

monink

The Newsletter of Monnett Experimental Aircraft, Inc.

November, December, 1981

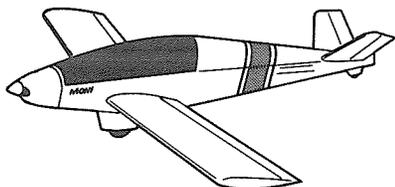
Dear Fellow Aviators,

Happy New Year! It should be 1982 by the time you receive this. The Christmas rush is over and the new year settled in. Hope you all had a nice holiday and can end the winter doldrums by working on your airplanes!! I can't let the old year pass by without toasting to an interesting, challenging, exciting 1981! I hope the Monnetts can now have an interesting, challenging, exciting but alot less hectic and much more calm 1982!

Since the last newsletter, John has been to Italy! He missed his turkey dinner but had some wonderful "sparrows" instead - in Italy you eat the whole thing except the head. The food was exotic, the time table short (left Thanksgiving and returned on Monday) but all in all it was an exciting trip. The KFM factory was very impressive. Let us suffice to say it rivals any engine manufacturing facility John has seen yet. To add some additional excitement, he got a ride in a 130 mph 1600cc VW Rabbit! (No speed limits in Italy!)

You will find a couple of additions to our Monink this issue. We have a Moni column for all of our new Moni kit owners. Also Randy Novak will be writing a column each issue called Handy Randy Novak's Notes! He will feature building tips and technical data for our builders. Randy is in charge of Research and Development Projects, maintains all the airplanes in the hangar-showroom, and even answers some of your technical questions when you call. We will also feature the Monerai and Sonerai columns, of course, and still want you to send us information on first flights, news about your projects, and any building tips you may have and would like to share.

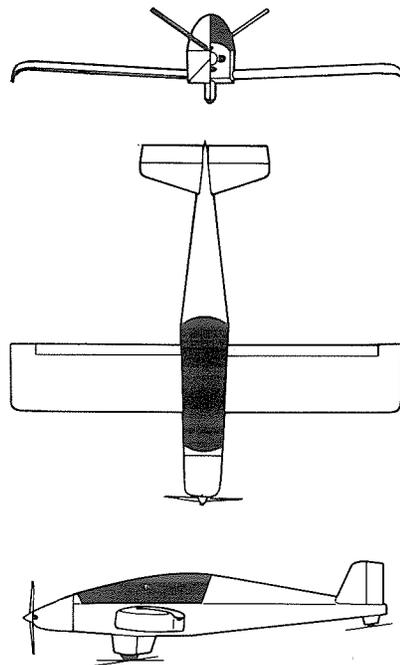
moni



As of January 1st, 1982 the price of a Moni Kit will be \$5,500.00. The deadline of \$5,000 for the Introductory Kit price was January 1st as stated in the last newsletter.

John has been flying Moni alot. Flight progress includes testing a new carb manifold which puts the carb a little further away from the prop and allows for an air

cleaner screen. The new cowl, motor mount, and exhaust stringer will be 4" longer. The cowl will be rounder in front with smaller air inlet openings and a joggle for the front canopy closure. All in all John feels it will enhance the performance, the C.G. location, exhaust system, and the looks. The new fuel tank, which everyone jokingly calls the mail box because of its round-top-suitcase-looking shape, will give us approximately 4 gallons of fuel capacity. (Two hours endurance at full throttle). And why more fuel? It's for the next step of the development of the ARV concept in Moni---called MINI-MONI. What is Mini-Moni? A Moni with short interchangeable wings. Why Mini-Moni? To produce higher top speed (140 mph) and a much increased roll rate for aerobatics (remember the 107 engine has a built-in inverted system).



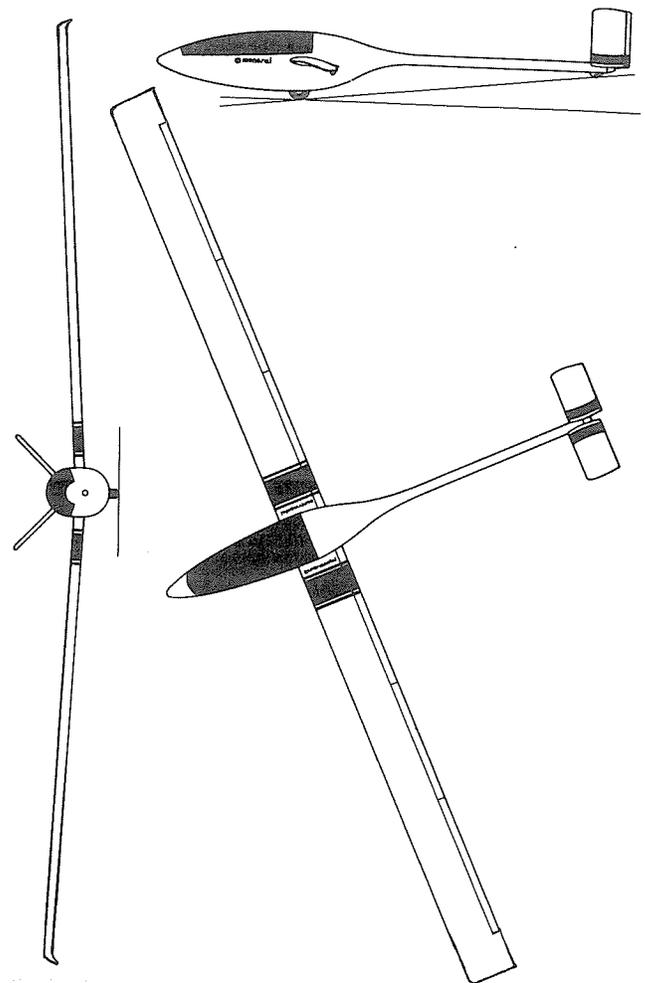
Specifications:

