

Micko Scale Reproductions

Fun Scale F8F-1 Bearcat



Photo by Joe Babalon

Thank you for purchasing the F8F-1 Bearcat model. This is a continuation in a “Fun Scale” series of aircraft designed for optimum flight performance while retaining sport scale appearance. The design layout is similar to a large free flight model; light weight construction and stringers are the main features. The model features retracts and is designed to use stock parts from other models. The retracts/struts and tail wheel assembly are off the FMS P-51 1700 model and the power system and propeller are off the FMS P-47 1700 model. There is some sheeting on this model, but the design allows the modeler to modify the build according to their likes- such as sheeting the entire model and/or adding flaps. If the modeler decides to add sheeting, it is recommended to use from 1/32” to 3/32” balsa or 2mm Depron. The prototype model features retracts and with an all up flight weight of 8 pounds. With that weight the wing loading is 23-24 ounces per square foot. The construction techniques require intermediate skills but the airplane’s flight characteristics make it a good first scale subject. If it has been a long time since you have built a model, or if this is your first build, you may wish to purchase and practice on a Guillows or like type free flight model, as the construction style is similar. The photos used in this manual were from the prototype build and some parts have been updated (such as the Vertical Tail design and Tail Wheel (TW) unit used). Please refer to the plans for any items that do not match the photos.

Prep Work, Tools, and Specialty Items

No special tools are needed but there are a few items the builder might find useful. A balsa stripper was used to cut all the stringers. A small razor saw or “Zona” makes for ease in cutting across stringers. Small

files and sanding blocks, especially nail files can be handy. One item that is very useful is a 90 degree triangle. Several sizes and types are recommended. These can be purchased from a hobby shop or a home improvement store. A small level also comes in handy throughout the build. The entire model was covered Coverite Micro Lite with only a "Trim iron". The glues used throughout the build were CA and Titebond Wood Glue.

It's best at this time to decide how you plan on completing the model. Do you wish to add sheeting, flaps, full cockpit? Knowing these items in advance can help prepare the model from the start for these options. As each modeler will tailor the model to their own desires, not every step in the construction will be covered; just the main points.

Horizontal Stab and Elevator

The horizontal needs to be built before the fuse can be constructed. Start by removing all the Horizontal "H" parts from the sheets. Using the square holes in H-7 and H-8 and the plan as reference, glue these two parts together and pin to the board. The 1/4" H-2 is placed at the center of the Horizontal. The remaining Ribs can be "tabbed" into H-7 and H-8. Slide H-1 and H-1A into place, beveling as needed for H-1 and H-1A to meet flush. Once satisfied with the fit and alignment, glue the pieces in place. Add the



top 1/8" sqr. Basswood stringer at this time. *Note- Spruce or another hardwood equivalent can be used in place of Basswood* Remove the assembly from the board and add the bottom stringer. Laminate 2 H-9s to make tip- glue in place per the plan and repeat the other side; sand/contour the tip. In-fill the center section with 1/16" balsa per the plans and set aside for now.

Remove all the Elevator "E" parts and cut a 1/2" wide strip from 1/8" (1/2"x1/8") balsa sheet. This will be the trailing edge of the elevator halves; glue E-7 to one end and trim per the plans. Cut several "shims" from 1/4" balsa and pin to the board so that the trailing edge can sit on top of them (see photo). Place E-1 flat on the table and tab in E-2 through E-8. Carefully dry fit the trailing



edge into the cut outs on the Ribs, and then place the assembly over the plan with the bottom of the trailing edge resting on the top of the 1/4" shims (see photo).

