

# monink

The Newsletter of Monnett Experimental Aircraft, Inc.

September, October 1982

Dear Friends,

As you read this John and I will be on our way to Las Vegas and the AOPA Convention held there Oct. 30th through Nov. 4th. This is a first time for us. The first time at an AOPA Convention and the first time in Las Vegas! We will have a booth and will be taking the Moni for display. It should be interesting to be in this market place. It is amazing how many pilots of AOPA don't necessarily know about homebuilts and sport aviation. Dad Monnett is joining us to help out and Rob Maddox will be doing the road duty and driving the Moni out and back.

Rob is what I call our "oldest" employee - at 22! He was one of our first part time High School Packing Boys back in Elgin. During college, he continued to work every vacation and summer, and now after graduating has moved to Oshkosh and is back again full time. Only temporary I'm sure, but we are glad to have him.

Speaking of personnel, we have had a change in the office staff. Perhaps some of you have already spoken on the phone with Livia Hazlette. She has the same lively personality that Carol has and many of you have mistaken the two on the phone! Livia has replaced Betty Evers as our bookkeeper so any questions about your account - she can answer. You may be getting a few notes from she and I concerning your account as we are going through and checking out each and every one before the end of the year. Livia is truly a great asset to our staff as she is highly competent and very personable. She is still, of course, learning about the airplanes and parts, etc. but is learning fast. She and her husband have a business in Oshkosh called Audiophile. We welcome her to our staff!!

John just returned from a short speaking tour of "one night stands"! Instead of doing workshops he just gave a presentation each evening in Tulsa, Dallas, and Kansas City. We want to thank the E.A.A. Chapters for their cooperation in setting this up with Dave Gustafson of Communication Resource. John wanted me to thank Jerry Treager in Tulsa, OK; John Harast in Dallas, TX; and Herb Ford in Overland Park, KS for making him feel welcome, taking their time, and chauffeuring him around. He enjoyed meeting and talking with these chapters.

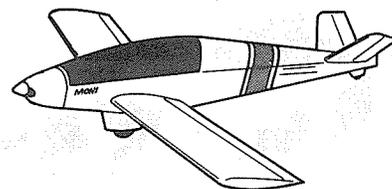
The Kerrville, Texas trip was also enjoyable for John and Randy. Although six days of driving for two days of air show was a bit taxing, they felt it was worth it! They said it was a nice fly-in, with great hospitality. They met alot of you builders, saw alot of Sonerai's there, and won Best New Design with Moni!!

They did spend some time with Roy Lopresti at Mooney

and enjoyed going through their facilities. Their new airplane is going to be something!

We have a couple of new products which I need to mention here. The new Telex Radio TPX-720 I mentioned last time is available now for \$830.00. It will work well in all the airplanes. It is lightweight and compact! Also, we have added to our line of wheel pants again - in fiberglass this time. We now have 500 x 5 Horizontal Split for \$70.00 and 410/350 x 4 x 5 compact Horizontal Split for \$60.00. These items are listed in our newest supply catalog now at the printers, October 1982.

## moni



We have just finished another addition to the Moni brochure. This makes the third time it has been expanded as everyone asks for more and more information.

John is working on the Flight Manual for Moni which will resemble the one we have for the Sonerai. It will include everything from preflight to maintenance to performance charts. He is just beginning this and it should be available in the not too distant future. (How is that for being vague?!)

We are still waiting for the floats to come-in which we ordered for the Moni. There may be a need for snow skis before we get the floats on to be tested! That will be another item we'll be working on this winter if time allows - snow skis.

We have a new deluxe avibank pin set now available for you Moni builders. They are stainless steel quick release wing mounting pins. They will greatly reduce wear and tear on the wing mount fittings and help speed up field assembly time. Price is \$59.00 for six pins.

More news on the special KFM 105. It will be a 2 cylinder 4 cycle 40 hp engine. This will be an early prototype that we will be doing the Flight Testing on. Please don't write for extra information as there is none!

