CROSPORT EWSLETTER

PHOTOGRAPHIC ESSAY

PAUL POBEREZNY: PUBLISHER.



JULY 1986

This Acro II was recently completed by John J. Steele, 105 Lycoming Drive, Coraopolis, PA 15108

BEN OWEN & ANN RUBY: EDITORS

This aircraft, N896JC, has a 180 HP engine and constant speed propeller. It cruises at 135 mph. and stalls at 55 mph. Its empty weight is 1,102 lbs. and the first flight was on April 10, 1986. Center of gravity is located in the mid-range and the aircraft took 3 years to complete.

This photgraph shows the builder in the cockpit of his airplane before the wheel pants were installed.

This aircraft by David P. Marsino of 66 Columbus Avenue, Closter, NJ 07624 has been completed and flown. The plans were purchased November 1984 and, as you can see, Dave has a very nice instrument panel. This beautiful Acro is painted red with a white stripe.





Another shot of David Marsino's Acro Sport I. For more Acro Sport photos, turn to page 5.



ACRO SPORT EVENTS AT OSHKOSH '86

DATES PRIOR TO AUGUST 1st, ACRO SPORT WORK-**SHOP SET-UP**

SATURDAY

August 2nd — Wicks Acro Sport I and II Builder Forum from 1:00 — 2:00 p.m. North Exhibit Building, Booths N-1, N-2, M-14, M-15, and M-16.

SUNDAY

August 3rd — Wicks Aircraft Pixie Builder Forum from 1:00 — 2:00 p.m. North Exhibit Building, Booths N-1, N-2, M-14, M-15, and M-16.

MONDAY

August 4th — Pixie Forum, Bob Stagner, John Leitus and others, 10:15 - 11:30 a.m., Tent 8.

TUESDAY

August 5th — Acro Sport I and II Forums, 11:45 a.m. — 1:00 p.m., Tent 6, Bob Stagner, Pilot Bud Judy, Builders Tony Hohenwald and others.

WEDNESDAY

August 6th - Builder Awards at the Theater in the Woods from 6:00 — 6:30 p.m. No-host Acro Sport Dinner at Butch's Restaurant, cocktails at 7:00 p.m., dinner at 8:00 p.m., please R.S.V.P to Acro Sport, Inc., P.O. Box 462, Hales Corners, WI 53130, telephone (414) 529-2609.

ACRO SPORT AIRCRAFT AT OSHKOSH '86

- 1. Acro Sport II, N9AS, the prototype Acro Sport II will be seen on the flight line in the air show area and will be flown by pilot, Bud Judy in the air show demonstrations.
- 2. Mundelein High School Acro Sport II, in completed stage, but unflown, will be shown in the Schoolflight tent. The Schoolflight tent is adjacent to the EAA And You Tent, just to the west of the Blue Arch. Instructor Jim Jackson and his students who built the aircraft will be on hand in the Schoolflight tent.
- 3. The Acro Sport II completed in our Shops and with the Lycoming O-235-L2C installed is in the EAA Museum on the concourse on display uncovered. It does not yet have its engine plumbing installed. The airframe is an excellent example of the work done by our shop personnel and EAA volunteers.
- 4. The Acro Sport II with the IO-360-A1A will be on display in the workshop area and will be worked on there. It has not vet been covered and has no engine plumbing installed, but can be seen in the Stits/Acro Sport combined tent.
- 5. Acro Sport I on display at Oshkosh 1) N1AC, is hanging in the museum and is not available for close up inspection. 2) N5AC, the prototype Super Acro Sport, should be on the flight line, and may or may not be flown in the air show. 3) N76BM, Bud McHolland's in more or less the "conventional" Acro Sport color should be on the flight line, although location is not known yet. 4) N17HS, blue and white in color with a canopy, built by Dr. Henry Swenson, D.D.S., and both this and the McHolland Acro Sport have been donated to the Foundation and should be on display with other Foundation aircraft, location not yet known

- 6. Pober Pixie's on display at Oshkosh 1) N9PH, the prototype Pixie, is on display on the museum floor. 2) The Pixie project will be in the combined Stits/Acro Sport tent and Ray Stits will be covering the wings on this Pixie project, which will be worked on by quite a few volunteers. Additional volunteers are still needed for this project.
- 7. The Corben Jr. Ace will be worked on in the workshops. The fuselage in the welding workshop and the wings in the wood workshop. In addition, another set of ribs and wings will be assembled, and hopefully another wing panel will be completed by the time the Convention is over.
- 8. The Corben Super Ace fuselage on the gear will probably be on display in the welding area, or the museum shop itself. A new fuselage will be built up in the welding shop from the jigs on up. In addition, the Super Ace ribs may be worked on if the Junior Ace ribs are completed by the time the Convention is over. This again in the wood workshop area.

