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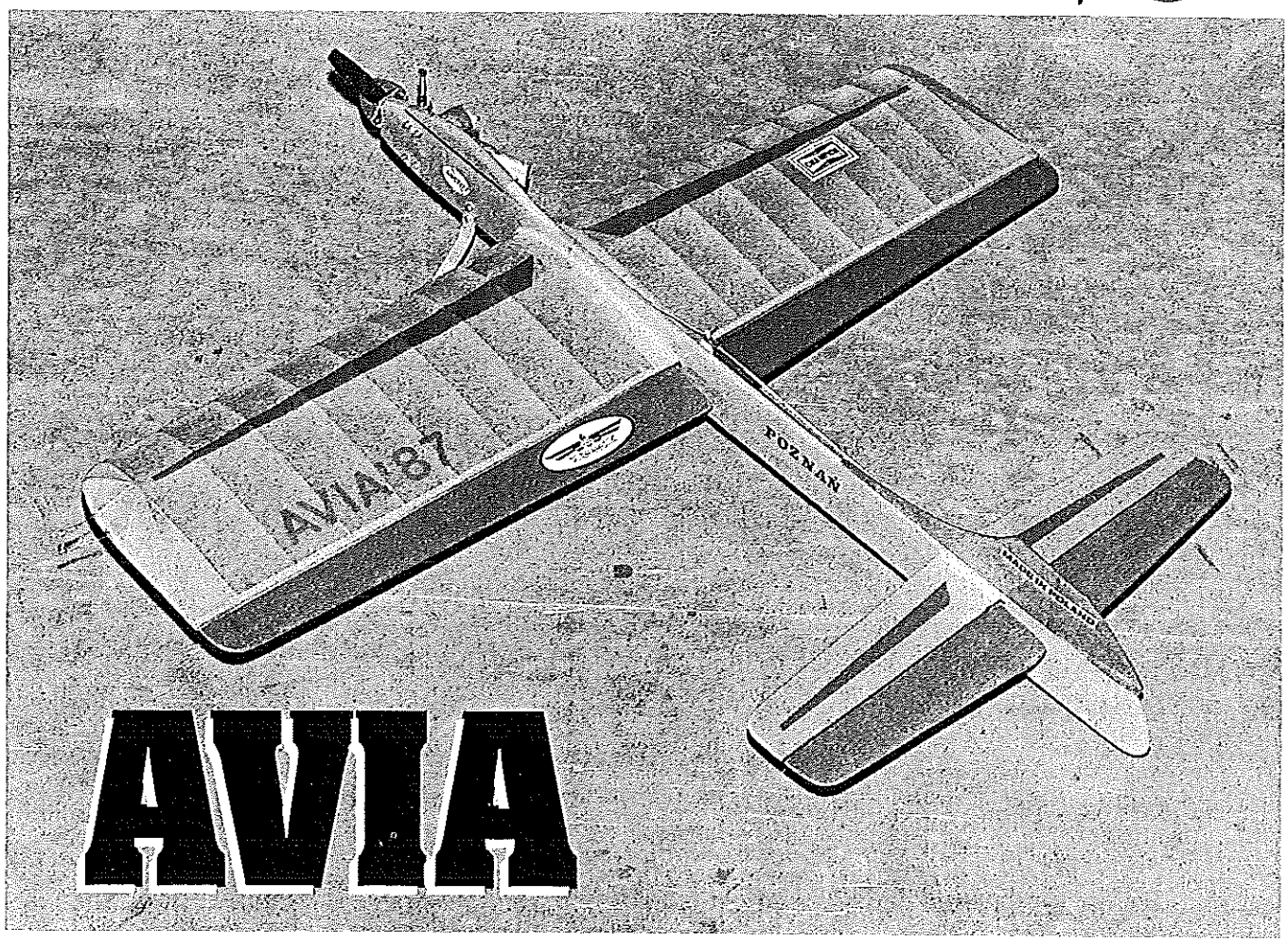


AVIA

Avia-'87 caps a decade-long series of CL Aerobatics models designed for the author's Avia Poznan model club students. Designed to execute a short F2B Aerobatics program, the '87 version is simpler and flies even better than its predecessors.

