ACRO SPORT Newsletter

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ACRO NEWSLETTER EDITORIAL

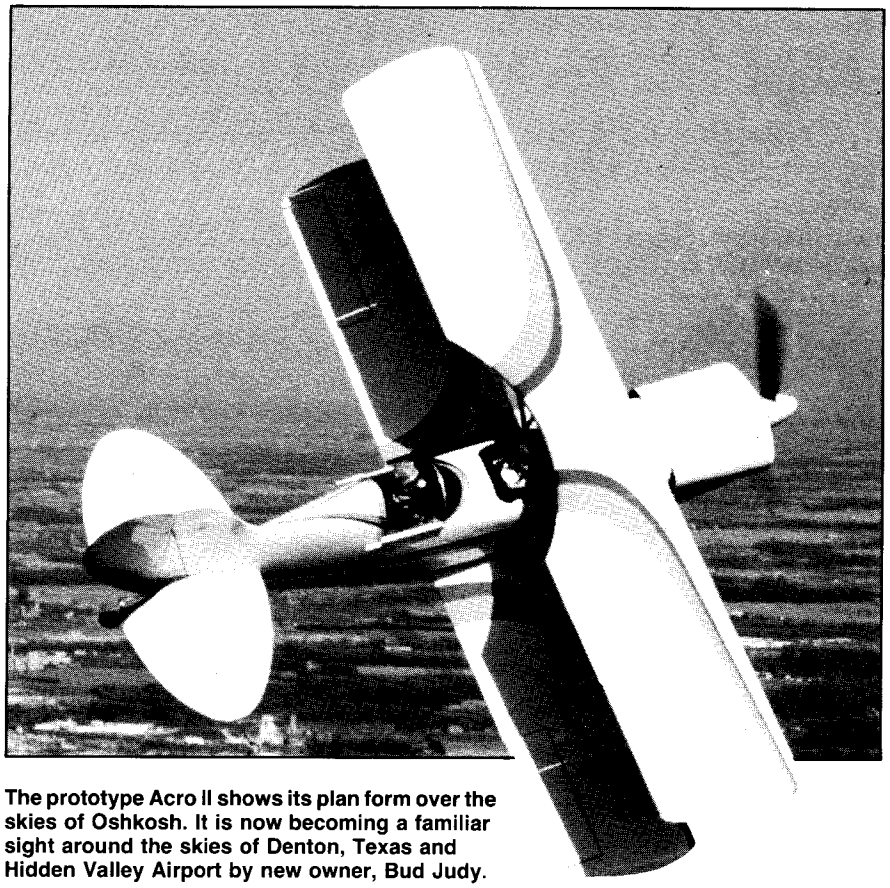
By Paul Poberezny

Oshkosh 1991 is just around the corner. The Convention is a great gathering of aviation enthusiasts and aircraft builders and is a wonderful educational opportunity that happens when we get to talking about airplanes.

While at EAA Sun' n Fun, I was pleased to see a number of Aero II's arrive. I even had the pleasure of guiding them to their parking spots. It is a wonderful feeling to see ones design so well accepted. The Acro II, I feel, is a fine two-place biplane that is becoming increasingly popular. We may be fortunate enough to see twenty-five or more of them at Oshkosh this year. Acro forums are again planned for the Convention and the schedule will be printed in the Convention program.

Work on the Pober Junior Ace, a two-place, side-by-side Parasol airplane which has a wing span of some thirty-five feet, has been progressing, but not at the pace I would like to see. Retirement from EAA still includes many responsibilities. It seems like the mail hasn't lessened, the telephone calls keep coming and I travel a lot dealing with FAA or going to speaking engagements. We will, however, continue to make progress slowly.

I also have a 0-230 Lycoming Acro II to finish. The wings, fuselage and tail group are covered and the fuselage cowling metal work is coming along well. For longer range, we have incorporated a center section fuel tank which, along with the fuselage tanks, should give a good range of some five hours flying time or 600 miles plus.



The prototype Acro II shows its plan form over the skies of Oshkosh. It is now becoming a familiar sight around the skies of Denton, Texas and Hidden Valley Airport by new owner, Bud Judy.