WORKSHOP VOLUNTEERS WANTED

Bob Stagner heads up the Acro Sport Workshop effort under Tony Goetz, EAA Museum Maintenance Supervisor. Bob has been an excellent manager of the workshop, and he and his wife, Louise, can be found at the workshops from mid-July on. Acro Sport, Inc., would like to say a sincere "thank you" to Bob and his wife, Louise, for the excellent work they have done in organizing the Acro Sport and Pixie workshops.

THANK YOU TO 1985 VOLUNTEERS

We would like to thank those people who volunteered at the 1986 Pixie and Acro Sport Workshops. Your help was deeply appreciated. Thanks to Ted Battler, Al Cromie, Bob Danczyk, Denny Downes, Paul Felkner, Art Green, Fred Hart, Tony Hohenwald, Bob Kenner, John Leitus, Ray Lentz, Jerry and Mary Jo Marler, George Pattison, Joe Peshek, Jim Peshek, Jim Quinn, Bob and Louis Stagner, Laura and Bob Magner, Lloyd Toll, Dick Thomsen, Hugh Meisser, Stephen Neal, Dick Graber, Bob Dunkelbarger, Chris Stvertecky, Benny Davis, Farel Robins, Gordon Erickson, John Lafferty, Sid Goldin, Joseph Young, Oren Hoopman and Warren Roebuck.

PICTURE THIS

The Editors of the Newsletter, Ben Owen and Ann Ruby, will be on hand in the EAA And You Tent. This is just adjacent to the blue arch and the Acro Sport II in the Schoolflight Display tent. Please do stop by and say hello. We'd also like to take a picture of you and your aircraft, if you do fly in, for publishing in the next newsletter. So, if you are going to only be at the Convention for a short period of time, we would appreciate your stopping by so we can get a picture as soon as possible, hopefully with both you and your aircraft together. Also, to be considered for the designer and other awards, you must be registered with aircraft registration on the field. It would also be helpful if you could stop by and tell either Ben Owen or Ann Ruby in the EAA And You Tent or Jean in the Acro Sport Tent that your aircraft is there, particularly so if you're only going to be there for a very short period. If you only going to be there for one day, it is also well to advise the aircraft judging team that you need your aircraf judged quickly. They are located just east of the blue arch. past the EAA And You tent in the "Homebuilder's Central" building — new location for 1986. Awards night, again is Wednesday evening, 6:00 — 6:30 p.m. in the Theater in the Woods.



ACRO SPORT II COMMENTS BY BUILDER, BUD GORE

Ben.

I have some comments on Bill Neelin's Acro — I also believe my Acro flies with more incidence than the 1-1/2 degrees used on the plans. I have to have slight nose up attitude to maintain level flight.

I used a mirror to check the elevator position, and I think I have about 1" deflection down to maintain level flight. I have been working on this problem by adjusting the horizontal stabilizer, which I don't think is, or should be, level with the top longeron. Rolling inverted has given some very interesting control pressures as a result of this.

I re-rigged my ailerons slightly up so that in level flight, they trail with the trailing edge of the wing, and I think this is better. It also seems slightly faster, but I could be mistaken on that.

Bill's problem could well be in the angle of the tail spring compared to the mounting bracket. I have about 65 hours on mine, and am still bouncing it in, but I was always a slow learner. It is a fun airplane to fly.

Keep up the Acro Sport Newsletter, I enjoy it!