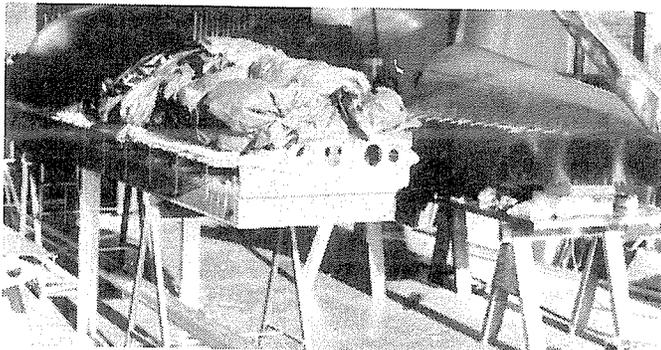
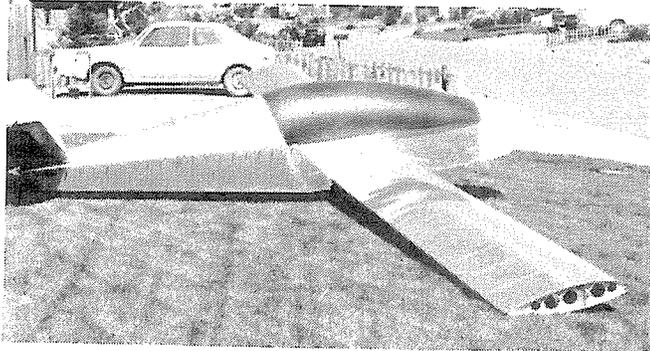
We are starting to build a special Moni airframe with standard Moni components, a mid-sized wing-19½ ft. wing span, and a longer main wheel for added prop clearance. The basic airframe isn't modified. This means

that sometime in the future there is the possibility of converting a Moni to a larger hp with a minimum of changes if Moni builders would want to do that.

We heard from our first Moni Builders. Thanks, guys!

### News From Builders

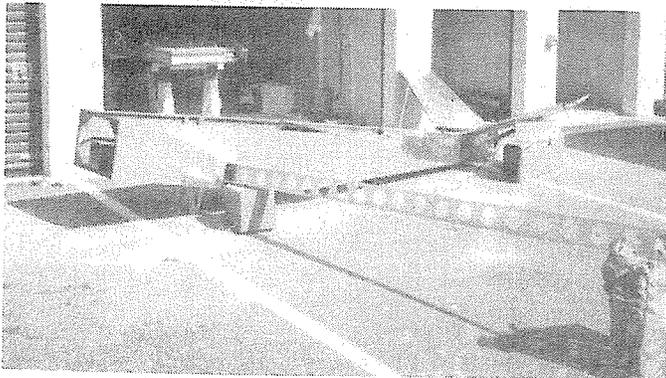
Garrett McClary #8  
611 Starlight Drive  
Grand Junction, CO 81501



Garrett and Joan send these photos of their swift progress. The garbage bags hold the sand they used to bond the wing.

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Gilbert Houston #64  
8 Vista Gardens Trail  
Vero Beach, FL 32960



Gil writes: "I probably have the distinction of having the smallest building space. As you can see in the photo - a 10 x 20 storage space adjoining. So far it's been ample. What you see represents 160 hours of hard hot labor but enjoyable with one side benefit I did not anticipate - the loss of 10 excess pounds so far . . . ."

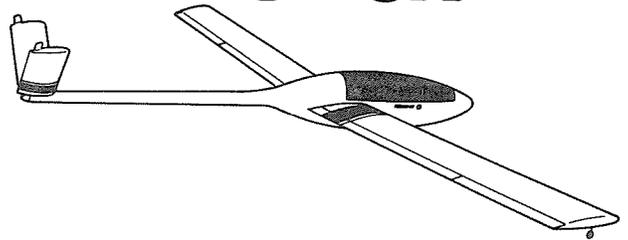
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### Builder's Tips

Gilbert Houston also sends this tip: "After checking on costs of drills to do the holes in the spar knuckle, I went to the local machine shop and had them do this along with the tailwheel castings. Cost \$12.00!! Cost of drills to step from 3/8" to 1/2" over \$50.00."

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# monerai



Look for an exciting cover photo of Monerai on Popular Science, December 1982. There is also an article. We are very enthused about this, of course. Such great exposure outside of the aviation world is hard to come by.

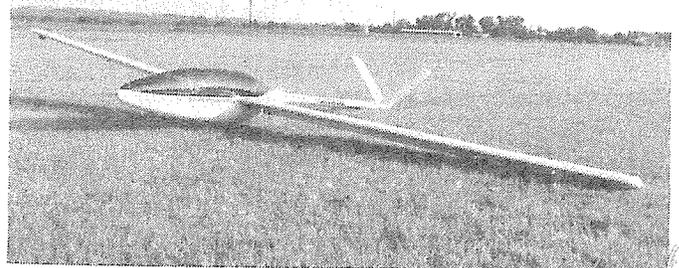
The Monerai Max Wing Tips have been very popular. We are trying to get the parts as fast as we can so hang on!!

