



Skywriter



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

August 2004

Breakfast at Vulcan 2004

by Dave Procyshen

Well it was an idea that started a few years ago, why not have a flying event where we could meet up with another club. The St. Albert club is a little far to go and I did not know anyone from that club. I did know some of the Lethbridge EAA gang as I joined their club a few years ago to get their newsletter. I made a call to a couple of pilots and suggested we try to do a group event. Well it didn't take long for a date, place and time to be set. This would also be another good excuse to get some extra flying time in. We had our first fly-in in 2001 and did it again in 2002, but missed last year.

July 17th 8 planes from Lethbridge and 10 planes from Calgary converged on the Vulcan airport for breakfast at the golf course. This year also saw some new pilots and their planes. The RV-6 was a good looking plane and it sure was fast, we had some duplicates like 2 Merlins, 2 Beavers and 3 Mini-Max's. We had taken some time to enjoy the club house breakfast special before we made our way back to our home field. We should make sure this is our yearly get together to see new planes and new friends from the south. I'm sure next year will be a bigger event again, so mark your calendar for the 3rd weekend of July 2005. The list of people and planes is as follows.



The Vulcan Breakfast Crowd 2004 at the golf course. Photo by Bob Kooyman.

CUFC Calgary Group

Andy Gustafsson	Merlin
Bernie Kespe	VP2
Allan Botting	Vagabond
Carl Forman	Mini Max
Dan Mitchell	EZ Harvard
Ken McNeill	Cardinal
Garrett Komm	Merlin
Ed Dantoni	Rans S-12
Glen Clark	J-3 Cub
Dave Procyshen	Beaver

Calgary Ground support

Bob Kooyman

The Lethbridge Sport Flyers Group

Brian Wilson	Skyraider 1
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Hans Le Blanc	Challenger
Guy Bishoff	Mini Max
Lawrence Van Egmond	Mini Max
Martin Nordstrom	Beaver
Larry Oddan	Super Cubby 2
Geoff Tanner	Chinook
Doug Murray	RV-6
Andy Cummings (Co-pilot)	

Lethbridge Ground Support

Charlie Shepherd
Jack Knight
Marg Van Egmond
Graham Millington

(See Page 5 for more photos)

For Sale

MiniMax - 90TT, enclosed engine, Rotax 503, always hangered, \$9,700. Graham, 403-601-6853 (08/04)

Hercules 084 Engine - 4-stroke, horizontally opposed, made by Teledyne, overhauled, price negotiable. Al, 403-271-0369 (07/04)

Murphy Renegade Spirit - S/N50, less than 100 hours on airframe, built under amateur built category and later changed to basic ultralight and modified to single seat. 18 imp gals fuel, full instruments, ELT, Icom A5. New Rotax 582 DCDI MOD 99, less than 10 hours, electric start, 2.58:1 "B" gearbox, 2-blade 74-34 Tennessee prop, \$26,500. Bernie Kespe 403-255-7419, office 403-259-5498 Ext 233, email bernie.raymac@shaw.ca (05/04)

Skywriter

Skywriter is the official newsletter of the Calgary Ultralight Flying Club - COPA Flight 114 and is published 12 times per year. Forward your articles and letters to:

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Calgary Ultralight Flying Club COPA Flight 114

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e-mail: vquest1@yahoo.com

Past President: Bob Kooyman 281-2621
e-mail: kooyman-eng@shaw.ca

Visit the CUFC web site: www.cufc.ca

Cavalier - 2 place side by side, zero time O-290-D2, low wing, tip tanks, 80% complete, selling due to health, \$18,000. John Ehrmantraut 256-7530 (04/04)

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, \$22,500.00 OBO, Troy, (403) 936-8424 or email for pictures brancht@tsesteel.com (05/04)

Notice: Classified ads are free to CUFC members. Contact Bob Kirkby to place or renew your ad (see masthead). Ads will be dropped after 6 months unless renewed.

