

monink

The Newsletter of Monnett Experimental Aircraft, Inc.

March, April, 1982

Greetings and Salutations!

It is truly Spring here now and with that all the hustle and bustle and "up" feelings that go with it. Those of you who have never lived in the snow country can't appreciate these feelings I'm sure. Spring Fever is one of the advantages I can think of to live here in the midwest. That and of course being at the site of the infamous "E.A.A. Oshkosh Fly-In"!

We are busy planning our activities for The Fly-In. We will be open long hours here - probably 8 am to 9 pm. John will be holding forums at our facilities instead of over in the forum tents and we will try to schedule them so as not to interfere with E.A.A. Activities. We are working on the possibility of a shuttle service to our side of the field. We are still going to maintain a booth in the Exhibit Building and will be passing out brochures, maps, information on how to get to our building and a schedule of our activities. We will no doubt have a few of the planes over on the flight line also. We have planned to have our Annual Builder's Party at the new facility. I think we had almost outgrown Butch's basement with last year's crowd! In the next newsletter coming out the first of July, I should have all the dates and times and more particulars about our activities. For now we are sure looking forward to seeing you here with your airplanes!!

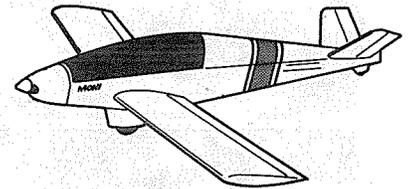
We have been asked to do so many fly-ins and mall displays, etc. It is very difficult to attend each and every one—even tho we would like to! What we are planning is to try to make as many as we can this summer as fly-in participants. Bring as many airplanes as we can and fly them! This is what we did at Lakeland and it was such a nice fly-in. So John, Pat, Randy, and Terry (Randy's wife) tell me! They came home with sunburns and complained of the heat. We all felt so sorry for them! John even managed a little sun poisoning of all things. Soaring Society Convention in Houston was a bit different. No flying involved but lots of good conversation and good times. It was nice to see all of you builders and thanks for looking us up. It is always nice to meet you in person and put faces with names!

Another place we do this is when you fly in, drive in, or come for a workshop. We have a couple more to go at this writing but by the time you get this they will all be over. Thanks for your support in this venture. John does feel they are a valuable activity for you as one of our builders. The Sonerai Workshop will be long remembered by those who attended. We had a terrible rain and 68 mile per hour winds which turned to snow and then a blizzard before the day was over! Everyone's car doors froze and they got stuck in the

driveway. It was a bad storm - especially for April 3rd! We only hope everyone got home or to a motel safe and sound. (Would you believe all of Oshkosh's motels filled up by 5:00pm? You would have thought it was August 1st!)

At any rate, the workshops have proved very successful and we hope to hold them again in the fall.

moni



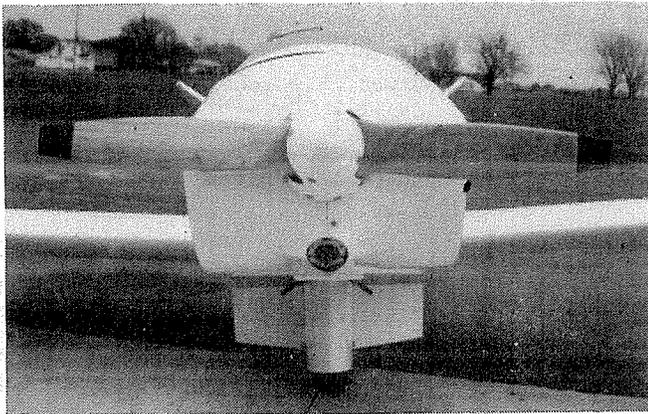
Everyday more parts are flooding in for the Moni Kits -formed aluminum components, fiberglass cowls, canopies, instruments, fuel tanks, batteries, etc. are all here. KFM Engines will be here by the time you read this. Only a few things remain to be stocked to complete the kits. The first kits should be packed and shipped the end of May. The remaining kits on order should follow in fairly rapid succession. The first kits will be shipped minus propellers which we are still working daily on optimizing. To date, John has tested about 20 different props from various manufacturers. Also several plans sheets may not be ready; i.e.: trailer, final assembly, etc. They will be sent as they are completed and will be available long before any builders need them.

