Propjet B-47D

by ROBERT L. PARKS

For the scale builder, a unique and beautiful airplane. Authentic and a proven flier for engines of .15 displacement. Twin engines—let's go.

Big, graceful—has everything but the whine of the turbines. Lead-outs for clockwise circles on designer's model are shown on drawings for more popular counter-clockwise flight direction.

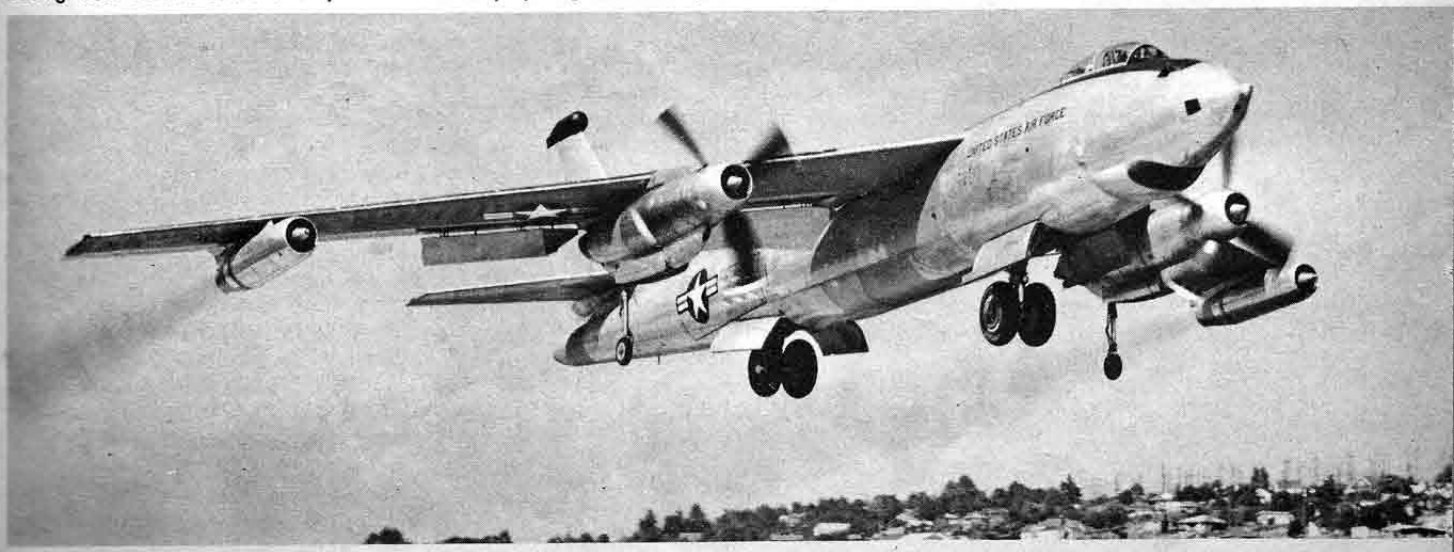
► Between 1952 and 1954 three XB-47D's were built to test the Pratt and Whitney T-34 Turboprop installation. Having seen these airplanes in the early stages of modification, we decided to build a model. Since it was difficult to see the entire airplane, we had to guess as to what the inboard nacelles would look like. This explains the difference between the photographs and the drawings because at a later date the Boeing drawings were available. The outboard jets were retained as a safety factor in case of power failure in the inboard nacelles. Exact performance figures are not available. It has been stated that the low speed performance was improved and the cruise speed was slightly lowered.

