ACRO SPORT Newsletter

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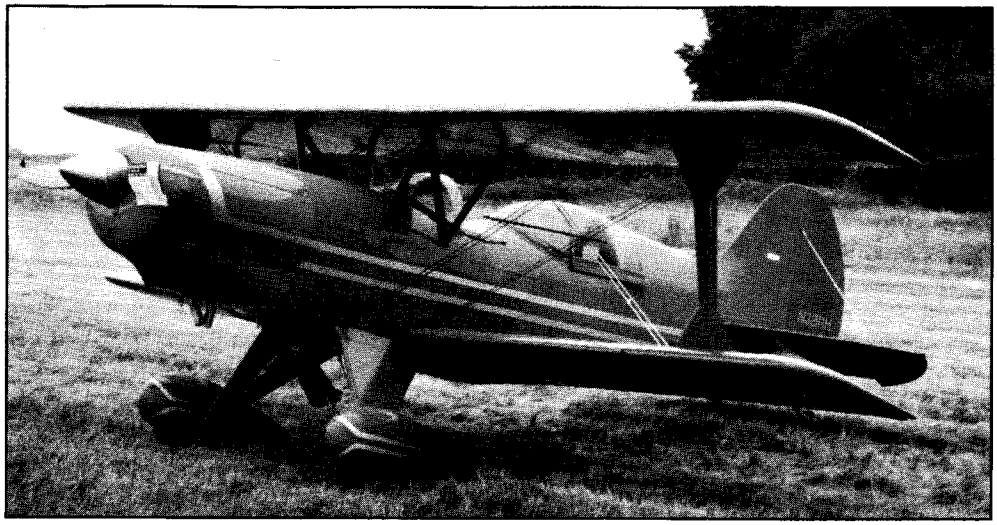
Award Winner!

by Rich Hartzell, Acro Sport II
N38RH — S/N 106
144 Briar Avenue N.E.
North Canton, OH 44720



Akron-Canton Regional Airport "1991" Airshow - Chapter 82 Canton.

I will try and tell you about my building the Acro Sport II biplane that I just received the Achievement and Designers Award for on December 19, 1991 from Oshkosh. My Acro Sport II is the second plane that I have built over the years. My first plane was an EAA Biplane, N75RN, that I finished in 1975 and flew to Oshkosh a few times. I put on over 450 hours total time before I sold it to the new owner.

The plane was built pretty much like the single place Acro Sport. The Acro Sport plane was just coming into its own in the middle 1970s. I built the Acro Sport turtledeck higher to resemble the shape of the Acro Sport I, installed an 0-320 EAA 150 hp engine. The plane cruised about 120 mph and really was fun to fly and looked like the Acro Sport.

My Acro Sport II plane I started in the early 1980s and finished in 1987. I like the tube and fabric type construction and the wood work. I like welding and fabrication work very much and enjoyed building this plane. The welding work was a little tricky with light steel .025 being welded to .035 and .040 steel tube stringer stand offs. All the fabrication work on the belly of the Acro Sport without turning the fuselage upright and doing the welding I found was very hard to do, especially on the back and wearing glasses along with welding glasses.

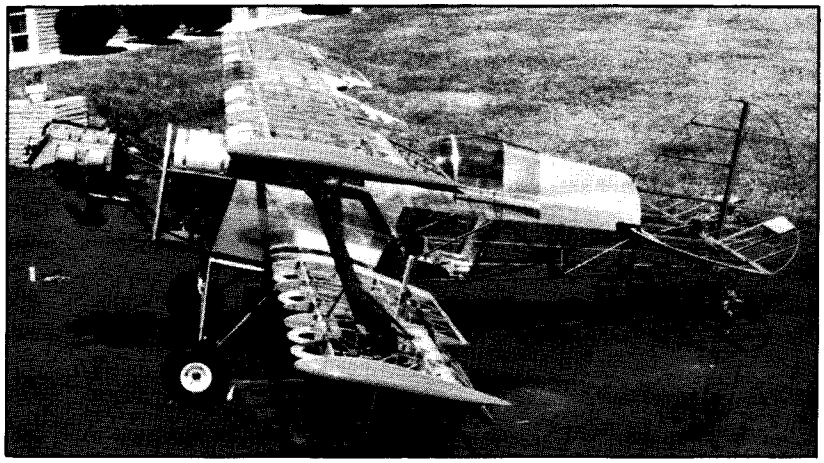
I started the wings first, buying my wood mostly from Trim Craft in Burlington, Wisconsin and doing all the ribs first, being the easiest and not having a lot of money tied up in the beginning. It took me about two years to build the wings, mostly working in the evenings — spending about one or two hours every evening. My spars came from Trim Craft and the quality of the wood being outstanding with grain line and slope real good. All my steel fittings I made out of steel flat stock, drilling many drill press holes and filling to fine line.

I enjoyed the steel work in the fuselage and tail section, making the jigs and using all the tools to do the job. It took me almost three years to build the fuselage, tail section and landing gear, the best part being when I made the landing gear and married it to the fuselage for the first time.

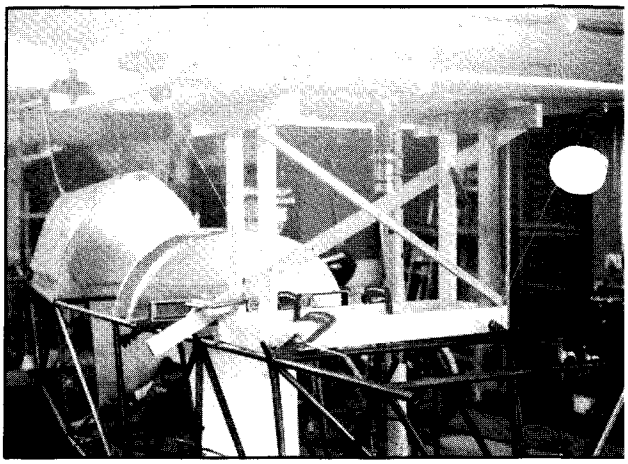
I just couldn't go past the garage to my truck without first stopping to look at my project. It seems when you get to the point you know it's going to fly soon, you start putting more in the project. I built the landing gear right to the fuselage using dimensions from the drawings and no jig was used; it turned out pretty good. And I used the shock cords like it called out. The shock cords really made the plane land a lot nicer and stress relieves the bad ones.

I was thinking about going to the steel spring like a lot of the builders have. The whole plane was built in my two place garage which is 18 feet by 24 feet and was able to rig the whole plane. I built the center section struts and "I" struts right on the plane by jigs and support as needed. The enclosed pictures will give you an ideal how it looked in my garage.

All of my steel stock was ordered from real good people at Dillsburg, Pennsylvania with the quality of the steel being good aircraft grade. My Acro Sport II plane was built from the green sheets and I have Serial #106. I had many incorrect areas in the plans and the corrections were made using Oc-



Rich Hartzell, Acro Sport II, N38RH, S/N 106 - 1986.



Cabin Construction — Rigged to center section & built using jig.

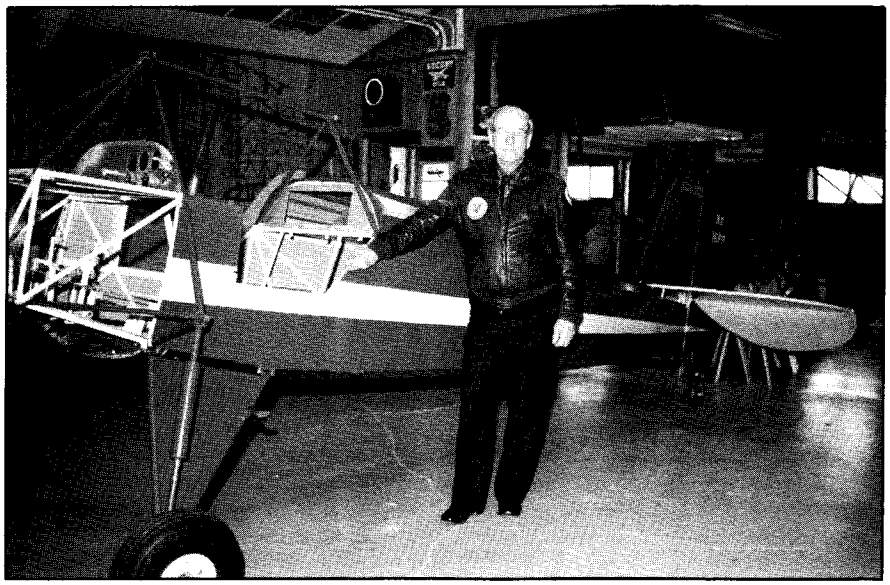
tober 19, 1979 corrections for almost every drawing sheet. I did get help from staff personnel Bill Chomo and Ben Owen when needed.