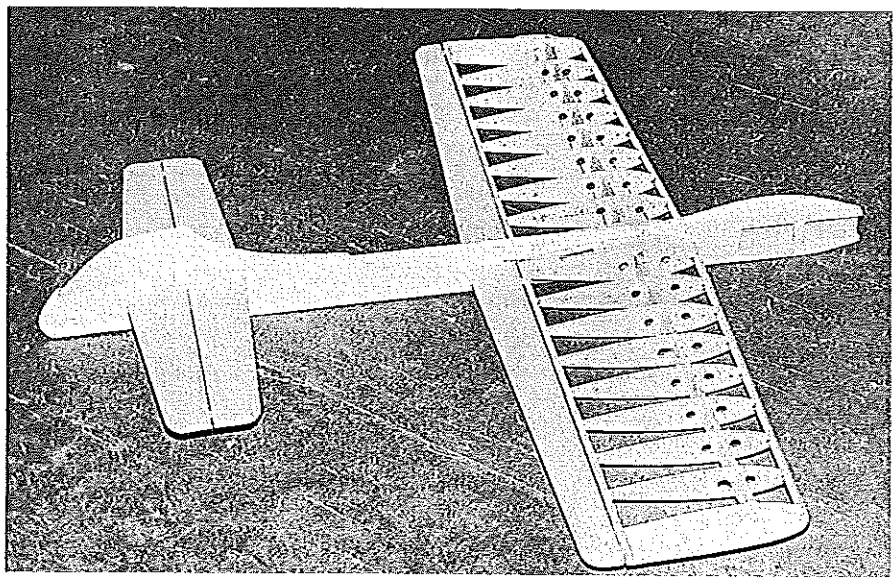
Already a two-time winner in Poland's F2B Junior Nationals, this simple, .15-powered design is considered the best of its kind by Polish CL Aerobatics fliers. ■ Piotr Zawada ■ Translated by Steve Fauble

IN POLAND, modeling could be a lot more popular if conditions were more favorable. Everything is so expensive for the Polish people. When the choice is between shoes or balsawood, food or an engine, naturally the necessities of life come first.

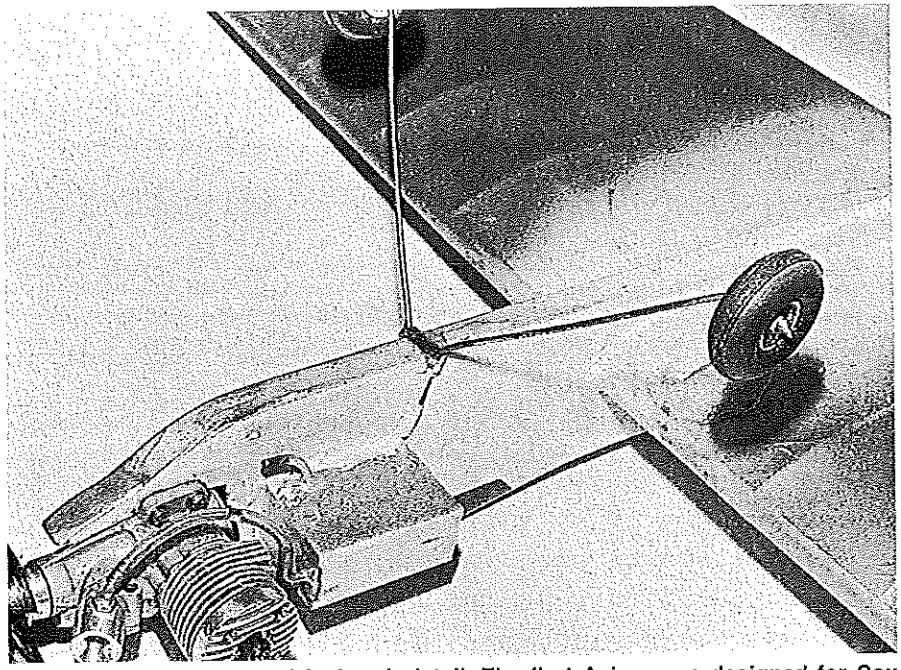
Then, too, most young boys in Poland have no opportunity to learn to make simple models. There are few hobby shops, and even fewer carry good, inexpensive kits designed for youngsters.