Ads reprinted from the St. Albert Flying Club Newsletter

Team MiniMax - blue & white, Rotax 447 with electric starter, drycell battery, 35 US gal tank, speed fairings on wing struts, wired for radio (power, PTT and antenna), skis, 185 TT, hangered at St. Albert, \$10,000 OBO. Ben Strafford 780-458-1606 or larandbe@telus.net

Modified Himax partially complete - fuselage 65% complete,



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empennage complete ready to cover, spars/ribs built, sufficient material to complete wings. Volkswagen engine with Colin Walker prop. Complete set of instruments. Excellent bargain for knowledgeable builder, \$3000. Viv Branson 780-460-8753 or email vbranson@interbaun.com.

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

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.



Ivan Myslawchuk and his VolksPlane at the CUFC fly-in breakfast. Photo by Adrian Anderson.

Stress-free Stress Calculations

by ed D'Antoni

At the April CUFC meeting, Wayne winters did a presentation on factor of safety calculations. Some confusion arose as to the relationship of aircraft weight to stress in a wing strut. It was pretty difficult to try to explain this at the meeting without a drawing so I thought a short article would be easier. Stress calculations of airframe members are simple if done graphically. Basic knowledge of trigonometry allows one to do these calculations mathematically, however a graphical solution provides adequate accuracy.

Now lets go to an airplane strut for an example.

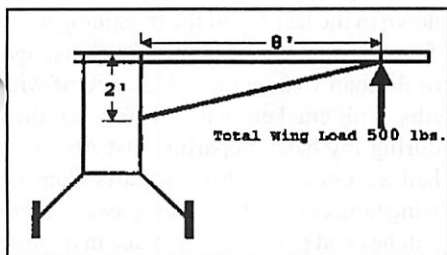


Figure 1

The figure depicts an aircraft with a single upward wing force of 500 lbs. Using a scale of 1"=1' draw a right angle triangle with sides 2" by 8." One can measure the strut length to be 8.24 inches, which scaled up is 8.24 feet. Using the Pythagorean theorem (Figure 2) will also give you the same number.

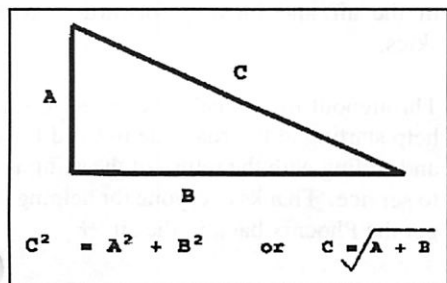


Figure 2

In order to find the stress in the wing strut, simply draw a similar triangle with the end A equal to 5 units representing 500 lbs.

Using the same scale and measuring off the length of the strut one finds the wing strut tension to be 2060 lbs. The distance between the top of the fuselage and the strut represents the 2000 lb. compressive stress in the wing spar. One often sees webbing between the rib leading edges and mid point of a wing spar. This webbing is there to prevent buckling of the wing spar from these high compressive loads.

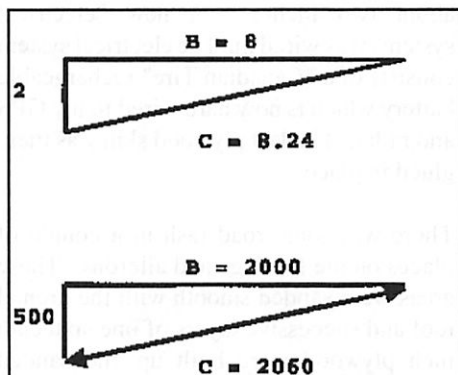


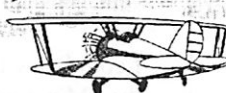
Figure 3

The drawing shows the wing strut 1/2 way up the fuselage, which is seldom the case. If the wing strut is moved down to the bottom of the fuselage, A becomes 4'. Redrawing the triangle shows the wing strut stress to be 1060 lbs. and the stress in the top spar to be 1000 lbs. →



Dave Kirkeby and his Davis DA 2A

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Flying Events

August 7-8 - Lethbridge air show,
www.albertaairshow.com

August 8 - Pincher Creek fly-in
breakfast, 0800-1100. Contact Alan
Cornyn 403-627-3538.