Flight testing continues and John flies everyday possible. On Easter Sunday he flew Moni to over 13,000 feet M.S.L. and it was still climbing at about 200 ft. a minute. Total fuel burn for climb to that altitude - a one and a half hour flight including glide - was 1 ½ gallons!! John has been testing the airplane for power on and power off aerobatics, and is pleased with the progress of these flight tests.

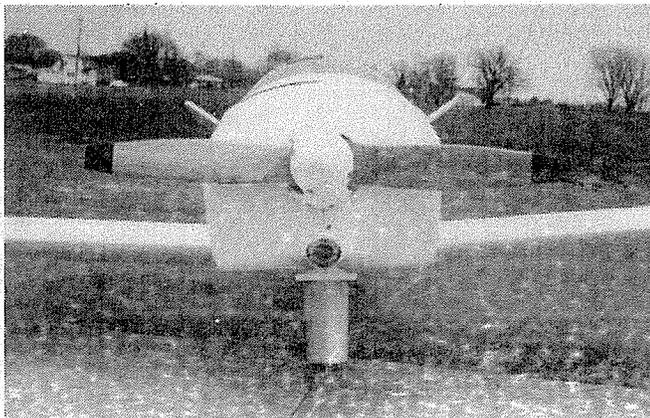


The little open trailer is now complete. The photo shows it with the mini wings, but of course it will hold the whole airplane - fuselage and one set of wings. It is built from a small utility trailer from K Mart, two sheets of plywood, and a few aluminum angles. Total cost of parts is about \$250.00. Total time to build is - a good weekend project! The drawings for the basic trailers, both open and closed, will be included in the plans sheets. Randy has now begun to work on the second Moni fuselage using the drawings - as a sort of a check on the accuracy of the final plans.

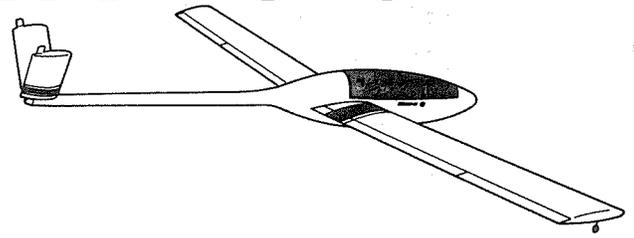
Many of you have asked about the clam shell dive brakes that were mentioned in early articles about Moni as a possible glide path control. John built a set into the wheel fairing and has been flying them for about three weeks. Altho they are not as effective as spoilers, he is very pleased with their operation. Essentially when they open they increase the flat plate drag area and produce a much higher rate of sink. They have no noticeable effect on pitch



or yaw and the airplane can still be slipped. For these tests the flap action of the ailerons has been locked out and the flap lever is then a dive brake and wheel brake. They have several positions from closed to full open and are used much as one uses spoilers. The retro fit of these parts on the standard wheel fairing was fairly simple. It took John about four hours to build them. Other pilots will be evaluating them by the time you read this and if they feel they are satisfactory then the dive brakes will be included in the plans. The photos show just a head on view of Moni with the dive brakes installed - one with them open and one with them closed.

