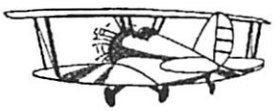
Skywriter

Monthly Newsletter of the Calgary Ultralight Flying Club

June 1994

Off We Go ...



by Wayne Winters

As a youngster, while growing up on the farm, I used to look up into the clear blue skies and wonder what it would be like to be a hawk or sea gull and see the fields from the air, especially during the Spring and Summer months. I could only imagine what the green fields would look like and how the trees and river valley would appear. By the time I learned to fly, some 20 years later (1971), the countryside was not as green and lush as it used to be when I was a kid. We had gone into a long, 25 year, dry cycle in the weather. Sloughs that had always had water in them, since I could remember, were now being worked, planted and growing grain. I remember Dad's cousin saying how the weather followed cycles of 7 years. Here it had been over 3 times longer and we were still dry. Now, at long last, the rains have returned and there is water accumulating in the low lying areas, and the whole countryside is becoming greener and lusher. Finally, I am realizing a childhood fantasy and am seeing the fullness of mother nature in the field and river valleys. When you see me flying around wide eyed and mouth open, it is because I am so taken at how beautiful the landscape is. It rolls so gently to the West, into the snow capped mountains.

Almost every sunny afternoon finds an accumulation of the soft white fluffy clouds, which are so much fun to go up and dance around in, keeping in mind minimum VFR distances, etc., etc. So many days I would like to stop the clock and keep forever!

The May Meeting

I have been so caught up in the events of Spring (above) that somewhere, somehow, I have misplaced my notes from our May meeting. My apologies to those in attendance who made profound statements and intellectually stimulating remarks, because I can't remember who and what to pass on to our readers.

We did discuss some of the up and coming events and fly-ins that will be happening over the next few months. Be sure and check the 'Coming Events' column.

We were going to go into the Model Railroad show in the Olympic Oval, and Bill Flemming was going to bring the fuselage from his Ultra Ag Cat for display. Things did not work out in the end and we elected to try it again next year, if the attendance for the show was good. Remember, they moved it from November to May, and it was felt that attendance might be weak because of all the Spring things folks are doing.

We had a confession session and learned a bit more about the projects that are being built by club members. The meeting wrapped up with 2 videos. One was on the ParaPlane powered parachute. It was really interesting watching the machines gracefully float around. It looks like a good way to have fun, and not get anyplace fast. The problem is that they are not good in the wind and one would be limited to the types of days that the balloonists fly in. The second video was one that Doug Ward brought and was on the Corsair. We watched the development of the

(continued on page 2)

Coming Events

June 4 - Linden Fly-in and pancake breakfast, Linden, AB, 07:30 to 10:00. Friendly flying competitions with prizes. For info call Dennis Wickersham.

June 5 - Okotoks Aviation Awareness Day, Okotoks Air Park, AB, 09:00 to 16:00, Pancake breakfast 09:00 to 11:00. For info call 938-5252.

June 5 - St. Paul Flying Club's fly-in BBQ, St. Paul Airport, 11:00 to 14:00. For info call Serge Larochelle 1-645-4034.

June 12 - Hinton Flying Club's fly-in breakfast & airshow, Hinton, AB, 08:00 to 14:00. For info call Jim Bacon 403-865-3616.

June 12 - Innisfail Flying Club's annual pancake breakfast, Innisfail, AB, 07:00 to 12:00.

June 18 - Strathcona Flying Club's annual fly-in breakfast, Josephburg airport, AB, 07:00 to 11:00. For info call Gerry Kydd 403-998-4934.

July 16 - Kirkby's annual fly-in breakfast, Kirkby Field, 08:30 to 11:00. Fly or drive. Breakfast served in new, weatherproof, hangar this year. For info call Bob Kirkby 569-9541.

July 16 - Airdrie's 25th anniversary open house & fly-in. Starts 01:00. For info call Bev Ayles 948-5839.

July 30-31 - Red Deer Airshow, Red Deer Industrial airport. For info call 403-886-5050.

August 20-21 - Lethbridge International Airshow, Lethbridge, AB.

If you know of coming events please call Bob Kirkby to have them listed, 569-9541.

(Off We Go - continued from page 1)

airplane and all drooled as we each became "fighter pilots' in our own minds as we viewed some of the aerial footage. Oh, to have been one of those 17 year old pilots in command of all that power and speed! Born too late again!