My Acro Sport II was covered with Dacron fabric and covered with nitrate and butyrate dope and finished in Pontiac Imron red and silver striped with silver sunburst on the top wing and tail section. A picture of my plane was in the Newsletter April 1990, No. 31. My plane has been to Oshkosh twice and will be returning this year. To date I have about 145 hours on it total time. This plane is powered with a Lycoming 0-320 EAA 150 hp engine and cruises around 115 mph. I have a 24 gallon fuel tank and gravity-type fuel system that has worked out real well.

I wanted to build light and did not want an acrobatic system installed. I did build in a full electrical system with 360 channel radio transponder and encoder because I fly in and out of ARSA area at CAK. My plane weight is 1000 pounds empty. I can fly time and distance around 180 to 200 miles in 1:45 minutes time. About one hour and a half and I am ready to sit down. My fuel burn is about nine gallons per hour for this engine. I need about three to four gallons to hold pressure while on ground or my engine will start to cut out. In flight with another person in the front seat makes the plane fly a lot nicer. It seems with weight on the center of gravity I can pick up more speed and make nicer landings, and cruise is 5 mph faster. This plane could use a little more weight up front. I located my battery up forward of the front seat but if I had a metal prop, I know it would help. The prop I am using now is wood and has a 54 inch pitch for climb and is lightweight. Make is Univair Flottorp, 73

EDITORIAL

by Paul Poberezny



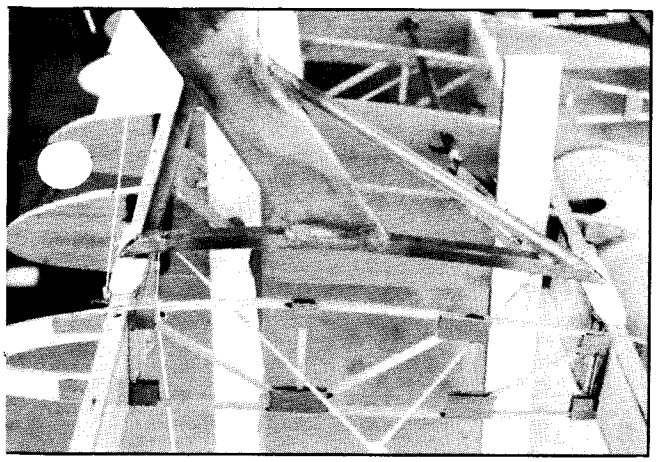
Spring is finally here in Oshkosh — or, rather, it seems like it quickly turned to summer! And in a very short time a number of you will be gathering here at Oshkosh to swap stories, visit forums and make new acquaintances, as well as renew old friendships.

While reading my mail we see an ever increasing number of Acro Sports being completed and that will mean more Acros on the Oshkosh flight line. As we did last year, we hope to have some space reserved up near the Homebuilders building for a row or two of Acro Sports — so get here early; "Gentle" Ben Owen will be there to greet you.

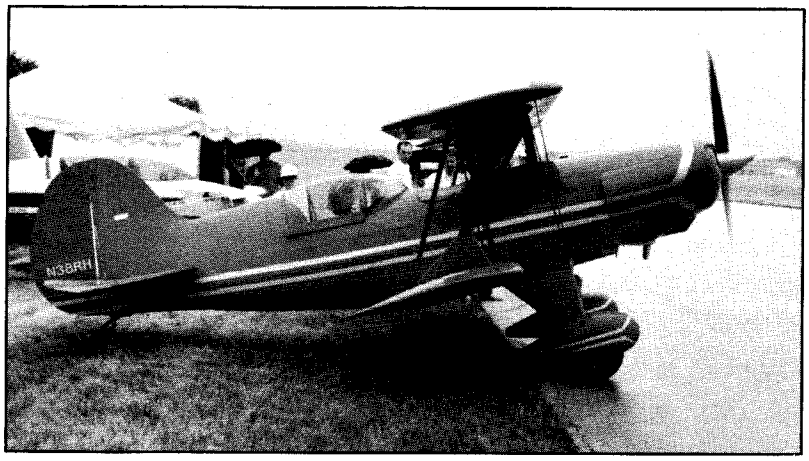
Progress on my Pober Junior Ace is slow. Seems that household duties, grass cutting, etc., and EAA mail get a bit in the way. But with help from longtime friend Bill Chomo, we will have the wings painted and the airplane ready for reassembly. Engine cowling is also ready for painting, so we should see the airplane ready for Oshkosh.

A correction on the rear fuselage wing cabane is published In this Newsletter for the Super Ace so that the dimensions between the wing spars and fuselage cabanes are the same, as well as a correction that effects the wing incidence. As always, we thank builders for such information as designers have always found that more then one set of eyes are invaluable.

If any of you builders out there would like the task of being co-editor of the **Acro Sport Newsletter,** drop a note to Acro Sport. It would be very much appreciated. Remember, news and photos, as well as corrections of your project, would be appreciated also.



Wing I brace left wing lower.



Akron-Canton Regional Airport Airshow "1991" rainy day!

inches in length.

I have to trim nose down all the time after flying 10 to 15 minutes because of fuel burn off. The trim is mechanical push-pull type and works out O.K. I fly mostly off of hard surface and quite a bit off grass. The plane will make a real nice wheel landing, and with the tail high I can really slow down almost like a speed brake on a jet on landing. On takeoff at 60 mph the tail comes up with a little pressure forward with liftoff around 65 to 70 depending on temperature and wind, and it climbs around 1800 fpm. All my landings are with power and around 90 mph all the way down to the runway. With power off the plane, it will slow down real fast with all the drag on it.

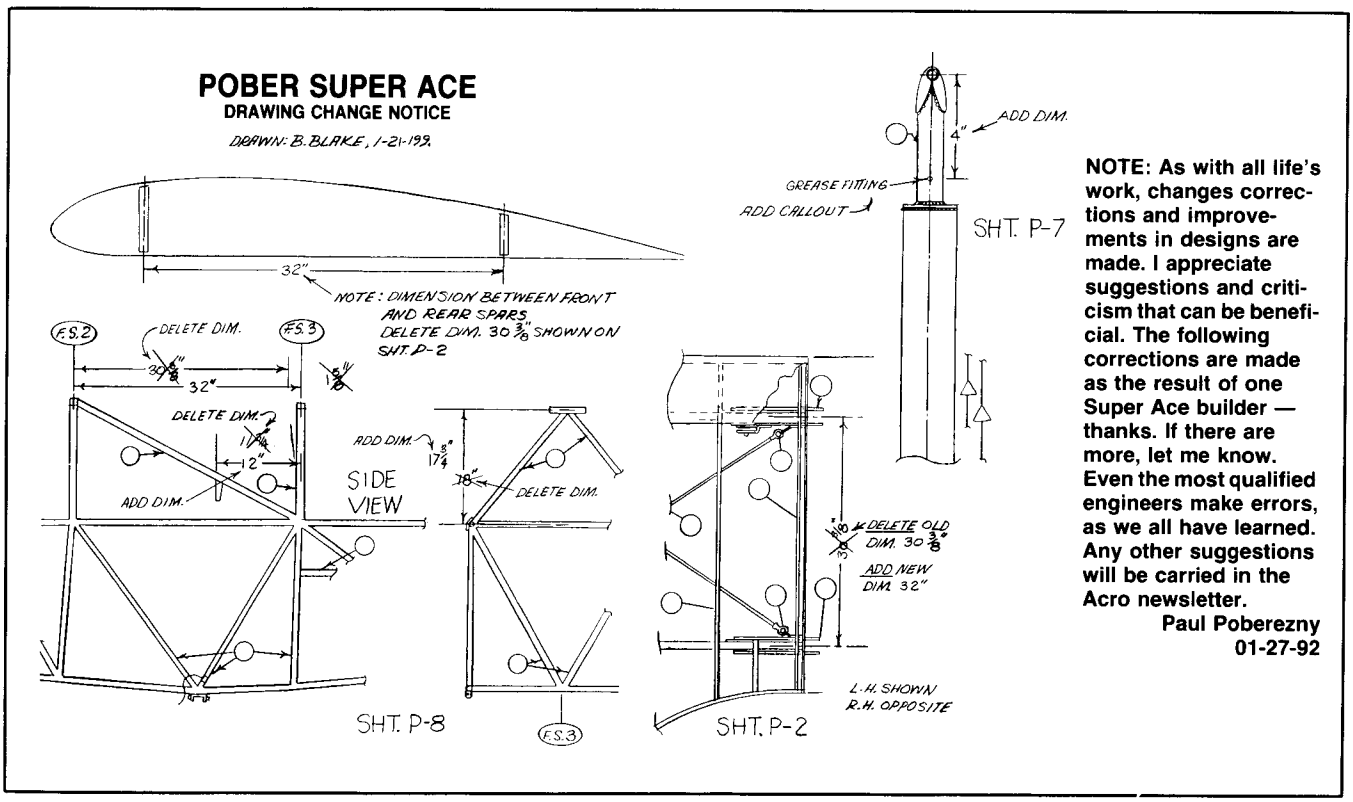
I had flown to Marion, Ohio to the Mid-Eastern Fly-in in September, 1988 and was awarded two awards for the best tube constructed plane and interior. Also, this year at Oshkosh I was awarded the 1st Place for the Acro Sport II type plane in category. I had a real nice time with all the other pilots and builders of the Acro Sport at the banquet we had one evening. I hope the enclosed pictures will be of some help to you for the Newsletter. I don't have any black and white pictures.