The KFM Power Pod status has not changed since the last newsletter. We are still working on the muffler-exhaust system. When put on the dyno the original muffler which we were flying was only developing 16 hp of the available 25!! We were not unhappy with the performance even at that 16 hp and the long wing. But naturally are looking forward to an improvement now. Both the Italian KFM and a California company are working on an exhaust system. Unfortunately all this takes a great deal of time. It is not something you can do overnight. You will be informed immediately when this power pod is available. I know many of you are waiting patiently! This is Monerai Month here! There were five first flights and lots of news!!

Terrific!!!

### First Flights

Fred Taylor #219  
2454 W. Dallas Street  
Grand Prairie, TX 75050



Fred sent us his picture and news of first flight on 7/11/81. Somehow we overlooked putting this in the newsletter and apologize. Thanks for letting us know. I did find your picture in our book Fred!

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Jim Veligdan #75  
601 Pennview Drive  
Pittsburgh, PA 15235

Jim recently wrote us telling us of his first flight in July, 1981. He used Monerai components as a base to produce his own new larger sailplane which he described in his letter: "Flies like a SGS 1-26 at 55 kts. Very stable. No P.I.O. 13.5 meter wing span; 50% more tail area; hinged tail surfaces at 25% chord instead of 29%. Conventional center stick instead of side stick; added spar doublers to maintain 6 G's. Empty weight 340 lbs.; same wing loading as original new canopy with 8" more headroom. Fiberglass molded seat; flush riveted wing skins and glued. After completion the aircraft was sandbagged while monitoring 6 strain gauges to check stresses with computer modeling. Resonant frequencies of wings, fuselage, tail were measured with accelerometers to check for possibility of flutter."

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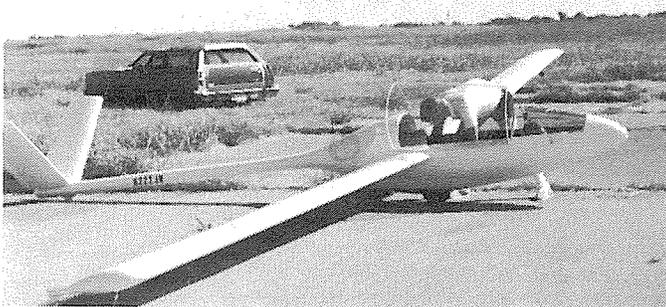
Tommy Lundmark and  
Lars Hillstrom #297  
Vallbacksqutan 11  
80225 Garle, SWEDEN



First flight August 21, 1982. Garle Sandriker Airport, Sweden

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Jim Necessary #222  
119 Leewood  
Arkadelphia, AK 71923  
First flight September 4, 1982 at Caddo Mills, TX



Jim writes: "First flight was great. No PIO, trim just right (full forward for T.O., pulled on after release). Flew hands off. Stalls were straightforward. Experienced some wing tip dragging before breaking ground on T.O. (Used 2 notches of flap) Tow was very smooth at 55-60 mph with 200 ft. towrope. Flaps are super. Full 90° really steepens the glide path. On second flight I gained 1000 ft. above release in weak lift. Really turns and flies nice. Now if I can take the thrills out of take-offs!"

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Lars Waldner #340  
Horizons Technology, Inc.  
6800 Poplar Pl., Stc 101  
McLean, VA 22101



First flight September 17, 1982. Lars writes: "Well, the impossible has been done. N3277H has been completed, test flown (and of course signed off) and had the 5 hour restriction time flown off. After seemingly futile delays - for instance ten extra days before I received the airworthiness certificate etc. from the F.A.A. because the inspector couldn't type and his secretary was sick! Oklahoma City refused to co-operate and admit that I had in fact registered my plane and requested a special N number, then I ended up being given 2 N numbers after all. - Yes it does fly!