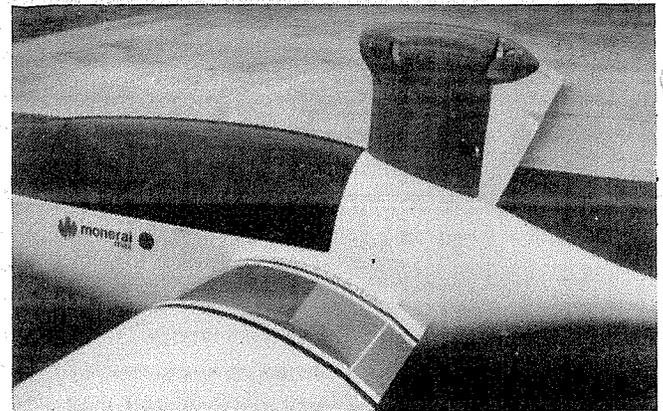


monerai

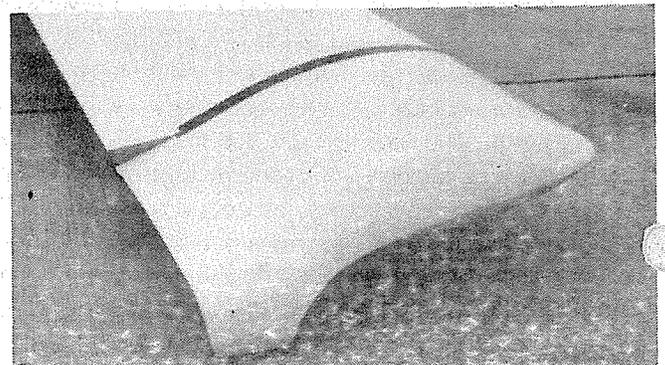


John flew Monerai with the changes on April 22nd!! Finally! It had to sit for a week after it was licensed just to get decent weather to fly in. This was the first time Monerai had flown at Wittman Field since the fly-in. The first flight went well and John looks forward to more test flying. Now comes the arduous task of prop testing and optimization. The exhaust system will undoubtedly see some changes. We will have new performance figures established when we have all the refinements incorporated into the power package.

The photos show the installation of the new pod and the 12 meter wing tips. We are also testing a modified aileron bell crank system which produces more aileron throw for better response. We hope to have more details on this in the next newsletter.



A steerable tailwheel is planned for our Monerai but has not yet been installed. We feel it will be necessary to operate off Wittman Field with a little more ease. (Sometimes John has to taxi two miles to 36!) For those of you who fly off a gliderport or a smaller airport, John does not feel a steerable tailwheel will be necessary.



John will be testing a new series of props for the Zenoh Power Pod in the near future. He expects to see an improved rate of climb since all out speed is not the intention of the Monerai Power Packages.

News From Builders

P. Coos - #286
 103 rue Scheuer
 6700 Arlon
 Belgium

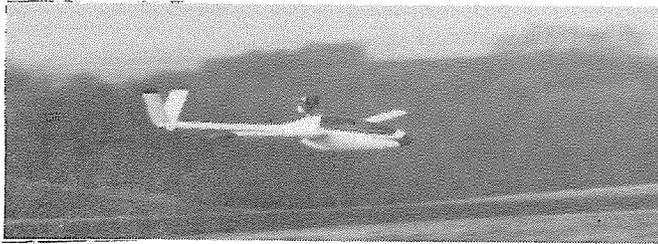


Photo of Monerai flying in Belgium which is the first to fly in Europe! (Luxembourg) Congratulations! Mr. Coos first flight was Sept. 1981 and we did feature some pictures in Nov./Dec. Monink but not of it in flight.

G. James McCulloch - #6
 c/o Artel Services Corp.
 141 Canal St., Bldg. 2
 Nashua, N. H. 03060



The intrepid Aviator and Test Pilot after surviving flights one and two of his Monerai. Very Happy! Jim sent us a copy of an article he sent to Doug Lamont, Editor of *Soaring*, in February 1982. It is quite a good article and I sure hope to see it in *Soaring Magazine*. If it does not appear soon then I shall print it in *Monink*!