Finally, most of us live in small apartments crammed into large buildings. So it's almost impossible to build models at home. Our neighbors don't appreciate the dust from sanding and the smell of dope from painting.

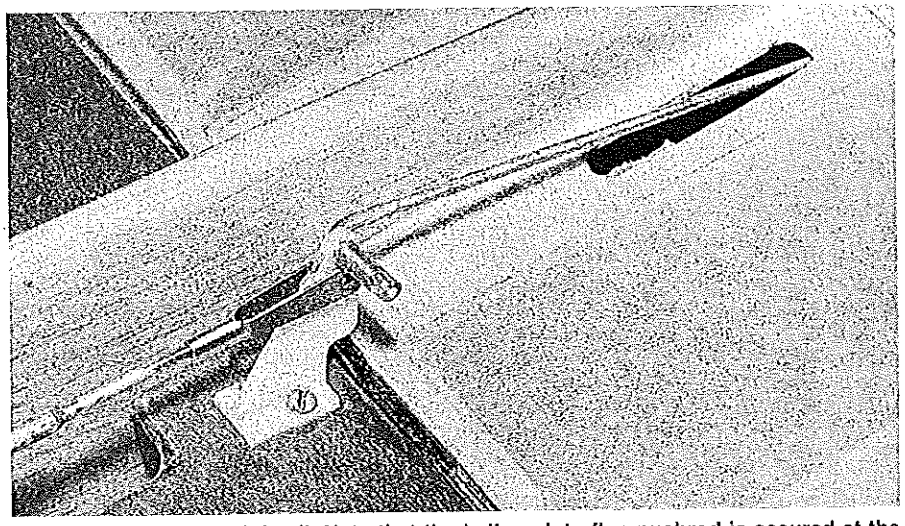
Poland has about 600 model clubs. They're mostly small, and they're found chiefly in the large towns. Usually the models are built and the children and teenagers taught in a room in the basement of an apartment building.



The completed wing structure ready for covering. Use thick Japanese tissue or silkspan for best rigidity. Follow with five or six coats of dope.



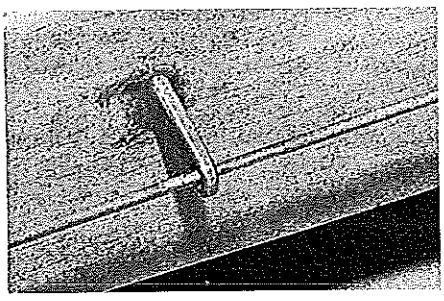
Landing gear, engine, and fuel tank detail. The first Avias were designed for Cox Medallion .15 engines. Adjust nose length to suit different engines.



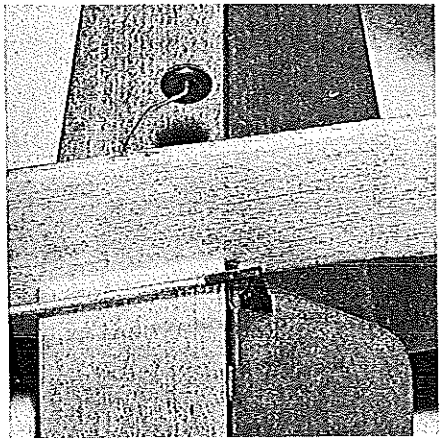
Flap horn and pushrod detail. Note that the bellcrank-to-flap pushrod is secured at the flap horn with a piece of plastic fuel line tubing.

I am the leader and teacher in my model club, Avia Poznan. This is a second job that I've taken on for some extra money—about $25 a month. The district government pays for the lease, my salary, and a little money for the children's model supplies. The children have to buy many of the supplies with their own money or with help from their parents. Fortunately, a few of my American friends help me and my boys with supplies. My club also earns extra money by having some of the older students do shows several times a year. As you can see,

Zawada with a design published in *Model Builder* several years ago. He is a several-time Polish CLPA champ.



The flap-to-elevator pushrod is supported with a plywood or metal fairlead. It's important not to omit it!



Looking down on the stabilizer-fuselage joint with tail wheel detail. Note the clean pushrod installation.

modeling in Poland is usually possible only in clubs like Avia Poznan.