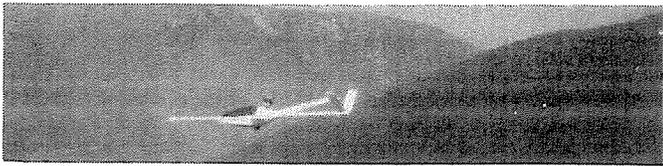
Well, not to be a braggart, but I am to an extent, at least about my Monerai. I had 19 total hours flying anything and on my 50th glider flight I test flew N3277H, after of course, progressive auto tows. I've a few hours in a 1-36 and found pitch control to be equally as sensitive. Boy, as soon as it reaches speed, that sucker wants to fly! I encountered no problems with modifications but noticed one peculiarity. Tow plane accelerates quickly to insure sufficient air over controls to produce effective lift for operation, and as soon as I'm off it's tough to maintain position behind tow plane before he lifts off. Sometimes (75% of the time) 77H jumps up and to the right and I wondered if anyone else has encountered this phenomenon. I think it might be due to the wash coming directly off the towplane and his prop. As soon as I'm able to compensate and stay behind him it's okay, but just that first split second of anxiety when it jumps off the ground to the right. No wingtips drop, no tremendous yawing action....hmmmm? And once I'm released and on my own it flies, yet that's correct...Hands Off!! I've got the extended wing tips, fiberglass seat and a 1-piece canopy that really works super. ..."

(Editor's Note: John says this phenomenon is caused by the wash from the tow plane. Monerai is more affected by it because of its short span and light weight. Longer tow ropes often help the situation.)

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## News From Builders

Richard Visscher and  
Peter Eims #341  
4100 15th Cres.  
Vernon, B.D., Canada V1T 7H4



Richard writes: "Today we did a 30 mile cross country. . . we have about 40 hours on it since our test flight of November 14, 1981. Picture of Monerai in flight is over Salmon Arm."

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

Sam sent us a copy of the letter he sent to S.S.A. and we thought you might like to read it first:

Dear Sirs:

I have built and am flying a Monerai (S/N 323) at Tehachapi, CA. During the S.H.A. Seminar held there this year, I had a chance to talk with quite a few Monerai builders, most of whom have heard bad reports on its handling characteristics. Some have even stopped construction in fear of what would happen to them when attempting to fly it.

Let me relate my experiences, observations and corrective action to allay these fears. I have logged 25 flights in my Monerai, with a total of 22 hours. Two of these flights were over 3 hours in duration and altitude max of over 12,000 feet in thermals.

During the first 16 flights, I ground looped it 6 times (twice on take off). That's a .375 batting average...okay for baseball, but it sure started raising hell with my nerves. With the prospects of something more permanent than my pride getting hurt, I went seeking help to evaluate and isolate the reasons for my problems. After talking with John Monnett, the instructors and tow pilots at Tehachapi, plus other pilots, I realized the overwhelming factor involved in my problems was ME, namely my incorrect flying technique.

My problems occurred at airspeeds below 25 kts. and an altitude of less than 3 ft., the ground loop being started by loss of aileron control and then catching the wing tip. In all cases I had a flap setting of +12° to +24° and therein lies the problem. The Monerai wing being close to the ground, this flap setting would create ground effect strong enough to support you long after the aileron authority has become insufficient to overpower any wind gusts you may encounter, tow plane propwash, or otherwise. On take off, positive flaps will also pop you into the air before you have sufficient aileron control.

With the help of the aforementioned, I have developed the following techniques that have restored by confidence in myself and my respect for this excellent little ship.

ON TAKE OFF: 0° Flap; Stick forward to raise tail; Lift off at about 40 kts. (ease it off); Tow speed of 60 kts.; 12° flaps after approximately 100 ft. altitude (so you can see the tow plane from high tow position).

LANDING: Final approach speed: 50 kts.; Flap setting: 45° minimum (I prefer 75°); Round out and get it on the deck (don't let it float); At approximately 40 kts. airspeed, dump all the flap, go negative. You can fly it on its main wheel, or hold the tail down to make it track straight. (I have a tail wheel on mine).

To those of you already flying Monerai's, who haven't found this out, try it. . .you'll like it! To those of you still building and are somewhat apprehensive, get with it! It flies well this way.

For my last four flights I've had the wing tip extensions on and can say they improve all aspects of flight and highly recommend them. They take less than a week to retrofit (plus some trailer mods.)

My evaluations of flying the Monerai? Never had so much fun, it's a ball! I can't quite climb with a 1-26, seems to have a slight edge on a Duster and will outrun both of them. It likes to thermal at 40 to 45°, bank at 50 to 55 kts. I estimate L/D of 30 at 52 kts. and minimum sink of 1.6 kt.

In appreciation for the help and support I've received, I want to thank

John Monnett and Monnett Experimental Aircraft Co., the Tehachapi Fantasy Haven personnel, in particular Bill Beacher, instructor; Larry Barrett, owner and instructor; and Ken Saul, glider guider. To these people and many others, thank you all for your help sorting out my problems and keeping me in the air.