Red Deer Air Show - Don't forget!!

Town Hall Meeting

Saturday, July 9th at the CFB Penhold Base Theatre from 10:00 AM to 3:00 PM. This is an opportunity to voice an opinion as to where the new Regulations are heading. Try and be there.

REMINDER - No Meetings in July and August

You can stay in touch via the Skywriter and attending fly-ins during those months. Be sure to be watching for the dates of our Family Fun Fly and other events. I am sure everyone will be standing by their mail box about the 15th of the month waiting for their copy to arrive!

CALGARY ULTRALIGHT FLYING CLUB

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Skywriter is the official publication of the Calgary Ultralight Flying Club and is published 12 times per year. Opinions expressed by our writers are not necessarily those of the club. Articles and letters to the editor are very welcome from any readers. Address correspondence to: Bob Kirkby, RR 7, Calgary, AB T2P 2G7 or Fax to 403-291-1112.

Meetings of the Calgary Ultralight Flying Club are held the first Wednesday of every month at 7:30pm at

R.C.A.F. Association
5430 - 11 Street N.E.
Calgary, Alberta

The next formal meeting will be Wednesday, September 7, 1994 at 7:30 PM.

Have a good Summer, and we will see you in the air.

Bed Sheets and Motorcycles

A few weeks ago, while getting a new front tire installed on my Motorcycle, I had a very interesting and entertaining chat with the "World's Most Famous Motorcyclist" - Walt Healey. For anyone who doesn't know, Walt has been around and riding Motorcycles since they were first invented. His 5'6" frame has become only slightly stooped after many, many years of hard work and rigorous riding. He has a very kind face with a full grey-white beard, whether he has hair under his cap or helmet is anyone's guess because you never see him without one or the other. His face is much like that of Santa Claus, with a red nose and a twinkle in his eye, and although generous in his disposition, he has never left a motorcycle under my Christmas tree. When I was a young puppy, during the 50's, my Father owned a Texaco Service Station two blocks away from Walt's Motorcycle shop on 10th Street NW, and as a result I spent many hours in his establishment drooling over his selection of new and slightly used machines. Except for the beard, Walt really hasn't changed much over the years.

In the course of our conversation, Walt asked me how the Ultralight business was going. I assured him "fine", although not good enough to afford a new motorcycle. I then suggested that it was time to get him out for an intro-flight. Then the story began about his first experience with what he called "ultralights" dating back to the 1920's. Although Orville and Wilber preceded him by a few years, Walt, born about 1913, wasn't too far behind. He said how he had always been fascinated with airplanes and decided, as a teen, to build his own. He wanted to use a small motorcycle engine to power it, but couldn't scrape up the cash to buy the motorcycle from which to pirate the engine. With powerless flight being better than no flight at all Walt elected to build a glider. He and a friend went to work scrounging lumber here and there, until they had enough pieces glued together to resemble an airframe, wings and tailfeathers. The next step was covering and since they didn't have the money for the linen of the day, they did the next best thing - improvised with bed sheets. Walt said, and chuckled as he said it, "a lot of folks in the Kensington area thought that the wind had blown away their bed sheets, right off the clotheslines". I guess that they weren't far wrong, because a couple of young whipper-snappers were going to make them take off into the wind!

Walt said that after doping and painting the sheets the day finally came for the test flight and he was elected test pilot. They took the craft to a hill in Bowness that would serve as their launch site. The right wind, a little push, and he was off and flying. Flying that is, until a wing spar broke and he along with wood, glue, bed sheets, dope and paint fell from the sky. Fortunately, there were no major injuries and as he sat in the rubble Walt realized that his "flying career" had come to an abrupt halt. He hasn't been back in an Ultralight since.

I am sure glad that our wing spars are a lot stronger these days, and who knows - we might get him flying again yet!

Letters

From readers

Dear Editor:

While trying to decide what airplane to build, I created this set of tables to help me check whether or not it would qualify as an ultralight under Canadian rules. Stu Simpson saw it and suggested that I have it printed in the Skywriter. These numbers will soon be out of date if the weight limits are increased. I hope so. When that happens I will redo the tables and submit them again. I hope other members find them useful. If you have any questions about these numbers, please give me a call.