Span	..... 16'0"	Fuel Capacity	..... 4 gal.
Length	..... 15'0"	Engine Endurance (full throttle)	..... 2 hours
Wing Area	..... 44 sq.ft.	Top Speed	..... 140 m.p.h.
Empty Weight	..... 230 lbs.	Range at 120 m.p.h.	..... 250 miles
Gross Weight	..... 500 lbs.	Rate of Climb (Average)	..... 500 ft./min.
Useful Load	..... 240 lbs.	Design Limits	..... +6,-4g's
Cockpit will accommodate a	..... 6'4", 235 lb. pilot	Construction	..... All aluminum bonded and riveted
Engine	..... KFM 107		
	..... 2 cyl., 2 hp., electric start		

The plane has retained the single wheel gear which John feels is the most practical and the easiest to fly type of gear. Even though some non-sailplane pilots may think the only way to go is tri-cycle. The wing tip wheels are built into the turned down tips. Essentially the short wings use 1/2 of the components of the longer wings. Note the 3-view also reflects the 4" longer nose on Moni which we feel enhances the looks. Mini wings are now well underway and have been signed off for cover today, as a matter of fact. We should have them flying in February. Maybe some of you who like the looks of the Monex might find the mini wings appealing. Since the wings are interchangeable, it is foreseeable that some people will build two sets of wings: One for sailplaning and putting around, One for getting your jollies upside down!

KFM Engines will be arriving in March and we are trying to time Moni deliveries relative to that. Kit deliveries should begin in April on a kit number priority basis. You will be notified when the kit is ready and it will be shipped upon receipt of the balance due. A \$500.00 deposit is all that is required when you place your order and this holds your production number.

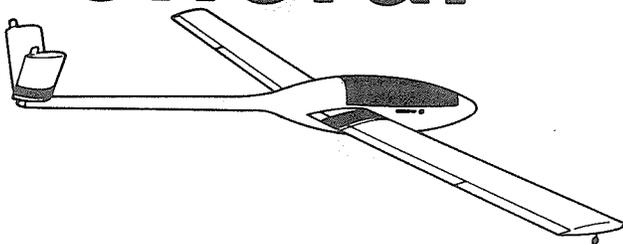
I might mention that the tower here at Oshkosh has been very co-operative to us during test flights. They are getting used to John entering the pattern with the engine shut down and flying a glider during marginal VFR days!



Monerai-Max

Span 12 m
 Aspect ratio 18/1
 Glide ratio 33/1

monerai



Plans for installing the 107 on the Monerai are progressing! John took the drawings and photos of the 107 engine pylon to Italy so the people at KFM could evaluate and design the exhaust system installation. We are waiting for that information in order to proceed on the 107 installation on Monerai and will keep you updated as that information becomes available.

Monerai-Max is a Monerai with a 12 meter wing! This wing will undergo testing as soon as John is able to furnish the molds for the extended wing tips. Performance evaluation is scheduled for Spring. The aspect ratio will be increased to 18 to 1 and the glide ratio may be boosted as high as 33 to 1 on a clean ship. Yes, they will be a retrofit item and will be available as a kit for your already purchased Monerai's.