The Poznan district has 16 small clubs made up of about 40 seniors and 300 younger modelers. The Avia club has three seniors and 16 boys who make models. Each year we hold a large contest for youngsters under 17 years of age for the championship of the Poznan district. This regional contest determines the winning team, which represents Poznan at our national championships for youngsters. Usually, 25 teams from throughout the country compete at this national championships.

Children can fly in eight different classes:

1) F1A—1/2A Small Gliders: 155- to 186-sq.-in. total area, 5-oz. minimum weight

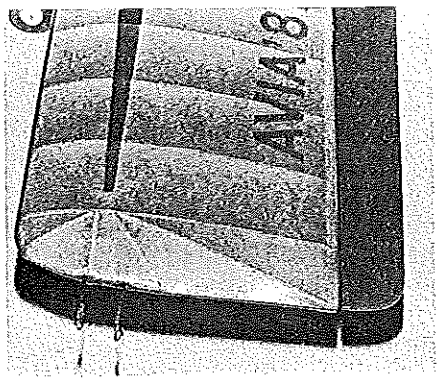
2) F1H—Gliders: 280-sq.-in. maximum total area, 8-oz. minimum weight

3) F1G—Rubber Powered: 2.5-oz. minimum weight, 1/3-oz. maximum rubber weight

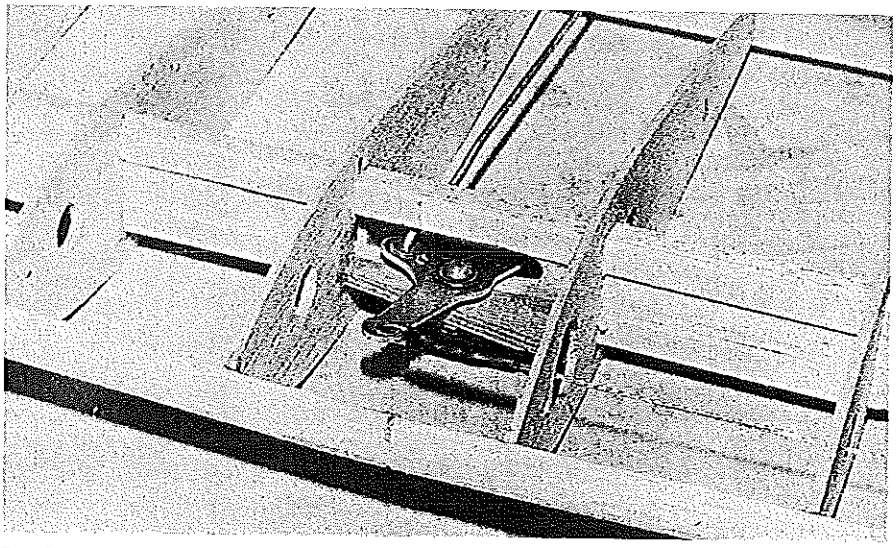
4) F1C—1.5cc Power Models: .09 maximum engine size, 10.5-oz. minimum weight, 7-sec. engine run

5) CO_2 Powered Gliders: standard CO_2 engine, 0.16 cu. in., made in Czechoslovakia or the former Soviet Union

6) S3A—Space Rocket Models: 5-sec. maximum engine run, 1.2-in. minimum diameter. Model must have parachute for landing.

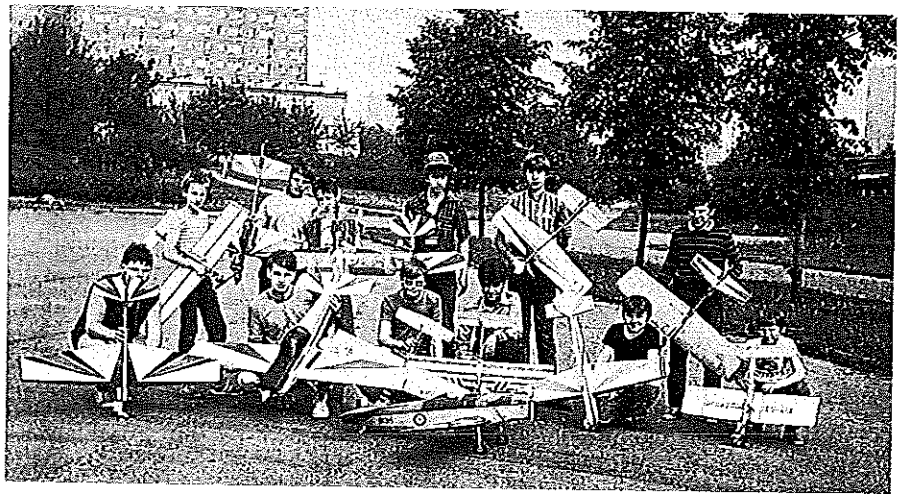


Lead-out detail. Silkspan covering on the wing is recommended, as plastic films provide less rigidity.