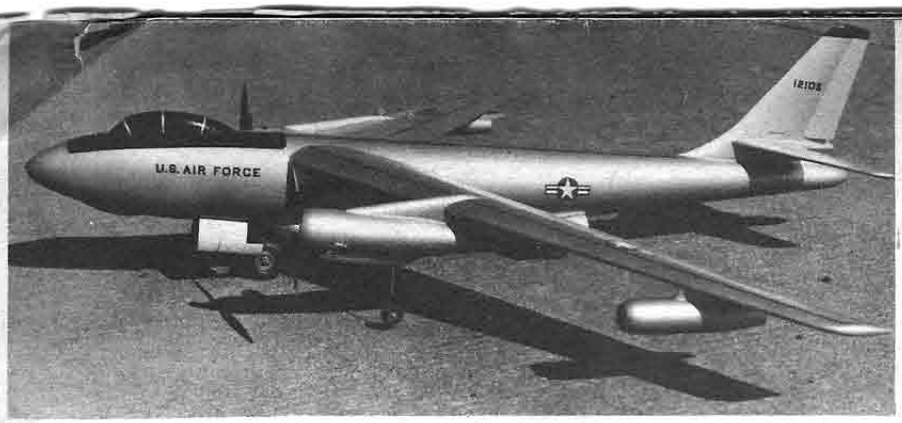
After you have studied the plans carefully and read the instructions, start construction by cutting out the fuselage pieces. Pin the keel pieces to the plan and set up the bulkheads. After the cement is thoroughly dry, begin planking while the keel and frames are still on the board. Be sure to leave openings in the planking near the bellcrank and landing gear areas so that these units can be installed when the fuselage half is removed from the board.

After the right side bulkheads are cemented and dried, install the wing platform, bellcrank mount, bellcrank, and pushrod. Now partially plank the right side to keep the frames aligned and the fuselage rigid.

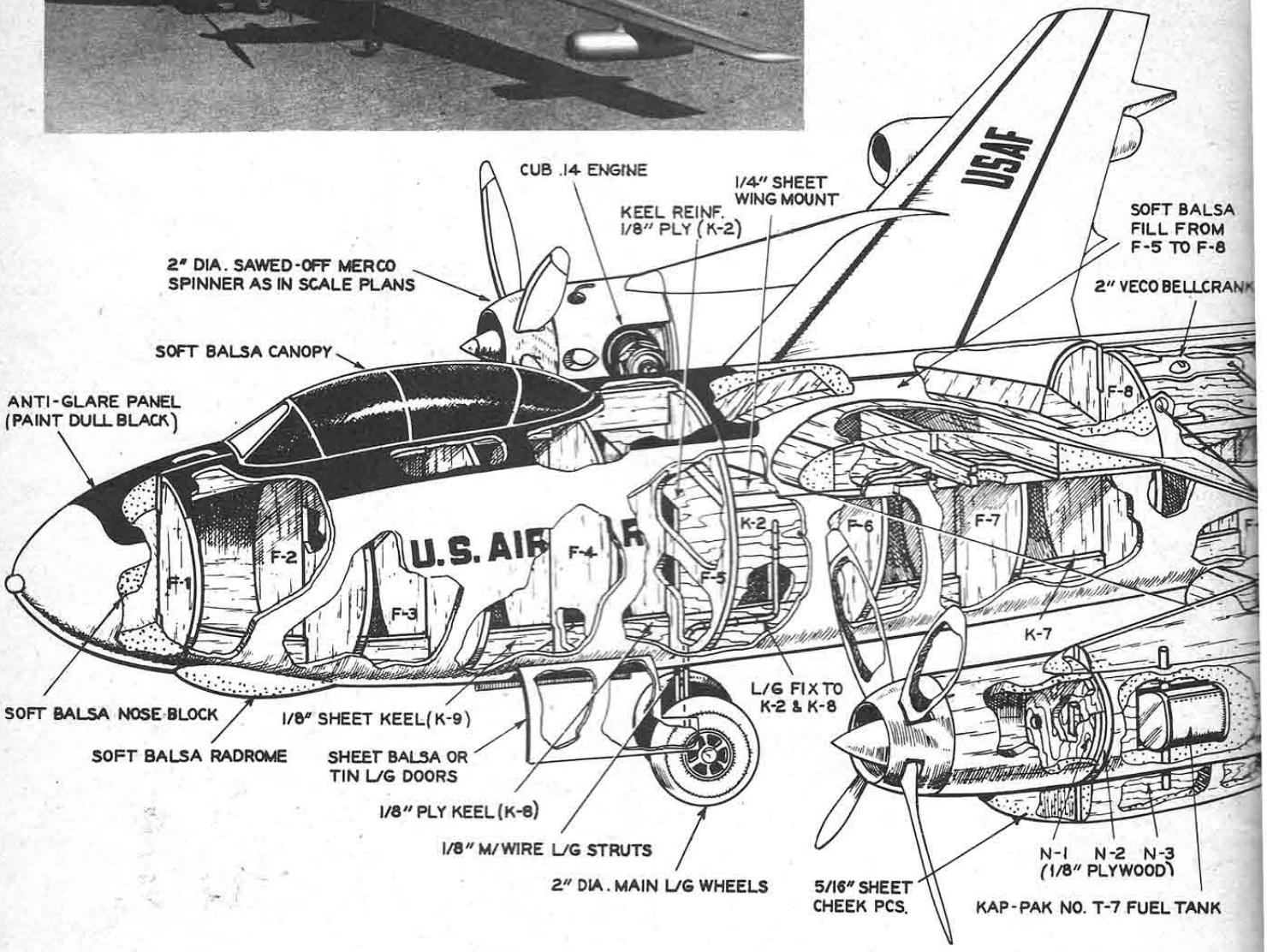
At this point, the landing gear units should be assembled. Clamp a piece of $\frac{1}{8}$ sheet between the two landing gear legs, making sure that they are in the proper relation to each other. Then locate the spacer piece, wrap with soft wire, and solder. *(Continued on next page)*