Sam Phillips

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N. S. Sandberg #253  
ORadiog 2C  
S-85242 Sundsvall, SWEDEN



Nils "thermal warrior". Nils writes: "My summer vacation is over and so far I have got 2½ hours in my Monerai. A thermal flight in 45 min. was the best one. Due to the hot summer with 30° C in the shadow I just can't fly. The aerotow gives no trouble at all. My Monerai makes stall tendency in 60 km/h (37mph), still controlable in gentle turns. Termaling is made in 70 km/h (44 mph) just as is the Ka6 CR we have. Best L/D is somewhere around 90 km/h (55-56 mph)."

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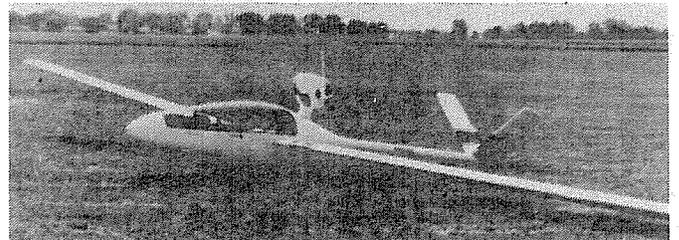
Jim McCulloch #6  
c/o Artel Services Corp.  
141 Canal St., Bldg. 2  
Nashua, N H 03060

Jim would like to try to start a Monerai regional newsletter and to hold a Monerai meet. If you live in the East, he asks that you please contact him!

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## For Sale

Ray Honey #276  
551 Drummond Dr.  
Bourbonnais, IL 60914  
815/933-8072



Monerai with power pod and enclosed trailer, 11 hours total time, restrictions removed, Radair 10, a Beauty!! Illness forces sale. Will sacrifice.

\*\*\*\*\*

Don Heath #170  
4349 Laurel Lane  
Ft. Meyers, FL 33908  
813/482-2177

Partially completed Monerai ..... \$3,000.00  
 Truss and Controls finished; boom mounted; spars finished and ribs attached; shell finished; canopy fitted.

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Harry Knight #207  
 1121 Independence  
 Bartlett, IL 60103  
 312/741-0468 work

Newly completed Monerai with power pod and trailer.

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Pierre Coos #286  
 103 rue Scheuer  
 6700 Arlon Belgium



Zenoah Power Pod Unit, ready to go ..... \$600.00  
 Pierre has been experimenting with a Konig Motor, is flying with it now and is very satisfied with the results.

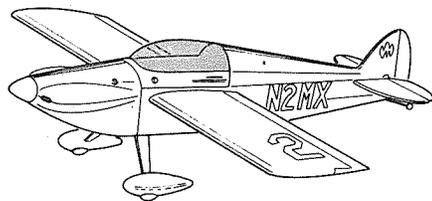
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Dario Toffenetti #314  
 5943 Mira Hervesa  
 El Paso, TX 79912

Zenoah Power Pod Unit for sale.

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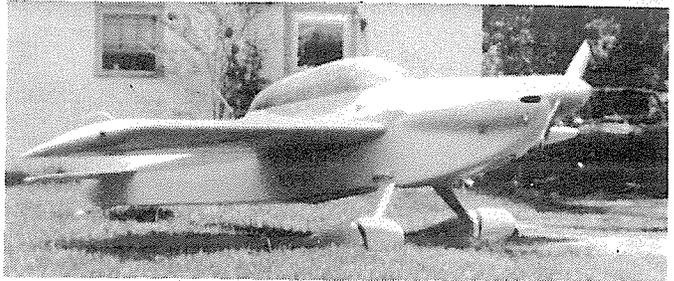
# sonerai



One word of caution to Sonerai builders. Auto Fuel. We have been using 100 octane low lead fuel until recently. We switched to auto fuel and found some problems. Some detonation can occur, burned pistons and/or cracked cylinders will result from the wrong compression ratio. It is suggested if you are going to run auto fuel the compression ratio should be at or below 8½ to 1. If you have some further questions, call Randy about the piston deck height in determining your compression ratio. Our low wing prototype has been running about 10-1 compression ratio with 100 octane and we are now in the process of lowering it.