Ultralight 1-place		Ultralight 2-place	
Sq Ft	lbs	Sq Ft	lbs
107.6	253.1	107.6	197.3
110	258.0	110	209.6
115	268.2	115	235.1
120	278.4	120	260.7
125	288.6	125	286.2
130	298.8	130	311.8
135	309.1	135	337.3
140	319.3	140	362.9
145	329.5	145	388.5
150	339.7	150	414.0
155	350.0	153.1	429.8
160	360.2		
161.7	363.7		

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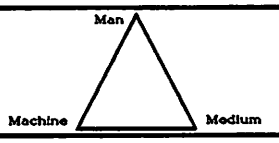
Safety Corner

by Paul Hemingson



The Long Run

Summer is here, and along with the change in climate most ultralight pilots will adjust their thinking to the new conditions. Familiarity with winter conditions and response cannot be carried over into the summer. Remove your mental chocks and move into a different mindset.

Hot, humid and high altitude conditions conspire to make the take-off run much longer than the winter or cool weather take- off. Longer grass and softer fields will also lengthen the take- off run.

It is not uncommon for the take-off run to be twice as long as it would be under winter conditions, even though the plane is loaded to an identical weight. On a hot day, we may be uncomfortably hot in the cockpit and want to get rolling to cool off. We may forget that hot air is less dense, something balloon pilots use to their advantage but to our disadvantage.

The less dense air means we have to be moving through it faster in order to get the same lift that we experience at lower speeds on a cool day.

If a pilot uses his usual visual clues of speed, he is likely to try and get airborne prematurely.

If the pilot uses a distance clue..ie assumes he should be airborne at the half-way point of the strip (because thats' where he usually unsticks it), then he will also likely be airborne before the airplane is ready to truly fly.

Many a good pilot has embarrassed himself by falling into the trap that he can take-off in a hundred yards or less under summer conditions. Many pilots have forced an airplane to get off the ground earlier than they should, only to find that it subsequently stalls, and falls back to earth as soon as they have risen out of the reach of ground effect. When the airplane feels like its not responding or climbing, the urge to pull even more backstick is irresistible. This ensures the aircraft will stall. Fortunately, this usually happens from 20 feet or less, and results in an embarrassing bounce and rollout off the end of the runway or worse yet, into a fence or rough pasture. Your ego and landing gear may be bruised, but it's a lesson well learned, and every pilot has pulled an airplane off too early on at least one occasion.

In addition to the low density air created by hot, humid and high altitude conditions, there is another gremlin that commonly makes for a long run in the summer. This is long grass and soft fields. The drag created by these conditions should also alert you to ensure you have a runway of adequate length. The dry and hard surface of the same sun-baked pasture may be inadequate once rain has softened it, or knee-high grass has sprouted. Review the short field and soft field take-off procedures that your instructor told you about but that you didn't have much opportunity to practice.

Every good pilot has become a better pilot by learning from his mistakes. Before you advance the throttle for take-off do a quick mental check of the runway and weather conditions and plan your options ahead of time. Tell yourself that if you have not reached take-off speed by a certain point you will shut it down and abort safely. Try it again after considering your options, or wait until its cooler and/or the wind more favourable.

Expect the long run, and you will become a better pilot in the long run.

(Letters - continued from page 2)

1-place formulae:

Area=((W/2.204)-15) x 1.078
Weight=((A/1.078)+15) x 2.204

2-place formulae:

Area=(W+352.64)/5.111
Weight=A x 5.111 - 352.64

AULA 1-place

Stall: 45 mph dirty
60 mph clean

Launch weight:	628.3 lb
Less pilot:	-176.0 lb
Less gas:	-80.0 lb
Empty weight:	372.3 lb

AULA 2-place

Stall: 45 mph dirty
60 mph clean

Launch weight:	1058 lb
Less pilot:	-352 lb
Less gas:	-100 lb
Empty weight:	606 lb

Yours truly,

Bruce Plepgrass
255-6210

A Little Prop Wash

by Douglas J. Ward

Somebody's FAX machine wasn't working very well, so I phoned his home number and spoke to his wife. He then called me back and we covered the information over the phone instead. He was one of the attendee's at the Big Meeting which was going to review all the problems with all the different aspect of Recreational Airplanes. He was really a heavy fellow (and I don't mean his weight) in Ultralights. He and I totally agreed on most points. That told me that we had an even stronger voice in these Ottawa meetings than the voice of Ken Farrar. Mr. Bennett stated that he would push this to the top and even past in order to get the rules modified so that Ultralights (with the "I") would remain a legal aircraft in Canada. Raa, Raa for you Ralph Bennett.