August 15 - Westlock air show and fly-
in breakfast. Contact Fred Primrose 708-
349-3533.

August 22 - Hanna fly-in breakfast, 0730
to 1100. Contact Mark Fredericks 403-
854-4522.

August 23-27 - Annual CUFC Air
Adventure Tour. Contact Stu Simpson
255-6998.

September 2 - Cardston fly-in breakfast.
Contact Doug Murray 403-653-2087.

September 12 - Rocky Mountain House
Air Show, 1300 to 1600. Fly-ins
must arrive before 1200. Contact
W.J. Horemans 403-845-7053.

September 18 - CUFC/COPA Fit
114 fly-in BBQ - details TBA.

Rebuilding the MiniMax

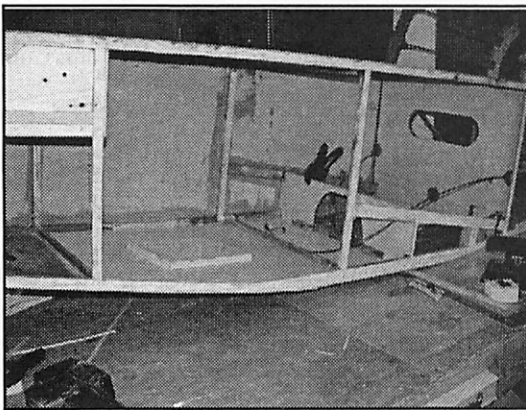
by Carl Forman

I was reunited with my MiniMax at Kirkby Field a month after my fiery accident.. The cockpit interior was charred everywhere and the fire had burned completely through the side of the fuselage in one or two small places. Fuel lines, electrical wires and control cables were all charred and/or tangled. The floor was covered with debris. Initially, I thought the fuselage was a write off. Bernie Kespe phoned me later that day and convinced me that the fuselage could be repaired.

Work began in late November. The fuselage was relieved of tail-feathers, landing gear, stick and rudder, engine and instrument panel. Everything was labeled and stored. Fabric was stripped off and thrown away. I removed the internal gas tank. It was still half full of gas. Its fuel line had burned and then self sealed. I got goose bumps looking at it. My GPS lay in the rubble on the floor. It had been severely burned and had cracked and warped with the heat. I turned it on and to my surprise it worked just fine. When I cleared the floor of debris, vacuumed and washed it, I was amazed to find that it was virtually unscathed. The only part of the floor that had burned was the varnish on the surface.

The right-side plywood skin was cut away with the jig saw.

A belt sander was used to remove what remained of the plywood from the longerons and uprights. Reinforcing wood pieces were glued to part of the longeron, one of the uprights and one cross member.



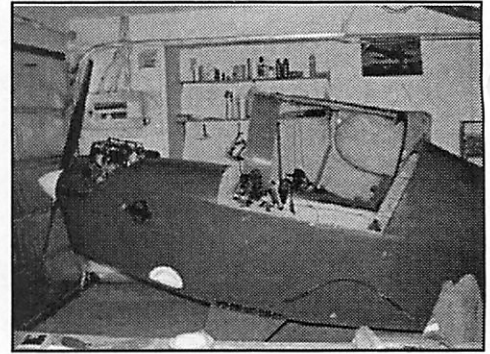
The "new" fuselage complete with a coat of fire-retardant paint in lieu of varnish. Photo by Carl.

A new plywood sided was glued on. The process was repeated for the top plywood skin.

I could now concentrate on the interior of the Minimax. The one eighth inch plywood on both the rear and under seat bulkheads as well as the seat and floorboard were badly burned. I cleaned them up with a wire brush and sander and glued new plywood to them. The instrument panel was too damaged to reuse so I built a new one. All the instruments except the tachometer and the turn coordinator were cleaned up and reused. New fuel lines were installed. With the elimination of the internal fuel tank the fuel lines have fewer connections and are a lot simpler. Aileron and elevator cables were replaced with new cables. The interior was painted with fire retardant paint. I took the opportunity to lengthen the rudder cables by about two inches. A new "electrical system" was wired in. The electrical system consists of a "Canadian Tire" rechargeable battery which is now hard wired to my GPS and radio. The last plywood skin was then glued in place.