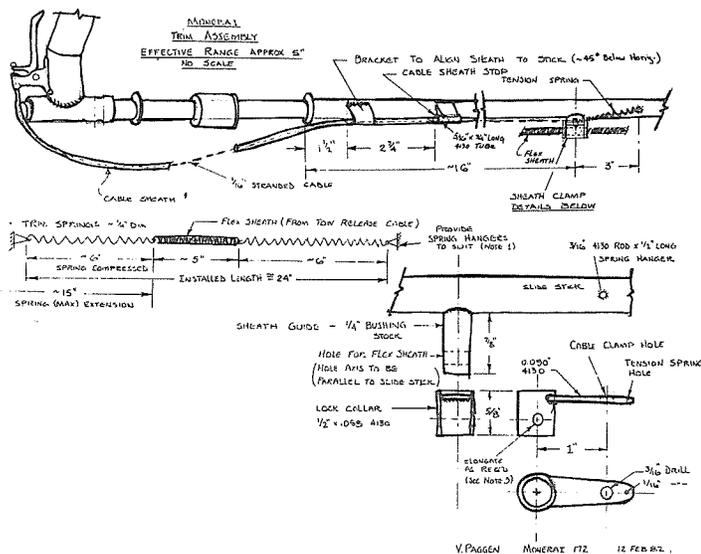
Builder's Tips

Virgil Paggen - #172
 123 Loomis Street
 North Granby, CT 06060

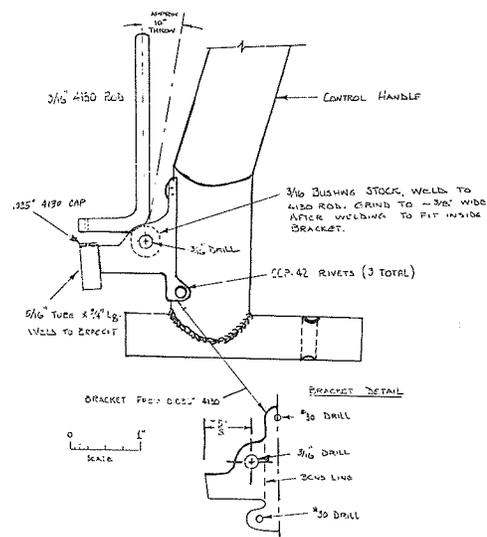
Virgil sends this Slide Stick Trim System that is light weight, finger-tip operated, and effective over the full range of stick travel.

Notes:

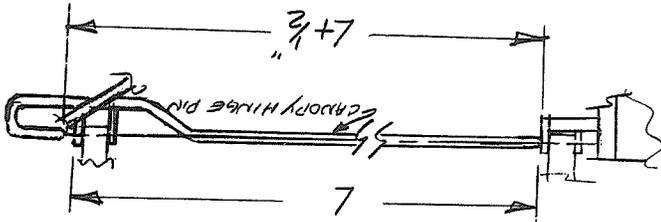
1. Locate Spring Hangers to keep trim springs parallel to



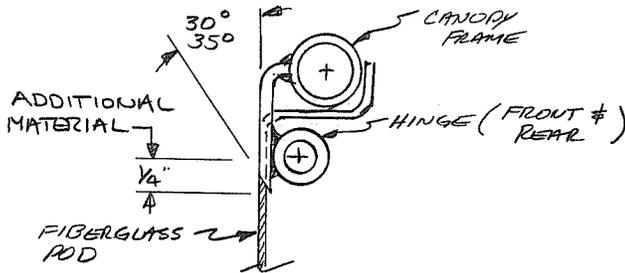
- stick (Stick neutral position).
- Provide as much fore and aft separation of spring hangers as possible. Rear Hanger on "E" Station. Watch front support for interference with seat sling.
- Lock collar rotates freely on guide. Collar is retained by flex sheath. Elongate sheath hole in lock collar to allow free sheath slippage when trim release is squeezed.
- Adjust tension spring as required to provide adequate locking force on flex sheath.



Sam Phillips - #323
 8537 Lubago Avenue
 Canoga Park, CA 91306



Sam sends this idea for a canopy hinge pin.
 By making the hinge pin length $\frac{1}{2}$ " greater than the canopy hinge support it is much easier to install the canopy.



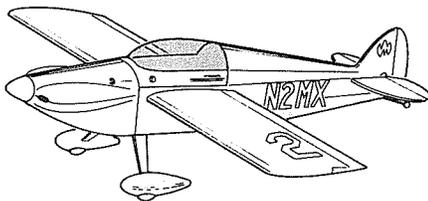
With careful fitting, this will close with no gap for air leakage.

For Sale

Robert B. Clark - #351
 Box 29
 Lincolnville, ME 04849
 207/789-5797

Untouched Monerai Kit - \$3,600.00
 Can't get my weight down. Would consider trades.

sonerai



Plans for a Sonerai Fly-In have been finalized. Mark your calendars now - June 5th, Saturday, 9-3 or thereabouts. We'll have some special events. It won't be spectacular but it will be a good excuse to get together, talk to other Sonerai owners, and join in the contest fun! In-vade the Tail Wind Country!! Try to let us know if you are coming so we will know how many to plan for. Just call Carol or drop her a note. We may have you contribute to the coffee fund but otherwise no fees involved. Just hope the weather cooperates.

Don Hardy has been pushing John into thoughts of a tricycle gear low wing Sonerai II. There are some studies going in that direction anyway and who knows??????

I might mention here that the Monex has been put back on the active list. Randy and John have been working on it again. The aileron control system has been modified and a new seat installed. We hope to be doing some interesting things with it this summer!!