Detail of bellcrank and lead-out installation. Avia's simple construction keeps weight down to help it attain super performance.

Three Avia Poznan boys work on their projects. Up to eight club members can work together in the larger of the club's two apartment-house rooms.



Twelve Avia Poznan club members with a baker's dozen of their creations. Each of the young fliers keeps one of his models at home.

7) F2B—CL Aerobatics Model: .15-cu.-in. maximum engine size

8) F4S—CL Profile Scale: .21-cu.-in. maximum engine size. (*Ed. note*: F4S is not a recognized FAI category in the U.S.)

Regional selection contests are open to junior modelers from all district clubs. Clubs can have teams in different classes, with each class made up of four youngsters. Each contestant gets 20 points for first place, 15 for second, 10 for third, and seven or six for fourth and fifth places. Each team is scored according to the total points earned by its members. Only the team with the most points will go to the Junior Nationals.

A Control Line flier, I was several times the Polish Aerobatics champion and held second place in CL Scale in 1990. Obviously I prefer CL models, so the standard Avia contingent is made up of F2B Aerobatics, F4S Profile Scale, CO_2 Powered Gliders, and S3A Rocket Models. Generally I have two teams and a few free competitors. My boys usually win in two classes and achieve 40 points with few problems. The team has won this regional selection many times and has had the pleasure of representing the Poznan district in Poland's Junior Nationals. If my next two boys receive 10 to 15 points, the Avia team will once again be the winner.

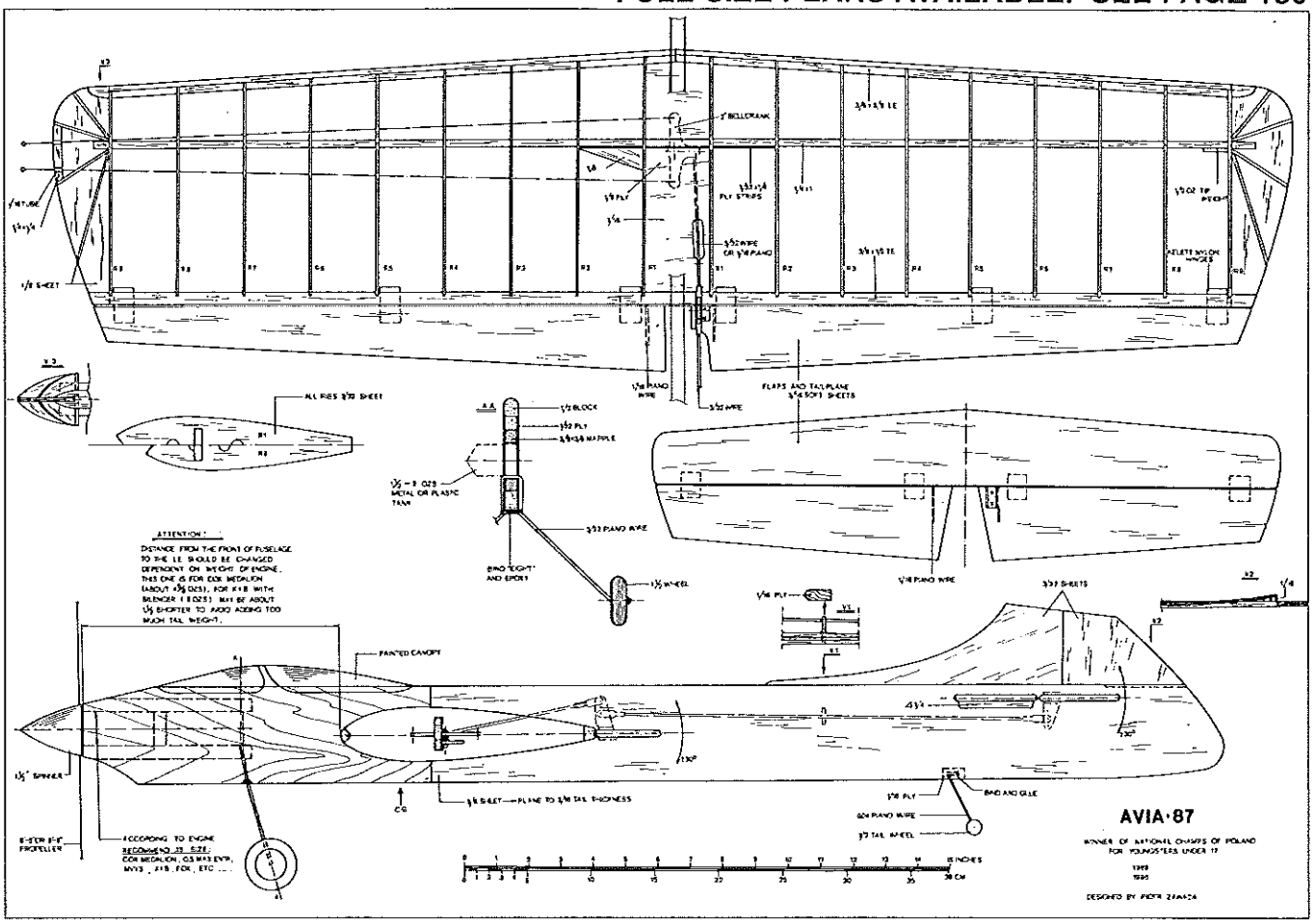
The Poznan district team has won the Nationals five times, thanks in large part to good results in the F3B Aerobatics and F4S Profile Scale Control Line classes. My Avia series of CL Aerobatics designs gave them a competitive edge. They finished first in 1982 and 1984 with the Avia-'80, came in third with the same model in 1987, and won with the Avia-'87 in 1989 and 1990.