All I can say to the new builders is finish the whole plane. Do everything that you want to do in building because if you don't, you will start flying and never get finished with the little details that you might want do do. The plane is really fun to fly, but not for a beginner pilot. I don't recommend this plane to low time pilots. If you don't have a rating in taildragger aircraft, you better start before you try to fly the Acro Sport. With a little Cub or Aeronca time, maybe you can hack it.

I had problems with my ailerons in building them and when married to the wing, I had pin interference. This problem had to be corrected by cutting out the leading edge of the aileron to allow for clearance. It worked out O.K. but wasn't too happy about this. The size of the cockpit is pretty large and the front seat will allow a large person to sit, my largest passenger being about 250 pounds and six feet and over. The plane flew real well with full fuel off hard surface.

I never tried acrobatics to any degree, only a few aileron rolls and some stall work which are straightforward with no tendency to fall off.

Another problem I have developed is that my compass malfunctions. It seems when I finished welding the fuselage, a lot of magnetism had built up in the welded clusters and I didn't demagnetize the tubing. I tried to demagnetize the frame with an AC coil and mag unit



NOTE: As with all life's work, changes corrections and improvements in designs are made. I appreciate suggestions and criticism that can be beneficial. The following corrections are made as the result of one Super Ace builder — thanks. If there are more, let me know. Even the most qualified engineers make errors, as we all have learned. Any other suggestions will be carried in the Acro newsletter.

Paul Poberezny
01-27-92

but can't get all the problems out. Going to try again on my next annual with the help of a shop. The first plane I built, I did demagnetize the frame of the fuselage and didn't have any compass problems.

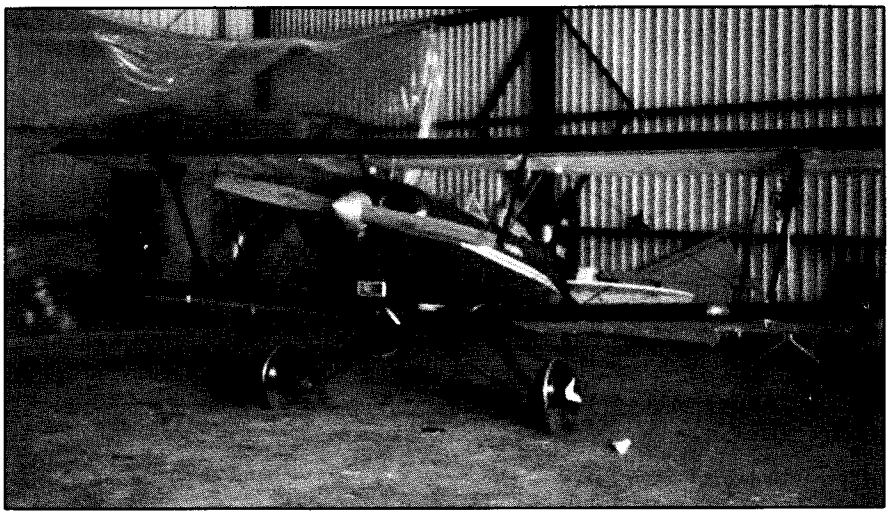
I started flying in 1952 while in high-school and really didn't finish my flying for my ratings till I got out of the Air Force, using the G.I. Bill. While in the Air Force I was a mechanic working on the B-36 large 10 engine bomber used in SAC and worked on all types of aircraft in base flight at Carswell. I flew quite a lot on the B-36 as maintenance people were always needed to keep the plane going. I remember spending 22 hours in the air on one long flight to Saudi Arabia from Texas.

I hold commercial rating, multi-engine, instrument and A&P with inspection authorization. I have been a mechanic over 38 years, experienced with heavy round engine work and large aircraft and small aircraft of all types. At present time I am still turning wrenches on aircraft and engines, including jet aircraft Hawker type. My flight time is over 3500 hours, mostly in singles and in light twins, Beech 18, Cessna 310 and 400s an DH-125s.

Enclosed, again, are pictures that I hope will work out for you. If you need any more information or help, you can call me at home or work; 216/499-8438, 216/499-3316.

I am past president of EAA Chapter 82 in Canton, Ohio and Technical Designee No. 16 for our chapter at present. I have been coming to Oshkosh with my family for over 21 years. I started my interest in the homebuilt movement when a friend of mine started to build a PJ-260 biplane and finished it in 1963. This member built the first plane in Chapter 82. My wife and I went to Rockford, Illinois in 1969 to the first EAA Air Show with my two little ones and we have been going to Oshkosh almost every year since. It is unbelievable how much this organization has grown in size and the quality of workmanship developed.

Letters To The Editor



Dear Sir,

Here are a couple of pictures of my Acro II. I finally got it in the air after six and a half years of off and on work building it.

The first flight was October 28th (1991); that was a real thrill. I hadn't flown much in several years and had to get a biannual flight check before taking this one on, so I took it in a Champ. I wanted to be sure I could still handle a taildragger. I had to add a rudder trim tab and adjust an aileron to correct a slight left wing heavy condition.

I made my own wing tip bows, put walkways on both lower wings, and the pictures don't show it but I have an auxiliary power connection behind the rear cockpit on the left side under an inspection hole cover. Sure has come in handy for hooking the battery charger or jumper cables on. I put an auxiliary tank in the center section; holds over 12 gallons.

I've got an 0-290 D-2 EX engine, built it up out of pieces, and a 74 x 52 Sensenich prop; gives me between 95 and 100 mph at 22 inches and 2200 rpm. I'm going to have to move the oil cooler to the front to cool it down some more; had to open the bottom cowl and put a longer lip on it. I put coil springs on the shock struts. Other than that, it's about a stock Acro. Weighed in at 994 pounds empty.

The windshields are a little short; I've got one made with more slope back and a little taller. I'm about to get her worked out. It has sure been a fun project. This is my first one, and at 72, probably my last.

Sincerely,
Earl Eighmy
1775 Bridgewood Rd.
Clarksville, TN 37040

P.S. The plane is hangared at the Hopkinsville, Kentucky Christian County airport.

