ACRO SPORT Newsletter

NO. 21 OCTOBER 1987

ACRO SPORT II PROJECT

MAYNARD ENGEL'S ACRO SPORT II

Maynard Engel was one of the speakers at the Acro Sport II forum at Oshkosh '87. He spoke on the flying characteristics of the aircraft from the builders standpoint. His particular aircraft was built by he and his son Doug, over a three year period and finished December 4, 1984. His son, Doug, is 26 now and occasionally does come home and fly the aircraft. Maynard said that he and his son took about 2500 hours to complete the aircraft. Maynard's occupation is that of a cabinet maker. His son, Doug, should be married by now to a girl he met at Sun 'n Fun. His wedding date was set for September 19 of this year.

As Maynard is a woodworker, the instrument panels on his aircraft are overlaid with wood veneer. He says that his welding is "not to good" so he bought a prewelded fuselage from Wag Aero. The minor welding items, Maynard did himself. He purchased the spars and the wood also from Wag Aero.

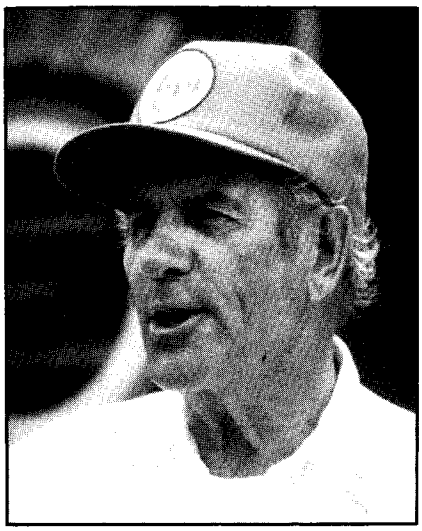
Some of the features of the aircraft are that it has a Maule tailwheel and uses a Lycoming O-320-E2A of 150 HP. The propeller is a Sensenich 74-58. This propeller can be seen to flutter out of track slightly and he is working with Sensenich, which is very near to his home, to build another new prop on it. At this time, he has a thicker prop known as an Aymar-Demuth wooden propeller of 74 inch diameter and 54 inch pitch. He flys from the Chester County Airport in Coatesville, Pennsylvania. The aircraft cruises at an indicated 115-120. The rate of climb solo is from 1200-1400 feet per minute and dual about 700-800 feet per minute. Empty weight is 1004 pounds. It does have an electrical system and starter-alternator and a battery on the firewall. He uses a Narco Escort II radio and has an intercom system. There is one strobe light installed on the tail.

Maynard describes his plane as a "honest fun-flying airplane that is easy to land." He says that he does not get in-

volved in aerobatic flight, but his son has done some aerobatic flying with a CFI. The CFI was quite impressed with the airplane although his usual experience is flying a S-1 in IAC competion. The CFI reports that he was very impressed with the way it handled, in particular in spin recoveries and other manuevers such as hammerheads, barrel and aileron rolls. The aircraft has no inverted systems so they had to do all positive manuevers with the airplane. The aircraft is finished in Imron and Stits, has a full canopy bubble and a canopy frame that Maynard copied from other similar aircraft. At this time, they have about 216.5 hours total time and his son Doug has about half of this time. Doug received his pilots license when he was about 18. The aircraft has an unusual color scheme, the base being a polytone ivory, dark brown being a dark chestnut, and the lighter brown, a light chestnut. All paint is Imron. He estimates that the canopy itself to weigh about 12-14 pounds and is blown from 3/6 inch plexiglass by the Airplane Factory. The canopy frame is 1/2 inch 4130.

Other unusual features would be the engine breather running out the back, the tie downs are 1/4 inch rod, 1/2 inch circle and they attach to the "I" strut bolts. There is a hand hold in the center section and they use the Wag Aero three-part double harness. Maynard's wife, Nancy, who spent some time in the aircraft as a passenger, enjoys it as much as Maynard and Doug does and states the airplane "is a family thing.' Maynard's wife, Nancy, is also co-chairman of operation thirst at the EAA convention and they are active in the Delaware chapter that covers some four states. She says that Maynard has won trophies with the airplane and is quite proud of him for that.

Editorial



EDITORIAL
By Paul H. Poberezny, President

This year's EAA OSHKOSH '87 Convention was one of the best yet. Our workshops were very active, and we received a great many compliments on the many workshop activities that take place. It also gave many attendees the opportunity to see the modernized two place Pober Corben Junior Ace, as well as the Pober Corben Super Ace, which were on display. A great deal of interest was shown relative to these two aircraft which give a lot of nostalgia of the 1930s that so many like.

Since Oshkosh '87, the Super Ace has moved along quite well and it is hoped that during the winter months the fuselage and tail group will be covered and the airplane made ready for a test flight early this spring, with the Junior Ace following sometime during the summer of '88.