We will probably find out what happened at this "Brain Storming Meeting" from Ken Farrar, before the next meeting in Penhold in July. I will try and keep all members informed through the "Skywriter". I once again urge all members who can spare that Saturday in July, the 9th, to go to this meeting in Penhold. The more little faces that are present at this meeting, the more it looks like we are interested in the future of "I" Registered aircraft in this country.

I was doing a bit of work for one of the Members on his Rotax 532 engine. On the early versions of this style of engine, Rotax did not install a coolant bleed back line from the top of the Cylinder Head to the Radiator. I mentioned that this should be done on this engine while it was down for points repair and adjustment. When the cylinder head was removed to have this bit of machining done, it was noticed that the Head Sealing Ring was blown out on one of the cylinders. This engine was blowing compression into the water jacket; it was headed for the "Run Silent" effect. I would strongly recommend that all owners of the Liquid Cooled Rotax Engines that do not have a cooling bleed-off line to the top of the Radiator, get one installed. It can prevent internal problems with your engine that you won't even suspect until a bigger problem shows it's ugly head.

I must also again suggest that ultralight flyers do not leave old fuel in their airplane fuel tank. As stated in an earlier Skywriter, when you add new fresh fuel to the old fuel that is in your airplane tank, you do not spark up the old fuel, you only decrease the quality of the new fuel that you just put in. Rotax's run best on good new clean fuel . Don't jeopardize your airplane and yourself by using a couple of gallons of old fuel. Put the old fuel in your car's fuel tank. It can probably adjust to it and burn it fine. Your Rotax can't.

Safe Flying.

Classified

Bushmaster II - 1986, 2-place, Rotax 503, 15 hrs since rebuilt motor, very nice, always hangared, VSI, ALT, ASI, engine gauges, $12,500 delivered, OBO. Pat Rudiger 403-986-3159.

Chinook - 2-place, Rotax 503, electric start, ASI, ALT, EGT, Tach, Hobbs, cabin heat, VHF antenna, always hangared, ground adjustable GCS prop, good condition, $7900. Don Rogers 242-6549.

Crusader - 2-place, enclosed, one-of-a-kind ultralight. Rotax 447, cabin heat, VHF radio, 4-years old. $8000. OBO. Arlene Sondergaard 289-9662.

Airlight Model "A" Parasol - Steel tube & rag, Rotax 503, Warp Drive, lots of instruments, 800 x 6 tires, strobe, CB & VHF hookups, folding Kolb wings, $8,500. (Reduced). Jim Creasser 226-0180.

Trailer - all metal, fully enclosed, 7'w x 24'l x 6'h, built for airplanes, $800. Jim Creasser 226-0180.

Hiperlite 2-place - excellent condition, Rotax 503, full instruments, 2-blade wood and 3-blade Ivo props included, wheels and skis. One of the best ultralights flying - a real little airplane. Price reduced to $18,000 (less than kit price) - offers. Paul Hemingson 931-2363.

1977 Honda 750 FourK - Excellent condition, 4700 Mls, $1200.00 firm. Doug Ward 282-0806.

Lazair - wind damaged, repairable, pioneer engines, $500.00. Jim Creasser 226-0180.

Hiperlite SNS-8 - 200 Hrs. TT, hydraulic brakes, ground adjustable prop, STOL, fun aircraft to fly, good condition, $7500.00. Bob Campbell 934-3657.

Gauges - Dual CHT and Dual EGT gauges - $125.00 for both, 3 1/8" Tachometer with hour meter - for CDI ignition. Ken Johnson 546-2586.

Classified ads are free to CUFC members. Call Bob Kirkby, 569-9541 to place your ad.

Town Hall Meeting

Who: Recreational Aviators

When: Saturday, July 9th
10:00 am to 3:00 pm

Where: Base Theatre, Red Deer Airport

Topic: Recreational Aviation

Presented by: Lindsay Cadenhead

Around The Patch

by Stu Simpson

Movin' Right Along

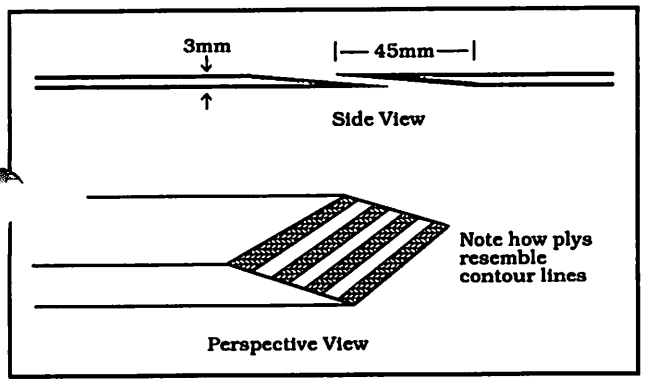
When we last laughed at our hero (or goat, you decide), I was making pieces of the fuselage sides. Well, I've been movin' right along since then.

