of a working committee to help with safety and help keep the airstrip and park maintained.

As most of you know the runways do get a bit rough for 'pavement' type airplanes. This is due to the shear fact that the traffic exceeds the grass's ability to regenerate. It is no coincidence that the E-Z Flyers have large tires and a very smooth, shock absorbing gear. The plan was, and still is, to twin the runways so the grass can have every other year off.

The runways were smoothed and very good 2 years ago when we re-did them. The problem was the traffic blew out the new grass before it had a chance to get well sodded.

We want everyone, flyers and flyer wannabees, to feel that the airport is their home away from home. When, for whatever reason, someone needs to get away from it all they are welcome any time of the year and any time of the day to drive out and just plane ole' wander around. Problems of the city, etc. seem to vanish when one comes in contact with the airplanes. This includes simple things like walks down the runways - watch for airplanes though!

Some people do not completely comprehend why I am so bullish on the E-Z Flyer. It is not just that it is our product, but that it is a composite of many of the other existing airplanes on the market. It was not developed by happenstance. It represents what I liked about every airplane that I have ever flown with almost everything that I did not like removed. This applies to flight control characteristics, stability, ability to handle strong cross-winds, ease of repair, and the plain old flyability fun. The sampling of airplanes flown comes from about 40 different craft, and not just a short ride, but becoming intimately familiar with the airplane. On the building side it comes from building a total of about 16 different airplanes, of which only 4 or 5 were the same kit. I would match that experience with any other manufacturer. As many of you know initially all that building was not by choice, but Dad just kept buying kits...

When the subject of a/c damage came up someone once told me that the E-Z Flyer has suffered a lot of gear damage over the years. Sure it has! When you are in a training environment and putting on 600 to 800 hours per year it is inevitable that some damage is going to occur. What can be noted though is that the airplane is back in the air again within the hour, if we so choose. Other gear damage, around the field and in non-training aircraft, has taken from 20 to 100 hours to repair, and at a cost of more than \$25 to \$30 as in the case of the E-Z Flyers. The most damage ever

on an E-Z occurred on the one that the boys from Winnipeg bought. After a 'high drop in' landing, the gear, fuselage and wing were all damaged. As some of you will remember it was repaired, re-covered and re-painted and flying in the morning of the 2nd day after it happened. The actual total hours of work were less than 9.5 hours. Most of the 2 days were spent waiting for sealer, primer and paint to dry. The cost of materials used in the repair was less than \$100. I challenge anyone to compare that with any other damage that has occurred to other a/c on the field. Because we knew that we were going to have to fix them, we kept construction and techniques simple, durable and economical. (Remember we have been in the Flying School business since 1989 and have watched Schools bust up their equipment since 1983.) As mentioned above we are bullish on the E-Z Flyer and it is because not only is it safe, easy, and fun to fly, but it is the only a/c out there that will take that kind of a licking and keep on ticking. I challenge anyone to show me an airplane, that is in current or past production that will deliver everything that the E-Z Flyer does and handle a 35 knot cross wind to boot!

Announcements

February Meeting

Guest speaker at the February meeting will be Eden Sustronk, the CFI at Skywings Aviation's Okotoks operation. Eden will be bringing us up to date on the procedures at Okotoks, the programs and course that Skywings has to offer, and the new housing development proposal on the airport property.

1999 Dues

Please have your '99 dues (\$20) submitted by Feb. 11th (at the meeting or by mail), in order to have uninterrupted delivery of the Skywriter. If mailing, send to: Bernie Kespe, 6 Spokane, Calgary AB T2W 0M5

A Brief History of VSTOL

compiled by Bernie Kespe

VSTOL Aircraft Corp. may seem like a newcomer to the ultralight/light plane market. It is, but it has deep roots.

The CEO and senior designer of VSTOL Aircraft Corp. is Dick Turner, raised in Wichita, Kansas. He got his start in aircraft being on the tooling crew (optical instruments specialist) that built the first 747. He was there for the birth of one of the largest aircraft ever built. He also did a tour of duty at Cessna Twin Division.

Dick was one of the early ultralight pioneers; he started Starflight Mfg. Inc. of Liberty, Mo. in 1980. Starflight Mfg. produced several different models, including the Starfire weight-shift, the TriStar, one of the first three-axis ultralights, later the DBL. The DBL was the first tandem ultralight trainer. Next came the XC series.

In 1985 Dick was chosen as the Team U.S.A. manager to take the U.S.A. ultralight team to France for the first World Microlight Championships.

In 1986 Dick teamed up with S.A.B.C.A., a Venezuela spray company, to produce the first specially certified ultralight crop duster for developing countries. The XC

Aglite uses half the normal chemicals and uses vegetable oil as the primary carrier. This makes it the most environmentally friendly spray machine produced so far in the custom spray industry.

The spray aircraft, along with all the special order ultralights, kept Dick busy until the end of 1994 working back and forth between the USA and South America. In 1995 Dick and his wife Carmen permanently located their new shop in Ft. Myers, Florida. With over four hundred aircraft flying in the USA, Central and South America, South Africa, Finland and Mexico, they look forward to re-entering the US market with an outstanding aircraft using the latest technology. While bringing new models to their existing South American market.

VSTOL's Super Solution 2000/XC 2000 Aircraft

The Super Solution 2000/XC 2000 is a single engine two-place, high-wing, strut-braced ultralight airplane using aluminum tubing, fiberglass enclosure, and fiberglass landing gear. Built by VSTOL Aircraft Corp., its high-lift, double-surface airfoil is made of aluminum tube and fabric covered.