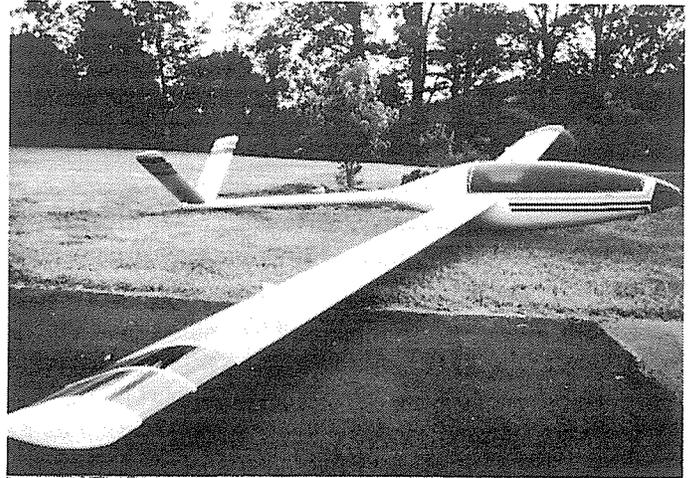
A nice addition to your Monerai--New 2 3/8" diameter soft rubber tires on an aluminum wheel are now available from M.E.A. The cost is \$3.50 a pair, post paid (in U.S.). These are to replace the hard nylon wheels on the wing tips. They will help cushion the wing drop loads and reduce the noise of the nylon wheel running along the runway. They should be in stock by the time you get this newsletter.

Those with a Power Pod Kit please note:

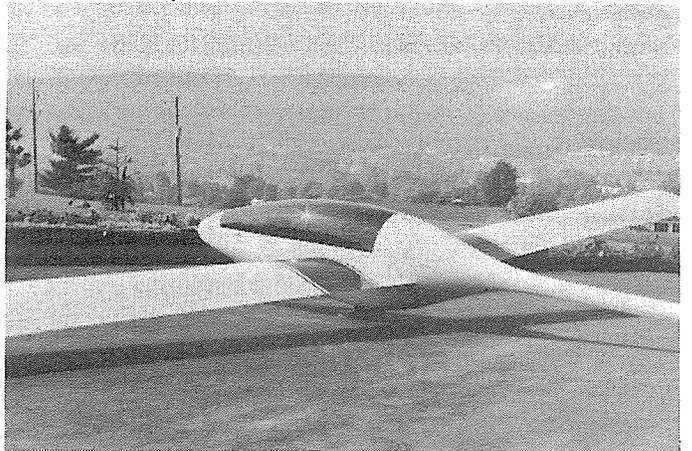
Monerai Power Pod Exhaust Modification -- We have had a few cases of the exhaust silencer screen on the muffler exhaust cracking and/or breaking. To avoid pieces coming out and entering the prop, remove the screen and retainers completely. 5/8 ID washers should be welded on top to the Chrome Exhaust to restrict the opening to the original size.

News From Builders

Virgil Paggen - #172, 123 Loomis, North Granby, CT 06060 Licensed Sept. 1, 1981 (Expects to fly in Spring)

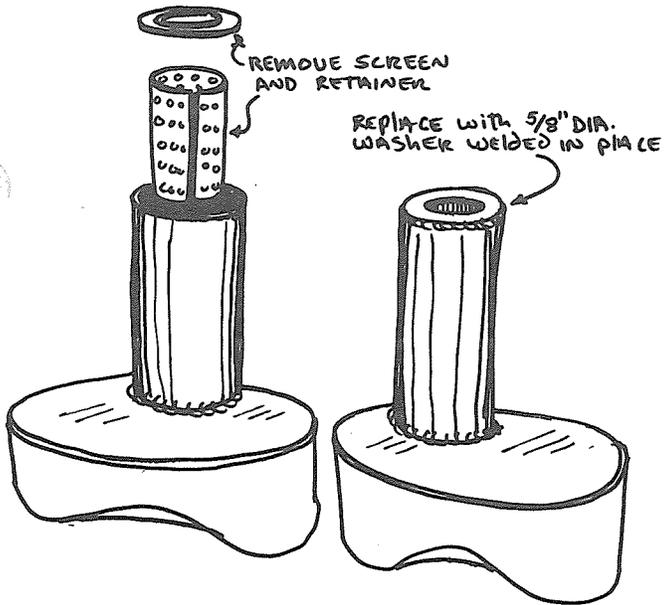


Wide angle lens makes it look like this Monerai has a 17 meter wing!



Helmet Hess - #74, Rd. 4, Box 82, Norwich, NY 13815

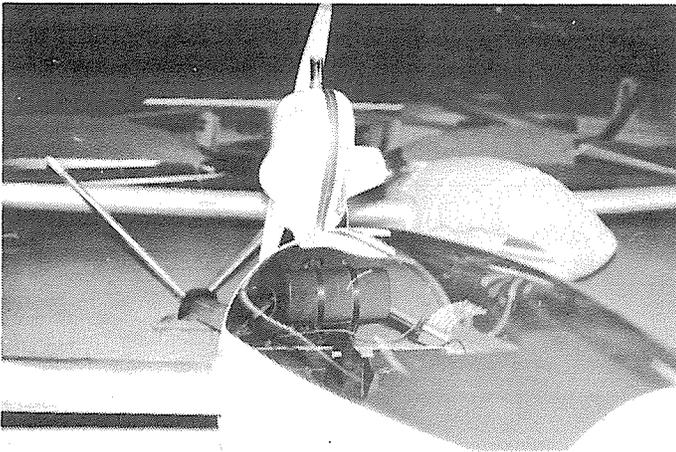
Completed Oct. 1981. Nice paint job - only red stripes instead of green!