Boeing built several B-47D Stratojets to test turboprop engines. Show picture to skeptical judges. This is one "jet" that really had props.





"Bicycle" type landing gear, outriggers, other different items.



Sew the landing gear to the keel piece with soft wire and thoroughly cement the entire area. Both landing gears are assembled and installed in the same manner.

Plank the rest of the fuselage except the areas over the bellcrank and the tail end of the pushrod. These areas will have to be left open in order to locate lead-outs and pushrod splice. The nose block and tail block now can be cemented on and rough carved to shape.

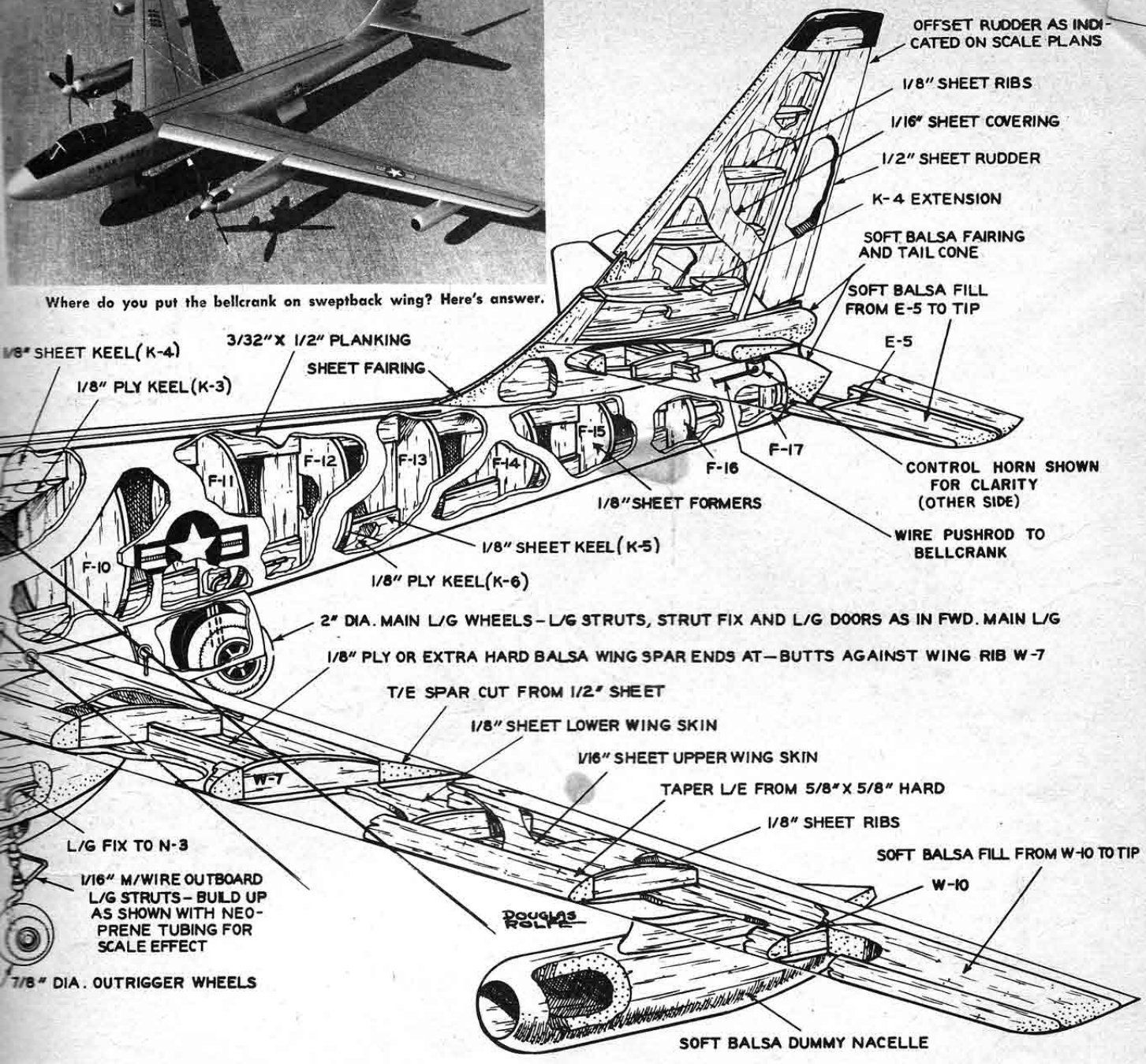
The fuselage can be put aside momentarily while you are constructing the wing. Notice that the bottom surface of the wing is cut to the outline of the entire part, except for the strut fairing extensions and flap extensions. These can be added after the wing is assembled. If your hobby dealer has 6-inch wide 1/8 sheet stock, use this for the lower surface. If this stock is not available, a splice point is suggested on the drawing.

After the lower surface for the left wing is pinned to the board, mark the rib locations with soft pencil. Cut out the ribs, spar, leading and trailing edge pieces and plywood splice plate J-1. Now set up the leading edge and trailing edge pieces and pin them to the lower surface in their proper location. Check the ribs in their respective places and make sure that the fit is snug and that the beveled ends are angled correctly. Mark the spar location. After all pieces are checked out for fit, cement the splice plate first then the spar and ribs. It is recommended that Elmer's Glue or Weldwood Glue be used from W-7 inboard to the wing joint.

Remove the wing panel from the board and cut out the slot for the inboard strut. Before the upper skin is put on the wing panels, try the nacelle strut keel N-3 in the slot to make sure that the fit is snug and that there is no interference with the upper skin contour. Do not cover the upper surface until the wing panels have been joined. At this point, the left wing panel should have everything installed including the plywood joiner.

To start the right hand panel you will have to trace the left panel from the plans on tracing paper and work from the back side of the paper. The right wing panel is built the same way as the left except for the wing joiner which is mounted to the left wing panel. Join both panels, install the gusset blocks and then the upper skin. Check

Where do you put the bellcrank on sweptback wing? Here's answer.



the locations of the line guides in the left panel and punch small holes in the upper skin so that the guides will be centered over the strut slot. Finish the wing by adding the tips, then carve and sand to shape.

Now assemble the verticle fin and check it for fit on keel piece K-4. Make sure that the fuselage planking is secure in the area of the fin keel and then mount the fin base blocks and carve to shape.