I attended the Reno Air Races and as Chief Judge, monitored all race activities. This year's biplane races saw an Acro II competing, along with many of the other biplanes. Though the Acro II was not competitive, it certainly gave the pilot/owner a lot of fun racing around the pylons with some of the faster Pitts and Mongs. And I'm sure an Acro I would have done much better. I've talked to a number of pilots and owners of Acro IIs, and they all say the same thing about its flight qualities. . . docile, easy on directional control, roomy and a lot of fun to fly.

Over the years we have found that many pilots feel various homebuilt aircraft are a bit squirrely or difficult to control on the ground. True, some designs with narrow gears and short coupled are a bit more sensitive to ground control. However, we find that a majority of the problems some of these airplanes face is improper alignment of the landing gear axles and/or wheels. With the proper amount of toe-in and alignment, which then permits the airplane to roll true in a straight line under normal conditions, the pilot then only has to concentrate on reducing foot movement and not over controlling.

We can well remember a few years ago at Oshkosh when the owner of a homebuilt biplane complained about his difficulty in keeping the airplane straight on landing roll and was prepared to sell the airplane. Unfortunately, he damaged his gear while here at Oshkosh; repairs were made by our emergency repair crew. After the repairs to the landing gear were complete, the gear realigned, the owner test flew the airplane and came back all smiles. He said to the repair crew, "What did you fellas do?" They said that all they did was ensure that the airplane's landing gear was aligned properly with the proper toe-in. Needless to say, the owner did not sell his airplane.

Aviation faces many challenges in the forthcoming years ahead and it will take all of us working together, pulling together, to ensure that we can utilize airspace safely and with the greatest possible freedom. Twenty years ago I would never have foreseen the battles that face us today and in the future. And with some of the information that we've been provided by FAA at this time, the skies in the United States do not look bright. Recommendations are for positive control of everything above 10,000 feet and the only free space without Mode C altitude reporting from ground level up to 1200 feet. While building our airplanes, we also must continue to ensure our freedoms. EAA is being looked upon more and more by all of aviation to provide the leadership in maintaining our freedoms.

The **Acro Sport Newsletter** will contain status reports, modifications of the various designs or planned corrections in the future. As we all know, those little mistakes or errors seem to some way creep into all drawings when the draftsman measures from the actual product to the drawing board.

Acro Sport Newsletter Index

EDITORS NOTE: The Acro Sport Newsletter has been running continuously since September 1982. It is still available from Acro Sport, Inc., P.O. Box 462, Hales Corners, WI 53130. Four issues per year at $12.00 subscription per year. Issues 1-20 are available on a special order for $30.00 for these issues up through the end of 1987.

Many other designers have made their newsletter mandatory for builders of their aircraft as they use the newsletters to advise of changes, corrections, etc. As of this issue, all of the back issues of Acro Sport Newsletter will be considered mandatory for builders of the Pober Pixie, Acro Sport I, Super Acro Sport and Acro Sport II.

Acro Sport Newletter errors. In going back through the issues of the newsletter, I can see only two important errors in the information presented to you. The first was to Pixie builders in which we indicated that the change was necessary in the cabanes in the Pixie. This was later found to be incorrect and was corrected in the next issue. The Clark Y Airfoil has some unusual characteristics that had even us confused for a while. Builder John Leitus straightened everyone out on that one.

The other correction concerns welding. Some of the welders I have known in the past have left very slight gaps in the welded steel tube structures. This usually amounts to under 1/32 inch to allow for expansion of the metal during welding. However, many builders of the aircraft have told me that they make these fits as tight as possible and when stress relieving by whatever method, they have not found this to be a problem. In reading the excellent book "Welders Handbook" by Richard Finch and Tom Monroe, a H.P. book, I note that these highly experienced welders often leave no gap when assembling tubing. We stand corrected by their superior experience. This book is an excellent manual and available from H.P. Books, P.O. Box 5367, Tucson, AZ 85703, telephone (602) 888-2150. It is one of the better welding manuals the editor has seen.

Following is a fairly complete index of back issues of the magazine that we hope all builders will find helpful.

ACRO SPORT NEWSLETTER INDEX

Next are indexes broken down by first, all aircraft, then the Acro Sport I and Acro Sport II combined, and then Pixie, Acro Sport I and Acro Sport II alone.

Newsletter No. 1
All Aircraft - Project School Flight Aircraft Oshkosh '82 awards and Paul Poberezny Editorial.
Acro Sport I and Acro Sport II combined - Flying and Landing Wire Tensions,Tail Wires and Roll Wire Tensions.
Pixie only - John Leitus-and seventeen questions and answers.
Acro Sport I only -12 questions and answers, Baker School's aircraft, Dick Maulsby's aircraft, Mandatory Horizontal Stabilizer Brace and Mandatory Front Gear Leg Change.
Acro Sport II only - 32 questions and answers, fittings available (for sale) and George Jones' Acro Sport II.