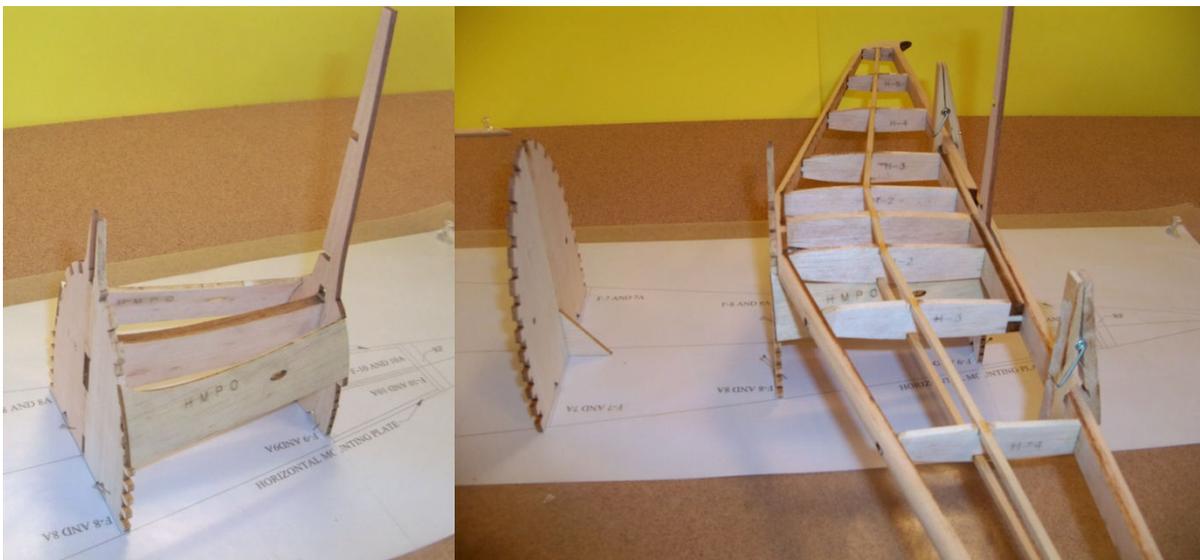


Once satisfied with the fit and alignment, glue the pieces in place; repeat for the other half. On both halves, draw a center line on the leading edge and sand round. Lightly sand the Horizontal and Elevator halves. Add the additional scraps and triangles per the plans. Bend the "U" shaped joiner that connects the two elevators from 1/8" piano wire per the plans.

Fuselage- Top Half

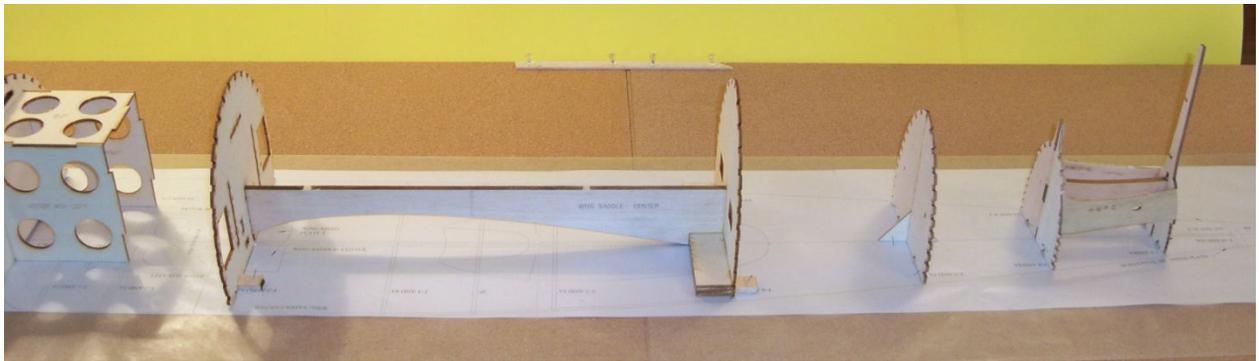
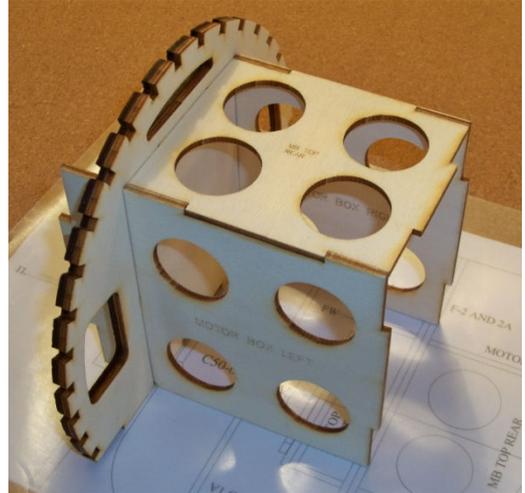
Locate all the "F", "FW", MB, Wing Saddle, Horizontal Mounting Plate, Alignment Tools, Wing Mounting Plates (4 total), WMP-2 and WMP-2A and "R" parts and remove from the sheets (there is an extra F-10 that will not be used). The Fuse is built over the Fuse TOP View plan and has several sub-assemblies. Glue the (4) Wing Mounting Plate 4 together and make 2 separate assemblies of WMP-2 (each has 2 laminations). Also, glue 2 F-2s together to make one 1/4" piece- care must be taken to ensure all slots and holes are lined up. For these sub-assemblies, I used wood glue vs. CA for a stronger bond.