There was some road rash in a couple of places on the fuselage and ailerons. These areas were sanded smooth with the dremel tool and successive layers of one sixteenth inch plywood were built up and sanded smooth until the original shape of the part was restored. The Rotax 447 engine was overhauled. The muffler mount was redesigned. The muffler is now attached to an aluminum bracket which is secured to the fuselage with two heat isolating rubber mounts.

Bernie Kespe and Bob Kooyman helped me put new fabric on the airplane. We started the fabric work on Friday night and we were finished late Saturday afternoon. Although painting only took about a week, it took



Almost ready to trailer back to the airfield. Photo by Carl.

about a month before I heard the last on Barb's comments about the paint dust that somehow got into the house and settled on every conceivable surface.

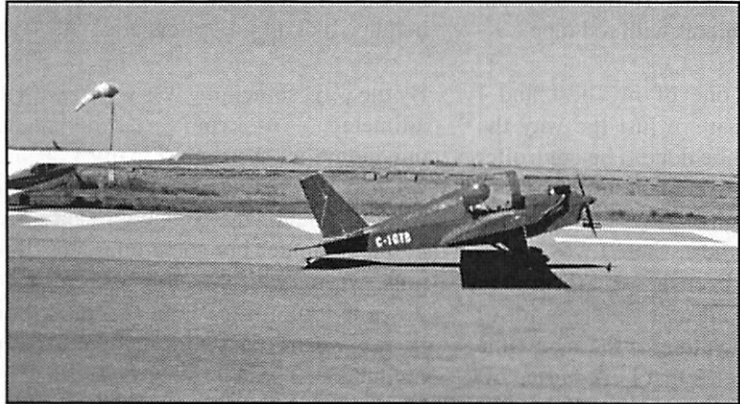
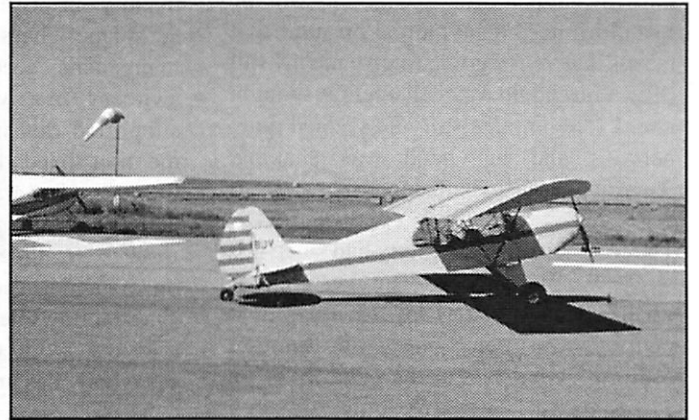
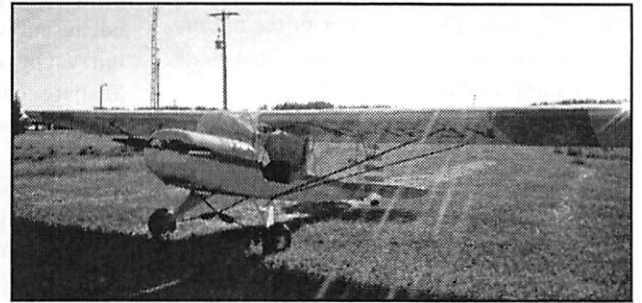
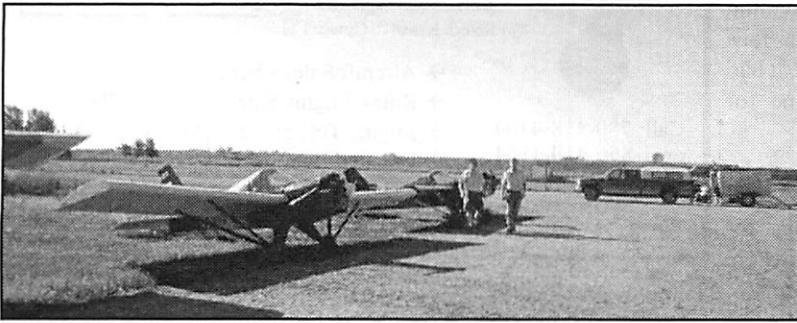
Reassembly was a piece of cake thanks to the previously mentioned labeling which had been done when the airplane was disassembled. Terry Enmark helped me deliver the Minimax back to Kirkby field and reunite it with its wings. I was now down to the last 1% of the remaining work. True to form, it took about 10 times longer to do than I expected. A couple of wing ribs had cracked when I fell on them during my hasty departure last August. I had access to the broken parts from the wing tank cavity. Crutches, gussets, fabric patches and paint were in place in no time.