## First Flights

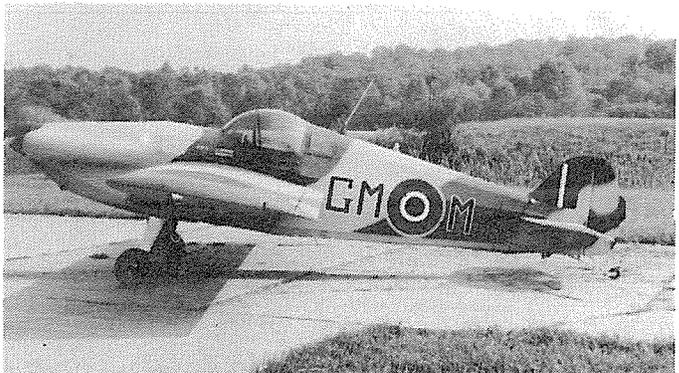
Ray Daze #321 IIL  
 Box 872  
 Onalaska, TX 77360



While the newsletter was at the printers last month, Roy wrote: First flight August 15, 1982. 5 hours, 10 minutes flight time by 8/25/82. 1700 cc Monnett Super Vee, strobe lights, Genave Radio. Past experience: 40 hp cub through AT 6 & B29 and clipped wing cubs!

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G. B. McClintock #504 II  
 107 Vansickle Ct.  
 Point Pleasant, W. VA 25550

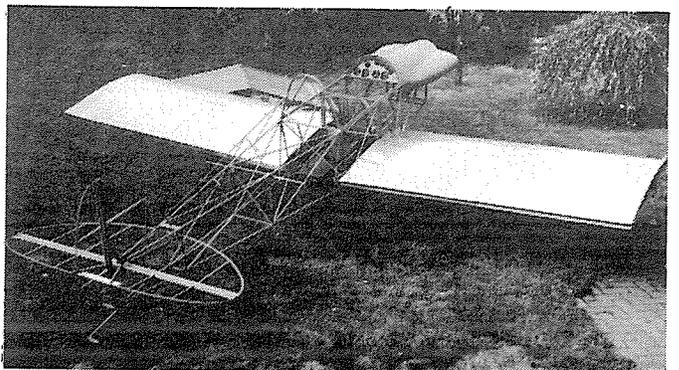


Flew first flight 10/18/82. Congratulations! A Sonerai "Spitfire" at last!

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## News From Builders

Frans De Smet #919 IIL  
 Molenbaan 18/2  
 2410 Herentals, Belgium



Frans sends us this photo of his progress.

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William Ziegler #433 II  
 69 - 4th St.  
 Waterford, NY 12188

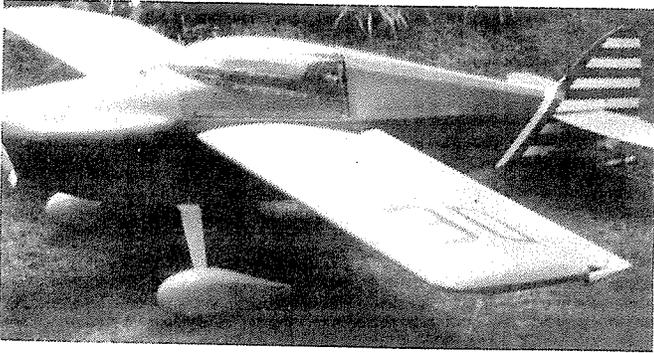


Photo of progress as of August 1982. Looks ready to fly!

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T. E. McDaniel #820 II  
 5800 Alameda  
 El Paso, TX 79905



Photo looks like its ready to go too!

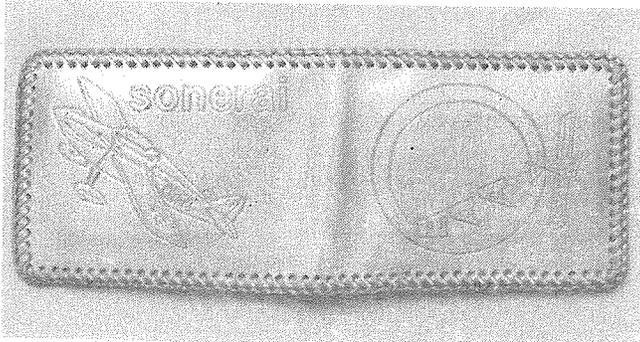
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### For Sale

Robert Veneck, Sonerai #971 II, showed me a wallet made by his friend during his visit to the Fly-In this year. We thought you might be interested in purchasing one also. If so here is how to order.

Write to: John J. Stephens, Sr.  
 3670 Fowler Avenue  
 Omaha, NE 68111  
 455-4648

Cost: \$25.00 post paid



(He could also put on a Moni or a Monerai for anyone else interested.)