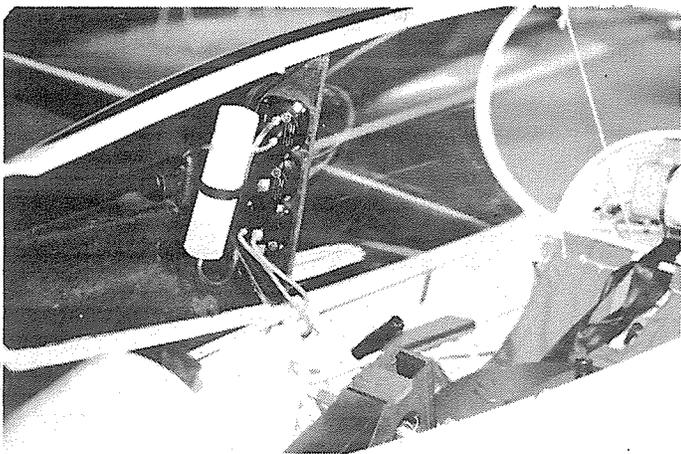
Monerai Muffler Modification

First Flights

P. Coos - #286, 103 rue Scheuer, 6700 Arion, Belgium



First flight Sept. 30, 1981 with power pod!



Another nice canopy modification.

Builders Tips

James D. Taylor - #208, 3625 S. Verbena St., No. 318, Denver, CO 80237

Jim sent us all these excellent ideas about a year ago! Somehow they were lost in a shuffle between desks and I humbly apologize for the lateness of publication!

1. If you are having problems getting the tail boom to slide into the shell, try this. Take the tailboom extension tube and insert it into the boom hole in the shell from the canopy opening. Reach thru the boom hole from the back and pull the tube thru the hole. Won't fit? Now you know where to file out the excess resin as the instruction manual tells you. Once the tube slides all the way thru the hole push it forward until the back edge is an inch or so forward of the aft end of the shell opening. This will spring the shell open and

hold it to the right shape. The tail boom will slip into the shell just as slick as a whistle.

2. If your constitution is more delicate than John and his friends and you find the idea of bending 4130 tube over your knee to make canopy bows a bit ludicrous there's an easier way. Find a well inflated tire of the proper diameter and bend the tube in a semicircle around the tire. Use a piece of tube longer than necessary and cut the excess off after you have the radius established. The tire has enough give so that it will conform to the diameter of the tube and virtually eliminate kinking problems. A 6:00 x 6 aircraft tire is just about perfect for the mid canopy bows but someone else will have to contribute a size for the aft bow as I used the tank of my air compressor. The best thing about this is that the bends are uniform and they match!

3. I ruined a couple of good clamps trying to straighten the spar caps and turned the air pretty blue until I hit upon this trick. Buy or rent a stout 2 jaw gear putter such as K-D Tools #2298. Buffer the jaws with a steel bar or angle and put a nut and a plate or something under the threaded spindle which has a sharp little point on it. Tighten the spindle until a straightedge laid across the outer edges of the spar caps clears the vertical web by about 1/8". When the tension is released the caps will spring back and be flat. You probably will have to move the whole business outboard and do it again to get a flat place for the whole root fitting but the process is so quick that you can bend all 4 caps in 1/2 hour or so. The gear puller is about \$45.00 but then building an airplane is always a good excuse to buy exotic tools, isn't it? (Editor's note: this is for old style unformed spars - the new spars do not require forming the caps.)

4. Hanson Tool Company makes drill bits especially for plexiglass. The price is under two bucks, I got mine at a plastics dealer. Cheap if it saves a canopy. A 1/2" rotary file is one of an aircraft mechanic's favorite tools. Black & Decker makes them and they will make short work out of opening up the wing ribs to clear the spar caps. Best of all they leave a nice radius and eliminate the chance of a crack producing nick or break which occurs anytime you cut with a tin snips and close the jaws fully. Used gently, this tool will do wonders on fiberglass too. It's a swell way to open out the main spar and flap drive holes in the shell. These files are much too coarse to use on the canopy but if you have access to one of those Dremel Moto-Tools or similar high speed device a small burr used very carefully will trim and cut your canopy like magic. (Editor's note: a small 1" diameter circular saw blade works great for canopy cutting also.)