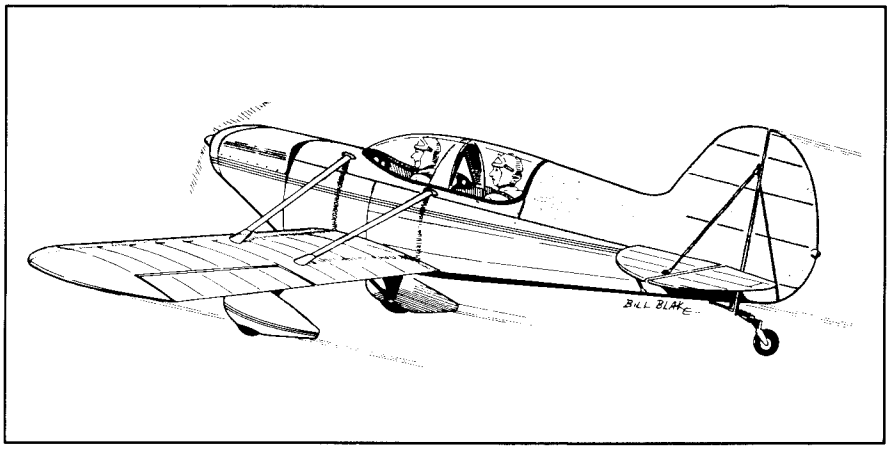
The single-place Pober Super Ace is part of the EAA Pioneer Airport flying activities and has been seen flying the pattern with Colin Soucy as its pilot. The Super Ace will be flying during the 1991 EAA Convention.

Before we hang up the drafting board, I would like to turn out one more design . . . a two-place, low wing, tandem airplane. I've had a sketch of it for some ten years and I am sharing it with you. I

hope you like Bill Blake's drawing of it. It will encompass the Acro II fuselage with changes to accept a low wing and wing struts. The tail group, turtle deck and landing gear will remain the same. The prototype may be powered with the Oldsmobile V-6 engine, which my son-in-law, Bud Judy, is working on. Engines such as a Lycoming O-230 - O-360 could also be used. Again, this takes a bit of time, but I guess dreams are completed by time and a labor of love.

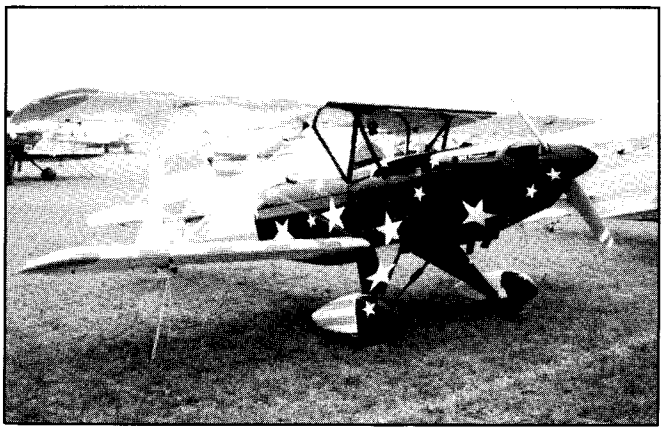
Getting together at Oshkosh, whether it be around our airplanes discussing the challenges of building, the improvements made, or the longtime friendships kept is most heartening. Attending the many forums is all so worthwhile. The Acro I & II forums are scheduled for Monday, July 29th from 1:00 p.m. until 2:15 p.m. in forum tent #4. The annual banquet and awards dinner will be held at Robbins Restaurant. Cocktails are at 7:00 p.m. and dinner will be at 8:00 p.m.

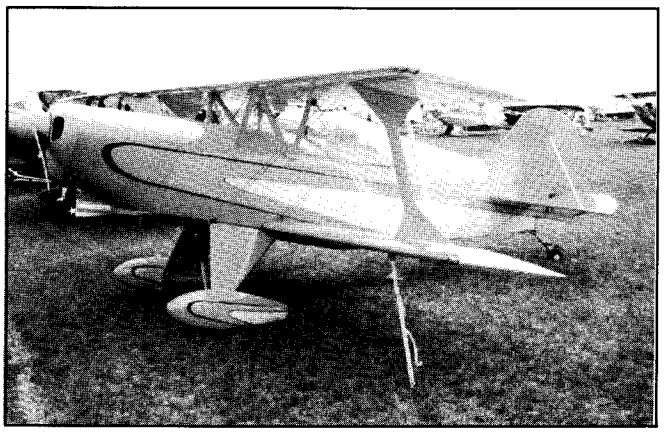
I would like to hear from any of you . . . the progress you are making and good photos of your project. Though sharp color photos are satisfactory, black and white photos often give greater clarity for the production of the newsletter.