The Super Solution 2000 is the tail wheel model. The XC2000 is the tricycle gear model. Either model can be ordered wire or strut braced.

The Super Solution 2000/XC 2000 uses

the wing from VSTOL Aircraft's Paradigm -- a unique high-lift double-surface wing with slats, slotted ailerons, and flaps. This results in slower stall speeds, and shorter takeoff and landing rolls for additional safety.

Options include a set of controls for the rear seat, an additional gas tank, an instrument panel, an enclosure with windshield and wheel pants.

Specifications:

Empty weight	320 lbs.
No. of seats	2
Gross weight	860 lbs.
Horsepower	70 HP
Wingspan	32 feet
Power loading*	12.5 lbs./hp
Wing area	160 sq. ft
Wing loading*	5.3 lbs./sq. ft
Overall height	8 ft 6 in
Overall length	20 ft
Fuel capacity	6 gal.(US)
Super Solution 2000	Conventional gear
XC 2000	Tricycle gear
Detachable wings	
Fuel consumption	5 GPH (US).at 75% power with 70 HP
G loading	+6 ultimate +4.4 working
G loading	-3 ultimate -2.2 working
Performance:	
Top speed*	70 MPH
Cruise speed*	45 MPH
Stall speed*	18 MPH
Range at cruise*	90 miles
Rate of climb*	500 ft/min
Takeoff distance*	100 ft
Landing distance*	150 ft
Service ceiling*	13,500 ft

* Performance will vary somewhat depending on engine and propeller choice

Construction Data for the VSTOL Super Solution 2000/XC2000

Fuselage: Fiberglass covered aluminum tube structure using channel, angle, and plate. The alloys used are 6061-T6, 6005-T5, 2024-T3 and 7075-T6

Wings: Slated leading edge, aluminum tube spars, 2" front spar/ 2" rear spar, 1-1/4" compression struts, with slotted ailerons, aluminum ribs and fabric covered. (Continued on page 10)



Super Solution 2000

VSTOL - continued from page 9

Tail group: Aluminum tubing, strut braced, and fabric covered.

Control system:

- Elevator push/pull tube to side control stick.
- Rudder stainless steel cable to rudder petals.
- Aileron push/pull tubes to side control stick.
- Flaps lever controlled push-pull tube.
- Pitch trim electric toggle switch.
- Main wheels: 6" aluminum with drum brakes.
- Tail wheel: Maul tail wheel steerable with breakaway type steering.
- Nose wheel: 5" steerable with rudder pedals.

Standard Engine:

- 2 Stroke International 2 cycle 3 cylinder 70 HP liquid cooled.
- Rubber dampened gear box max. 2.62 reduction.
- Max. RPM 6300.
- 1000 hrs TBO.
- Electronic ignition

Optional engine:

- HKS 4 cycle 60 HP air-cooled
 - Spring dampened gearbox 2.58 reduction.
 - 6250 RPM
 - 500 hrs. TBO.
 - Electronic ignition
 - Fuel burn 3.4 GPH (US). at 75% power
- Standard Prop:
3 blade 64" dia. Warp drive carbon fiber, ground adjustable.

Info packages and videos are available (\$10 and \$15 respectively). Kit prices as published through several sources are conflicting so contact Vstol for pricing.

Vstol Aircraft Corporation:

Voice/Fax (941) 936-1261

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E-mail: info@vstolaircraft.com

Web Site:

www.vstolaircraft.com/index.html



VSTOL XC 2000 with fiberglass enclosure



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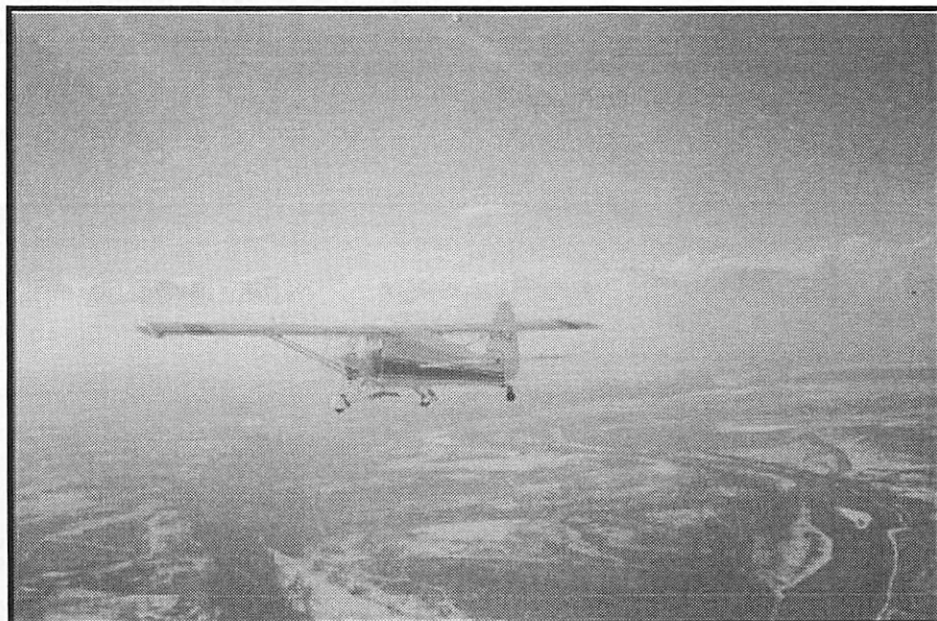
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Don Rogers in his Norseman

Photo by Stu Simpson