I have many friends in neighboring countries who occasionally visit my club. When they saw the Avia models my boys had made, they asked for plans of the design. Just last year, they told me that Avia has proven the best .15-powered Aerobatics design in their respective countries, too. In what until recently was East Germany, a young boy won the Nationals with an Avia. The design also has won a few contests in Czechoslovakia. In all, over 60 Avias have been built from the plans, and I haven't heard a single negative opinion about the model.

Both Avia-'84 and Avia-'87 were designed to execute a short competition Aerobatics program. The boys are expected to start within one minute, take off, and then do three inside loops, inverted flight, three outside loops, and two horizontal figure eights before landing the model. In the hands of a good pilot this aircraft can do the entire pattern. In fact I have no trouble taking it through the full F2B schedule.

Construction

This CL Aerobatics series began a decade ago with the .15-powered Avia-'80. I incorporated a few modifications in the Avia-'84, then made several further changes in the version presented here. While the



airfoil and many of the dimensions are little changed from those used in the Avia-'80, otherwise the construction has been both simplified and improved. The Avia-'87 is demonstrably the best design for .15-powered Aerobatics. It's also much simpler for young boys to build.

Of course, even the best design is only a tool. The modeler in the center of the circle, the person on the handle, is the most important part of the equation in performing an aerobatics pattern. And it's not his name but how much know-how and how many hours of practice he's put in before the contest that determine his success. Thus, a good model with a good pilot make a winning team.

As the plan shows, Avia-'87 is easy and inexpensive to build. To save you time for building, the instructions that follow cover only the main construction points.

Wing: Cut the ribs from sheet balsa clamped between two aluminum templates. Sand this sandwich to shape. If your club is to make just one or two models, plywood can be used for the templates. Making the hole for the 1/4 x 1-in. spar is a problem for children, so I drill a few 3/16-dia. holes through the rib stack and have my pupils finish the hole to exact size with square files.

Use medium-weight, straight wood for the leading edge, spar, and trailing edge.