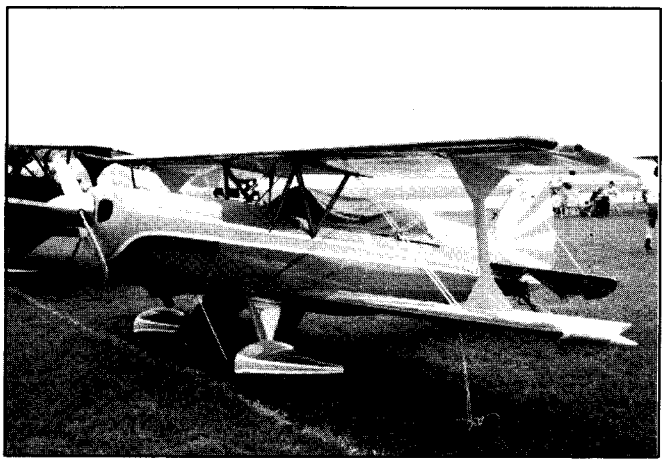


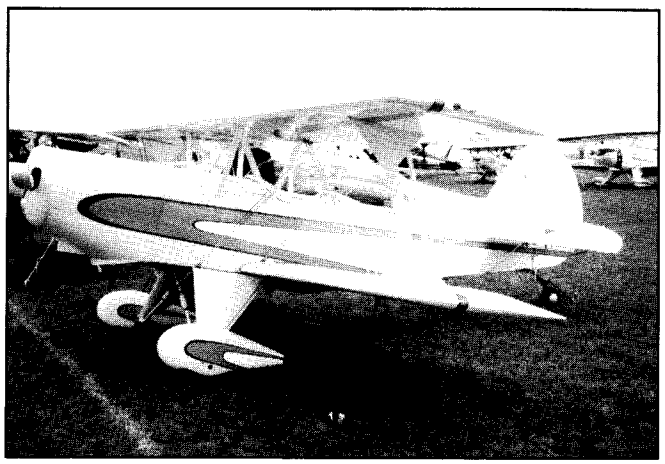
The Pober Speedster **- A sketch by Bill Blake of a planned future project of Paul Poberezny. A modified fuselage of the Acro II to accept relocation of the wing attachment fittings is being studied. The Acro II tail group, landing gear, engine mount and cowling for the Lycoming engine will remain the same. The use of an automotive engine will give the nose of the Speedster a more streamlined look. Paul has had sketches of this aircraft on the drawing board for the past 10 years. Now to find the time to make them reality!**

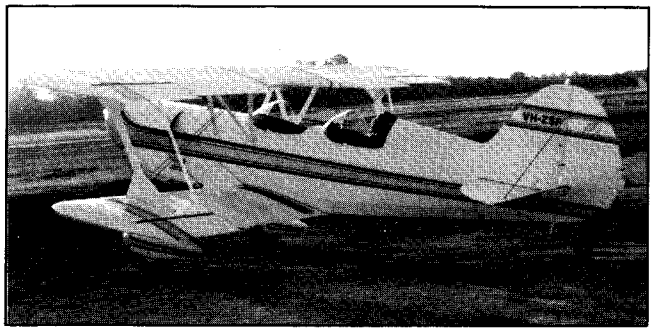
Below — EAA Sun 'n Fun, Lakeland, Florida was a beehive of activity. A number of Acro II and an Acro I were on the flightline. At Oshkosh '91, some twenty-five examples are expected.











Dear Paul,

Please find enclosed some photos of my Acro Sport II taken on 7 January '91 — first flight!! It has met my every expectation except for 3 things:

a. It's a little heavier than I expected, but I like a few creature comforts.

b. It's a little slower than I expected, only 90 knots IAS cruise (but the flight tests have shown that it's more like 95 knots CAS, which is just the number I wanted.) — It's a climb prop, too!

c. It doesn't know how to land perfectly yet, but I'm slowly bringing it into submission!!

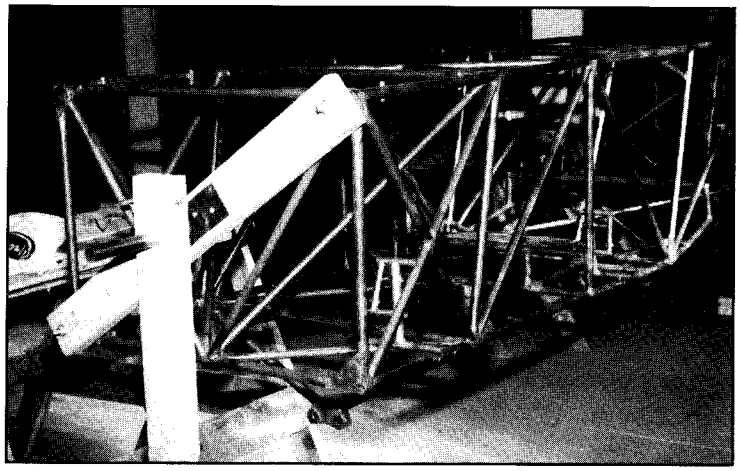
Thanks for your answers to my letters and phone calls over the last six years. Being the "first of type" in Australia, there wasn't anyone I could compare notes with here. In the early phase of construction, I received a lot of help from Bill Merurin and Elton James (both from Sacramento), who had built some of the earliest Acro II's.