5. I looked at all those little spacers John uses in the control system, you know, the ones cut out of the 3/16 ID bushing stock, and said, "There's got to be an easier way." There is. Catch 22, you need a bench grinder. Get a big stack of 3/16 ID AN flat washers, a piece of 3/16 threaded rod and a couple of nuts. Cut a short piece of bushing stock to use as a diameter gauge, stack the bushing and washers on the rod, tighten the nuts and grind to size. Two washers equal one bushing

6. Look at all those elastic stop nuts used in the control circuits and elsewhere. Did you tighten each and every last one of them properly? Are you sure? Eliminate all doubt by writing Organic Products Co., Irving, TX. Ask them to send you some "Torque-Seal" inspectors' lacquer. Comes in a variety of fluorescent colors at 90¢ per 1 oz. tub (minimum order 6 tubes, share with a friend). A dab on each nut as you torque it is proof positive that it's tight. Best of all the stuff gets hard when it dries and breaks and falls off if the nut is loosened in the future. All the aircraft manufacturers use it.

7. A pallet knife from any art supply store makes a dandy applicator for small areas of body filler such as around the front canopy bows. Tongue depressors make good epoxy mixers. See your favorite Doc.

For Sale

Len Padios - #18

Apt. 207, 1801 Ocean Park Blvd.

Santa Monica, CA 90405

1 Power Pod Unit. Ready to go, with tach - \$11,000.00

Donald J. Heath - #170

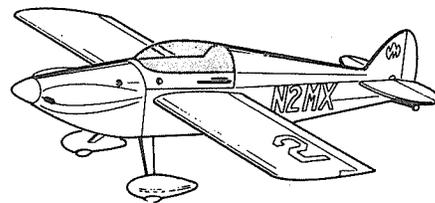
Rt. 5, 4849 Laurel Lane

Ft. Myers, FL 33908

813/482-2177

Monerai Kit. 80% complete. Glue one tail surface and it's ready for pre-cover inspection. \$4,000.00

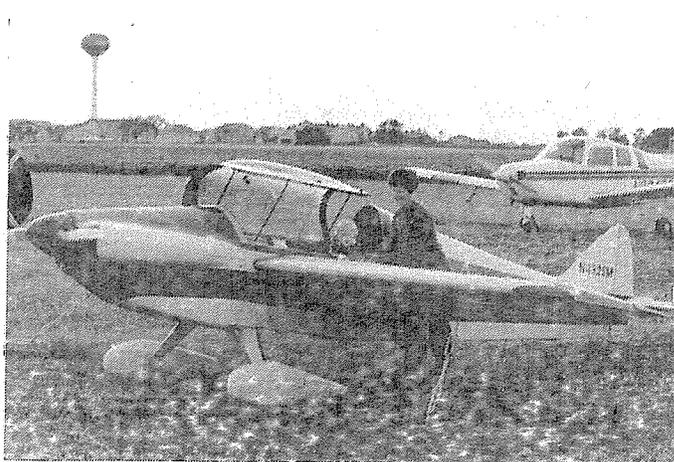
sonerai



First Flights

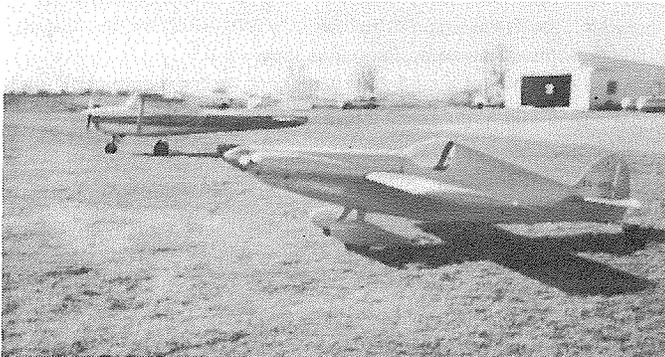
Steve Mitoraj - #579 II

2224 Charming Fare Dr., Woodridge, IL 60515



Steve's first flight was back in Sept. 1980. Was this little one in the cockpit the pilot or the payload? Pretty nice crew anyway!

M. Mazurek - #232 I
270 Wellington St. W, Chatham, Ontario,
Canada N7M 5K1



First flight Oct. 29, 1981. A highly modified Sonerai I
-called the Sonerai I ½!!

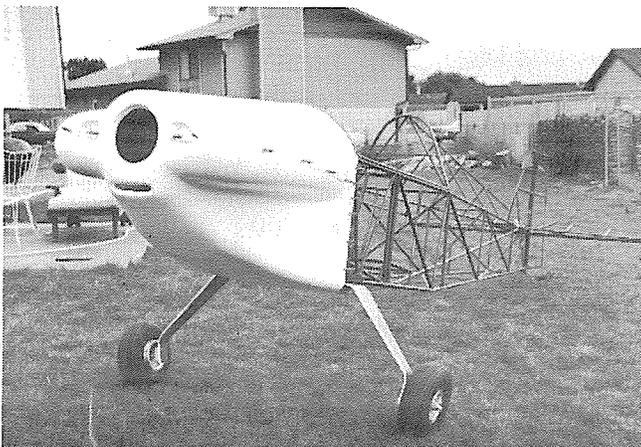
News From Builders

David B. Heal - #210-I
135 Woodland Rd., Pleasantville, NY 10570



Spring 1981. Before Engine and lower cowl installation.