Late one afternoon, after successfully completing the engine break-in and taxi tests, the Minimax was ready for flight. Instead of flying that afternoon, I elected to come back the next morning for the first flight. I did a very thorough preflight inspection. I rehearsed emergency procedures, started the engine and climbed aboard. The flight was normal, the instruments all stayed in the green. I'm still dealing with minor snags, but I'm back in the air and looking forward to blue skies.

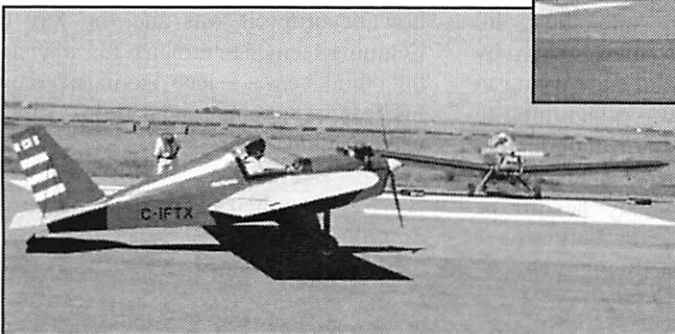
Throughout my ordeal, I received lots of help starting at the roadside in Cold Lake and ending with the return of the Minimax to service. Thanks everyone for helping to get the Phoenix back in the air. →

Images of the Annual Vulcan Mind Meld

Featuring the Calgary Ultralight Flying Club and The Lethbridge Sport Fliers



Photos courtesy Bob Kooyman



It was certainly a beautiful day for flying in Vulcan. Look at all that blue sky! I couldn't see across the parking lot where I was that day (Fredericton). - Editor

From the Files of the CAA (South Africa)

The following letter turned up in the CAA file of a certain pilot during a recent investigation. The identities of the people and organisations concerned have been withheld for obvious reasons....

Dear Sirs

I have been asked to make a written statement concerning certain events that occurred yesterday. First of all, I would like to thank that very nice CAA man who took my student pilot license and told me I wouldn't need it anymore. I presume that means that you're going to give me my full PPL. You should watch that fellow though; after I told him this story he seemed quite nervous and his hand was shaking. Anyway, here is what happened.

The weather had been pretty bad since last week, when I soloed. But yesterday I wasn't going to let low ceilings and pouring rain deter me from another exciting experience at the controls of an aeroplane. I was proud of my accomplishment, and I had invited my neighbour to go with me since I planned to fly to Sun City, where I knew of an excellent restaurant that served steaks and draught Windhoek beer. On the way to Lanseria my neighbour was a little concerned about the weather but I reassured him and told him about the steaks and beer that were waiting for us and he seemed much happier.

When we arrived at the airport the pouring rain had stopped, as I already knew it would from my meteorology classes. There were only a few small hailstones around.

I checked the weather and I was assured it was solid IFR. I was delighted. But when I talked to the flying club, I found that my regular aeroplane, a Piper J4 Cub was down for repairs. You can imagine my disappointment.