The stabilizer halves are built separately, the spar joiner being mounted in the left half. To mount and join the stabilizer, slip the spar joiner through the hole in the fin keel and slide the right hand stabilizer over the joiner. The stabilizer halves should be pressed firmly against the fin keel when cemented.

The elevator hinges on the original model were the type used on jewelery boxes or small wooden chests. They can be purchased in hardware stores and possibly at your hobby dealers.

If they have a tendency to bind, they can be loosened by "working" them in a paste made of kitchen cleanser and oil. If this is done properly, the hinges will operate smoothly and they will make a neat installation on this type of model. Two hinges are used on each elevator. To install them, cut matching slots in the stabilizer and in the elevator. Slip the hinges into the slots making sure they are thoroughly cemented.

Before you mount the elevators install the spring joiner on the left elevator, slip through the hole in K-4 and fasten to the right hand elevator. Now fasten the hinges.

Make the control horn from sheet brass or tin can stock as shown, and mount on the elevator. Cement Silkspan or silk over the tabs to make a stronger mounting.

To finish the pushrod, clamp the elevators in a neutral position and fit the connecting piece of the pushrod to the portion previously installed in the body. The splice is made by soldering a section of brass tubing at the joint as shown. Make sure that the bellcrank is in neutral before soldering the splice.

Mount the verticle fin and install the elevator fairing. After this is completed mount the wing, using Elmer's Glue. Hook up the lead-outs, which are .020 flexible cable. Finish planking the rest of (*Continued on page* 42)

The most significant design improvements this year would seem to be: In Cedar Rapids area, further increase in wing span, and the use of a timer-operated auto-rudder. From the St. Louis area, John Yardley used a rotating axle to prevent ground loops. At the Thermaleers meet in the fall John had installed a complete auto pilot, with cams, springs, flaps, and flaps on flaps (servo elevator).

Mini Cargo with the Cox .020 Pee Wee was also run at this meet. Plenty of interest. Despite short rolling runways the event was successful, Cargo lifted, seven ounces. PAA says no Mini Cargo in '58, in keeping faith with AMA and its schedule trimming.

Last chance to fly Cargo in '57 was December 31 at the King Orange meet in Miami. The weather was the finest on Cargo day. Competition all around. Blanchard was lifting 41 ounces. Ritz got off with 50 but came back down. George Gardner recorded a total of 138 ounces for the Pelican. (45, 45. and 48 ounces) I believe this is a record.

Originally Clipper was flown only at the Nationals. Now it is a regular event in contests throughout the country. The places I know of are: Upper Midwest Payload & Ietex Meet at Mpls., Minn., Thermaleers Payload Meet at St. Louis, Mo., John Pavlis Model Meet at Cedar Rapids, Ia., New York Mirror Meet, King Orange in Miami. For more information write George Gardner at Pan American World Airways, 28-01 Bridge Plaza, North, Long Island City 1, N.Y.

Clipper Cargoing is a challenge to the modeler who wants to go beyond the usual sporty events. It's a quiet sort of competition, but it is very rewarding, and is not restricted to aeronautical engineers. The basic form has been set. You can take dimensions from the three-views in this article and draw your own plans.

It could be a nice event for Juniors to fly because you don't "skyrocket" a six-foot, 40-ounce airplane with a Half A engine. I have been given permission by two local airport managers to fly cargo off their runways, on an otherwise restricted field. Just explain the low slow flying characteristics of these ships.

Well, that's Cargo. It's been fun telling you about it.

International News

(*Continued from page* 2)

committee. A great deal of time was spent in just running the elims, etc., without having to worry about getting the money to send teams over to Europe, nor was the committee necessarily equipped to do this fund raising.

We hope the new set-up will be established quickly so that slack will not have to be picked up. The biggest job is to get the teams to England this summer. Orchids to President Good for his prompt action. If this is any indication of the way things will be handled in the future, we know the academy is in good hands.

On behalf of the old committee, I want to thank all the people who have helped in the past, and those who have written in their suggestions and ideas.

I want to thank Model Airplane News for making this space available.

The remaining three-view plans of the models on the 1958 Power and Wakefield teams will be published in a future issue.