The fuselage sides are finished. Each of the vertical and diagonal members had to be marked and cut very carefully to ensure a correct fit. The instructions recommend placing a few small blocks against the longerons and truss members. I found it worked better if I added several blocks. Since the longerons can be so flexible, the extra blocking really helps shore them against unwanted movement.

I built the second side at the same time as the first. I'd cut one member for the first half, for example, a vertical. Then I'd check the fit and trace that member onto another piece of wood and cut it. The result is two fuselage halves that are the same. It's simple, albeit precise work. And a bit time consuming with 25 pieces for each side.

Then it was glue time. This turned out to be simple. Just apply a 1/2mm layer of glue to both pieces of wood to be joined, and clamp them down until dry. The two most useful items at this stage are a small palette knife (to apply the glue over the small surfaces) and every clamp you can find.

Before we go on, a few words about clamping. For a project like this you'll need lots. You want both "C" style and "speed" type (which are used for longer distances). I found it helpful to layout my clamps at each joint before I started gluing. Have a few strips of clear poly nearby to insulate the clamps from the adhesive. Otherwise, you may find your self chiselling your clamps free when the glue is dry. Don't tighten them too much. There should be some squeeze-out, but not so much that all glue is expelled from the joint.



Scarf Joint

I let the first fuselage side dry for at least 24 hours before removing it from the jig. Then I simply assembled the second half and repeated the whole process. Make sure you have a spot to store the finished fuse' pieces. They're each 14' long and hang nicely on a wall.

After the glue is dry, it's a matter of sanding away the excess and then wiping down the joints with a damp cloth to remove sanding dust in the wood pores.

Next step is attaching the plywood sides to the front of the fuse'. The plans call for a 21"x 67.5" piece of plywood. Unfortunately, the longest pieces I have are only 60". The answer, lengthening the plywood by scarfing.

This is a tried and true aircraft construction technique of joining two pieces of wood end-to-end. It's a matter of feathering or sloping the end of one piece , then making a reverse and matching slope on the second piece. The slopes must be at least 12 - 16 times long as the thickness of the wood. As you can see from the diagram, this drastically increases contact area when compared to a butt-joint.

The trick to scarfing is to get a consistent and even slope for the width of the wood, and then be able to match it on the adjoining piece. For plywood, the best way to do this is by use of a disc sander.

The fuselage sides are comprised of 3mm thick plywood so I set my scarf slope at 45mm long (practice this technique on scrap wood before turning yourself loose on the real thing). Then with a 100 grit sanding disc on the end of a power drill I ground away a gentle slope from the end of the board back up to the 45mm line. Proceeding slowly, I watched as the layers of wood and glue revealed themselves until they looked like the lines of a contour map. Each of these layer lines should be the same width and as straight as possible.

I found it tough to get it exactly right using the disc sander. So when I had things roughly the way I wanted, I switched to a sanding block. Doing that turned a ragged scarf joint into a very nice one with an even and consistent slope for the entire width of the wood. Clean up the joint with a wood scraper and a damp cloth and you're set to glue.

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*(**Around** - continued from page 5)*

Before gluing, I latched onto some old 2x4's that were a few inches longer than the width of the scarf joint. I wrapped them in clear poly and attached it with staples. After applying glue and joining the scarfed plywood surfaces, I used a staple at either end of the joint to hold it in place. Then I set the joint between the wrapped 2x4's and clamped the whole mess together. The plastic, of course, prevents the 2x4's from sticking to the plywood. All very neat and tidy, and very strong.

Now I was ready to attach the fuselage side walls to the frame. The technique is to lay out the plywood beneath the frame and clamp it so it remains still. Then, trace the outline of the frame onto the plywood (have a pencil sharpener handy at this point). When that's done, flip the whole thing over, put the plywood on the bottom again, and trace the outline on the other side of the plywood. This lets you see where to apply the glue on the inside, and where to clamp and staple on the outside. Pretty clever.