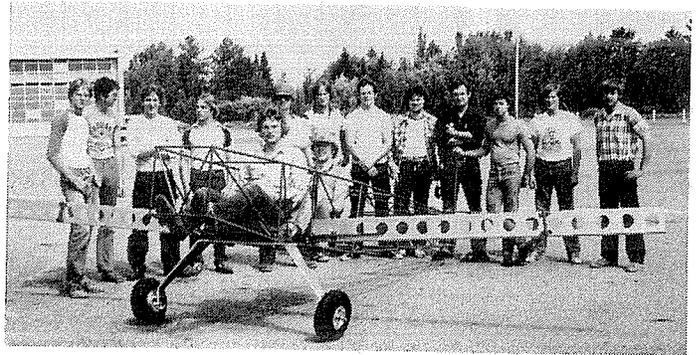
First Flights

Ray D. Macke - #986L
 213 N. Main
 Marissa, IL 62257

Ray just flew on April 21, 1982. Congratulations, Ray!

News From Builders

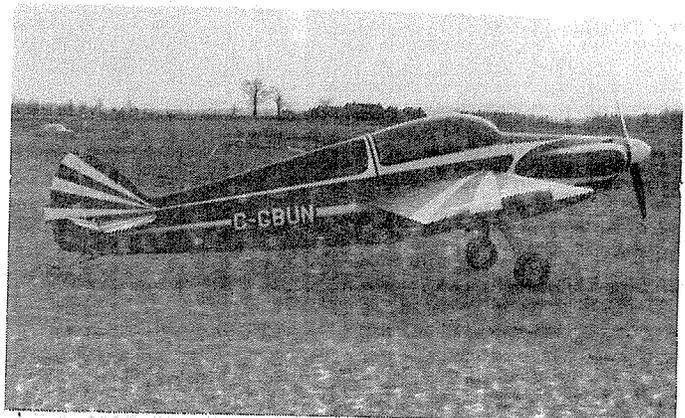
Rhineland High School
 Coolidge Avenue
 Rhineland, WI 54501
 Rick Northrup, Instructor



Rick dropped off this photo of the progress made in Summer school 1981 on this project.

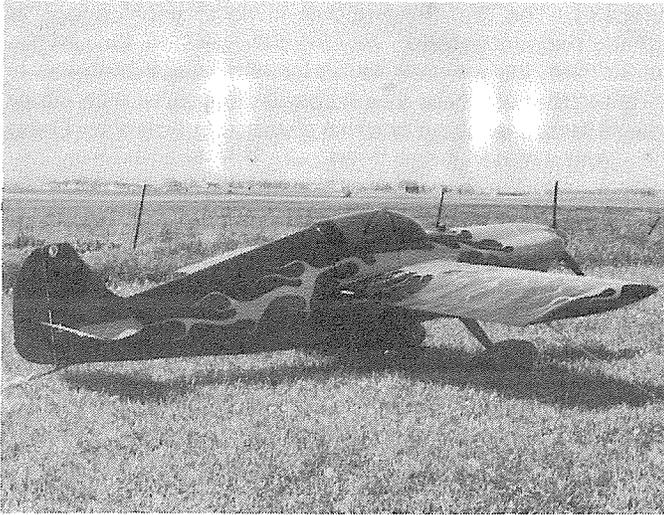
Julian Lamoureux - #48 II
 323 Vodden St.
 Bramton, Ontario
 Canada L6V 1N4

Before and after photos of C-GBUN.



randy's ramblings

(Editor's note: Our name Randy's Column contest was such a success. I have had so many good suggestions that I am going to have to have a guest's title each edition! Thanks everybody! This month two of you came up with the title: Betty Evers, our secretary; and Ed Sterba, Sonera II owner and prop maker.)



Julian writes, "Original 2-seat configuration was excellent but after flying it I wanted to change it to a single seat with sliding canopy for that open cockpit feeling." (Also changed engine to an A 65 Continental)

For Sale

Donny Cannon - #434 ILL
513 Estancia Dr. N.W.
Albuquerque, N. M. 87105
505/831-4518

Set of wings without folding hardware and a welded fuselage.

Wanted

Ed Sterba
3209 S. Woods
McHenry, IL 60050
815/455-2575
Nav-Comm or just Comm Radio such as an Escort 110 or Alpha 200 B.

Ray E. Allandar
330 Locust St.
Marysville, PA 17053
717/957-2922
Folding wing-Flying Sonera. Prefer Sonera II with 1834cc Engine, however will take any good flying Sonera.

