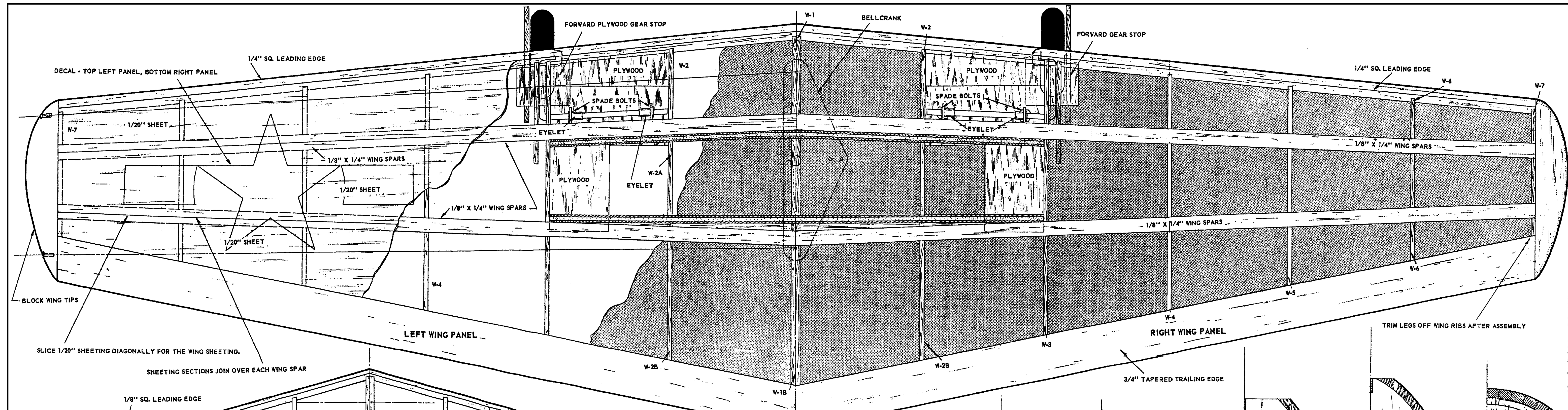


The F-8-F "Bearcat" was in its day, the World's fastest climbing airplane. It is also a wonderful flyer in model form. This model has been designed so that it will be easy to build, and quickly assembled. Study the plans carefully, and remove die-cut parts from the sheets. Group parts according to use, wing, fuselage etc. for convenience as you assemble.

WING CONSTRUCTION: Start construction with the wing, as it must be installed in the fuselage at an early stage. Note each rib is equipped with legs to hold it level over the plan. These are to be trimmed off after removing from the plan. Position each rib in over the plan, and pin to prevent movement. The tapered trailing edge is now cemented in place, and aligned carefully to insure the proper airfoil. . The 1/4" sq. leading edge is next, followed by the top 1/8" x 1/4" wing spars. W-1, W-1A and W-1B units should not be installed at this time, as the will be cemented to the plywood gussets etc. as the panels are joined. W-2, W-2A and W-2B units should be handled in the same manner.

Once this much of the structure has dried sufficiently, it may be removed from the plan, and the opposite panel assembled in like manner. At this point it is wise to remember that the plywood gear mounts will have to be installed before the structure is advanced too far. Laminate the plywood layers together, one short and one long. Remember to make a right and a left. Drill an 1/8" hole where punch marked for the spade bolts. Test fit into notches on plywood gussets. Test fit into area between ribs W-2 and W-3. Next, trim the leading and trailing edge and spar ends to meet at the dihedral angle shown on the plywood gusset. Laminate an 1/8" sq. to the rear spar as shown, and trim to a sliver as it meets rib W-3. This provides a straight length for the plywood spar to cement to. As the bottom spar is added, it is treated in like manner. The rear plywood gusset is now cemented firmly in place, to one panel only, and allowed to dry well. Once again, test fit the opposite panel to check the dihedral angle. Pre-coat all end grain of spars etc. with cement to fill the pores. After the plywood gear mounts have been carefully test-fitted, and bevelled to meet the leading edge, cement each in place, checking position with the forward plywood gusset notch. The panels may now be permanently joined, with the forward die-cut plywood gusset in place, but not cemented in yet. This will permit the panels to be joined by the rear gusset, without the panels being subjected to tension from the forward gusset which is bent at a slight angle. When very thoroughly dry, the forward gusset may be cemented in place, together with the forward bottom 1/8" x 1/4" spar, and remaining rib sections added.