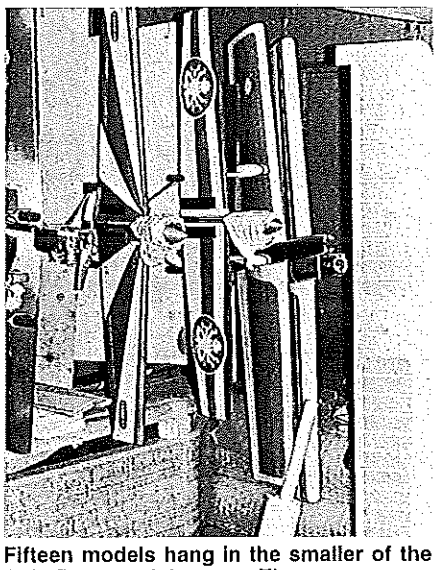
I think white glue works best for youngsters. It's odorless; it presents no health hazard; and the kids can easily wash the residue off their hands. Older modelers probably will use epoxy or CyA (cyanoacrylate glue).

Cover the wing with thick Japanese tissue or silkspan, and give it five or six coats of dope. Of course, MonoKote or Solarfilm can be used instead, but at some sacrifice in rigidity.

Fuselage: Build the structure from lightweight 3/8-in. sheet balsa, planed and sanded to a thickness of 3/16 in. at the tail. Glue two hardwood (maple) strips to the front of the fuselage, and cover them with plywood along both sides.

The nose length will require adjustment for different engines. About 10 years ago, Cox Medallion .15 engines were available

Continued on page 132



Fifteen models hang in the smaller of the Avia Poznan clubrooms. Three more even hang in the bathroom!

CL Avia - '87

Type: CL Aerobatics

Wingspan: 38 1/4 in.

Recommended engine size and type: .15 c.i. Examples: Cox Medallion, O.S. Max, Enya, MVVS, K&B, Fox

Expected flying weight: Not available

Type of construction: Built-up

Type of covering/finish recommended: Dope plus fuelproof lacquer; wing covering optional: silkspan, iron-on film, etc.

CA

SEPT. 19—Fremont, CA (E) 2nd Annual Hobby Flea Market. Big raffle, lunch, static display and helicopter tema demos. $15.00 for a 15' by 15' space. Browsers welcome! Bayside RC Club. Site:.Grimmer Rd., & Warm Springs Blvd. Reservations accepted. Contact Will Sievert 408-379-2520. Sponsor: BAYSIDE RC CLUB

AZ

SEPT. 19-20—Tucson, AZ (E) Second Annual Tucson Modelmasters Exposition Static Display. Site: Park Mall. M. Osier 7525 E. Edison Tucson, AZ 85715 PH: 602-886-0994 Sponsor: TUCSON MINIATURE AIRCRAFT ASSOC.

AZ

SEPT. 19-20—Tucson, AZ (E) 2nd Annual Modelmasters Expo. All hobbies CL, RC, Plastic models, cars, boats, trains. Static Displays. Site: Park Mall. Raffle, free admission. To promote Tucson International Modelplex. For info: Dwight Palmer, 6361 N. Willowhaven Dr. Tucson, AZ 85704 PH. 602-297-4963. Sponsor: TUCSON MINIATURE AIRCRAFT ASSN.

TX

SEPT. 26—Weatherford, TX Weatherford Aero Modeling Society Swap Meet & Auction. 8 a.m. till 4 p.m. Largest in the Southwest. Site: Hall Jr. High School, 902 Charles St. For Info and Directions Call Dr. Sandy Franke 817-599-7131 Sponsor: WEATHERFORD AERO MODELING SOCIETY

VA

OCT. 10—Falls Church, VA (E) Radio Control Auction. One of the oldest & biggest Auctions in the Mid-Atlantic. Usually over 300 participants. $1.00 Admission. Planes, Helicopters, Cars & Boats. Refreshments, Door Prizes. Open 8 a.m. Auctions Starts at 10 a.m. Site: Falls Church City Hall. K. Larson 905 Plum St. SW Vienna, VA 22180 PH: 703-255-0020 Sponsor: NORTHERN VIRGINIA RADIO CONTROL

OH

OCT. 17-Bedford, OH (E) Ninth Annual Swap Shop 9:00 to 2:30, 8:00 For Sellers. Ellenwood Ctr. 124 Ellenwood Ave., Bedford, OH Swap Tables $10. Advance Reservation Recommended. Bob Jones, 32850 Charmwood Solon, OH 44139 PH: 216-248-5640. Ellenwood is 1 Mile South of Rockville off Warrensville Center Rd., Sponsor: CLEVELAND RC CLUB