Newsletter No. 2
All aircraft - Paul Poberezny Editorial, Wing Incidence Tool, Elastic Stop Nuts and Wire Nuts, Drag-Anti-Drag Wire Tightness, Layout of Wings, Attaching Metal Leading Edge, Steaming Cap Strips.
Acro Sport I and Acro Sport II combined - Engine Mount, Trailing Edge Riblets, Interference Between Landing and Flying Wires and Shock Cord Covers.
The Pixie alone - A. Hartwell Jewell's Pixie and Pixie Completion List.
Acro Sport I only - Earl Ritter's aircraft, Larry Lindsey's aircraft, Willard Anderson's aircraft, article "Bob Heuer Flies the Acro Sport I."
Acro Sport II alone - Bud Gores' aircraft, Al Smith's aircraft, Shoulder Straps, Head Rest Door, Drag-Anti-Drag Center Section Wires, Landing Wire Tabs for Short Wires-Plan, Earl Ritter's aircraft, Dave Kragne's aircraft, Plan Changes (6) on Pedals and the Acro Sport II Completion List.

Newsletter No. 3
All aircraft - Paul H. Poberezny Editorial, Photos, Nicropress, Sparkplug Wires, Weight and Balance, Engine Weight Listing and Allowable Maneuvers and G Loads.
Acro Sport I and Acro Sport II combined - Canopy Drawings for Track and Canopy Latch, Instrument Panel Photos and Flange Shrinking Tips.
Acro Sport I only - photos of 5, John Kimber's aircraft, Warren Curd and Dick Brown's aircraft, and Pedal Photos.
Pixie - EAA's Aircraft, with the Rotorway 133 Engine, Wing Drag-Anti-Drag Wires.

Newletter No. 4
All aircraft - Paul H. Poberezny Editorial, '83 Convention Winners, Notes on Zero Side and Down Thrusts and seven additional notes.
Acro Sport I and Acro Sport II combined - Engines, Propellers, Landing Gear Gussets - Mandatory Change.
Acro Sport I only - 3 pictures, Willard Anderson's aircraft-5 Pictures, 2-Page Article, Doug Bell's aircraft - 8 pictures, 2-1/2 Page Article, Ralph Cashen's-2 picture, 1/6 Page Article "Fastest Acro Sport I To Date", Archie McDonald's 1 Page, 5 pictures, R.A. White's aircraft-1 Page, 1 picture.
Acro Sport II only - Speeds and Instrument Markings.
Pober Pixie only - Shock Struts.

Newsletter No. 5
All aircraft - Polyester Work Clothing, Don't Use In Painting, Landing Gear Slide, How To Make, Electrical Systems and Wire Sizes, Burnishing Aluminum and Epoxy Glues.
Acro Sport I and Acro Sport II combined - Air Drill to Drill Drag-Anti-Drag Holes, Bungee Cords, Drag-Anti-Drag Intersect Ribs and How To Correct.
Acro Sport I only - Dorothy Vallee's (E. Aiksinoras) Acro Sport I of 100 HP, Henry Thompson's Aircraft, Dave Marsino's aircraft, Gary Grover's aircraft, Dick Maulsby's and Further Comment on Mandatory Horizontal Stabilzer Change.
Acro Sport II - Al Smith's aircraft - 2 Page and 8 pictures, Mundelein Illinois High School School Flight Project's aircraft, Dave Blanton's aircraft and stall strips.
Pixie only - Hartwell Jewell's aircraft, John Leitus' aircraft - one page, 4 picture article, and Electric Generator & Pixie Side Doors by Leitus.

Newsletter No. 6
All Aircraft - Paul H. Poberezny Editorial, Electrical Schematics, Rib Stitch Guide, Fueling Aid, Magnets as a Welding Aid, Drilling Notes, Landing Gear Notes, Comments on Used Engines,

Differential Compression Tester Information, Engine Safety Cable Information and Spar Drilling.
Acro Sport I and Acro Sport II combined - Patch Plates, Landing and Flying Wire Ends, Paul's Wing Fitting Tips, Spade Details, Cabane Inserts, Patch Plates For Flying and Landing Wire Holes.
Acro Sport I alone - Barry Beausoleil's "Fastest Acro Sport I" Ralph Cashen's Super Acro Sport.
Acro Sport II - Elmer Farris' aircraft, 1 page and 2 pictures, Bud Gores' aircraft, Lee Farnsworth's, George Jones' Aerobatic Flight Report, Entry Speeds and Stick Support Drawing.
Pixie only - Wind Generator Diagram.