Bill Allen - #1083 IIL
598 Shoshone St., Grand Junction, CO 81501



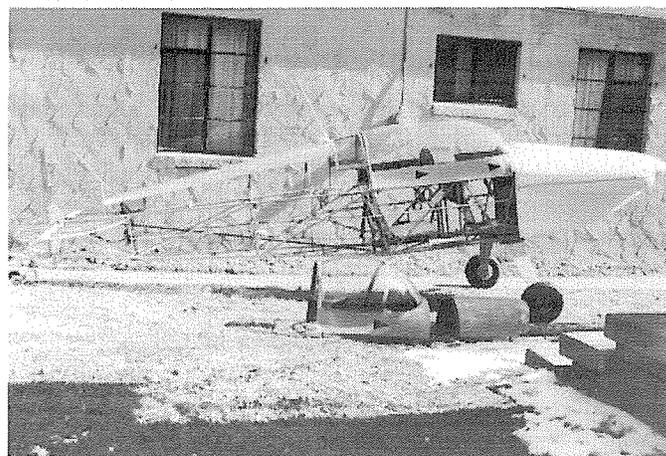
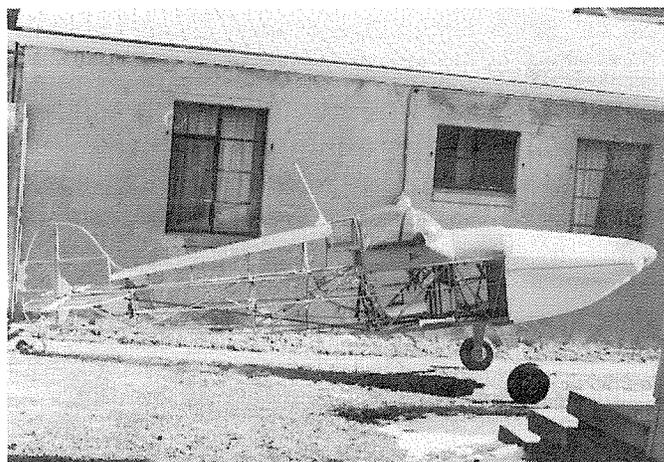
Progress as of September, 1981

Sammy Fulco - #724 IIL
20250 Smithfield Crossing Ln., Katy, TX 77449



Son, Neal, sends this photo of Dad's progress.

G. B. McClintock - #504 II
107 Vansicle Ct., Point Pleasant, W.Va. 25550



Aircraft is set up to be convertible from one place canopy
to a two place canopy.

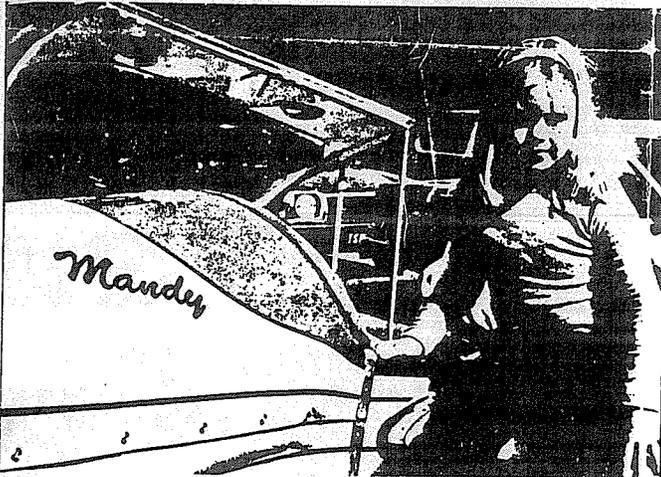
Darrel Richards - #780 II
Route 1, Box 95, Fordsville, KY 42343



Awaiting registration and final inspection!

E. C. Woods - #441 II
 3M South Africa Ltd., P.O. Box 10465, 2000
 Johannesburg, South Africa

Mr. Woods completed a Special School Flight Project which I feel is certainly worth reading about. This article from the South African Digest, week ended March 27, 1981, came to my attention from Mr. Chuck Larsen at E.A.A. Headquarters. Hats off to Mr. Woods!!!



Mr. Woods' granddaughter Mandy sits on the wing of the plane named after her.

Their Pride Soars as Mandy Makes Its Maiden Flight

As the small, blue and white aircraft came out of the clouds and banked towards the runway, there were cheers and applause.

Moments later when it rolled to a stop, the cheers became a roar.

Mandy has just completed its maiden flight. About 600 teenagers swarmed around its pilot, Mr. E. C. Woods, managing director of 3M South Africa, when he stepped out. Hundreds of parents, well-wishers and onlookers were also on the runway.

It was a proud moment for the young people. They had helped build the plane. It would have been a worthy feat for any group of teenagers, but these students of the Batavia Special School in Cape Town have learning difficulties.