Regards,
Lloyd Shepherd
45 Park River Close
Mulgoa NSW
Australia

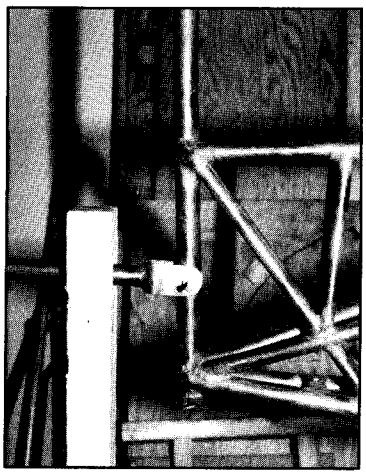
THE COUGAR MODEL I

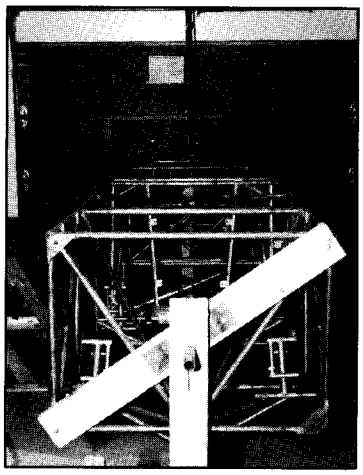
The Cougar Model 1 was designed by Robert E. Nesmith, EAA No. 755. Bob liked the Cub method of hinging the tail surfaces of the low slanting one piece windshield of the Beech Staggerwing and Wittman Tailwind. He chose the Continental motor mount from the Luscombe, and also worked it out to fit the Lycoming. Wittman's gear fascinated him, so he decided to modify it and used it. This is where he started. The tailwheel is the Funk style, the stick control is from the Luscombe. The wing construction was taken from Mooney and Tailwind, and the gasoline tank from a Funk. The brake pedals are from a Cessna 140, the cowling from a Cessna 310 style, the fuselage modified after Piper fuselages. The airplane was named COUGAR because several of his architects and his daughter were University of Houston alumni, and the Cougars are their football team. Bob was 5'8" tall and the original fuselage height was 35 inches. He later increased this to 38 inches, and he received some complaints from the 6' pilots. He finally increased the fuselage depth to 40 inches. He took the 4900 series airfoil and modified it by lowering the bottom chord on the leading edge, and made the bottom chord straight. The prototype first flew in March of 1957. Hundreds of these aircraft were built by amateurs from plans obtained from Mr. Nesmith. The wing fold mechanism was designed by Leonard Eaves, and his wife, Rita. The rights to the plans have been obtained by Acro Sport, Inc., the current plans seller.

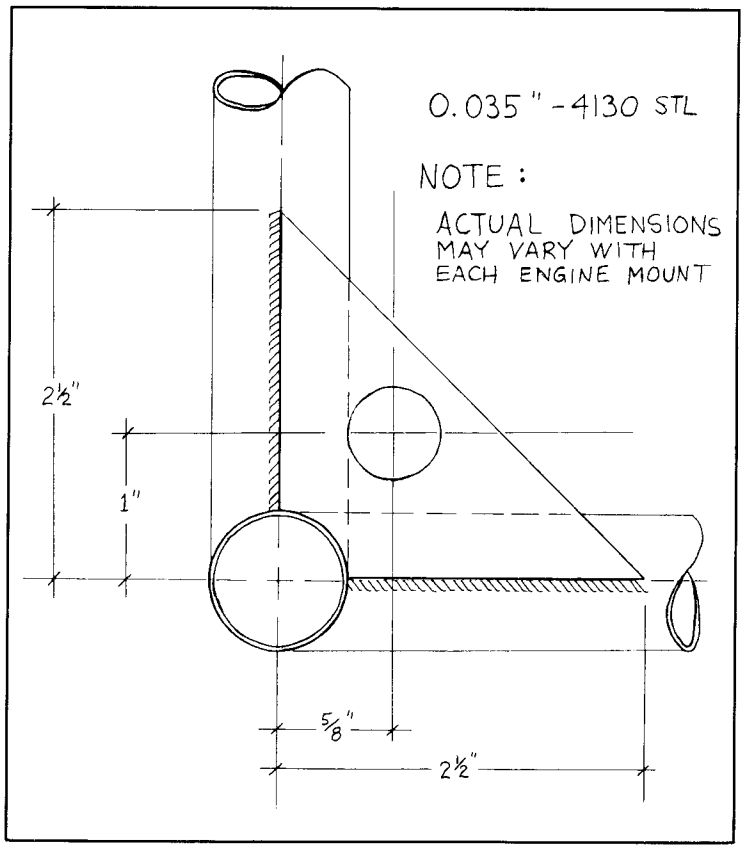
The Acro II is becoming very popular worldwide as reported by Mr. Engstroem of Sweden. He states, "My project is proceeding. After two years, as of May 13, 1991, the basic fuselage is ready (scratch built). The wings are up to the photo. I enclose. Very much thanks to the Acro Newsletter. ULF Engstroem, Box 12, S-66052 Edsvalla, Sweden.



An invaluable aid when welding the fuselage is this turning stand. Views below show fore and aft ends that permit fuselage frame to be rotated in a complete circle. It's a simple jig allowing one person to turn and position fuselage at any angle most convenient to work on.