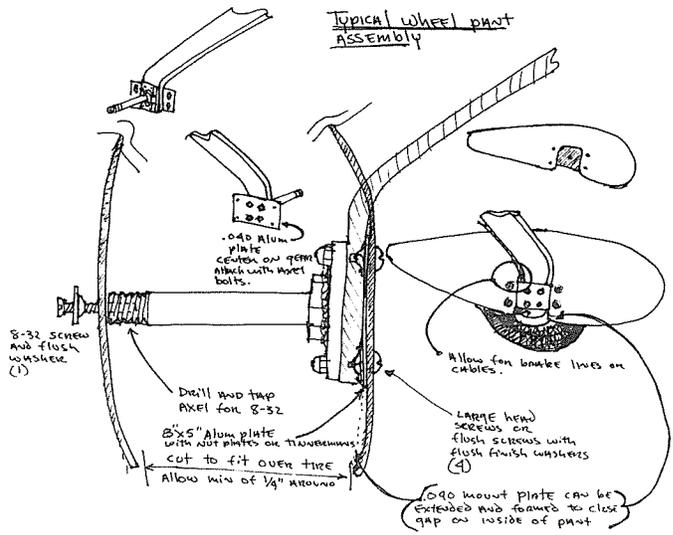
V W Engines Classic Air

114/426-2763

For sale: New Aero-Vee (EV) 1850cc Engine with generator, posa carb and exhaust parts. Only one hour test stand time for total time. \$2,495.00

Wheel Pants

There are several different ways in which the wheel pants can be mounted to the landing gear. The method used on our low-winger seems to work well and the procedure is fairly simple. For attaching the outboard side of the pant, simply drill and tap 8-32 or 10-32 threads into the axle end. There you can use a counter sunk machine screw and counter sunk washer to hold the wheel pant down tightly to the axle end. For the inboard side we've used a small piece of aluminum (about 8" x 5" x .040) bolted to the inside of the gear leg using the four 1/4" axle attach bolts. A cut out must be made in the inboard side of the wheel pant to allow the wheel pant to slide down over the gear leg. Your small piece of aluminum should now be on the inside of the wheel pant wall, and after blocking up the wheel pant to hold it straight, you can drill through the pant into the aluminum. (Two holes on each side of the gear leg.) Now you can install nut plates of your favorite size in the aluminum and use four machine screws to hold the inboard side of the wheel pant in position. Your brake arm, cable retainer and housing are now on the inside of the wheel pant, making a clean installation.



Parking Brake

In case you're tired of trying to find a tie-down rope everytime you prop your airplane, here is a simple idea that might make life a little easier for you. Find a rubber tarp strap of the appropriate length (approximately 15 inches) and fasten one end to the left rear support tube for the rear seat and leave the heavy wire hook in the free end. Now, whenever you need a parking brake, you just stretch the rubber strap and hook it into the top of the brake handle, giving the handle a slight pull to set the brakes. When not in use, we usually hook the strap over the front support tube to keep it out of the way. We've used this set up for about three years and have found it to be a welcome feature.

Magneto Can

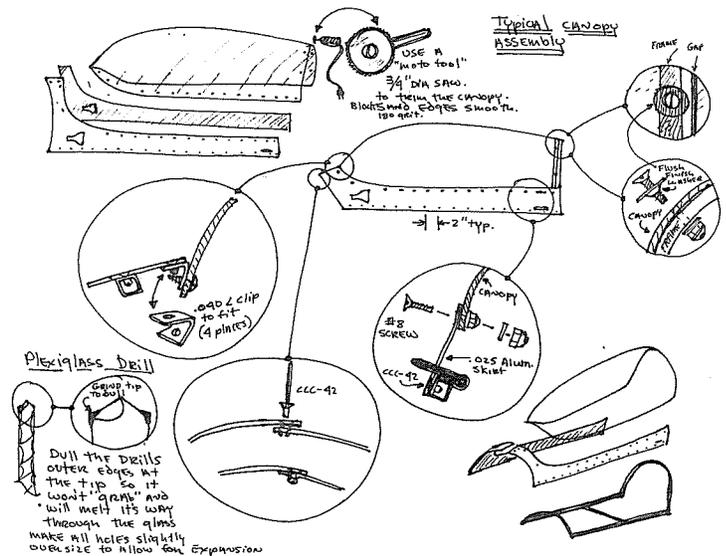
In the Sonerai II plans you will see the drawing on how to build the magneto box that attaches to the rear of the firewall. When it came to building this part of my plane I took the easy way out. Take an old three pound coffee can and shorten it to the correct length leaving enough material for six or more tabs that can be bent outward 90° and used to fasten the can to the firewall. Pieces of rubber trim channel can be glued to the edge of the can, in between the tabs, to seal it to the firewall. A round hole, the diameter of the can, replaces the square hole in the firewall. The mag should have clearance all the way around.