Mr. Woods started them on the project in 1977 when he first visited their school. Because his 10-year-old granddaughter Mandy is a victim of Down's syndrome, he has a deep interest in programmes for children with learning problems.

Mr. Woods was impressed by the dedication, enthusiasm and high qualifications of the staff of Batavia. They are teaching youths, who are handicapped, to become self-sufficient, independent adults.

Along with basic academic subjects, the school offers vocational training in hairdressing, sewing, nursing, woodworking, spray-painting, sheet metal work, auto-body repair, welding and engine mechanics.

As Mr. Woods marvelled at the dexterity with which the handicapped youths performed new skills, he got an idea.

A World War II pilot and a former bush pilot, he has always had a great passion for flying. A few years ago he built his own aircraft, which won the South African Aerobatic Championships.

Surely, he thought, with the facilities at Batavia and the excellent instruction available there, the students could build an aircraft.

He wrote to Monnett Experimental Aircraft in the US to inquire whether he could purchase a kit for a Sonerai II - a two seater, single-engine sports plane.

For two years, the plane became the focal point of the school. Everyone was involved. Student mechanics worked on the engine, seamstresses on the upholstery, welders on the fuselage, painters on the finish.

Mr. Woods and his friends from E.A.A. in Cape Town provided expert advice. The Department of Civil Aviation regularly inspected the project.

"You have not only given them an aircraft, you have given them a tangible reason for pride," said Batavia's principal Mr. Lenel van Niekerk, in a letter to Mr. Woods. Each of the school's 613 students signed the letter, which continued: "The pupils of my school come from such poor homes and ... have always had to suffer the indignity of being called ... slow, useless, etc. Our initial task ... is to try to instill a feeling of pride in themselves.... You can't realize what a big job this is. You have done this job for us in record time."

Mr. van Niekerk said each student felt Mr. Woods had given him or her the plane personally.

As the project neared completion, enthusiasm at Batavia was at a fever pitch. When the plane made its maiden flight late last year, the entire school turned out to see the rewards of their work.

The story of Mandy had really just begun. Mr. Woods is flying the plane to various cities for fund-raising events for local schools. He hopes it will raise R35 000 for Batavia before it is raffled.

"I have never known a more rewarding experience," Mr. Woods says. Inspired by the project's success, he has given another plane kit to a school near Johannesburg.

For Sale

Clayton Harrell - #458 I
 1 Rensselare Drive
 Pittsford, NY 14534
 716/381-7148 Call collect evenings.

Wing Kit - Sonerai I with plans, hardware and rivet kit.
 Spars professionally built. \$800.00

Handy Randy Novak's Notes

For Sonerai IIL Builders:

1. The dimension shown for the rear spar carry-thru is 22 15/16, it's actually approximately 22 1/8" due to the angle of the vertical tube at station 73 3/8 which allows the lower longerons to be narrower than the top ones at that point.

2. The hinge tube assembly (station 47 3/8) must be heated and twisted slightly to allow the wings to line up with the wing fold tube (station 115 3/8).

3. Aileron push-pull rods for the low-wing must be shortened to the extent that the type of rods used on the midwing will not work well. A method that does work well is to use a long shank, male thread, rod end bearing screwed into the standard rod end bearings supplied in the hardware kit. This gives you a short enough length combined with good double jointed action for smooth controls. We do not currently stock these extra bearings, but we are working on it.

Miscellaneous:

1. Cutting plexi-glass - A good method for cutting your canopy is to use a high speed Dremmel tool, or die grinder with a small abrasive disc or circular saw blade. It cuts very clean, leaving an edge that requires little filing, and lessens the risk of cracking your canopy.

2. Sonerai aileron rigging - While talking to a few builders this past summer, I realized that there is confusion as to how to properly rig the ailerons. First of all, the aileron push-pull rods must be adjusted so that the counter balance tips will be approximately 1/4" above the wing skin. This is done in order to maintain the proper airfoil contour. In flight the tips will be almost level with the top wing skin, which achieves the concave profile of the lower surface (wing to aileron). It also puts a light pre-load on the aileron control systems, giving you faster aileron response. It does mean that the aileron tip will not be exactly lined up with the wing tip, but it will offer better aileron control and mush slower stall and landing speed.

3. Sonerai Flight Manual/Pilot Handbook - For all of you Sonerai builders that are nearing completion, and those of you who are veteran Sonerai Pilots, this manual offers alot of good information. It is styled much like a production aircraft flight manual, and includes information on weight and balance, performance specs, and flying procedures, in addition to ground handling, inspection and maintenance procedures. It is quite a large book and is well worth the twenty dollars. (Cheap!)

(Editor's Note: Mel Lamb of Merrillville, IN actually wrote the majority of the manual several years ago. Much credit is due him for the lay-out and nice format. Thanks, Mel!)