To adapt bottom dimension of pre-welded engine mount, gussets were welded at both lower corners of the fuselage frame.

I purchased the Acro Sport II plans in January '90, received my first kit at the end of February and haven't stopped since. At Oshkosh '90 I enjoyed attending the workshops and was very pleased to participate in the Mattituk engine rebuilding seminar. This was most useful, especially now that I'm in the process of rebuilding my recently purchased O320-E2D. The Acro forum was the highlight of the trip.

To start my project, I felt the least comfortable with welding. After a few hours of instruction (from a local Skybolt builder) and many, many hours of welding little stubs I went to the real thing. I have enclosed the latest pictures of my project. The fuselage turning stand is a super idea!

The kits of materials I purchased have been a blessing sometimes, but a frustration at other times. On occasion wall thickness of tubing as supplied was incorrect, and insufficient materials was also a problem in some shipments.

Another problem I had was with a prewelded engine mount. While fitting the mount, the ½" bushings at station #1 fit perfect horizontally, but are ⅜" short in the vertical dimension. Gussets and bushings had to be fabricated to correct this problem. (See drawing.)

Another problem to avoid is wrapping the longerons around the back of the tailpost. The excess material at the back of the tailpost from the bottom longeron interferes with the installation of the back gusset for the tailwheel mount. This will also affect the fabric installation later.

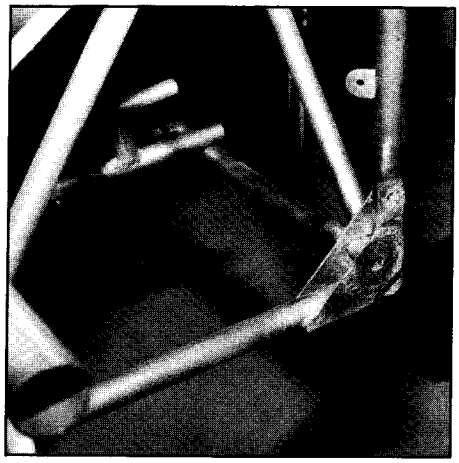
The front landing gear fittings required the extensive filing of a "U-shaped" (see sheet 3.0, A-5, Station 2 cross-section) groove to allow the bracket to be mounted without interference with the landing gear strut cabane. The fitting (sheet 5.0, A-2) shows a 1" flat surface welded on centerline directly below the bottom longeron. The cross-section shows the cabane mated on centerline and therefore no flat area exists to weld in the landing gear fitting.

I purchased the wing kit (ribs all built), leading and trailing edges, wing tips and all rib jigs from an advertisement in the classifieds in Sport Aviation.

In preparation for the assembly and building of the wings, I have been studying the past Newsletters and am grateful to the many other builders for sharing their ideas. I will no doubt be using many of their suggestions and hope to contribute some of my own to the Newsletter in future issues.

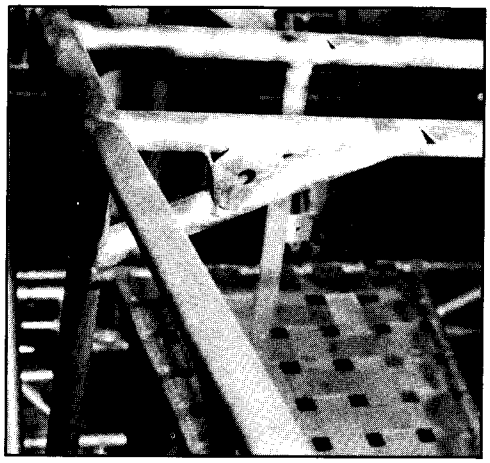
John C. Kafford
1607 Holden Drive
Sarnia, Ontario
Canada N7S 6G2

Acro Sport II S/N 1217



Left — Bottom engine mount bushings with added gussets required to bridge 3/8" gap on engine mount that was purchased from a supplier.

Right — Carb heat control mount modification — it is "angled in" toward the pilot and requires a bar to be welded between the top cross member and corner brace tube.



Acro Sport II Builders

Builder	Serial No.
Capt. Michael Kukulske 250 North Arcadia, Apt. 314 Tucson, AZ 85711	971
Earl H. Buchanan 9 Bassing Harbor Road Chatham, MA 02633	972
Donald M. Elliott 10209 N. Cherry, Apt. C-2 Kansas City, MO 64155	973
James R. Meeks P.O. Box 1416 Apopka, FL 32703	974
William W. Hindle, Pres. Tempo Engineering 8021 North Congress Kansas City, MO 64151	975
Bruce E. Owems, Sr. 2525 Swarth Fairbanks Road Monroe, LA 71203	976

Acro Sport I Builders

Ron Labey (Completed)
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Calgary, AL, Canada T2J 1M4