Dear Ben,

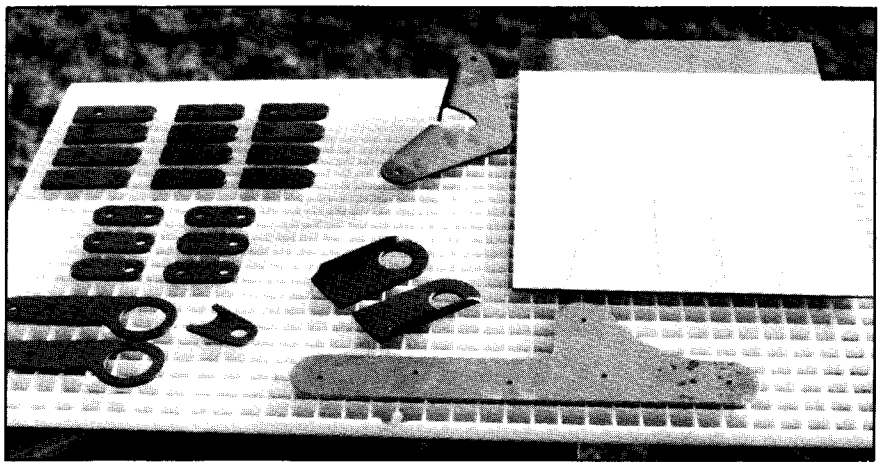
Enclosed is my check for the renewal of the ACRO SPORT Newsletter. Please keep them coming. The articles and pictures are a big help, especially the construction photos.

My Acro Sport II is coming along slowly. I have all the wing ribs completed and the ailerons only need the

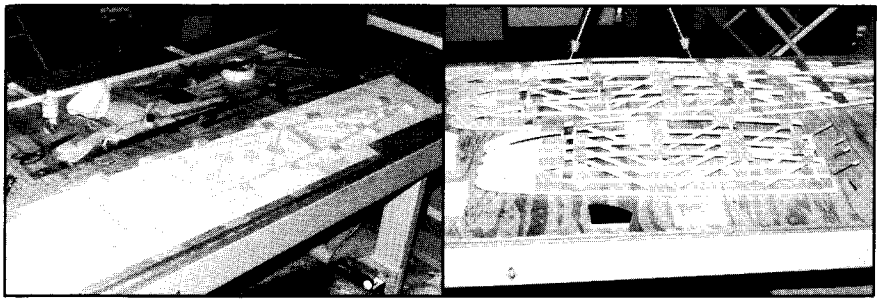
plywood on the bottom of the leading edge, the cutouts for the hinges after this is on, and the trailing edge put on. I put the upper plywood on the leading edge using nailing strips, which worked out real well. It's a lot of work in preparation for gluing but I think the results are worth it.

I've enjoyed every minute of my time working on my Acro, even though there are some frustrating times and botched parts. I get to put in 2-3 hours most every night. It's time to go and put the plywood on one or two ailerons now.

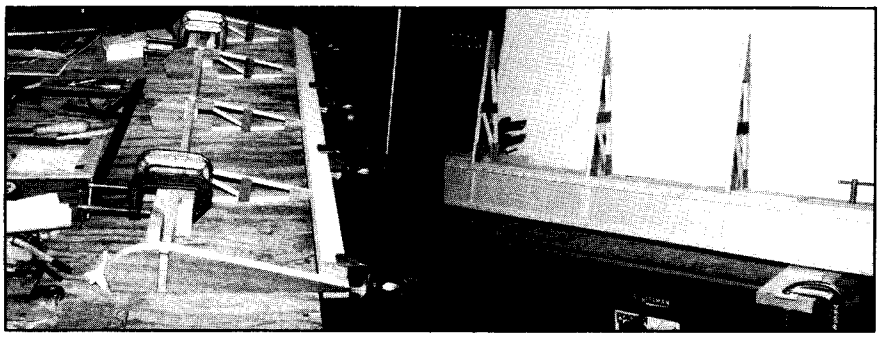
Sincerely,
Ron Palascak, Plans #1205
57 Woodview Lane
Algonquin, IL 60102-3043



Summer '90



January '91 **February '91**



Left — June '91 Each rib is glued and nailed. Hinge reinforcing blocks are glued and nailed. Trailing edge is clamped up and squared for alignment. Right — August '91.

Dear Paul,

I thought that I better get a letter off to you right away and let you know that I received your letter.

I went through my pictures and have a few for you showing various stages of construction of some metal fittings, ribs, ailerons and wing panel. I hope some of them are good enough to use in the Newsletter. I have found the Newsletter to be quite useful. I've used several ideas sent in by other builders and they've worked great.

Last winter was spent building all the ribs for the wings and ailerons. Through the summer I assembled the upper wing center section and the ailerons. This winter has been spent assembling the four wing panels. All the major woodwork has been done on three of the four panels. Corner blocks and pull blocks, plus the wing walk, remain to be done on the fourth wing. Still remaining to be done on all the wings are drill holes for the drag/anti-drag wires, install the leading and trailing edges and the wing tips, and installing all the fittings on the ailerons.

I work on the plane almost every day, thanks to a very understanding and supportive wife. She even pitches in whenever an extra pair of hands is needed.

Progress may be slow, but as you can see from the pictures, I finally have some assemblies that are recognizable as airplane parts. It feels good to get these larger assemblies made. It spurs you onto the next challenge, to get more pieces done. You're so right when you said it keeps a guy busy.

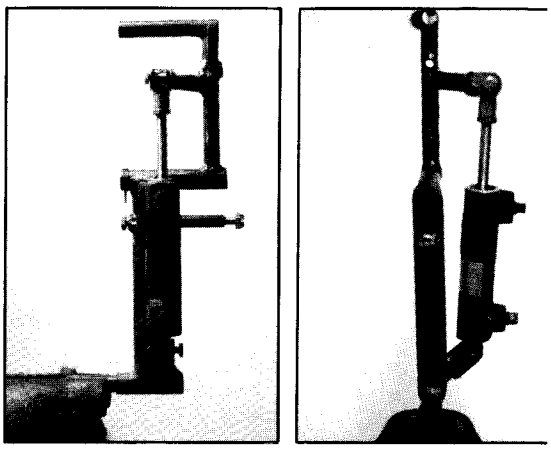
As I progress farther along, I'll keep you posted.

Sincerely,
Ron Palascak (EAA 111311)

Dear Ben,

My Acro Sport II has been under construction for many years now. As a matter of fact, the original plans were green and the number was 41. That set of plans was replaced by a yellow set which I am still using. The airplane project has been put aside on many occasions as a lower priority item. I am sure many builders can appreciate the fact that our enthusiasm waxes and wanes periodically and I have allowed it to gather dust on many occasions. I have truly enjoyed the newsletter over the years and have used many of the suggestions and techniques which it has contained.

Enclosed please find several photographs which may be of interest to others. I have felt all along that I was never pleased with the fact that the brake pedal and rotor pedal did not move in harmony. I have changed the design very slightly in order to accomplish that design change. Only time and testing will prove if I have done the proper thing. I have not included any specific dimensions; it is only the idea that is of interest. Please feel free to use this material if you wish. I have just



"forked over" the king's ransom for a factory remanufactured engine which will give me the added interest to complete the project. I hope to be flying by the end of this year and hope to have it at Oshkosh '93.

Respectfully,
Richard W. Henry
651 South Hebron
Evansville, IN 47715

Richard Henry's partially completed Acro II on display at Evansville shopping mall.

Dear Mr. Poberezny,

Thank you for your letter dated 4/7/92 in which you acknowledged receiving the photographs from Ben Owen on my alteration of the brake pedals for the Acro II. You failed to make any comments regarding that change as to whether or not it might be beneficial or even hazardous. I have no idea of the outcome until the moment of truth arrives.

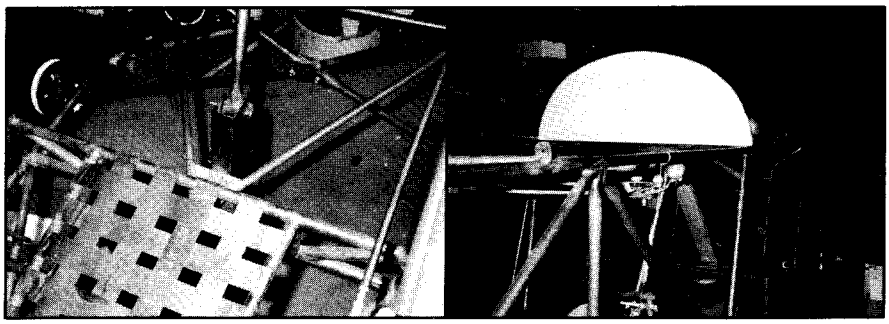
Two weeks ago I received my Lycoming factory remanufactured IO-360 engine which has yet to be installed because of other pressing jobs "around the house." Enclosed please find a photograph which was taken during the recent local chapter display at the Evansville mall. Hopefully it will fly next year.

Thank you for taking the time to write me. I appreciate your courtesy and interest.