Newsletter No. 7
All Aircraft - Paul H. Poberezny Editorial, Rib Stitching Tips, Wind Shield Cutting, Engine Cable Information.
Acro Sport I and Acro Sport II combined - Bracket Bending, Flying and Landing Wire Information, Fuel Gauge and Wire Tightness.
Acro Sport I - Mishap History, Plans Changes - 4, article list in SPORT AVIATION and Hose Change.
Acro Sport II - Paul Faulkner's aircraft, 1 page, 4 pictures, Dave Kragnes' aircraft, 1-1/2 pages, 2 picture, Bill Neelin's aircraft, 2/3 page, 2 pictures, Nick Nickles' aircraft, 1 page, 4 pictures, Mishap Information, Center Section Drag and Anti-Drag Wires, Rudder Pedals, Plans Changes, Article List of Articles in SPORT AVIATION.
Pixie - Plans Changes, List of Articles in SPORT AVIATION.

Newsletter No. 8
All Aircraft - The Flight Envelope Article
Acro Sport I - George Coussement's and Fred Haeck's 1-1/2 page, 1 picture.
Acro Sport II - Flying the Acro Sport II by Bob Davis, Tony Hohenwalde's and Ray Lentz's aircraft, 2 pages, 7 pictures, Dave Blanton Jr.'s aircraft, Glade Hoyle's 1-1/3 page, 1 picture, William Hood's aircraft, 1 page, 2 pictures and Oil Cooler Notes, Mike Clark's aircraft.

Newsletter No. 9
All Aircraft - Paul H. Poberezny Editorial, Leading Edge Metal Tips, Posa Carburetors, Landing Gear Shock Strut Tubes, Hinge Forming, Drag-Anti-Drag Blocks Reinforcing, Glues, Hand Starting Hint, Engine Hoses, Water Skis, Toe In and Toe Out, Landing Gear.
Acro Sport I and Acro Sport II combined - Bending Aluminum 1/4 inch Horn, Push Rods and Horns, Starter Speeds for the Lycoming.
Acro Sport I - Mosley, FL High School, School Flight Project, 3/4 page, 5 picture, "Flying the Acro Sport I" by Archie McDonald, 2 pages.
Acro Sport II - Attaching Wheel Pants, Dave Comrie's aircraft, Don Smith's aircraft and Acro Sport II Errors and Hints.
Pixie - Photograph on Skis, Pixie Tips by Hartwell Jewell, Items and Corrections, 6 pages and 1 picture.

Newsletter No. 10
All Aircraft - Paul H. Poberezny Editorial, Welding Techniques, Water Detectors for Gas Tanks, Tube Benders, The Angle Between Front Gear Legs and the Axles. Removing Fabric From Wood, Fuel Line Inside Diameters and Welding Engine Mounts.
Acro Sport I and Acro Sport II combined - Propeller Weights, Hartzell Propellers, Metal and Wood Propellers.
Acro Sport I - Dave Marsino's aircraft, 1/2 page and 2 pictures, Crossover Exhaust and Bungee Cord Deterioration.
Acro Sport II - Dan Quebedeaux's aircraft, 2 pages and 6 photos, Bud Gores' aircraft, 1-1/2 pages, 6 photos, Geoff Anderson's Project and Rib Jig, 1 page, 3 photos, Editor Working on Paul's Acro Sport I, 1 page and 5 photos, Steve Blake and his aircraft and two place canopy, 1 page, 3 pictures, Acro Sport II Aileron Problem and Shortened Ailerons, Sensenich Propeller for Acro Sport II.
Pixie - R. L. Sorenson's Proposed Flaperon System, Drawing Only, Not Yet Tried.

Newsletter No. 11
All Aircraft - Paul H. Poberezny Editorial, Sandbox Frame for Even Rib Gluing Pressure, Staplers, Aluminum Welding, 1 page.
Cougar - First Plans Announcement.
Acro Sport I and Acro Sport II - Shock Cord Covers for Acro Sport II also fits Acro Sport I, made of metal and dimensions and drawings shown.
Acro Sport I - Jim Olson's aircraft, 1-1/2 page and 1 picture
Acro Sport II - Maynard Engel's Acro Sport II, 1/4 page, 1 picture. Dave Kragnes' Mishap-Ran Out Of Fuel, 1 page, Acro Sport II Filler Neck Height, Center Section Fuel Tank, 2/3 page, 4 pictures.
Pixie - Jose Leaa Saffe's Brazilian Pixie, 1/3 page, 1 picture, Clark Y and Angle Of Incidence **May Be Misleading**, Build as Plans Show! Thrust Line Location, Wing Fittings From Ken Brock.