Duane Goode (Completed)
15624 183rd Ave. W.
Reynolds, IL 61279-9778

Charles Brewer
P.O. Box 44098
Cincinnati, OH 45244

Scott Breunig
R.R. #1
Newark, IL 60541

Felix Christiano, Jr.
1113 Elmwood Ave.
Buffalo, NY 14222

POBER PIXIE BUILDERS

Dennis DeBottis
5154 Corpal Welch Rd.
Syracuse, NY 13215

John A. Johnson
0644-25½ Mile Rd.
Homer, MI 49245

Juan Solvez Vera
Banco Central
Marques De Molins, 2
02001 Albacete, Spain

Frederick Hamilton, MD
Coffin's Point Plantation
Rt. #3, Box 765
Frogmore, SC 29920

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1844 Natalie
Billings, MT 59105

Richard D. Blevins
2215 Syracuse St.
Denver, CO 80207

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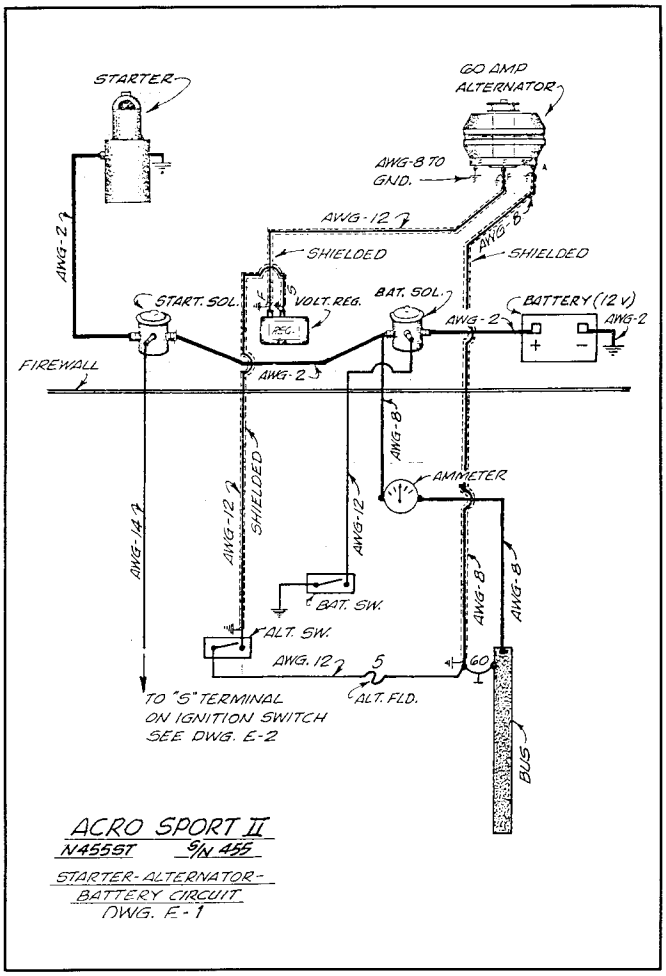
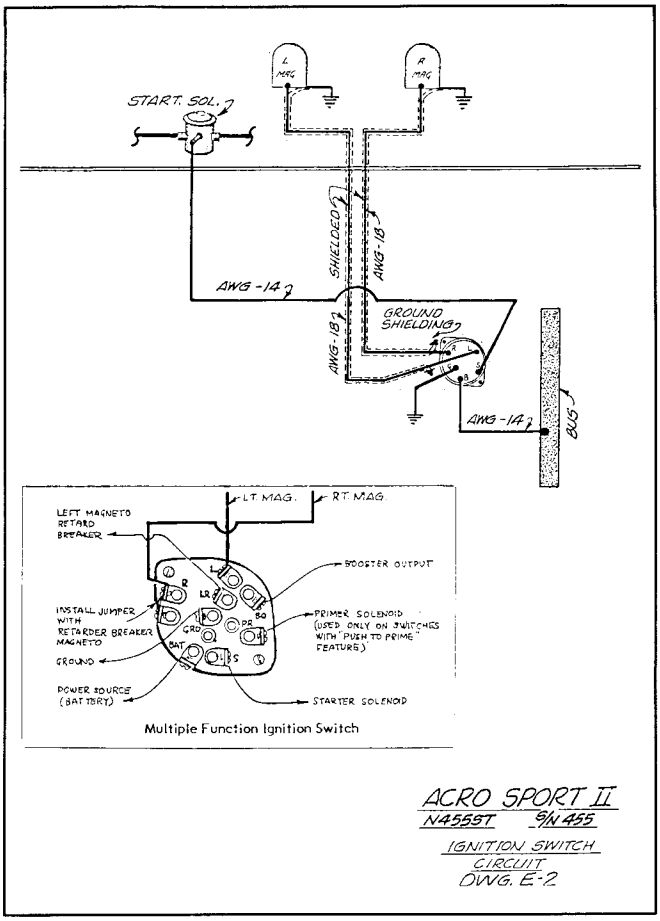




Dear Paul,

Well, it's finally Spring and the warm weather is coming around at last. We are ready to begin covering as soon as the weather gets consistently warm enough for the poly-tak and poly-brush.