OH

OCT. 11—Marion, OH (E) The Marion Airfoils present a Static Show and Swap. Site: Tri-Rivers Vo-Tech School on St. Rt. 95 East of Marion, Ohio. Set up 9 a.m. Doors Open 10 a.m. Tables $8.00. Admission $2.00 Static Show with three categories. Trophies and Prizes for three places. Door Prizes and Raffle. Call Jim Russell 614-382 8401 Info. Sponsor: MARION AIRFOILS

OH

OCT. 25—N. Olmsted, OH (E) 23rd Modelers Swap N' Shop & Auction. 9-4. N. Olmsted Community Cabin, 28114 Lorain Rd., (Rt. 10). Suggest Advance Table Reservation. Vendors Set-Up at 8:30. Tables, $10.00/8', $5.00/4' Admission $2.00.Contact Bob Sargeant, 216-331-7654, 1-10 p.m. Sponsored by SKYLARKS & WESTLAKE RC CLUBS.

OH

OCT. 25—Greenville, OH (E) Swap Meet Darke County Aeromodelers 9 a.m. Til 3 p.m. Tables $6.00. Admission $2.00. Ladies Free. Location, Darke County Fairgrounds, Youth Bld. Greenville, OH Contact Dan Weaver 513-548-1035 Days Bob Ryan 513-548-2240 evenings Dealers Welcome.

MI

NOV. 7—Grand Rapids, MI (E) KRAMS 18th Annual Swap Meet. Site: Cutlerville Christian Jr. High 6746 Cutlerville Park 9.00 a.m. to 2:00 p.m. Refreshments on site. Table Reservations $10 (Advance Recommended) Raffle Includes Futaba 7UAF Computer Radio, Great Planes Citabria Kit, O.S. .40 FP engine. Static Display area with trophys for Best In Sport Plane, Scale Plane, Sailplane & Best of Show. For more information contact: Bill Whitney 616 245-7231 or Bruce Kibbey 616-281-2147 Sponsor: KENT RADIO AEROMODELERS

Contest Calendar

Avia

Continued from page 81

in Polish hobby shops. Since these engines were excellent for young boys—inexpensive, easy to start, and good-running with long life—the first Avias were designed around them. With the help of my factory, I was able to purchase 10 of the Cox .15s for club ownership. I am very glad to be able to loan them to the boys, who use them only as long as they continue to fly as active members of the club. Sometimes when a member turns 17, he gives his model and engine to a younger pupil.

Recently, my American friends have contributed several different engines for our club's use. Since the engines differ in weight, I adjust the nose length in each case to achieve a good center-of-gravity without adding much tail weight. Each of our club models is made for a specific engine, and the pupil takes this into consideration before he begins the fuselage. The older boys fly the full F2B program, so they advance to larger models or often to F4S Profile Scale designs. My club boasts the best youth Scale team in Poland. They won every contest for Juniors in 1990.

Tail surfaces: Cut the tail plane and rudder from balsa as shown on the plan. The small holes for the 1/16 music wire U-connectors that join the flap and elevator halves should have been made at the same time that the holes for the wing and stabilizer were drilled in the fuselage.

Make certain the wing, stabilizer, and engine are all at 0° with respect to one another. All must be parallel! Recheck the alignment, tack glue the parts with five-minute epoxy, and then check them again when dry.

While some of my pupils make the landing gear from 1/16 aluminum, it's better to use wire as shown on the plan. Wire is light and easy to bend.

Covering and finishing: Paint the fuselage, tail plane, rudder, and flaps with a few coats of dope. Lightly sand the entire structure, and finish with a coat of fuelproof lacquer.

The model flies very well on 45-foot lines. Equipped with a .15 engine and an 8 x 6 or 9 x 5 propeller, it can fly the entire F2B schedule.

Should you run into any snags or have any comments about the Avia-'87, I'd be most interested in hearing from you. Send all correspondence to Piotr Zawada, Osiedle Przyjazni 22n M. 141, 61-680 Poznan, Poland. ✈