Ed Dolby
AMA International Competition Committee

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the fuselage and install the wing fairing block.

Cut all parts needed for the inboard nacelles and start assembly by mounting the firewall N-1, N-2, to the nacelle keel. Then mount the tanks. Solder a square of copper screen to the top and bottom sides of the tanks as shown on the drawings. Bend up the tab ends of the screen and thoroughly glue to the nacelle keel. Now attach the fuel lines and cement the strut side pieces to the keel.

After the side pieces are dried and shaped, mount the outrigger gear by sewing with soft wire and cement. Build up the nacelles with medium hard balsa blocks and carve to shape. Mount the power packs in the wing slots using Elmer's Glue or the equivalent. Carve the cowls, and check the cowls for fit. Now carve and mount the outrigger gear pods.

The firewall formers have the engine mounting holes marked and identified for the left hand and right hand engines. Also the holes for fuel tubing are identified. These locations should be scribed on the firewall before mounting so that the engines can be installed accurately. Mount the engines with three No. 6 wood screws ¾ of an inch long, which have been dipped in cement. After the engines are mounted, cut the slots in the cowls for the cylinder heads and make holes for the intake and needle valve.

Add the flap extension on the wing trailing edge and assemble the outboard struts and engines. Carve the canopy from soft balsa or, if you prefer, use a plastic canopy of the same size. Do not mount

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the canopy until the model is ready to paint with primer. Sand the model thoroughly and fill any cracks and holes. Now cover the entire model with light Silkspan and give it several coats of clear dope. Lightly sand the model and give it three or four coats of primer, sanding between each coat. The original model had four coats of automobile lacquer primer and three coats of silver dope. Add trim and markings after the finish has dried for several days. Last of all add the line guides, wheels, and landing doors.

The model should balance at the point indicated on the drawing. If it is tail heavy in the slightest, don't fly it. Add ballast if necessary to level it off. Fly from a smooth surface so that the outriggers won't hang up and possibly turn the model in toward you. Make sure that the inside engine has plenty of fuel and power so that it quits after the outside engine.

The model gets off the ground quickly enough without using a lot of up elevator and if it is balanced properly it will fly the same as any other control line model.

For additional exterior markings see Model Airplane News July 1956. The first XB-47D No. 51-2103 was marked as shown on the drawing. The upper surface of the wing was painted a dark glossy gray for filming the action of tufts of yarn during flight. This was accomplished from the fin mounted camera pod.

These three planes are now stationed at Larsen Air Force Base, Moses Lake, Washington.

Ruffy

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at Atlanta. So far this year, one first and second have been the results. (Editor—Written in 1957; ship since took a first at the King Orange Meet and won the Air Force Nationals in '57, and the '57 Southeastern at Atlanta.)

Ruffy will fly good in either calm or windy weather due to the clean lines and light weight. It is necessary to lean the engine a little for flying in windy weather or at high elevation but in either case full power of a good .35 is never necessary. This plane has a solid but not excessive pull at all times and doesn't bobble or stall on square maneuvers which have been emphasized in the '57 pattern. This is accomplished by using small amounts of engine and rudder off set, slanting lead outs, longer inboard wing and weight in the outboard wing. Any one of these items can impair a ship's maneuverability and smoothness if used excessively. If proper control linkage and a small handle are used so over controlling is prevented, Ruffy will really fly through each maneuver instead of mushing and bobbling as so many ships do. By proper control linkage, I mean such that ¾ inch movement of the leadout wire will give 30 and 20 degrees of elevator and flap movement respectively. This set-up works very well on this design.

Construction is conventional for the most part so I shall deal only with those points which may cause some difficulty. It is imperative that close grain medium to light balsa be used so that weight will be kept low and strength high at the same time. The close grain requires less filler and sanding. Construction seems to go a lot faster if all parts are cut out first. It is necessary to cut out a space for the landing gear in the first three ribs in each wing panel and a slot for the main spar in the first four. The wing is built around the landing gear which also adds strength to

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