I have spent most of the winter finishing up the electrical system wiring and all the little detail things that need doing before covering.

I am enclosing the electrical diagrams for our Acro which I have drawn for inclusion in the "Aircraft Serivce and Maintenance Manual."

The schematics shown herewith show the manner in which I have wired our Acro II. I have drawn the various system circuits separately for clarity. I would like to express my thanks to Tony Bingelis for the excellent electrical component drawings in his book, "Firewall Forward," which I have used on several of my drawings.

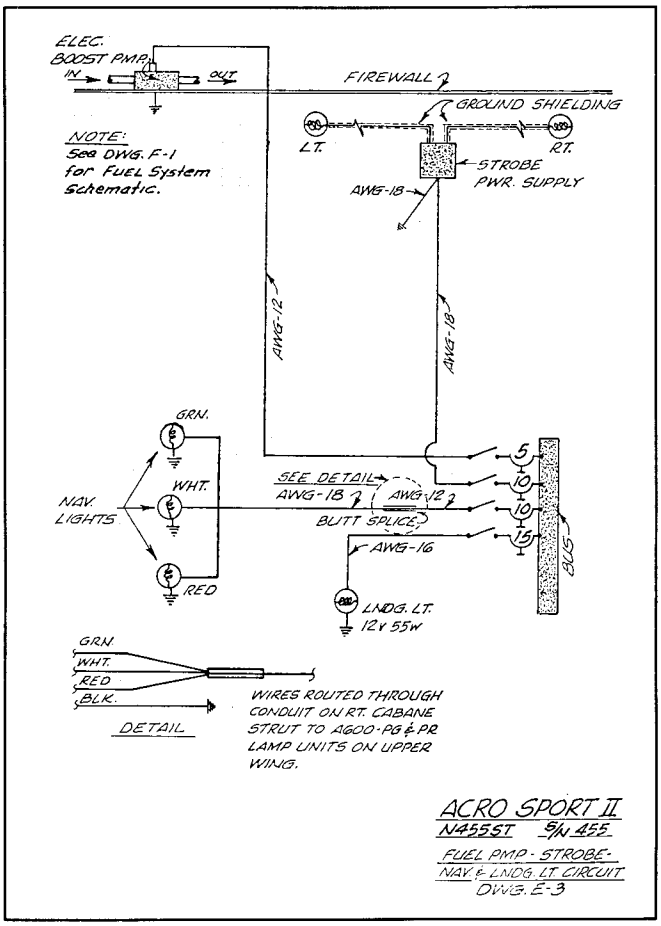
All wiring is standard AWG stranded aircraft wire. Terminal ends are the solderless crimped type.

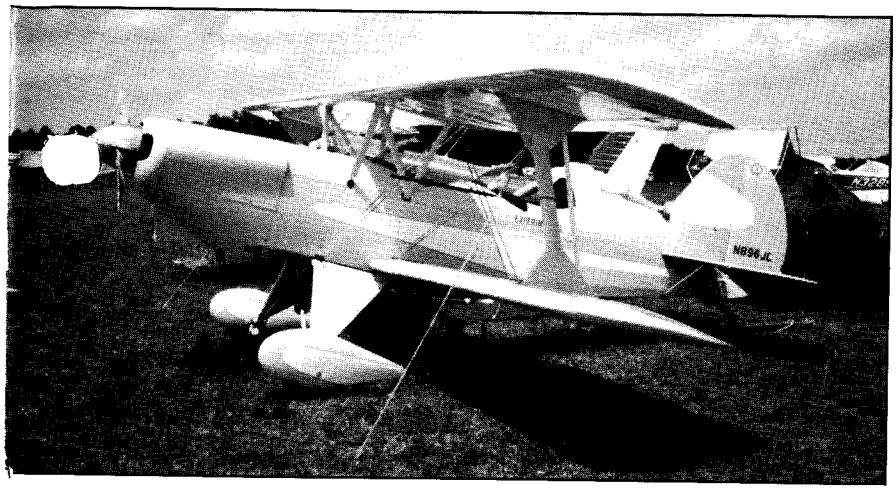
These schematics are for the primary operating systems for the aircraft. A future issue of the newsletter will show the avionics circuitry and photographs of wiring details.

It should be noted that these schematics are not intended to represent the only way to wire the aircraft, but rather, the way I chose after studying numerous sources of reference material.