Slide the Alignment Tools into F-7 through F-10 and pin them to the board- BE CERTAIN THAT THE NOTCHES IN F9 & F10 THAT WILL LATER ACCEPT RIBS R2 & R3 ARE SITUATED ON THE SAME SIDE. Slide



the Horizontal Mounting Plate Center into the center slots on F-8 and F-9; tack glue HMPO in place (see photo). Test fit the Horizontal between F-8/F-9 and the Horizontal Mounting Plates. Ensure a good fit and the alignment is correct and level- adjust/sand as needed. Once satisfied with the fit, remove the Horizontal and glue all the parts in this sub assembly together.

Slide F-2 assembly (dry) into Motor Box Left/Right and then also add MB Top Rear. Once satisfied with fit and alignment, use wood glue on assembly. Glue the 2 FWs together, noting that the marking lines match up. Dry fit FW, MB Top Front and MB Bottom in place- noting the down and right thrust angles. When satisfied with fit, glue in using wood glue. Slide the Wing Mounting Plate 4 assembly into the slots on F-6 per the plans and dry fit Wing Saddle Center into F-6 and on top of the Wing Mounting Plate 4 assembly. The wing Saddle Center may extend slightly through the back side F-6- this is not an issue and was added to allow for some adjustment. Ensure that the