Newsletter No. 12
All Aircraft - Paul H. Poberezny Editorial, Article on Flying An Airplane on Trim Tab Alone, 2/3 page, Trim Tab Free Play, 1 page article, Cutting Tubing and Clamp to Use, Cutting Fittings, 3/4 page article, Cutting Sheet Metal Inside Corners, 1 page, 6 pictures.
Acro Sport I and Acro Sport II combined - Fuel Tank Capacity, Lycoming Service Bulletins, Letters and Instructions, Continental Motors Service Bulletins, Corrections on Flying and Landing Wires and How To Do It, Aligning the Wings Straight.
Acro Sport II - Cliff Schrader's Flies, Larry Steven's and 1 picture, Cabane Building Tips, Orientation of Fuselage Stringers - Drawings.
Pixie - Trim Tab, 1 picture, 1 drawing, Clark Y Air Foil, Correction of Newsletter No. 11 Information.

Newsletter No. 13
All Aircraft - Paul H. Poberezny Editorial, Antenna Placement, Specifications on Three Aircraft, Rib Drawings May Shrink or Stretch.
Acro Sport I and Acro Sport II combined - Pitot Tube, Six Cylinder Engines a No-No, O-235 and Wag Aero Nose Bowl, Acro Sport I Specifications.
Acro Sport II - Jack Elenbaas-Strap Gear And Canopy, 2 pages, 5 pictures, Lee Farnsworth's Acro Sport II, 2/3 page, 1 picture, Hints and Tips on Assembly, Don't Drill Lower Wing Spars, Bellcrank Assembly, Center Section Drag and Anti-Drag Wires, Center Section Fuel Tank Data, Angle Of Incidence and Rigging, Questions and Answers-12, Drilling Spars, H Model Engine Problem With Fuel Pump.
Pixie - Specifications
Corben Jr. Ace - First Notice, Progress Made and Initial Drawings Available.

Newsletter No. 14
All Aircraft - Thanks to Paul H. Poberezny, History on Acro Sport Aircraft, Achievment Awards, "Last Acro Sport News" (An Error, We Kept It Going) Tapes Available From EAA.
Acro Sport I and Acro Sport II combined - "Hot Rodding" The O-200.
Acro Sport II - Bill Neeling's Acro Sport, 3/4 page, Acro Sport II Strap Gear Specifications For Fore and Aft Center of Gravity, Don't Use Continental R-670-No-No, Picture Gallery, Construction Shots-8.
Pober Pixie shots -11.

Newsletter No. 15
All Aircraft - Paul H. Poberezny Editorial, The Newsletter WILL Continue.
Acro Sport I and Acro Sport II Combined - 2 pictures-forming the Upper Wing Center Section Bow, The Aileron Nut Plate For Rear Spar, PS5 Carburetor, Fuel Pump Sources, Elevator Binding Solution.
Acro Sport I - Pictures of Tom Poberezny Flying N1AC.
Acro Sport II - Spring Aluminum Gear - Herb Williamson's 1-1/2 page, 2 pictures, Maynard and Doug Engel's 1 page, 3 pictures, Steve Chase's, 1 page and 1 picture, Jack Flannigan's under

construction, 2/3 page and 4 pictures, Acro Sport II List Under Construction and Complete.
Pixie - List under construction and Complete, 2/3 page on Skis with pictures.

Newsletter No. 16
All Aircraft - Oshkosh '86 Preview, Drilling Spar Holes, All Acro Sport Awards Listed Up to That Time.
Acro Sport I and Acro Sport II combined - Aligning and Drilling Straight, 3/4 page and 4 pictures.
Acro Sport I - Dave Marsino's 1/2 page and 2 pictures.
Acro Sport II - John Steele's 1/2 page and 1 picture. Flying incidence, tube bending tip. List modifiers and addresses, strap gear and 2 place canopies. Plan corrections pinks cover and all other sets. Acro Sport II stick support drawing. Steve Chace's 1/2 page and 1 picture. Nick Nickle's construction article. Dave Blanton's Acro II. Builder, installing Gypsy major. Weight and Balance reference from CUSTOM BUILT SPORT AIRCRAFT HANDBOOK.
Pixie - Picture of Georges Hagaman's Belgian Aircraft.

Newsletter No. 17
All Aircraft - Oshkosh '86 Awards, Schoolflight Acro Sport II.
Acro Sport I - Pictures of Doug Bell's aircraft.
Acro Sport II - Pictures of Al Smith's, Lee Farnsworth's, Jack Elenbaas', Mundelein High School, Eugene Jones' (Two-place Canopy), Jim Jahnke's, Greg Windham's Acro Sport Spring Gear Picture, Modifications, Bracing, etc., 6 pictures 2-2/3 pages. Acro Sport II Pilot, Bud Judy Comments.
Pixie - John Leitus And His Award.