Sincerely,

Tony Hohenwalde
3550 Jackson Way
Thornton, CO 800233
(303) 452-4180

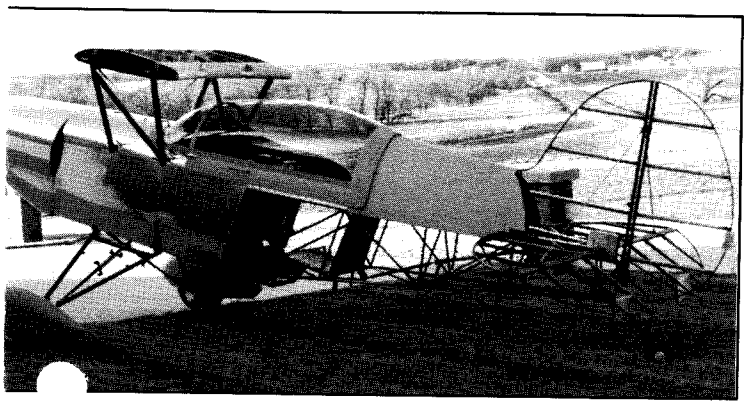


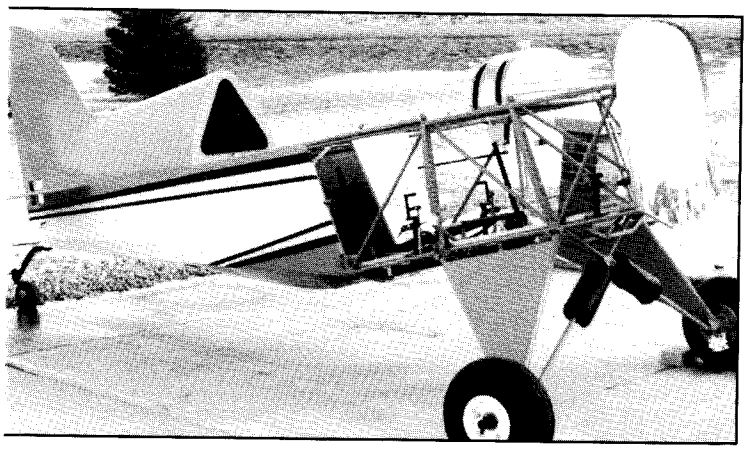


John J. Steele
105 Lycoming Drive
Coraopolis, PA 151088-2407

180 H.P. - constant speed cruise 135

John made EAA Sun 'n Fun 1990 and camped with his Acro II.





Dear Paul

I'm enclosing some pictures about the progress of my Acro.

Basically I followed the Acro plans; except I put a full double canopy on it; which I made it down to the top of the longerons to give me more glass and better visibility. (Had to change my dash; cut it down).

I've got an IO-360 Lycoming engine.

I used Stits covering system with Polytone paint. Very happy with the way it turned out.

I've installed a smoke tank or reserve tank which goes right behind the main tank.

An all wooden paint booth; built in sections is setting on one-half the garage. It has built-in lights — which gives me a very dust-free environment — works out good.

WHAT IS COMPLETED AS OF NOW:

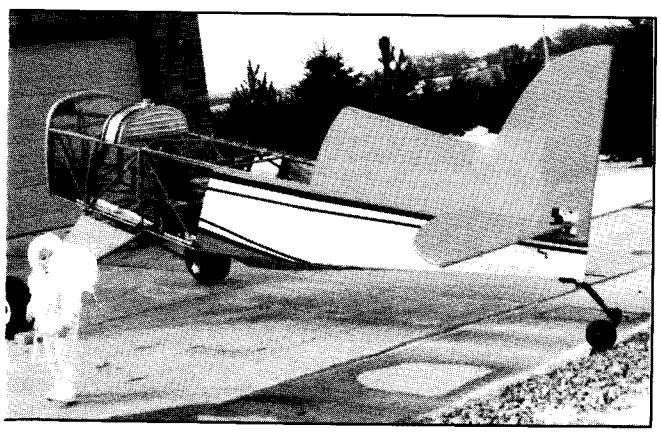
1) Fuselage is covered and painted, and back on its gear.
2) Brake lines and brakes installed.
3) Wings, all tail feathers, ailerons, eye struts are painted and completed.

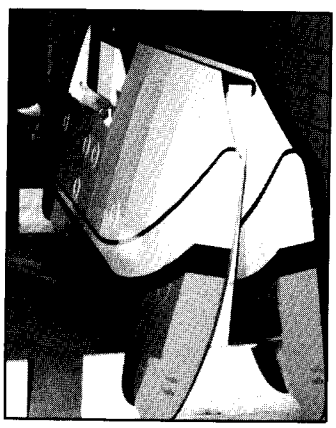
WHAT IS LEFT TO BE COMPLETED:

1) Paint side panels and cowling.
2) Plumb and wire fuselage.
3) Rig the airplane!

I've always enjoyed reading your newsletters; they've been very helpful. I always wanted to write to you; but kept putting it off. So a special "thanks" to my wife; who's been very supportive through the six (6) years our plane has been under construction.

Thank You.
Paul Muhle
Rt. 5, Box 236
Richland, Nebraska 68601-8958
402-487-2702





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