Respectfully,
Richard W. Henry, D.D.S.
Southern Indiana Oral & Maxillofacial Surgery, Inc.
651 S. Hebron Ave.
Evansville, IN 47714-4048

EDITORS NOTE: The change should have no effect on safety.

P.S. I would like to thank Donald Baker (N122DB) of Ohio for his help. He has been very helpful. Also, one morning first week of November an Acro II departed Livermore; was in process of having tower locate "N" number but owner met a fellow flight instructor at Fuel Island and gave him his address and phone number. A second person very helpful and eager to help. My hats off to them. The second person is Herb Williamson. You requested his address: Herb Williamson, 6234 Harvy Way, Lakewood, California 90713.



Eric Woods plans to install either an O-320 or O-360 on his Acro II.

Dear Sir,

Enclosed is a check for $22.00. Please renew Newsletter and bring me up to date; last Newsletter was #31 ($12.00 to renew and $10.00 for back issues).

Also enclosed are pictures of my Acro II project. I plan on using an 0-320 or 0-360 and trying to track one down now. Finding a good engine at a fair price is difficult. I have not started wings or "I" struts or N struts at this time.

Fuselage is on the gear with tail feathers completed. Turtledeck in. All controls completed. Installing side stringers for sheet metal to round out shape of fuselage; then with instruments.

I ordered fuel tank from Aircraft Spruce. (I hope they are aware of modification needed to keep them from cracking; trying to get in touch and advise them.)

Eric Woods
859 Tanager
Livermore, California 94550

EAA OSHKOSH '92 ACTIVITIES

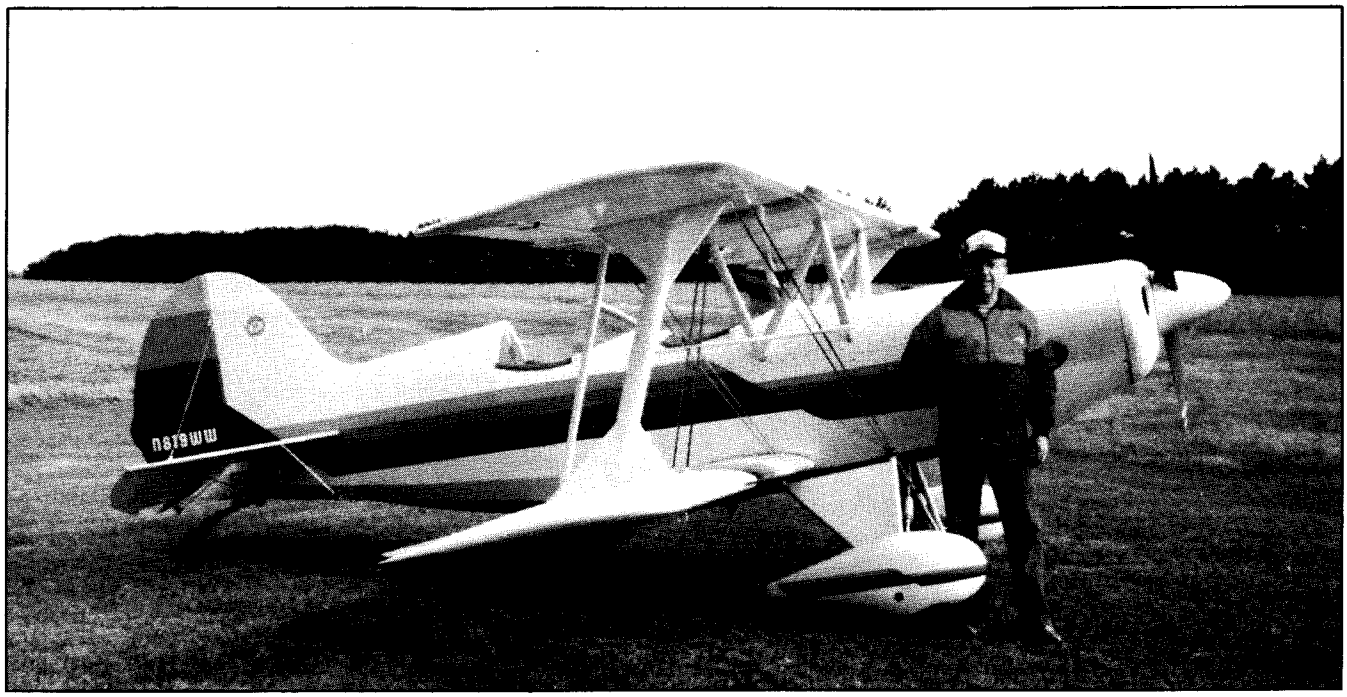
Acro Sport Awards Dinner will be held Monday evening, August 3rd, at Robbins Restaurant. 7:00 PM Cocktails; 8:00 PM Dinner. Please make your reservations now with ACRO SPORT (see back page for address and phone number).

FORUMS:

Acro Sport I & II - Monday, August 3, 1:00-2:15 PM, Tent #6
Pober Pixie, Pober Junior Ace & Pober Super Ace - Tuesday, August 4, 11:30 a.m.-12:45 p.m., Tent #6.

1992 SUN 'N FUN

Acro Sport held its first forum at Sun 'n Fun in Lakeland, Florida this year and the panel members were moderator Maynard Engel (Pennsylvania), Wallace Weber (Florida & Minnesota), Al Smith (Georgia) and Rich Hartzell (Ohio); these gentlemen gave an excellent presentation. A total of 23 attended the forum and many asked for an Acro Sport forum in 1993. We hope to do it!



Nine years construction. Flown September 30, 1991.

Builder Chooses Acro II Because ". . . it's an Extremely Good Looking Airplane."

by Wallace W. Weber (EAA 16733), 13800 190th Street East, Hastings, Minnesota 55033

Enclosed a check for subscription to the Newsletter through 1992. Thanks for the reminder. The Newsletter has been very helpful in the construction of our Acro Sport II.

Enclosed, also, is a picture of our Acro Sport II. After nine years of construction, it was flown on September 30, 1991 for the first time. My son Stephen helped in the construction the last three years. He is now a pilot for Delta Airlines; however, in the 1970s he was production test pilot at Bellanca's Citabria factory in Osceola, Wisconsin, so it was only natural that he would fly the Acro Sport the first time. Everything went quite well. A few minor problems, but it turned out to be a most exciting day. According to Ben Owen, and as of 8/28/91, it is the 60th Acro Sport II completed.

The plans were purchased in the late 1970s (#273) — the green cover. It contained quite a few errors; however the corrections arrived in time to prevent too many problems. The wings were built first. We spend our winters in Florida, so the first three winters I brought a mobile workshop down there where all the wing ribs were constructed, as well as most of the fittings. The remainder of the aircraft was finished in Minnesota in our workshop on our farm which has a 2300 foot private air strip. Unfortunately, no one else in this area either has an Acro Sport or is building one, so any problems we had to solve ourselves or wait for the fly-ins at Lakeland or Oshkosh to compare notes with other builders.

The engine is an 0-320-B2A that came out of a 1958 Tri-Pacer that went over on its back, landing on our field. The owner decided not to rebuild it, so we purchased it for the engine and prop. The remainder of the airframe was sold. We then majored the engine and installed a B4C starter and alternator. The oil sump was modified so the Christian inverted system was installed. Purchased a Bendix PR5C carburetor out of SPORT AVIATION want ads. Sent it to Precision in Miami to have it bench flow adjusted for the 0-320; it had come off of a Lycoming 0-360. Tried it before it was sent to Miami, but it turned out to be extremely rich.