Bud Gores, 125 Hillcrest Drive, Burlington, WI 53105

BUILDER'S TIP FROM TONY HOHENWALD AND RAY LENTZ

These two builders are building their airplanes together, and so sometimes come up with a two-man solution to a problem. When they got to the point that they were ready to bend the leading edge and trailing edge tubing for the tail surfaces, they came up with what they call the "Firestone Pneumatic Tube Bending Jig." Basically, what this consists of is a spare automobile tire on the wall with one man at each end to bend the tube over it! This works well, as long as the person on the other end is of nearly equal strength and is a suggestion you might consider.

WHO HAS ACRO SPORT II MODIFICATIONS MADE

Wittman-Type Landing Gear

- 1) Jack Ellenbaas, A 4354 46th Street, Holland, MI (616) 751-5047. Jack has Wittman gear flying. See Acro Sport News 13 and 14.
- 2) C. G. Windham, P.O. Box 1236, Wyldewood, FL 32785, aircraft not yet flown. See Acro Sport News 14.
- 3) Herb Williamson, 7121 E. Briarwood Circle, Englewood, CO 80112, see Acro Sport News 15.

Two-Place Canopy Mod's

- 1) Steve Blake, McHenry, IL. See Acro Sport News 10.
- 2) Jack Ellenbaas, see address above.
- 3) Maynard Engel, 317 S. Black Horse Rd., Parksburg, PA 19365. See Acro Sport News 15.

HOW TO BEST DRILL THE HOLES IN THE SPAR

From David Kragnes, Rt. 1, Box 100, Felton, MN 56536.

Ben

In the Acro Sport News, there was a question of how to best drill the holes in the spar. I took a 3/4" spade bit and filed it down till it made a tight hole in a test block. At a slow drill press speed with a 3/16" pilot hole, I drilled through the whole assembly at one time, both aluminum plates, the plywood and the spar, and got beautiful results.

With a solid backup, this bit also works well on thin 2024 or soft aluminum.

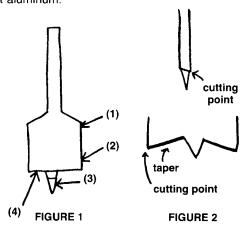


FIGURE 1: 1) File this area to make a 1 degree taper so the bit won't bind. 2) Make a test hole and file equal amounts on both sides till you get as tight a hole as you want. 3) Use a 3/16" pilot hole or a hole that will get tight just before the main blade hits. 4) When you need to sharpen, be sure to follow the original blade shape, that is the outside point should be a cutting edge.

HISTORY OF OSHKOSH "DESIGNER" AWARDS FROM ACRO SPORT INCORPORATED

Acro Sport II: 1985 — no award; 1984 — Dave L. Blanton, Wichita, Kansas, N94BD; 1983 — Al Smith, Valdosta, Georgia, N4233T; 1983 — Runner Up, Mike Brown, Allegon, Michigan, N3045T; 1982 — Bill Merwin, Clarksburg, California, N15DM.

Acro Sport I: 1985 — no award; 1984 — no award; 1983 — Doug Bell, Cadillac, Michigan, N176DB; 1982 — John Kimber, (International Outstanding Acro Sport I).

Pixie: 1985 — no award; 1984 — EAA Chapter 443 in Columbus, Ohio, N443PX; 1983 — no award; 1982 — John Leitus, Roaring Spring, Pennsylvania, N81JL.

NOTE: Register and Win! We'd be happy to add your name to those outstanding builders listed above.

TEMPLATES FOR ACRO SPORT II FITTINGS AVAILABLE

Templates for Acro Sport II Fittings are available from James Triplett, P.O. Box 101, Ames, IA 50010.

ACRO SPORT PLANS CORRECTIONS

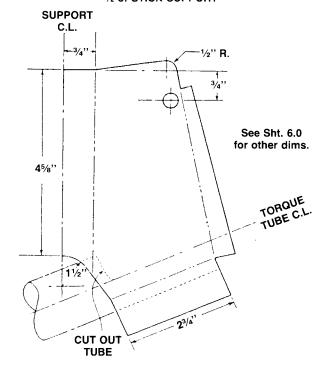
PINK COVER SET 6/3/86

Any aircraft plans ever made has had plans corrections due to the high number of measurements on the drawings. The holder of the Acro II Plans Set with the pink cover should have the following corrections:

SHEET/ZONE/CORRECTION

- 3 A3 Dimension of 33%" is actually 3½". Check the belly pan mounts for straightness by sighting down them, or using a straight edge as the belly pan is one piece of straight aluminum with no curves.
- 3 B5 The bottom stringer clamp tapers from 1½" at the top to ¾" at the bottom on the flat pattern. The bent side piece is ¾" wide.
- 3 D4 Pedal attach tube. Change 1¾" to 2¾". This moves the pedals inboard to avoid interference with the fuselage tubing. (Do not change the brake attach dimension of 1¾"!)
- 3 D5 Rudder balance cable pulley attach bracket, 4130N.090" sheet.
- 4 B2 Tailwheel steering fork goes on end of rudder post not on fin post as shown.
- 5 B3 Roll wire attach fitting, change $2\frac{1}{4}$ " to $2\frac{3}{8}$ ".
- 6 B2 Holes in bottom of stick are about 3/6" below the torque tube center line when stick and stick support are built correctly.
- 6 D2 Pin-Rear. Change the dimension from 5¼" to 6¼". The front pin stays the same. The above change is to accommodate the pedal attach change listed above on Sheet 3, Zone D4.
- 6 D4 Brake Pedal, Front and Rear. Change the vertical dimension of 2" to 3" This moves the brake actuating rod up 1" and gives better leverage.
- 6 D5 Front and Rear Pedals. Change the 2" vertical dimensions to $1\frac{1}{4}$ ". This moves the rudder cables up $\frac{3}{4}$ " to cross the horizontal bar at the front seat.
- 6 D5 Front Rudder Pedal. Change the horizontal dimension of 11/4" to 13/4" to give more foot room. (Align the cable with the front closed loop cable).
- 6 D5 Rear Rudder Pedal. Change the horizontal dimension of 2¹/₄" to 2³/₄". This is to insure that the brake rod clears the rudder tab and cables.
- 11 B2 Trim Tab. Use #10 screws or AN470-3-14 rivets spaced 1" apart <u>2D from</u> sheet edge.
- 12 D4 Terminal, AN665-21L and 21R.
- 14 D3 55%" dimension goes to inboard edge of rib #7, not to the centerline.
- 14 D5 51/8" dimension goes to inboard edge of rib #3, not to the centerline.
- 16 D1 Leading edge angle is 38° down from the horizontal, not 55° as shown.
- 18 D5 Aileron interconnect remove 1/32" dimension (it is 1/16"R. as shown.)
- 20 B5 Rear Instrument Panel. Dimension 26% should be 26%.

ACRO SPORT II 1/2 of STICK SUPPORT



PLANS AVAILABLE FROM ACRO SPORT, INC.

FOR	PRICE	PAGES
Acro Sport I	\$60.00 PP	24
Super Acro Sport I Wing		
Supplement	\$15.00 PP**	2
Acro Sport II	\$85.00 PP	23
Corben Junior Ace P Model	\$85.00 PP	35
Corben Super Ace P Model	\$85.00 PP	17
Cougar	\$60.00 PP	14
Pixie	\$60.00 PP	16

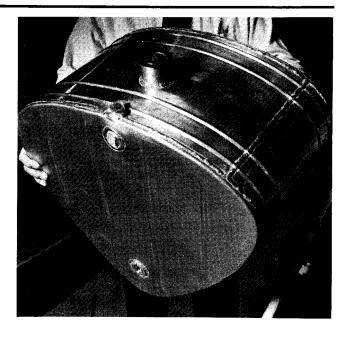
NOTE: You must have the Acro Sport I plans at \$60.00 to build this airplane. Supplemental wing applies to Acro Sport I **ONLY. Brochures on the Corben Jr. Ace and Super Ace are available at no charge. Brochures on the other aircraft mentioned above are \$5.00.

Acro Sport Newsletter is available on a subscription basis, \$12.00 for one year, 4 issues per year.

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

RIGHT: Photograph of Benny's tank by Carl Schuppel.