Just then a friendly, intelligent hangar assistant suggested that I take another aeroplane, which I immediately saw was very sleek and looked much easier to fly. I

think they called it an Aztec C, also made by Piper. It didn't have a tailwheel, but I didn't say anything because I was in a hurry. Oh yes, it had a spare engine for some reason.

We climbed in and I began looking for an ignition switch.

Now I don't want to get anyone into trouble, but it shouldn't be necessary to get the manual out just to find out how to start an aeroplane. That's ridiculous, I never saw so many dials, needles, knobs, handles and switches. As we all know, they have simplified this in the J4 Cub. Forgot to mention that I did file a flight plan, and those people were so nice. When I told them I was flying an Aztec, they told me it was all right to go direct via the airway, which I understand is a sort of local superhighway. These fellows deserve a lot of credit. They told me a lot of other things too, but everybody has problems with red tape.

The take-off was one of my best and I carefully left the pattern just the way the book says it should be done. The controller at Lanseria told me to contact Johannesburg Radar but that seemed silly since I knew where I was and I knew where I was going. There must have been an emergency of some sort because all of a sudden a lot of airline pilots began yelling at the same time and made such a racket that I just turned off the radio. You'd think all those professionals would be better trained.

Anyway I climbed up into a few little, fat clouds, cumulus type, at three hundred feet, but the highway was right under me, and since I knew it was due north to Sun City, where we were going to have drinks and dinner, I just went up into the solid overcast. After all, it was raining so hard by now, that it was a waste of time trying to watch the ground. This was a bad thing to do, I realised. My neighbour undoubtedly wanted to see the scenery, specially the Magaliesburg but everybody has to be disappointed sometimes and we pilots have to make the best of it, don't we?



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It was pretty smooth flying and except for the ice that seemed to be forming here and there, especially on the windscreen, there wasn't much to see. I will say that I handled the controls quite easily for a pilot with only ten hours. My computer and pencils fell out of my shirt pocket once in a while, but these phenomena sometimes occur, I am told. I don't expect you to believe this, but I thought it was really funny and I asked my neighbour to look but he just kept staring ahead with a glassy look in his eyes. I guessed he was afraid of heights, like all non-pilots are.

By the way, something was wrong with the altimeter - it kept on winding and unwinding all the time. Finally I decided we had flown long enough, since I had worked it out on the computer. I am a whiz at the computer but something must have gone wrong with it, since when we came down to look for the Pilanesburg Airport, there wasn't anything there except mountains. These weather people had got it wrong too. It was real marginal conditions with a ceiling of about a hundred feet. You just can't trust anybody in this business except yourself, right? Why, there were even thunderstorms going on with occasional bolts of lightning.

I decided that my neighbour should see how beautiful it was and the way the lightning seemed to turn that fog all yellow but I think he was asleep, having overcome his fear of heights, and I didn't want to wake him up.

Anyway, just then an emergency occurred
(continued on page 7)

From the Files - continued from page 6

because the engine quit. It really didn't worry me since I had read the manual and I knew where the other ignition switch was. I just fired up the other engine and we kept on going. This business of having two engines is a real safety factor - if one quits the other is right there ready to go. Maybe all aeroplanes should have two engines. You might want to look into this.

As pilot in command I take my responsibilities very seriously. It was apparent that I would have to go down lower and keep a sharp eye in such bad weather. I was glad my neighbour was asleep because it was pretty dark under the clouds and if it hadn't been for the lightning flashes it would have been hard to navigate. Also it was hard to read road signs through the ice on the windscreen. Several cars ran off the road when we passed and I see what they mean about flying being safer than driving.

To cut a long story short, I finally spotted an airport and, since we were already late for dinner, I decided to land there. It was an air force base so I knew it had plenty of runway and, judging by all the coloured lights flashing in the control tower, we were going to be made to feel welcome. Somebody had told me that you could always talk to these military people on the international emergency frequency, so I tried it, but you wouldn't believe the language that I heard. These people ought to be straightened out, and as a taxpayer, I would like to register a complaint.