4. Wing Construction - Sonerai builders please note that the wing spars furnished in the kits are not trimmed to length. Also, when you are skinning your wings and the wing is in the jig, fasten down the main spar so that it cannot move. Make a female template of the top half of the airfoil (from the plan co-ordinates) and use it to check the wing profile before, during and after riveting. There have been several cases of the main spar shifting during the skinning process because they were not fastened down well enough. Because of slight variations possible in the spar depth and forming of the ribs, you may find that the wing skin will take a dip where it is riveted to the spar. If you are going to smooth out your wing with the polyester filler, this is no big problem. However an alternative is to simply make a .020 (or whatever is necessary) strip of 2024-T3 aluminum to fit on the tip and bottom of your spar which is then riveted on between the spar and skin. Be sure that with the extra thickness your rivets are pulling satisfactorily. This will smooth out your profile without adding alot of filler.



In closing I'll mention a few things up and coming in 1982. We have set some workshops dates for April and May. Many of you have been asking about the workshops and we feel April is the soonest we can fit them in. For those not familiar with our Builders Workshops they are one entire Saturday of discussions, demonstrations, building tips, short cuts, lunch, visual presentations (slides, movies, video), and weather permitting, flight demonstarations! The schedule will be as follows:

Sonerai	April 3
Monerai	April 24
Moni	May 1

Cost is \$15.00 - this includes lunch. They run from 8 to 5 and are open to anyone interested in finding out how to build this particular airplane. Many participants are plan holders but many are just curious aviation enthusiasts who want to see what is involved in the building of one of our airplanes.

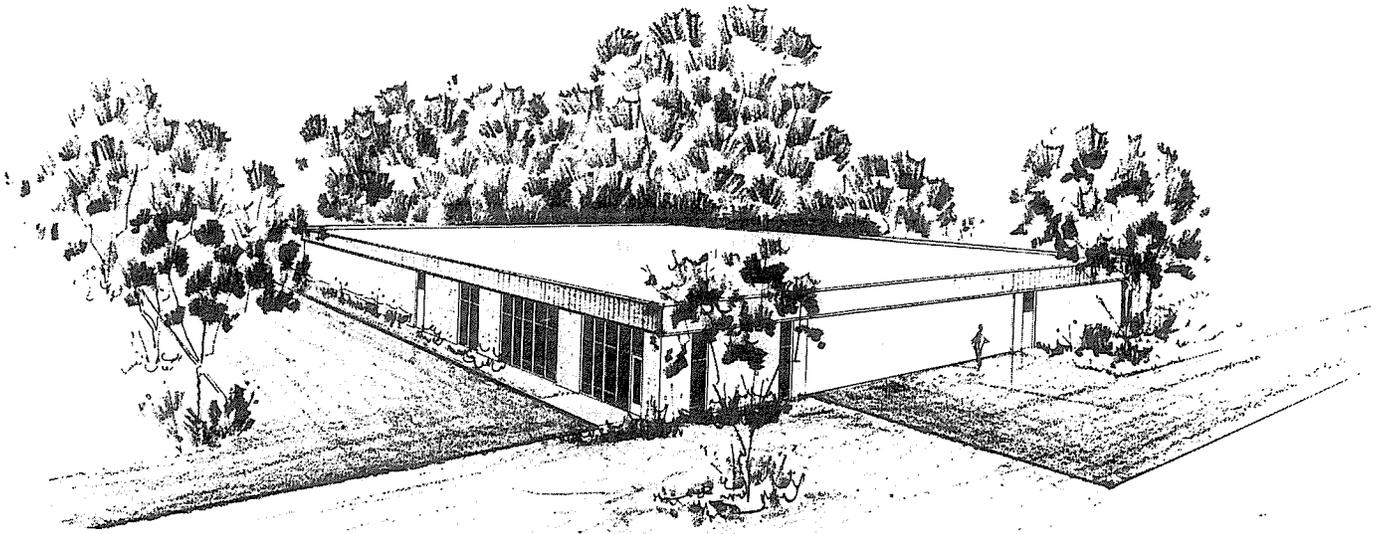
Dave Gustafson of Communications Resource is working on a short slide presentation with a narrative on a cassett tape. It will be about the airplanes, basic construction, and MEA in general. Perhaps you would be interested in this for an E.A.A. Chapter meeting or a small group meeting in your area. More on this later.

Looks like March will be a busy traveling month. We will be at the Soaring Society Convention in Houston from March 3 thru the 7th with both the Monerai and the Moni. We will have a booth so look us up! We also plan on being at the E.A.A. Sun 'N Fun Fly-In in Lakeland this year. That is March 14 thru the 20th. Hope its warm and sunny!

Remember we are now opwn on Saturdays from 10 til 2 so if you have nothing else to do this winter fly-in or drive-in and see what Oshkosh is like without all those thousands of people on Wittman Field!!!

A Happy and Prosperous New Year from all of us to all of you.





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