STEVE CHACE AND HIS ACRO SPORT II

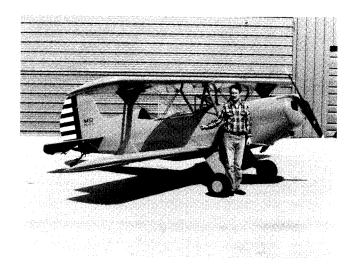
April, 1986 Paul,

Thank you for the great design of the Acro Sport II. I just completed the first flight of my Acro II, N452, yesterday. The plane flew just great with only two minor problems. The right wing was heavy and the airspeed indicator in the rear cockpit was about 12 mph slower than that in the front. After several more flights the first day, the rigging is just about correct. It is very responsive and is really easy to fly.

This is my second project, as I completed a Pietenpol back in 1979. I bought the Acro II plans (Number 632) at Oshkosh in 1982. I followed the design quite closely, but did make a few minor changes. I brought the fabric farther forward on the fuselage, used coil springs rather than shock cords, and used three-piece windshields, similar to those on a Stearman.

I wanted a sport biplane, rather than a serious aerobatic one, so I used a Lycoming 150 HP engine with no inverted systems. It does have a basic electrical system with starter, alternator, radio and fuel boost pump. With both cockpits open, no wheel pants, and a McCauley 75 X 53 prop, I have a cruise of about 115 MPH. Empty weight is 906 lbs., and I used dacron fabric with butyrate dope finish. I tried to keep it light and simple, and am pleased with the weight.

Back in 1982, I looked at all of the two place biplanes and felt that the Acro II was the best for a sport plane. It is simple to build (for a biplane), has good sized cockpits and is easy ofly. I did build it from scratch and only bought the nosebowl, adding edges for the wings, and the prebent tail ribs, as I



didn't have the use of a bending brake. The rest of the plane was built by hand. I did work on it almost every day during the three years and 8 months that it took to build.

Enclosed is a picture for your files. Thanks again for the great design!

Sincerely, Steve Chace 1413 Dallas Bloomington, IL 61701

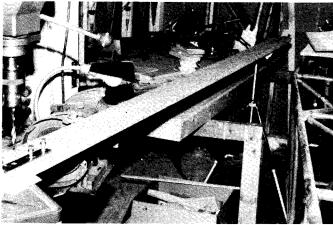
BOB CALLIS' CONSTRUCTION PROJECT

From Bob Callis, 4613 Young Farm Court, Montgomery, AL 36106.

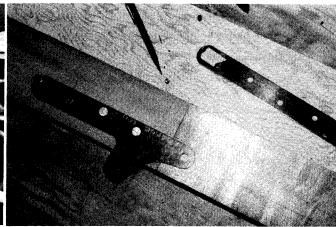
Ben,

Enclosed are the photos that we discussed. I think the

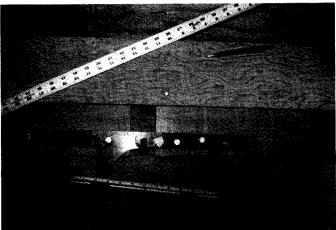
set-up for drilling the upper spar for fitting is self-explanatory. The mark is on the chord line. I used the tripod and level before drilling any spars. The angled cabane fitting is very easy to make. I'll be glad to provide a sketch if anyone needs it. Have you ever seen anyone working in this state of shambles?



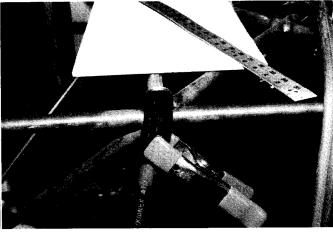
This photo shows the tripod supporting the spar to make it dead level for drilling the fitting holes.



This photo shows the method used to line up the center line fitting for the spar.



This photo again shows the fittings pre-drilled and in the process of assembly.



The clamp used to hold the cabane fitting in place prior to welding.

C.R. "NICK" NICKLE AND HIS ACRO SPORT II

From the EAA Chapter 168 Hangar Newsletter, May 1986.

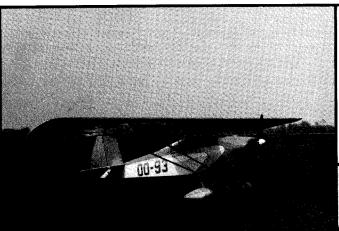
C.R. "Nick" Nickle is nearing completion of his Acro Sport II airplane. It is of tube/wood/fabric construction, 21 ft. 8 in. span, 2 seater, about 900 lbs. empty weight, and with a cruise of about 125 MPH. Typical of EAA issued designs, the design drawings are excellent. Nick has installed a Lycoming O-235-E2A engine complete with an aerobatic capability fuel/oil system. The engine log history is good and the engine has had only about 25 hours running time since the major overhaul. For cockpit comfort, a fiberglass blanket is installed on the back side of the stainless steel firewall.