Evidently they were expecting somebody to come in and land, because they kept asking about some "goddamn stupid ?/**!% up in that fog." I wanted to be helpful so I landed on the taxiway to be out of the way in case that other fellow needed the runway.

A lot of people came running out waving at us. It was pretty evident that they had never seen an Aztec C before. One fellow, some General with a pretty nasty temper, was real mad about something. I tried to explain to him in a reasonable manner that I didn't think the ATC should be swearing at the guy up there, but his face was so red

I think he must have a drinking problem. I then heard that we had ended up at Hoedspruit Air Force base - what a stroke of luck!

Well, that's about all. I hired a car and drove home from Hoedspruit because the weather really got bad, but my neighbour stayed at the hospital there. He can't make a statement yet because he's still not awake. Poor fellow, he must have the 'flu, or something.

Let me know if you need anything else, and please send my new license by registered mail.

Yours faithfully,
Anonymous

The Heath Story

This is the story of Edward Bavard Heath for whom the 1920's era Heath Company was named. He was born in New York state in 1888. His family owned a machine shop where he acquired his engineering education by the trial and error method, and this is where he built his first plane. This plane was much like the other monoplanes of that period, and did not possess the individuality that later characterized the Heath planes. But, it flew - and from that day on, Edward Heath dedicated his life to a career in aviation.

He was only five feet tall and weighed about one hundred ten pounds; he had a long, sharp, inquiring nose; his face carried the permanent wrinkles of a smile; and his eyes were small and bright. He was blessed with a great deal of vision and courage, and an abundance of determination.

He settled in Chicago and founded the E.B. Heath Aerial Vehicle Company in 1913. This company started like many others - with a basic idea, perseverance, long hours, ingenuity, enthusiasm, and a lack of capital.



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It was often referred to as Heath's 26 Airplane Trading Post. It was a parts and materials store - a place where pilots could buy things cheaply. He made and sold aircraft dope by the barrel. He made propellers. He built wings to any shape, any size. He sold wires, cables, turnbuckles, fuel tanks, wheels, new and rebuilt engines. If someone needed a part that he did not have, he designed and built one.

In 1913 he built his second plane, a biplane with a 33 foot span and equipped with pontoons. The pint-sized pilot who was a veteran designer at the age of twenty five became a familiar figure to Chicagoans as he flew out over Lake Michigan in this plane.

Up until this time flying was a costly hobby, and only the well-to-do could afford to take an active interest. Ed Heath had the idea for years of introducing low cost flying to Mr. Average American, and at the end of World War I he introduced his next plane, The Feather. This was a single-seater with a 20-foot span, empty weight of 270 pounds, and was powered with a 7 hp Thor motorcycle engine that hauled it through the sky at 45 mph. He was ready to market this little plane when the government released a huge amount of surplus planes and engines. Because he couldn't compete with these cheap products, he shelved the promotion of the Feather and became a dealer in surplus planes and engines.

Renamed the Heath Airplane Company, Heath founded a flying school, his
(continued on page 8)

Heath - continued from page 7

reasoning being that it was foolish to sell planes to people who then had to go someplace else to learn to fly them. It is true that Heath turned his students loose with the bare minimum of instruction, but for the benefit of his critics, it may be said that he never lost a student in an accident. This was due to the fact that he was extremely thorough in his instruction. Hundreds of Heath students became expert airplane and engine mechanics as well as flyers.

He also inaugurated an apprentice plan - learn while you earn - which became a permanent fixture of his company. With this method he built a solid business and turned out pilots and A & E mechanics at the same time.

The only time he deviated from his original, light plane idea, was when he built the Favorite in 1923. This was a 90 hp OX-5 powered biplane. Heath flew this plane with four passengers in it to St. Louis where he won several events in the National Air Races.