Newsletter No. 18
All Aircraft - Paul H. Poberezny Editorial, Publishers Comment, Glues Engine Mount, Position of Horizontal Stabilizer, PS5 Fuel Pumps, Building Sequence and Reference Help Available.
Acro Sport I and Acro Sport II combined - Drag and Anti-Drag Wires, How to Fabricate and Commercial Sources 3/4 pages and pictures.
Acro Sport II - Paul Felkner's Project 1 picture, Bill Wilkins Construction Shop 2 pages, 12 pictures including Recommendation of Transit for Rigging. Pictures of museum aircraft, Acro Sport II Open Frame, Paul Meuhle's Acro Sport II.
Pober Pixie - Mario Chavot's Pixie and Also 1/3 scale model.
Pober Jr. Ace - 1-1/4 page and 4 pictures.

Newsletter No. 19
All Aircraft - Manuevering Speed and G Loads, Shop Notes on Plywood, Handling 4130, Incidence Jig, Military Specifications on Wood Available from EAA, Nose Bowl Clearance, Dzus Fitting Dimensions, Editorial by Paul H. Poberezny, Aircraft in Jane's "All The World's Aircraft", Dull Tools - Don't Use, Hand Propping, Alignment of Wing and Landing Gear Fittings, Rudder Post and Rudder, Front Spar Matchup.
Acro Sport I and Acro Sport II combined - Biplane Advantages, Drag and Anti-Drag Wire Suggestions To Fabricate, Pressing Bearings Into 1/4 inch Aluminum.
Acro Sport I - Corbin's Highly Modified Aircraft, Electrical Schematic 3 pages, 1 pictures, 6 drawings.
Acro Sport II - Landing Gear Suggestion To Keep It Correct, Stick Support, and the Hohenwalde Project Picture
Cougar - Ray Wilkes Picture and Cowl Comments.

Newsletter No. 20
All Aircraft - Paul H. Poberezny Editorial, Cables For Throttles, Trim, Etc., Announcement of Oshkosh '87 Dinner, Use of Welding Rod.
Acro Sport II - Plans Corrections for Pink Set of 6-8-87, Nine questions and answers, Keith Hanchcliffe's 1/2 page and 2 construction pictures, William King's Acro Sport II, 1/2 page and 2 pictures, tailwheels and mounts.
Pixie - Lloyd Thompson's Pixie 1/2 page and 3 pictures, Plans Corrections Red Cover Set, 2 Questions and Answers, Angle Of Incidence Information.
Corben's Super Ace - 1-1/4 page, 3-view 6 pictures.
Corben Jr. Ace P Model - 1/2 page and 5 pictures.

Pober Pixie Model

POBER PIXIE MODEL

This model Pixie was built by Jerzy Kaluzowcz of Poland and it is introduced here for your information. Jerzy has overcome some rather severe problems to even build a model of the Pixie in Poland and is to be congratulated. As Paul said when he read his complete letter, "We don't know how lucky we are."

HIGH TIME PASSENGER HOPPERS

Adding to our list of those who have freely given of their time to provide others with a flight in their airplane, we would like to recognize retired Air Force Colonel, John Schifferer who recently donated a Breezy to the EAA Museum. His logbook includes more than 1000 entries for rides given to any and all who wish to fly.

Technical Tips

ACRO SPORT I

Regarding incidence on the Acro Sport I, the leading edge should be up higher than the trailing edge .94248 inches to have the proper 1.5 degrees on the Acro Sport I. The formula to use is that the opposite leg of the triangle or the height of the center of the leading edge chord line above the trailing edge chord line is determined by the sin of the angle that you had times the length of the chord.

ACRO SPORT II

1. Any airplane is a collection of compromises and the Acro Sport II and even the Acro Sport I are no exceptions. The incidence was set at 1-1/2 degrees on both of these aircraft so that when the aircraft were flown in inverted flight, they wouldn't have an excessively high nose up attitude. This generally means that the top longeron is about 2 degrees nose up in normal flight. This is quite a common compromise for aircraft designed for aerobatic flight. If you set the wings at 3-1/2 degrees nose up, the upper longeron **may be** level in flight enabling you to see over the nose better. However, in inverted flight, you would have a very extreme nose high attitude which defeats the purpose of an aircraft designed as the Acro Sports are for aerobatic training.

2. When building engine mounts, Acro Sport II builder Tony Hohenwalde recommends that angle irons be used as a jig and that 1/2 inch holes be drilled in the jig and the engine mount bushings be inserted through these holes before the welding is started. This will hold the bushings tightly in position on the fuselage so that it will match up with the mount you may have already purchased from suppliers such as Wag Aero. The ridged jig goes against most principles of welding but is usually the only way engine mounts can be properly aligned. Stress relieving your finished welding should relieve any locked up stress in this procedure.

3. Ailerons are listed as being 25% up and 25% down. This measure 5-3/8 inches from the trailing edge of the aileron to the trailing edge of the wing on the Acro Sport II. Ailerons themselves are 12 inches in length (new dimension for ailerons) and the vertical dimension from the cord line down to the center of the hinge is 3/4 inch.