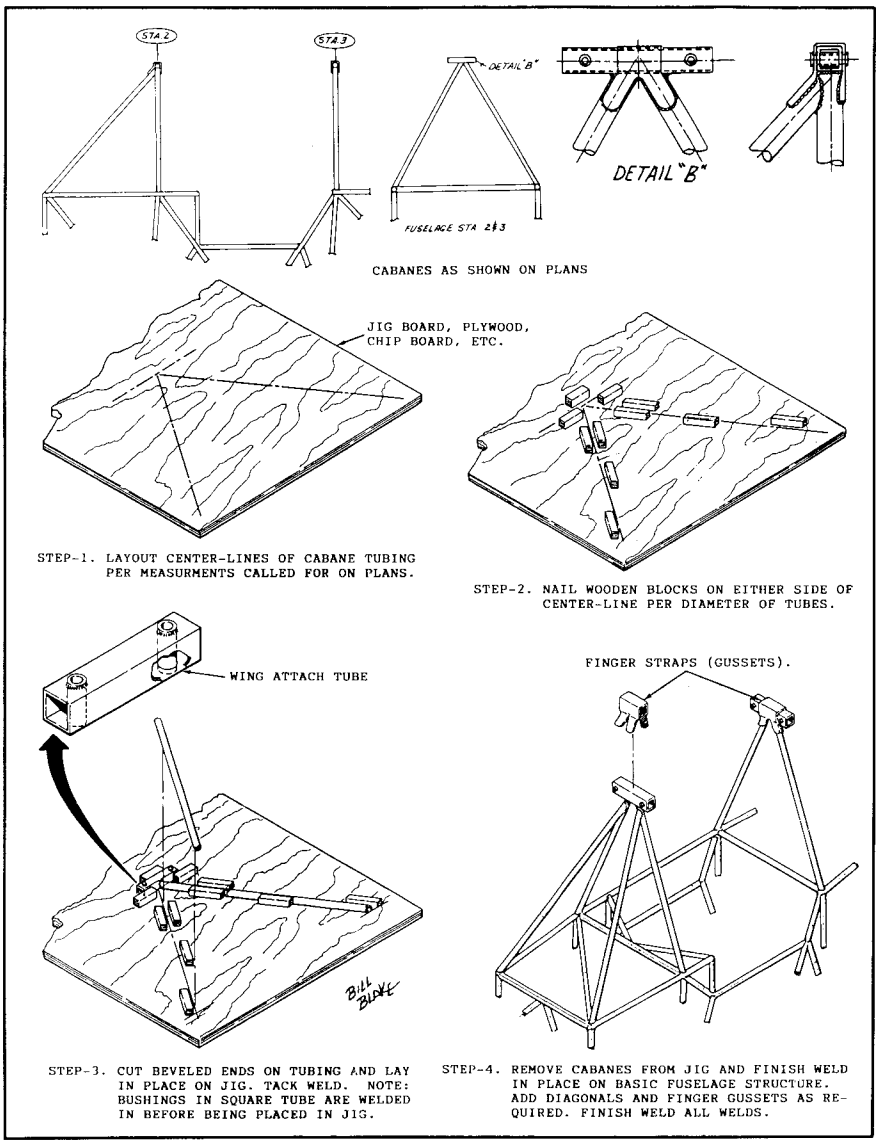
During the construction of the airplane, I was very conscience of weight. I knew the nose would be somewhat lighter due to the lightweight accessories installed. I wanted to put the battery on the firewall but like most builders, I just didn't have the room with a standard size gel cell, so the battery was placed behind the rear seat. During weighing and weight and balance calculations, the tail wheel weighed 79 pounds which put the cg four inches ahead of the lower wing leading edge. Fortunately, my son and I are not too heavy (160 pounds) so we can still carry 30 pounds in baggage and still be within the envelope.

Here are some of the other stats:
N819WW Registration
Stits cover with polytone color
Fiberglass wing tips and nosebowl (from Rattray — fit well)
Empty Weight 997 pounds
Spring shock struts (from Aircraft Spruce & Specialty)
Sensenich propeller (74 Diameter 54 Pitch)
Terra 720 Com radio
Terra transponder with Mode "C"
Ilmorrow 604 TC Loran

A great number of people have asked me why I chose the Acro Sport II to build. First of all, I always wanted a biplane (the first airplane I ever saw on the ground was a biplane; it was sometime in the early 1930s).

Secondly, it's an extremely good looking airplane. Even now, every time I walk into the hangar and see it sitting there, I get excited. Plus the self-gratification of knowing you built it from scratch. Thirdly, ever since I joined EAA (1963) I have been a firm believer in everything that the EAA stands for, especially being able to help young people getting interested in aviation. This is a very trying time for grass roots aviation. As long as we maintain our freedoms, it will prevail.

If all goes well, N819WW will be on the flight line in July during the Oshkosh annual convention and fly-in.



BUILDER'S SUGGESTION — A suggestion has been sent to the Newsletter on how to make a fixture for fuselage wing cabanes for the Pober Super Ace and Pober Junior Ace. It should be helpful in your construction of the fuselage. We thank illustrator Bill Blake for finalizing the sketches sent to us and we apologize for omitting the name of the submitter; I lost the letter that was with the suggestion.

TIPS / PROPELLERS

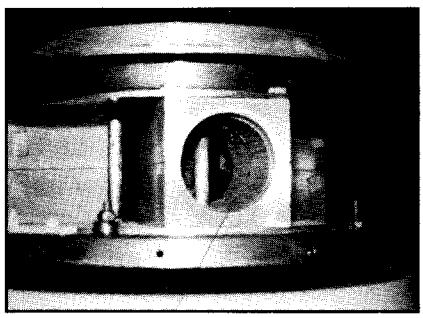
THERE HAVE BEEN SOME MISHAPS DUE TO MODIFIED OR UNSUITABLE PROPELLERS AS FOLLOWS

Mustang II — At 405 hours time, the propeller lost 14" from the tip. This being a McCauley prop EMS 72-70. No injury and aircraft was demolished. Pilot was flying level at 5500 MSL and lost part of the prop and landed in a river area in sand.

Cassutt — With a Sensenich 76AM-2, not rated for the 0-290 engine. The propeller diameter had been reduced from the minimum of 71-1/2" to 65" and the pitch increase for a maximum pitch of 55" to 73". At 2,000 feet the pilot experienced extreme vibration and landed in a wheat field with a hard landing. Twelve inches of the blade was found missing. No injury and substantial damage.

Thorp T-18 — Powered by a Lycoming 0-320-E2A, 160 hp, and the propeller a Sensenich, Serial K6184, the same as was installed on the previous engine on this aircraft, an 0-290 GPU. The propeller was manufactured 2-16-65 with a model number M-74DM-0-60. The propeller was stamped experimental and then being cut to 67" in diameter and repitched to 73". The type certificate for the subject propeller specifies the maximum and minimum propeller diameter that can be used from a vibration standpoint is a maximum of 74" and a minimum of 72". It is unknown when the modifications took place. The aircraft had landed previously and pilot contacted a friend and informed him that he had landed due to noise he heard in the airplane. Pilot stated he had a mechanic look at the airplane and it was reported that it was okay to continue the flight. One propeller blade came off and the aircraft landed on the top of a ridge. The airplane was destroyed by a post crash fire and the private pilot was fatally injured.

Polliwagen — An Austrian builder had obtained a ground adjustable prop from Props Incorporated. He had flown 45 hours in the Polliwagen and a blade separated due to a weak shear area in the hub at approximately 2400 rpm. Landed in a meadow and hit a hole. Pilot sustained serious injury and the plane was damaged. The photo shows how the propeller blade sheared right out of the hub.



This shows the Props Inc. hub of the ground adjustable prop.

The following are from NTSB records which are incomplete and they do not mention the manufacturer of the propeller. They may be of some value to Technical Counselors.

Race Aircraft - Special

At 200 knots airspeed, 18" of the propeller separated, engine remained attached to the aircraft due to the 3/16" cable wrapped around and attached to the firewall as required by air race rules. Propeller had been modified to obtain more rpm.

Long-EZ

Cafe 400 Efficiency Race. One propeller blade separated, made of wood and specifically designed for racing. At the outboard trailing edge, the tail blade had split and separated. Reportedly, the propeller had been flown through a driving rain at full power.

BD-4

Propeller separated from the aircraft mounting bolts as the propeller spacer had failed.

VariEze

Pilot made his propeller of fiberglass instead of the recommended wood. During the first flight, the propeller failed during climb after takeoff.

Owl Racer

Lost blade. No further details.

Miller Aerosport Gem 260

Test flight included operation of the engine beyond the propeller limit of 4,000 rpm. His 4 blade prop lost 3 blades approximately 8" from the hub, the 4th blade separated inside the spinner.

KR-2

Installed a different propeller. Unable to gain altitude on climb-out.

Long-EZ

One propeller blade separated from the hub.

Kolb Twinstar

Twin bladed composite propeller separated, one blade causing severe vibration.

Avid Flyer

Propeller blade failed in the root area. Severe vibration caused failure of the engine mounts and the engine fell out of the aircraft upon landing. The propeller was his original design. Propeller separated from aircraft and struck the left wing.