The gear wire is now installed. Slip eyelets into place in the spade bolts, to act as bearings, and pass gear wire through. Tighten spade bolts in place with nuts underneath. Coat with cement to prevent them from loosening. Note a third small piece of die-cut plywood is employed to act as a forward gear stop, to limit movement. Cement this well, and preferably fill in remaining area below to meet the bottom camber of the airfoil with a piece of scrap. An external rubber band looped around the gear, forward to a firmly mounted serves as an excellent shock absorber, allowing gear to flex rearward on impact.

Other points to consider on the wing construction include a 3/4 ounce lead ballast in the right wing tip to balance the weight of the controlines. Also, the leadout wires will pass through rib W-6 (left panel only) as punch-marked, and will then pass through the lower portion of the tip rib and block tip. When sheeting the wing, it is best to sheet the upper camber first, and test fitting the wing into the fuselage structure to determine the point where the leadouts will pass through the sheeting.

Four sheets of 1/20" x 3" x 12-5/8" and two sheets of 1/20" x 2-1/2" x 12-5/8" are used for the wing sheeting. Remaining 1/20" sheeting is for the rudder. Select a good straight edge for cutting, and slice the sheeting diagonally to the following sizes: Cut the 2-1/2" sheets, 1-11/16" tapering to 13/16". This will make four equal sized sections, two for the left panel, and two for the right panel. These are used to plank the area from the leading edge to the center of the forward spar. Cut the 3" wide sheets (two only) to a 2" width on one end, tapering to 1" on the other. This again makes four of equal size, to plank the area between spars, from the center of one, to the center of the other. The remaining two 3" wide sheets are cut 2-9/16" wide on one end, tapering to 7/16" wide at the other. These four sections plank the aft portion of the wing.

Remember to install the leadout wires as you plank the wing. Install block tips, and trim and sand as necessary. Eyelets form bearings for the leadout wires. Trim and sand the entire wing structure carefully.

STABILIZER: In many ways the stabilizer is constructed like the wing. Cement the rib ends to S-6, and allow to dry. Pin the ribs in alignment, add leading edge etc. If you wish a center gusset may be installed, but it is optional. Tips are laminated of die-cut parts provided. Cement in place. The 1/20" sheet covering is die-cut, but should not be installed until after the wire and eyelet hinges have been cemented in place.

ELEVATORS: The elevator leading edge or spar if you prefer is die-cut and laminated of 1/20" sheet. Cement ribs E-1 through E-5 in place, and add the trailing edge. The elevators are joined with the plywood cross-bar, which serves as a mount for the elevator horn, Cover after hinges are installed, with die-cut 1/20" sheet. Check for freedom of movement, trim and sand as on the wing etc.

FUSELAGE: The fuselage is easily assembled as a half shell over the plan side view. First layout the top and bottom keel strips on the plan. F-8 runs the entire length along the top, while F-9 and F-10 splice together along the bottom. These keel strips also position the wing and stabilizer at the correct incidence setting. Once pinned in the proper position, former halves F-2 through F-7 are cemented in place. Side keel strips F-11 and F-12 are now spliced together, and the left side keel installed, helping to hold the half shell in alignment. Once thoroughly dry, it may be removed from the plan. The right side former halves F-4, F-5, F-6 and F-7 may now be cemented in place.