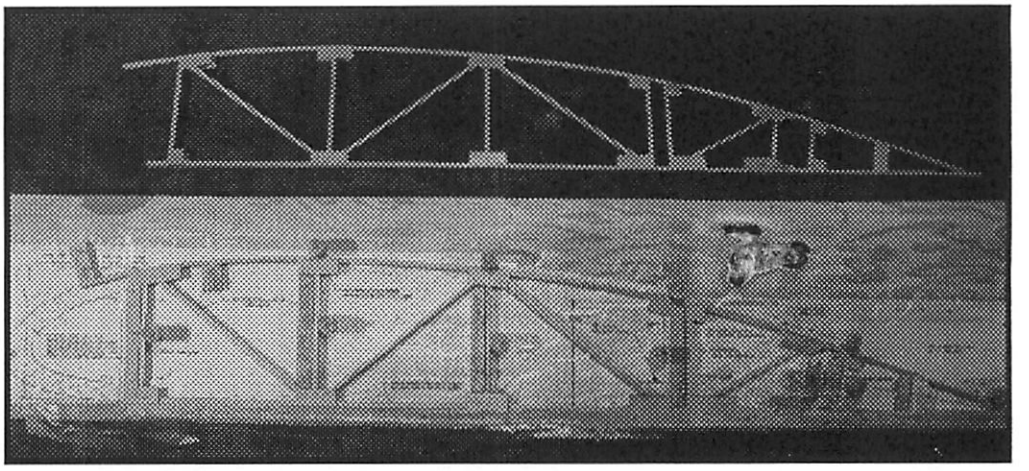
Glue that all together and repeat the process for the second side. Use staples to hold the plywood to the framing where clamps can't reach.

I've also been building ribs. I've got 9 completed of the 24 required. All the magazine write-ups that I read before selecting the HiMax said it only takes about 20 minutes to assemble one of the ribs. Imagine my shock when it took me about 2 1/2 hours to build the first one.

I think I've figured out the reason for the discrepancy. On the rib drawing the diagonal members are not cut to fit into their respective corners. They're just cut to the rough length and held in place with gussets on either side. However, I cut each rib piece to fit each corner joint exactly. And when I assemble them, I glue each point of contact. Of course, that takes more time, but it also makes a much stronger joint. I think the extra time is worth the additional strength.

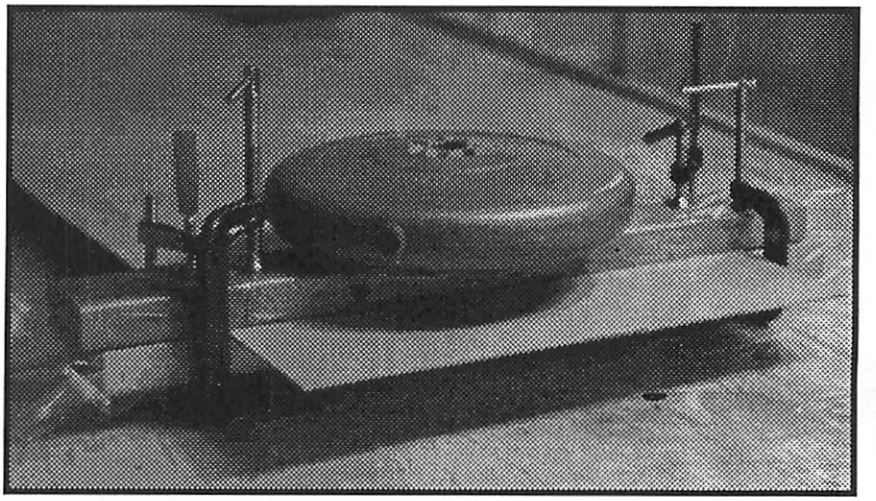
By the way, now that I've had some practice, it only takes about an hour to build a rib. And that time will get shorter still as I progress.

So that's where it all stands. The next job will be to finish the fuselage. That requires building the upper and lower halves, and gusseting them with plywood. Then I'll build the bulkheads and motor mount and glue the whole works together so it starts to look like airplane parts. Stay tuned, film at 11.



Rib and rib jig.

Stu holding fuselage side.



Scarf joint clamp with a little extra weight.

Photos by Tina Simpson