Eagle DW-1

Propeller fell and separated from the aircraft in flight. Not known if propeller failure or accessory failure.

Sidewinder

Lost the prop, the crankshaft bolts all sheared due to no reinforcing plate between the bolt heads and the wooded prop hub, only the front spinner bulkhead. The front spinner bulkhead showed wear in the bolt holes and the prop hub.

SNS-2

Both propeller blades found on airport property. It had pulled out of the propeller hub.

RV-4

Uses scimitar shape prop at about 190 mph with about 2900 rpms. Part of the prop separated.

TIPS / FIBERGLASS FUEL TANKS

KR Newsletter

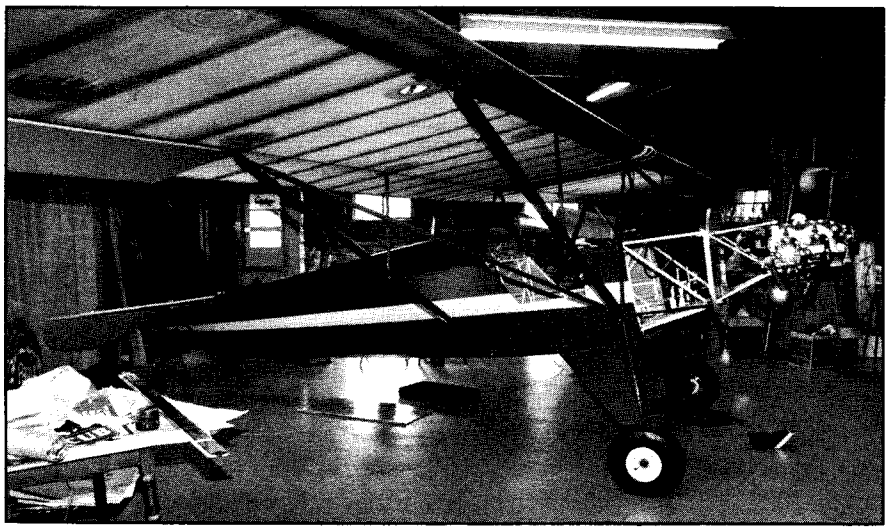
Some reports of resins "epoxy" flaking off and softening inside fuel tanks were quoted in the KR Newsletter. The KR Newsletter reports that Glasair people are using a "vinylester." This resin is "fuel proof." In checking with my supplier in Houston, Texas, I find that most companies manufacture fuel acid proof resin and Atlac 382-05A is a "fuel proof" resin.

I have used it in acid pumps for refineries in the area. The supplier says that it equals or exceeds properties in "vinylester" resins.

As for myself, my Turner T-40A fuel tank is 20 years old now and made of marine grade polyester resin and I've had no problems yet.

In the construction process, I left the top open to install baffles. I then completely "gel coated" the inside of the fuel tank. "Gel coating" is a must in fuel tanks. Anyone that wants more information, contact me.

Gene Darst
Technical Counselor #290
585 Iowa Street
Beaumont, Texas 77705
(409) 835-1990



The Pober Junior Ace on the gear. Wings and cowling to be painted. Engine baffling next, and final reassembly. The Pober Junior Ace 2-place, side by side, has a 34 foot wingspan and is powered by a Continental 85 hp engine. This light plane with its 40" wide cockpit brings back much nostalgia of the good old days of grass strips. And, as some have said, how about putting it on floats?

TIPS / FOAMS

Cozy Newsletter

The PVC foam stocked by our suppliers was originally imported from Europe but is now made in the U.S. Over the years it has been supplied in various colors, red, tan, brown or blue, and recently there has been a change in sheet size. Do not be alarmed if the foam you receive is a different color or size than that stated in the plans. We have also noticed some variation in thickness of the 3/8 inch PVC sheets. If you encounter this, line the sheets up on the outside to avoid a problem in finishing.

The color of urethane foam was changed from grey-green to yellow a few years back. As far as we know, Styrofoam has always been blue, and Clark white. The color of RAES epoxy catalyst is blue, but cures to a green. The RAEF catalyst is nominally red, but there is a large variation in shade. Of course, Safe-T-Poxy is brown. The different combinations of foam and epoxy can result in a multicolored airplane before painting.

Service Difficulty Report . . .

Submitted by Bill Neelin of Edmonton, Alberta Canada

Acro Sport II — Submitter reports a failure of the bolt securing the tail wheel spring assembly. The bottom of the rudder suffered minor damage. The cause was traced to the leaf spring bearing only on the insert tube and the subsequent "rocking-back-and-forth" resulting in a fatigue failure of the bolt. The submitter suggests that the fuselage should be constructed (or modified) so that the spring rests flat on the 3/4" x 3/4" cross member or that the bolt be replaced at frequent intervals. Time in service — 150 hours.

Contact . . .

The following individual's project is at the halfway point and he would like to hear from other Acro Sport builders: John C. Kafford (Acro II Plans 1217), 1607 Holden Drive, Sarnia, Ontario N7S 6G2 Canada.

Notice . . .

As of March, 1992, EAA will not be accepting any Acro Sport, Inc. orders. Please order directly from ACRO SPORT, INC., P.O. Box 462, Hales Corners, WI 53130; 414/529-2609.

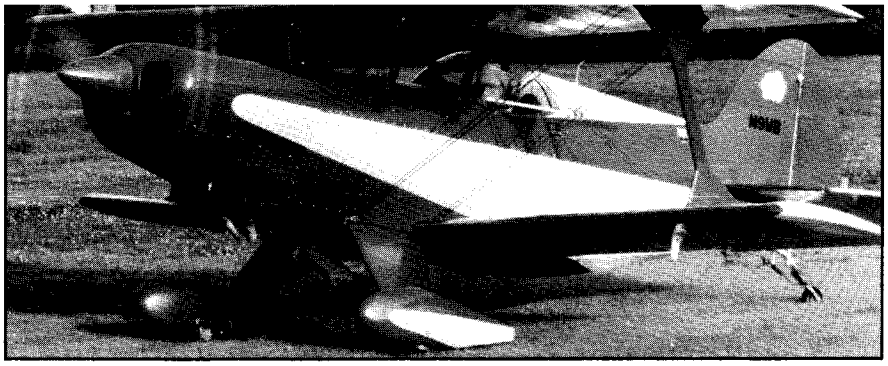
Builder Delighted With Performance

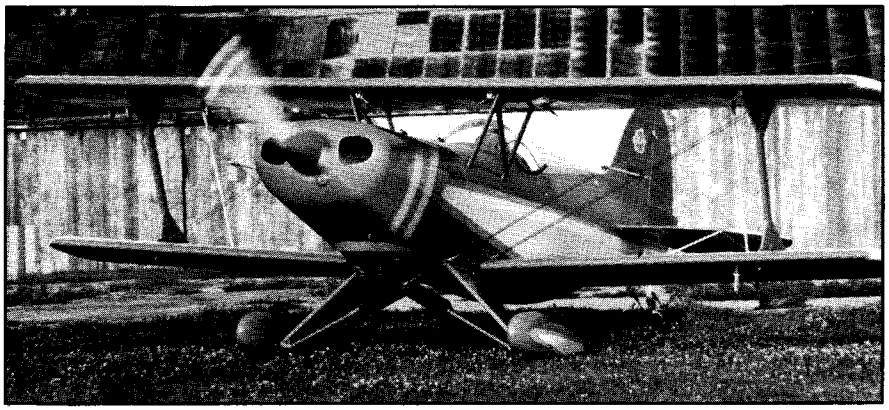
by Bill Berrick
11803 Hunters Cove
Omaha, Nebraska 68123

Work began on my Acro Sport I after my return from Oshkosh in August of 1975. The basic fuselage was welded over the next six months, but then it spent the next 13 years in a crate while I was moving around in the Air Force. I retired in June of 1988, attended A&P school for the next 18 months, then worked full-time to complete the Acro Sport for the next flight on July 5, 1991 (about three years of actual construction time).