4. Acro Sport II builder Neal Sidders recommends on sheet number 7, zone B-2, the idler have a washer also on the top to increase the bearing area and that on zone B-3, (the idler mount) that you install a 1/2 inch bushing inside the 3/8 inch bushing so that the idler is not rotating on the bolt itself.

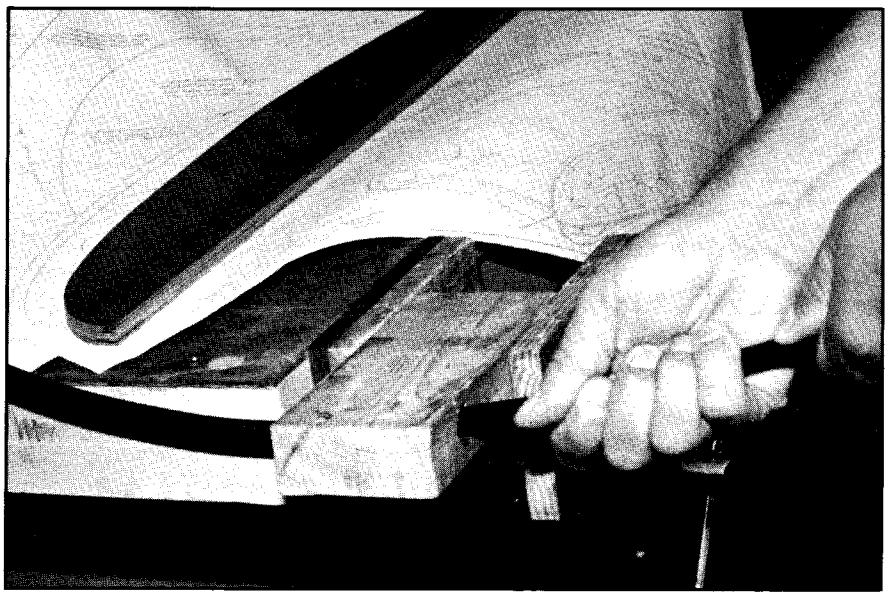
5. On sheet number 14, zone D-1, the static tube is .5 inch OD by approximately .065-.078 inch long and can be of any suitable tubing. The interior pitot tube of 1018 steel should be strong enough to support any tubing that you find suitable you use for that application. The comment that the block of aluminum should be drilled and tapped is correct, but only 3/4 inches deep, not 1-15/32 inches deep. The outside tube of 1/4 NPT pipe thread should be drilled 5/16 inch deep from the base.

6. Sheet number 20, zone C-4. Acro Sport builder Paul Felkner reports that the drawing of the upper forward cowl forward side panel with the hinge and channel installed, actually shows the hinge installed wrong. The bottom portion of the hinge must be up, not down or the cowling will not open fully.

TECHNICAL TIPS

For all Acro Sport Aircraft.

This photograph shows a two-by-four with a hole drilled in it slightly larger than the tubing to be bent. It makes an excellent tubing bender when placed in the device as shown.



PIXIE TIPS

We recently had an incident of minor nature when the right gear leg folded on a Pixie. The aircraft was being flown in airshow performances with many hard and sudden landings and also a "Tennessee Walk" type of operation where the aircraft was flown down the runway tipping from one wheel to the other, like Bob Hoover has done in the past. If the aircraft will be used in this type of service, possibly strengthening of the gear legs of the Pixie would be a good idea. In normal service there has been no problem at all with the landing gears as designed on the Pixie.

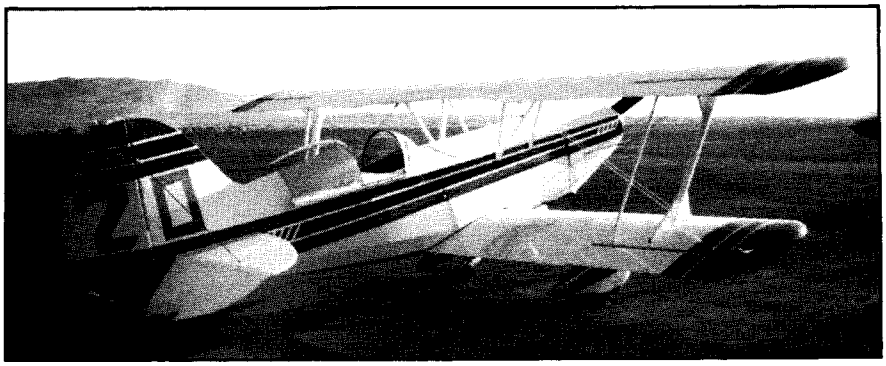
SUGGESTIONS FOR ACRO SPORT I AND ACRO SPORT II

The M-6 airfoil when laid on top of either the Acro Sport I or Acro Sport II airfoil would not be quite the same. The airfoil we know works well and is a modified M-6, possibly a "Pober M-6." You shouldn't try to take the coordinates directly from the Munk M-6 airfoil coordinates.