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### Trade

James Chapman  
 Box 23  
 Gilman, IL 60938  
 815/265-4422

James recently wrote: "I was wondering if any of the Sonerai owners, who might be considering selling their Sonerai, would be interested in trading a Sonerai I or II for a 1948 Harley-Davidson 740 hv, full dresser, trophy winner. If so, I would like to do business with them."

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# novak's notable notes

**Forming Wing Skins** - A common fact with all of the kits that are furnished for the Monnett designs is that the wing skins are furnished in the un-formed state, usually just rolled up. The procedure has always been to fold the aluminum sheet double as required, fasten the trailing edge corners with clecos, then form the leading edge radius. This could have been done by using either a 2 x 4 board or the wing spars taped together, depending on the airplane you were building. Then by kneeling on the board and working your way toward the leading edge, you could form the leading edge radius.

Now, there is a better way! Using a few simple household supplies, you can vacuum form your skins without fear of leaving any evidence of your labor on the aluminum (foot prints, knee dents, scratches, etc.) Just fold the skin double as required, but instead of using clecos to hold the trailing edge together, use nylon or mylar tape. (Masking tape can be used, just put an extra layer on so that it doesn't surprise you by suddenly returning to its previous shape.) Next, seal up the ends using large plastic garbage bags taped to the skin. The bags must be so large as to insure that they do not offer any resistance whatsoever when the skins get drawn together. Otherwise, you can end up with a misformed wing skin. In the plastic on one end, cut a small hole near the leading edge. Into this hole insert the suction tube from your vacuum cleaner and seal it up with tape. Turn on the switch and watch the skins draw together! If you're using a powerful vacuum, it may be possible to over form the radius, but by operating the switch on/off, you can control the whole process fairly easily. If your vacuum cleaner is a bit on the anemic side, then a small amount of help with a 2 x 4 may be necessary. In either case, check the radius using a rib or a template as you progress.

**Moni Wheel** - During a hard landing, the plastic wheel can deform enough to pinch the inner tube, possibly causing a flat tire. To prevent this, we have been using a plastic liner between the inner tube and the rim. A section cut from a plastic bleach bottle works well when trimmed to a width of two inches. After assembling the wheel assembly, inflate the tire to 39 P.S.I.

**Priming Metal Surfaces - Aluminum** - The following steps for priming aluminum surfaces are normally accomplished before spraying on the exterior paint finish. Although not normally even done by any of the major airframe manufacturers in this country, it can also be done on all the interior surfaces, protecting the aluminum from the corrosive action which is common along the ocean and around large cities. The ocean furnishes salt air and the cities sulphur dioxide, and both have an appetite for aluminum.

The aluminum is prepared for priming by polishing all of the surfaces with a medium grit scotch brite and then thoroughly cleaning the surface with lacquer thinner or M.E.K. The surfaces must be primed soon after they have been prepared, otherwise, a film of oxides will form, preventing a good bond. After cleaning with thinner, phosphoric etch could be used. The acid etch further cleans the aluminum but because of the mess involved most builders and even paint shops do not bother with it. The recommended primer for aluminum is any brand of zinc chromate or zinc phosphate enamel primer available at most automotive supply stores in either quart cans or aerosol spray.

Apply it following the manufacturer's instructions. When priming aluminum, it is best to spray a wet, thin, transparent coat. Try to avoid heavy paint build up. You can paint the interior surfaces after the majority of the structure has been assembled, but before it is closed up and you still have access to the interior. You can also paint all of the pieces separately, just before riveting. If you go with the latter method, it is very important to keep your paint film as thin as possible, to avoid having a soft layer of material between riveted parts. If you are going to spray color coats over the primer, as you would for the exterior or possibly the cockpit area, be sure that the primer is compatible with the finish coat. If you will be spraying a more exotic type of paint, a more specialized primer coat may be required. Follow the paint manufacturer's recommendations.

**Steel** - Any steel part must be cleaned by sanding or grit blasting and cleaned up with lacquer thinner. Again, Zinc Chromate enamel is the standard primer even though there are various brands of epoxy primer on the market, some made especially for aircraft use. The epoxys are more durable than the standard primers and are therefore able to do a better job protecting the steel parts.