I adhered closely to the plans except for a full electrical system using lightweight alternator and starter, strobe lights, com and Mode C transponder; and a gel cell battery in the rear fuselage. It has a Lycoming IO 310 B1A of 160 hp, inverted oil system and a used McCauley prop modified after tip damage to 7057. The rear mounted fuel injector of this engine required a 17 inch engine mount. This was largely compensated by the aft position of the battery. The empty weight is 900 pounds and the empty weight cg is 55.6 inches aft of the rear of the prop. The extreme forward cg is 59.3 inches (limit is 57.7 inches); and the extreme aft cg is 62.7 inches (limit is 64.9 inches). I used the limits in Newsletter 3 which gives them in relation to the lower wing leading edge.

I used formica type material for a wood grain surface on the instrument panel, and this worked very well. Leather was used to cover the seat, the cockpit coaming and the bungee cords. The fabric bungee covers made for Cubs that I purchased lasted only a few hours. I used light aluminum sheet inside the leather bungee covers to give an airfoil shape. A slip-in sheet steel holder was welded to the right side of the seat to hold a hand held radio, used with stick push-to-talk switch, whip antenna on the turtledeck and headset.





N9WB - First flown 5 July 1991. IO-320 B1A Lycoming, McCauley 7057 Prop. Full electrical system. 900 pounds empty weight. Docile spin recovery; stable flight. Excellent performance for loops, rolls, Immelmans, hammerheads, snap rolls. No changes from plans except electrical system and 17" engine mount for rear mounted injector. 53 hours flight by January '92.

WEIGHT AND BALANCE, N9WB
Jan 30, 1992 Datum at rear of propeller, or (front of spinner backplate)
Lower wing leading edge = 66.375

Weighting point	Weight	Tare	Net Wt.	Arm	Moment
Left main	474	2.25	471.75	50.75	23941.31
Right main	463.5	2.5	461	50.75	23395.75
Tail wheel	61.25	32.25	29	191.75	5560.75
		Total	961.75		52897.81
Gallons					
Fuel Main -5		-30		43.25	-1297.5
Fuel Aux -6		-36		62.875	-2263.5
Xponder & encoder		3.5		70.5	246.75
Sporty's Comm Radio		1		85	85
ValComm760		3		70.5	211.5
Bungee Covers		1		50.75	50.75
Delco starter		-17		8	-136
Sky-tec starter		10		8	80
Totals	897.25				49874.81
		Empty Wt C.G. = Total moment / Total wt =			55.5863
				Prototype example, p. 74 =	57.1
EXTREME FORWARD CG					
Oil, 8 qts		15		20.5	307.5
Pilot		170		92.25	15682.5
Main fuel 18 gal		108		43.25	4671
Aux fuel 6.5 gal		0		62.875	0
Sub-total	293				20661
Totals	1190.25				70535.81
			Most fwd CG Moment/wt =		59.26134
				Fwd limit =	57.6875
EXTREME REAR CG					
Main Fuel		0		43.25	0
Aux Fuel 6.5 gal		0		62.875	0
Oil		15		20.5	307.5
Pilot		170		92.25	15682.5
Baggage		35		119	4165
Sub-total		220			20155
Totals		1117.25			70029.81
			Most aft CG	Moment/wt =	62.68052
				Aft limit =	64.9375

Acro Sport Newsletter 3, page 11: Fwd CG 8 11/16 fwd of lower leading edge Aft CG is 1 7/16 fwd of lower leading edge Gross wt = 1350 for +6 G and -3 G

This worked well except for picking up interference over power lines and radio/TV towers. I have since added a com radio, mounted on top of the transponder, centered on the floor under the panel.

I used Blue River 7600 covering and their filler, and was well pleased with it. I used dope on the fabric and acrylic lacquer on the sheet metal after epoxy primer. I had the fuselage sandblasted and painted with a dry powder and heat coating process.

I had flown N9WB 50 hours by October, and have added six hours more through the winter. I am delighted with the performance and the handling characteristics. I think the design is ideal for agility in all maneuvers while being docile and forgiving, easily flown hands-off and not a squirrel to land. It handles all of the standard aerobatic maneuvers, including snap rolls, without using stall strips or other modifications to the plans. It has not been tested on outside maneuvers due to the pilot's distaste for that feeling. It requires a little nose up trim in cruising flight due to the cg; however, I appreciate the way the nose heads downhill to resume flying when I do unintentional inverted stalls. It takes goods care of me! Recovery from spins is quick and easy with only a light touch of opposite rudder, and an easing forward of the stick.

I get the tail up immediately on the takeoff roll in order to see the runway, rotate at about 60 mph and climb out at 90 to 100 mph. It cruises at 120-125 at 2500-2600 rpm. top speed is 135 true and I dive for about 140 to do loops or hammerheads. I use 75 mph on final, and it stalls at 50 mph.

I think this is an ideal project for a first time builder. The detailed plans and building manual, along with Tony Bingelis' three books, provide all of the information a homebuilder needs. I logged about 2500 hours of building time, not counting hours of studying the plans, rebuilding unsuitable parts, and just sitting in the airplane. The cost would be hard to predict, but one should plan on going over $20,000.

CLASSIFIED ADS

Ted Hendrickson 60-32 propeller complete with 12" Monnett spinner for Pober Pixie. Fits SAE #1 flange — Revmaster or Great Plains, $400. Motor mount for Diehl, Revmaster or Great Plains VW conversions, $75. Shipping paid with certified check. Hart Jewell, 5 Burrell Court, Tiburon, CA 94920, (415) 383-1928.

Acro Sport II Project — Fuelage and tail on wheels with engine mounted. Engine — Lycoming 0-320-E2A; TT 2,267 hours; TSMO 167 by Land-Air Associates, 1918 S. Arlington Heights Rd., Arlington Heights, IL 60005. If sold separately, $7,500. Wing Kit — Never touched; Wicks, at $1,000. New Sensenich Wood Prop, still in container, made for this project, 2/3 my billing. Streamlined tubing — 2/3 my billing. Also have Bendix Pressure Carb. PS5C - $300. Also free to anyone who needs it, a 0-320 case with conical mount to use in making an engine mount. Cleone Markwell, 513 East Main, Casey, IL 62420, 217/932-2252.

Wanted — Acro Sport 11 Project without fabric covering. FAX 49 211 882 5510 — or write: Dieter Horold, Wiebachstr 17A, 4018 Langenfelb, Fed. REP of Germany.

ACRO II CORRECTIONS

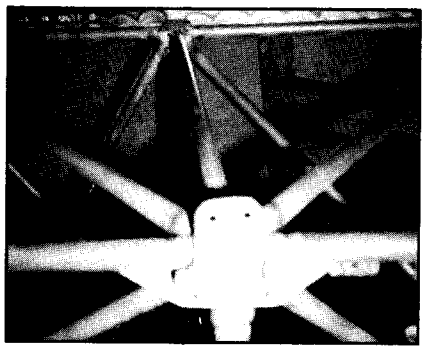
Dear Ben,

I just received the latest issue of the Acro Sport Newsletter. Regrettably, I immediately noticed an error in one of the articles I submitted.

The plywood I used for covering the wing leading edges was 1/16" thick (1.5 mm) and not 1/8" as I said in my article to you. I have no idea how I could have put that down and then missed it in my proofreading. There should be a correction in the next Newsletter as 1/8" plywood would be too heavy and too difficult to use.

My full apology for the trouble this may cause.

Yours truly,
Tom Watson



TIPS FOR THE BUILDERS

This photo shows the gusset that Tom Watson of Calgary, Alberta has put on the front gear leg of the Acro Sport II. The gusset is a .090 4130N. Tom Watson will welcome correspondence with other builders. His address is 608 Willowbrook Drive S.E., Calgary, Alberta, CANADA J2J 1N8. Telephone is 403/271-2366.

DRAWING CORRECTION

Sheet 13.0 (Detail C5) shows the fiberglass wing tips attaching to the wing via 1/4 inch x 1/4 inch stock on the outside of the last rib. These dimensions are too small to take the screws required. I used 3/8 inch x 3/8 inch material on the upper wings with marginal success and changed to 3/8 inch x 1/2 inch material (the 3/8 inch dimension to the rib) for the lower wings. The material could be bent to shape with a lot of effort but I cut the material into 4-6 inch lengths and shaped where necessary to accommodate the curved sections eg., the nose block.

POBER SUPER ACE CORRECTIONS

All corrections were sent out to the purchasers of the POBER SUPER ACE. The new printing of the plans with some corrections are now available. Will all purchasers please write Jean at ACRO SPORT with their current address, with zip code, if they want the newly printed plans.

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