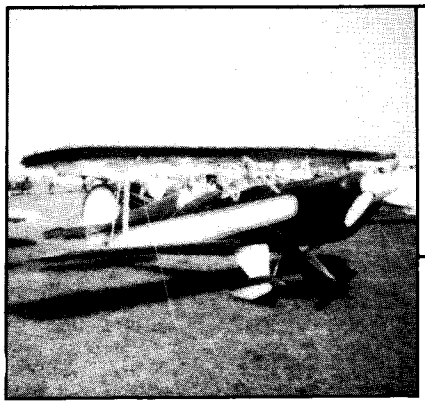
FAIRLEADS

Most fairleads have a restriction of a maximum bend of 3 degrees through the fair lead. Recently a rudder cable on a Skybolt failed due to the fact that the cable was bent approximately 10 degrees through the fair lead. The other cable on the other side was found also deteriorating.

Aircraft Builders Ads



Louis Tobin of Travis AFB, CA, flies this nice Acro Sport II, white with 2 shades of green trim. He brought it to Reno '87 and raced in several heats. In the Sport Biplane Class, he did finish dead last, but had a great deal of fun trying!



THE MYSTERY ACRO SPORT II

Can anyone identify the owner of this Acro Sport II? It was parked at the EAA Convention and was photographed by our roving photographer. We would like to be able to award an amateur built participation plaque to the owner of N87ES. Whose airplane is this?

Editor - Ben Owen
Co-Editor - Ann Ruby
Contributing Editor - Tony Hohenwalde
Printing - Times Publishing

PLANS AVAILABLE FROM ACRO SPORT, INC.

The following are available from Acro Sport, Inc., P.O. Box 462, Hales Corners, WI 53130.

Newsletter (4 issues per year) for $12.00 and the book "Techniques of Aircraft Building is $12.00 postpaid. The information packet on any of the above aircraft is $5.00. Acro Sport, Inc. does not have the facilities for credit card at this time.

Plans	Price	Pages
Cougar	$60.00	14
Pixie	60.00	16
Acro Sport I	60.00	24
Acro Sport II	85.00	23
Super Acro Sport	75.00	26
Corben Jr. Ace P	85.00	35
Pober Corben Super Ace	85.00	17

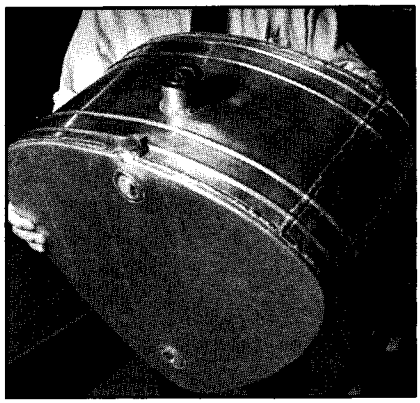
THANKS TO THE OSHKOSH ACRO SPORT VOLUNTEERS

Acro Sport would like to recognize those volunteers at the Acro Sport Forums given by Maynard Engel, Tony Hohenwalde, Bob Stagner, John Leitus, Art Crane and all those who helped at the Acro Sport Workshops and Forum at Oshkosh '87.

CUSTOM FUEL TANK SERVICE

Have your fuel tank built to your custom specifications for approximately $250.00 per tank. The builder is experienced in the construction of tanks for amateur built aircraft over several years. The weight of the tank is 8 lbs., 12 oz. Contact Benny Davis, Route #2, Corydon, Iowa 50060. Telephone (515) 872-2032.

Photograph of Benny's tank by Carl Schuppel, EAA Staff Photographer.



Builder Greg Windham of Wildwood, Florida reports that he obtained some nice Acro Sport II fiberglass wingtips from the Rattray Brothers, 2357 Afton Road, Beloit, Wisconsin 53511, telephone (608) 362-4611.

Aircraft exhaust rebuilders who also do all welded components and crossover exhaust systems are Chris Stepp and Larry Dawley of Stepp and Dawley, 281 E. Chestnut Street, Burlington, Wisconsin 53105, telephone (414) 763-3113 or 1-800-338-5420. They are certified aircraft welders.

ACRO SPORT CLOTHING — A FEW ITEMS STILL AVAILABLE!

QUANTITY LEFT	SIZE	ITEM	COST (includes postage)
1	Medium	Tan Acro II Jacket	36.25
4	Small	Tan Acro II Sweater	29.00
8	Large	Tan Acro II Sweater	29.00
7	Small	Grey Acro I Sweater	29.00
4	Medium	Grey Acro I Sweater	29.00
2	Large	Greg Acro I Sweater	29.00
2	Small	Grey Acro I Golfshirt w/Collar	21.66
		Acro Sport Logo Baseball Caps	7.00

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