Canopy Installation

In the following paragraphs, I will attempt to explain a part of the aircraft's construction that most builders approach with a certain degree of confusion and apprehension. There are many different ways that the canopy and frame can be constructed, and here is one method. Whichever method you use, a generous amount of patience and self-control will help give you good results and avoid unnecessary expense. The canopy frame itself should be built according to the plans. By following all of the dimensions carefully you should end up with the front and rear bows fitting up fairly well to the rest of the fuselage. The canopy frame is built right on the fuselage, even to the point of lightly tack welding the frame longerons to the upper fuselage longerons to hold them in position while attaching front and rear bows. Please note in the drawing how the rear bow is spaced far enough ahead of the turtle deck bow to allow sufficient edge distance (3/8 inch) for attaching machine screws. If your rear bow is too close to the edge to allow bolting directly to it, you could weld eight small tabs onto the frame, pointing them forward. By using the tabs for mounting, you gain that much more edge distance. If when fitting your canopy to the rear frame you find the frame a little short and not allowing the canopy top to line up, you can easily raise it by installing small rubber grommets or pads between the frame and the plexiglass. These rubber pads give the added benefit of serving as vibration mounts. Keep in mind when attaching the canopy skirt to the front frame, if need be, it can be spaced out with rubber pads or washers. Remember that now is the time to make and install your canopy latch (Don't Forget the Return Spring), since once the skirt is attached it is difficult to get the latch assembly into the frame.

When working with your canopy, take care not to scratch it. Keep your hands clean and the metal chips

swept up. The first thing you must do to your canopy is trim the excess material away from the outside. One of the safest methods we have found for cutting our canopies is to use a dremel tool or a high speed die grinder with either a small buzz saw blade or a thin abrasive cut-off disc. Once the excess material has been cut off, it is time to lay the canopy over the frame (off of the fuselage) and mark your cut-off lines (masking tape works well) for the rear bow. The front of the canopy should rest against the rear side of the front canopy frame bow. Cut it off about one inch longer than necessary since you can always trim more off later.



At this time you can now put the canopy frame back on the fuselage and lay the canopy in place. Use blocks and small clamps to hold the canopy in position. You will notice that when you clamp the canopy down to the rear bow that it must be flattened considerably to make it conform to the shape of the rear bow. Use plenty of clamps to spread the force out along a greater area, so as not to create a high stress area. During the clamping procedure the canopy will usually shift slightly because of its modified shape. Any holes that you may have drilled earlier will probably not line up. It is better to wait until it is clamped securely in position before drilling any holes. When blocking the front of the canopy in position, try to get it as low as possible without restricting the front seat headroom too much as this will help improve your visibility. Usually the canopy front is fastened only to the canopy skirt, although a couple of tabs could be added to the front bow allowing the canopy to be fastened directly to the bow frame.

Now that the front and rear of the canopy is in position, you can now attempt the canopy skirt. It is important to remember that when drilling plexiglass it is advisable to use a dull drill bit, drill at high speed, and use very little pressure since it is easy to chip or crack the plastic. Drill all your holes 3/32" or 1/8" and use clecos to hold it all in position until you are done. For installing the skirt, the cowling must also be in place. The skirt is made from two pieces of .025 aluminum, with the pieces joining in a lap seam at the top, front area of the skirt. The skirting is installed by attaching the sides (top and bottom) first and then making the wrap around in the front. It does help to start out by making a template of the skirt out of poster

board or light cardboard. When transferring the pattern on to the aluminum, leave a fair amount of excess in the front. The aluminum does not form to the curve like the cardboard did and you will probably have to make alterations as you form it. Attach the skirting at the rear first, drilling and clecoing your way forward using two inch spacing. The lower edge of the skirt is attached directly to the frame longeron by just drilling through the skirt into the frame. The top edge is fastened to the plastic, drilling through the skirt into the plastic, allowing the 3/8" edge distance in the plastic and 1/4" for the aluminum. After both sides are attached, you can start forming the aluminum around the front. Work slowly, clecoing as you go. Continue attaching the skirt to the plastic with this method until coming to the area where the plastic begins to curve tightly around the front and the angular difference between the plastic and aluminum is too great to allow attaching directly between the two. From here on forward, use bent aluminum tabs as shown in the drawing. The top of the curved area should follow the line of the cowling. Do not allow the aluminum to slope up sharply in front, since this will not do much for your visibility. If you have trouble forming the front curve, go take a coffee break and convince yourself that it can be done.