Except for customizing details, Nick has made very few design modifications. Nick took a 40 hour course in welding at Skyview before starting construction and examination of his welding shows that he learned well. A battery is being mounted behind the seat, and with Nick being a larger than average pilot, he has carefully calculated the weight and balance, and positioned his engine accordingly. The workmanship throughout including the wood framed wings, sheet

metal cowls and systems have that "professional" appearance. Stits HS fabric was used for the covering, however, Nick says that if he had it to do over, Stits D-103 fabric would be used, since he believes that the stitching and taping appearance would be less prominent.

When the plane was started in 1980, target completion date was several years ago. Lately, it was hoped to have the plane complete for the 1986 Oshkosh Fly-In, but now that has been revised to a completion date less than a year away.

Nick started flying in 1950 and spent 10 years in a non-flying status with the Navy. However, he resumed flying in 1976 with his only complaint being that the aircraft building cuts down available flying time. Nick says that it is a toss-up as to whether the building or the flying is the most enjoyable However, there is no question about the fact that the mose enjoyable experience is yet ahead, and that is the one composed flying the airplane that YOU built. Nick's garage workshop is nicely arranged, lighted, and equipped for his project. His co-pilot, Sandie, has been most supportive throughout and she is looking forward to more flying and learning to fly when the project is complete.



This is a nice shot of the Acro II built by Dave Blanton of Valley Center, Kansas, that some of us are already familiar with.

This shows the Pober Pixie completed by Dr. Georges Hageman of Belgium, registered in Belgium and flying since 1983. This received an award during the R.S.A. Fly-In in 1983 at Brienne Le Chateau, France.





Acro Sport, Inc.:

Dear Sir:

I am very pleased to hear that the Acro Newsletter will be continued. My Acro II is about 40% complete. I have a Gypsy Major engine (140 HP inline inverted 4) which I intend to install in the Acro. The weight and balance, according to my rough calculation, should pose no difficulty, but it certainly will look different.

Incidently, I filled out the enclosed card showing the VP II I've been flying for 5 years and, of course, my new project, the Acro. Keep up the good work!

Yours truly, Frank Langdon 26 Jill Circle 1 Slington, Ontario CANADA M9B 6B3

EDITOR'S NOTE: We have recently completed the Custom Built Sport Aircraft Handbook. In this book you will find a very complete article using the Acro Sport II as a base, on weight and balance (4 pages), and on the specific engine problem of installing engines, including the Continental O-200, Lycoming O-235, O-320, O-360-A and IO-360-A's in the Acro Sport II (5 pages). I am sure you will find it an excellent reference for weight and balance for the Acro Sport, as well as other amateur built aircraft. This is available from the EAA Headquarters for a total of \$11.50 postpaid.

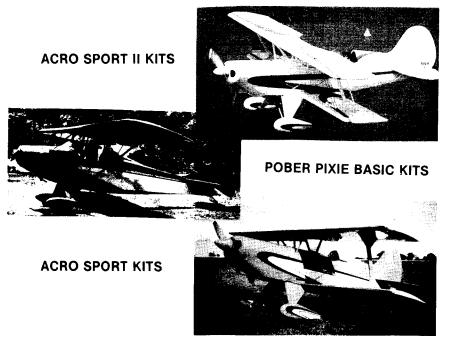
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The Editors would like to solicit your letters, articles and photographs for consideration for the Acro Sport Newsletter. Please send all materials to Ann Ruby, EAA, Wittman Airfield, Oshkosh, WI 54903-3086.

FOR MORE DETAILED INFORMATION PLEASE CONTACT..



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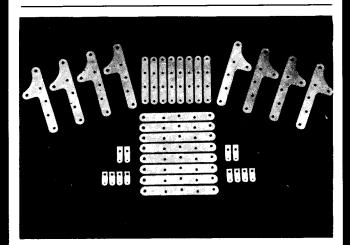
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