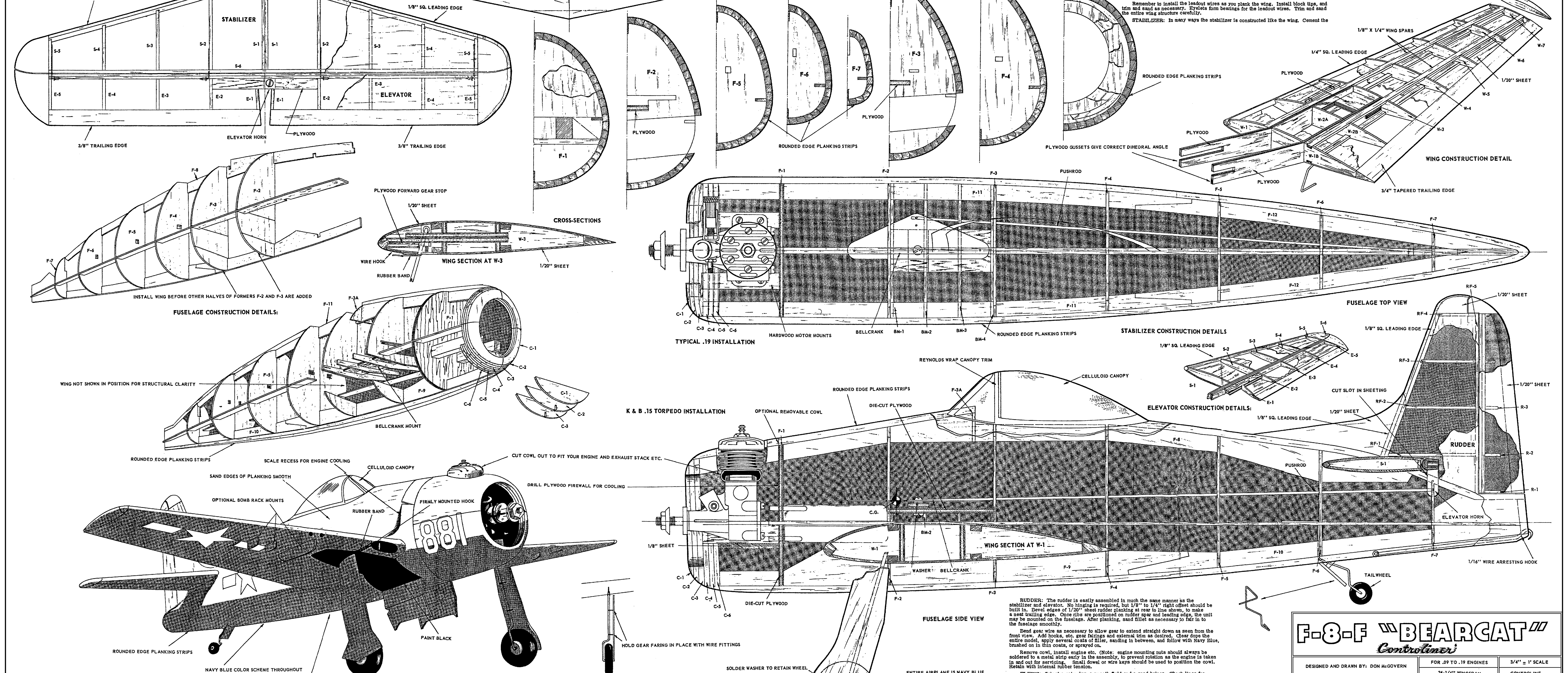
The plywood firewall F-1 is also installed at this time. Next, laminate C-4, C-5 and C-6 units (1/8" sheet die-cut, illustrated on the plan) together and position at the forward end of F-9. Position motor mounts next, either at right angles to the firewall, or as some prefer, with a degree or two of right thrust. Block mounts to the left and right with scrap to prevent movement. A piece of 1/8" x 1-7/16" x 3-1/4" sheet is provided to reinforce the mounts from underneath. This passes across the cowl and braces against the planking.

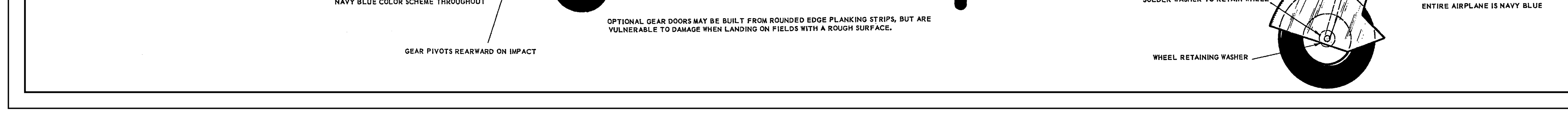
At this time, the wing should be test fitted into position in the fuselage. An area of the trailing edge must be trimmed off as marked to clear former F-4. Formers F-2 and F-3 were die-cut intact, for easier assembly in the earlier stage. The wing cut-out area has been scored halfway through, and should be sliced out at this time. Due to the dihedral angle of the wing, it will be easier to insert the wing should a bind develop, if you temporarily remove the lower portions of F-2 and F-3 on one side. Trim away F-11 and fair into wing as is necessary. Once in place, permanently cement the wing in position.