Once everything is all clecoed together, you may now take it all apart. Deburr the holes in the skirt and the frame. If you are going to use counter-sunk pop rivets for holding the skirt to the frame, you can dimple the skirt and counter sink the frame to accept the dimpled skin. All the holes in the plastic should be drilled oversize. If you are going to use 6-32 screws, drill the holes to 5/32 inch minimum. It is possible to attach the skirt to the plastic with pop rivets; however, machine screws and stop nuts would be the better method. Use a large area washer or aluminum backing strip between the plastic and stop nuts. Tighten the nut down snugly then back it off one or two turns (depending on the curve in the plastic) to relieve the pressure. The loose fasteners and over-sized holes allow the canopy to expand and contract freely. Applying adhesive sealer between the plastic and aluminum is not necessary or recommended, since it could restrict its movement. If you find it necessary to seal off air or water leaks, run a bead of sealer around the outside of the canopy. If you are going to install an air vent in the canopy skirt, install it as far forward as possible. This position provides much more airflow compared to a central or rear location. The aerovator type of vents can be installed easily by just gluing them in position with a silicone type adhesive.

Now that you're all done, you can breathe a sigh of relief, knowing that you made it over the tallest hurdle.

Randy Howard

Our slide presentation is now available for anyone interested. It is a twenty minute program with about 30 slides and a tape to go with it. It is basically a very brief presentation of Monnett Experimental, John, our facilities, our airplanes, and our products. Anyone can borrow it for a

\$10.00 deposit. We have nine sets so there should be no problem getting it on relatively short notice. It would be good for E.A.A. meetings or even a get together of family or friends (who think you are crazy to be building your own airplane!). We do ask that you return it within 10 days, send U.P.S. if possible, and if mailed insure for \$15.00.

I have just sent off the purchase order for some new patches. The design incorporates the logo in a name badge patch for Monerai, Sonerai, and Moni. The patches will be black with white lettering and a green logo. They should be ready for the next newsletter with photo and price. Sorry but we will no longer have the Super Vee Patch. There are, however, several of the name badges left of Monerai and Sonerai in white. I am also working on some T-shirts for Sonerai and Moni. I know you Sonerai builders have been asking for them for years! One more addition to our line of incidentals may be hats. I hope we will have some kind of cap for the Fly-In.

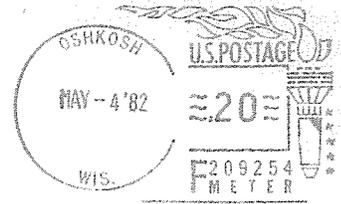
My children have all had the chicken-pox, one at a time no less. A mother's dream would be all at once! Now they are on Spring Vacation so I have not been in the office too much lately. To entertain myself, I decided to undertake sorting through two large boxes of photographs that had been stored in my office since the move. Low and behold, many of them were photos builders have sent over the years. Many had no names on them. So when you are up during Oshkosh we'll have a name the plane board of all those unidentified beautiful airplanes! It was quite a "trip" back in time to find photos of the old 410 Adams shop and the original Sonerai I and II. Eleven years has gone very fast! Many of your names have been in the files since then. Thanks to those of you who have sent old photos and articles. I recently received some photos taken in 1970 of the "Mini Messashidt", some of you will remember it as John's version of the Jeanies Teenie. Also an article from 1974 issue of *Popular Mechanics* about the Sonerai I and II.

Enough of our trip down memory lane. . . I'll be getting out my handkerchief in a minute. . . . Here's to May and June and to many hours of **Building or Flying** whichever your case may be!!

Betty Monnett



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ex. 9/82

**BE GOOD TO YOUR
AIRPLANE —
TREAT IT TO THE
OSHKOSH FLY-IN
1982**