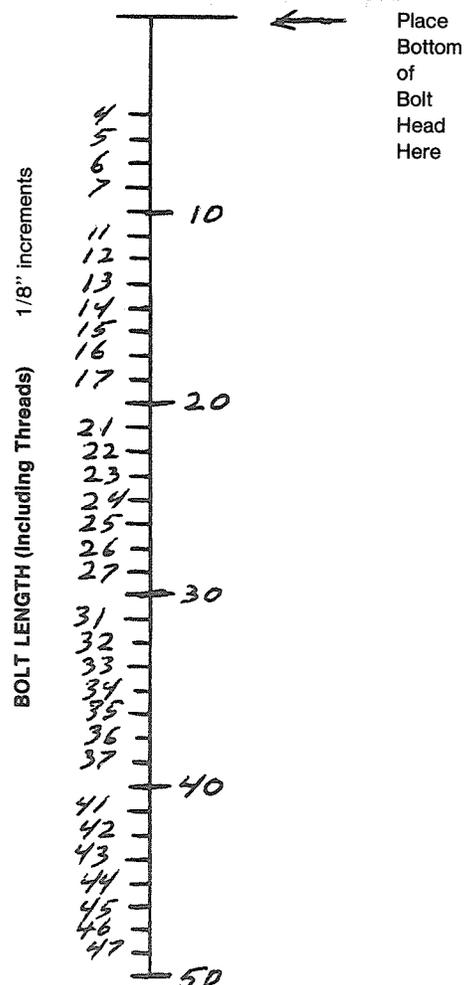
**Moni Stabilizer Skins** - Making the skins in accordance with the dimensions given in the plans will leave you with an oversized piece after it is formed. This is to allow for some error during the forming process. Fit the skin to the

structure using the dimensions shown for leading edge and tip spacing. After the skin has been clecoed in place, mark the rear spar position and remove the skin to trim off the excess material. The excess material at the root end will be trimmed off later, if necessary, when the tail is fitted to the fuselage.

**Sonerai Engine Maintenance** - After about 25 hours of operation on a new VW engine, constant expansion/contraction and movement may allow the cylinder hold down nuts to loosen. All eight of the cylinder nuts should be checked for proper torque and if needed, re-torque to 215 inch pounds (8 mm). Do not exceed this value or the studs may be damaged. To accomplish this, the intake manifold castings and rocker assemblies will have to be removed. When reinstalling the rocker shaft assemblies, be sure the push rods are seated in the lifters and rocker arms. Then torque the shaft retaining nuts to 215 in. lbs. Check the valve clearance and re-set to .006 to .008 inches if necessary. Re-install the intake manifold castings and torque to 160 inch pounds.

**How to Determine Bolt Sizes** - AN bolt sizes are given in dash numbers. The first number indicating the bolt shank diameter in sixteenths of an inch (AN3 = 3/16"). The length is in eighths of an inch. See chart below.

**AN Bolt Length Guide**



We will be holding workshops again so mark your calendars with these dates: January 15th, 1983 - Soneral Workshop; January 29th, 1983 - Moni & Moneral Workshop. They will be from 8 to 5 - all day affairs with lunch provided. The fee will be \$20.00. Wives or girlfriends only \$5.00 (A Special Deal). Just send in your fee or call in a reservation. You will need to register ahead of time. We need your name, address and phone number. As I have explained before these are definitely construction workshops. John goes over details of welding, metal-working, construction techniques used to build the airplanes. We have decided to combine Monerai and Moni since the construction is very similar. Now just hope the January weather here in WI co-operates. Last time we waited til spring and that April Saturday we had one of the worst storms all winter!

Did anyone happen to tape any of John's forums during the Oshkosh Fly-In? I had a request for one and we did intend to tape them but in all the hub-bub no one thought of it. If you did, please contact me about it. Thank you.

Could it possibly be? We have been in Oshkosh for one whole year now. October 30, 1981 was our Grand Opening Celebration. It is truly hard to believe.

We are die-hard Wisconsinites already though - as we went to the 5th World Series Game on a Sunday in Milwaukee and cheered our hearts out for the Brew Crew!! (Never had a chance to say that about the Chicago Cubs!) It was quite a celebration in Milwaukee that night; all over Wisconsin for that matter. We do get behind our teams.

We are behind all of you too and cheering you on as you work on and fly your airplanes. Thanks for all the photos and reports and goodies you send me. Keep them coming!

Betty Monnett

Prodorick Kelp S111#356  
11726 Six Mile Road  
Franksville, WI 53126  
EX-9/S2



monnett experimental aircraft, inc.  
p. o. box 2984  
oshkosh, wisconsin 54903