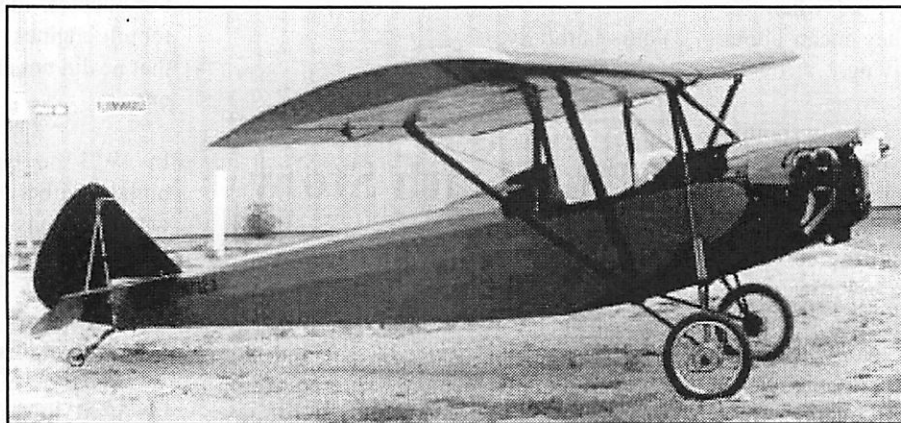
In 1925 Heath and Claire Linstead, a designer whom he employed, designed and constructed the Tomboy. It was a single-seat, full cantilever monoplane with a span of about 22 feet. The wing butts attached at the top longerons. It was built around a 32-hp Bristol Cherub engine and its speed was 103 mph. Heath used it to win the light plane events at the National Air Races in Philadelphia in 1926.

In 1926 Heath and Linstead produced the first Heath Parasol. This was a single-seat, high-wing, monoplane with a span of 26 feet. It was built around a 27 hp Henderson motorcycle engine. The designers improvised somewhat - the wing was contrived of two lower wings of a Thomas-Morse Scout biplane, braced with

steel tubing and cables.

The following year they constructed another version of the Parasol. This plane was cleaner. It had a 24 foot span and was powered with a Cherub. He called it the Spokane Super Parasol and proceeded to annex the light and sport plane events with it at the National Air Races in Spokane.

This event marked a turning point. Heath had found his light plane market and he used every kind of bait possible to push the sale of his Parasols. You could buy a Parasol, fly-away, Chicago, for \$975. If you couldn't afford that, you could buy it, less the engine, for \$690. Still too much? Okay! You could buy it in kit form. The kit came in eleven groups. The first group cost \$12.47. The total cost of the eleven groups, less the engine, was \$199! Still too much?



The Heath Parasol created by Ed Heath.

Well, you could buy the blueprints for \$5 and get your own materials. These were the first Heathkits.

The Heath Parasol, or to be exact, Super Parasol, created an entirely new group of airplane owners. Guys who had never taken an active interest in flying because of the high cost flew into aviation sitting in a Parasol cockpit. Pilots who heretofore could not afford to own and maintain an airplane became Parasol owners. Thousands of these little planes were built in barns, garages, and cellars. Some were assembled in rooming houses, others in deserted theaters, and one in a church.

The only tools necessary to assemble one of

the kits were a pair of small pliers, screwdriver, hacksaw (with plenty of blades), hammer, small hand drill, chisel, center punch, file and drill.

The little Heath craft was a well designed, compact monoplane with exceptionally clean lines. It was sturdy, stable and flew easily. This was a dream come true for Ed Heath. He had successfully marketed a low cost airplane. His firm prospered and won an international reputation.

The Parasol had proved itself. Now he decided to build a low-wing and a mid-wing. It was the low wing aircraft that he was testing in February of 1931 when he crashed. The little man whose determination and genius had created and guided the Heath Airplane Company was gone. It is nearly 90 years since Ed Heath built his first plane.

And he is remembered fondly by today's homebuilders, for it was he who developed a practical, simple, economical airplane the average individual could build and fly. It was also Heath who introduced the kit concept for packaging of materials needed to build an aircraft. Today's homebuilder has embraced the kit concept with

enthusiasm as it saves time in hunting down materials, providing a single-source for the thousands of items that are involved in building an aircraft.

Story written by Roger Lorenzen and "borrowed" from the internet - Editor.