Focus your attention now on the gas tank installation. A type "C" Berkeley tank is shown installed. The wing sheeting must be notched away to allow the tank to drop down under the bellcrank. Pass all fuelines through the firewall. Also, at this time it is a good idea to drill a few holes along the edge of the firwall to allow air to pass through and out the cooling recess as visible in the detail at the lower left.

The bellcrank mount is formed of die-cut plywood laminations, the smaller one being used to provide clearance etc. Bolt the bellcrank in place after joggling the pushrod into the inner hole. BM-1, BM-2, BM-3 and BM-4 die-cut units mount the plywood bellcrank assembly. Cement well, after the pushrod has been snaked through the formers along the right side of the fuselage. The stabilizer-elevator assembly may now be cemented into F-8, and carefully aligned. Test elevator action by moving pushrod. Equal up and down, or slightly greater up is desirable. A scrap brace or two will help hold the tail assembly at this time. Install the remaining 1/8" sheet cowl laminations now, and if cowl is to be a removable one, which we recommend, cut the laminations free as you proceed.

You are now ready to proceed with the planking. This step will be very easy and enjoyable. Start with a strip on each side, even with the bellcrank.. Install wire leadouts, and pass through the strip as indicated. Add rounded edge planking strips working up and down around the fuselage, trimming as necessary as they meet. To make cowl removable, neatly slit each strip flush with firewall after the cement has hardened. An inner reinforcement may be added to hold the shape, but is not usually necessary. Test fit the canopy etc. to insure correct fit. Trim planking around cockpit etc. Canopy and Reynolds Wrap trim are added after doping. Sand entire fuselage smooth at this time.





RUDDER: The rudder is easily assembled in much the same manner as the stabilizer and elevator. No hinging is required, but 1/8" to 1/4" right offset should be built in. Bevel edges of 1/20" sheet rudder planking at rear to line shown, to make a neat trailing edge. Once ribs are positioned on rudder spar and leading edge, the unit may be mounted on the fuselage. After planking, sand fillet as necessary to fair in to the fuselage smoothly.

Bend gear wire as necessary to allow gear to extend straight down as seen from the front view. Add hooks, etc. gear fairings and external trim as desired. Clear dope the entire model, apply several coats of filler, sanding in between, and follow with Navy Blue, brushed on in thin coats, or sprayed on.

Remove cowl, install engine etc. (Note: engine mounting nuts should always be soldered to a metal strip early in the assembly, to prevent rotation as the engine is taken in and out for servicing. Small dowel or wire keys should be used to position the cowl. Retain with internal rubber tension.

FLYING: Select a calm day, a smooth field and a good helper. Check lines for freedom of control action, tight connections etc. Check for proper balance, rudder setting and freedom from warps. Use a prop of medium-high pitch. Run engine wide open, just a little rich on the needle valve. Launch R.O.G. downwind only, keeping arm fairly stiff at wrist and elbow. This gives very delicate elevator action as the arm is raised for up and lowered for down. Relax your arm as conditions warrent, but do not overcontrol the model at first. Keep model low as the tank empties, and make the approach with sufficient speed for good control. Flair out gently as the model settles.

Those desiring to fly Navy Carrier events should install a two speed engine system, either by a third line or by running current out the controlines to a relay and escapement. The arresting hook is shown on the plans. Anchor securely. Happy landings.

F-8-F "BEARCAT"

Controliner

DESIGNED AND DRAWN BY: DON McGOVERN KIT ENGINEERED BY: BILL EFFINGER	FOR .09 TO .19 ENGINES	3/4" = 1' SCALE
	26-1/4" WINGSPAN	CONTROLINE
	FULL SIZE PLANS	KIT NO: 5-7

BERKELEY MODELS INC.,
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