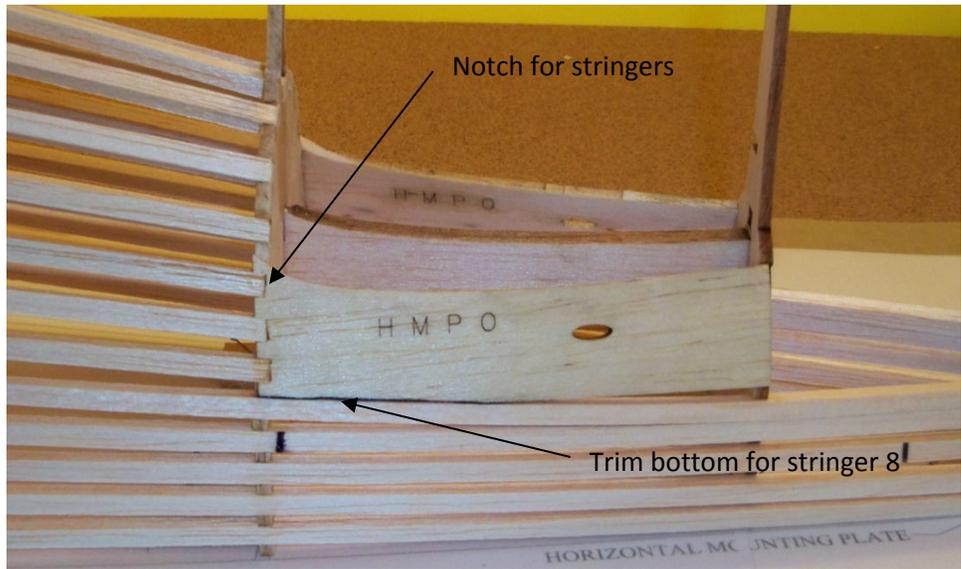


Wing Saddle Center and Wing Mounting Plate 4 assembly are 90 degrees to F-6 per the plans. Once satisfied, glue these parts together. Pin this assembly to the board over the plans and slide F-3 in place with Wing Saddle Center into the center slot, also pinning over the board. Once checked for alignment, glue F-3 to Wing Saddle Center. Use a 90 degree to mark and position F-4, IP, IPA, and F-5 in place and glue when ready. Slide the F-2 and MB assembly into the front of F-3 and glue in place with wood glue. Using the Alignment Tool for F-1, pin this part in place over the plan.



Using a balsa stripper, cut 3/16" balsa stringers from several sheets (I marked the "top" of the sheets with a felt pen so I know which side was cut and which was the original "flat"

side). Starting with the top most stringer- Stringer 1- glue in place the top 4 stringers, alternating on each side. These stringers go from F-1 to F-8. On Stringers 5-7, you will need to cut a notch in HMPO to receive them (see photo). Test fit Wing Saddle Outer per the plans- the highest point should fit right under stringer 7. Make sure the bottom airfoil section is in line with the pre cut lines on F-4 and F-5- you may need to bevel the bottom of Wing Saddle Outer near F-6. When satisfied with fit, glue both Wing Saddle Outers in place. Add Stringer 8 and trim bottom of HMPO (see photo). Stringer 9 should sit on top of Wing Saddle Outer and go from F-5 to F-10. Remove the pre-cut section of Wing Saddle Outer. Bevel the outer edge of Hatch Rail Upper to match the contour of the Fuse. You may wish to add the 1/4" x 1/8" magnets at this time. A scrap piece of balsa was glued over the back of the magnets to give additional surface area for adhesion. Glue the Upper hatch rail in place and finish the remaining stringers on the top half of the fuse.



and F-5- you may need to bevel the bottom of Wing Saddle Outer near F-6. When satisfied with fit, glue both Wing Saddle Outers in place. Add Stringer 8 and trim bottom of HMPO (see photo). Stringer 9 should sit on top of Wing Saddle Outer and go from F-5 to F-10. Remove the pre-cut section of Wing Saddle Outer. Bevel the outer edge of Hatch Rail Upper to match the contour of the Fuse. You may wish to add the 1/4" x 1/8" magnets at this time. A scrap piece of balsa was glued over the back of the magnets to give additional surface area for adhesion. Glue the Upper hatch rail in place and finish the remaining stringers on the top half of the fuse.

Test fit the Horizontal again and mark the back of H-8 (see photo). Cut scrap 1/8" balsa to shape and glue in place (see Photo). Set Horizontal aside. Add the 1/8" sqr. Balsa stringer on F-9 and F-10 per the plans. Hinge the Horizontal and elevators and dry fit the "U" connecting wire. With the Horizontal set back in place, the "U" wire should be just aft of F-9 (see Photo). Remove the Horizontal for covering.



Cover the Horizontal and elevators with your material of choice. The Prototype used Coverite Micro-lite iron on film. You can also use Silk or similar light material. Due to weight, "standard thickness" covering film is not recommended. Trim part of the covering on the top and bottom of the Horizontal along the glue joint lines. Test fit

the Horizontal in place and check for alignment fore/aft, zero incidence, and ensure level. Glue in place when satisfied.

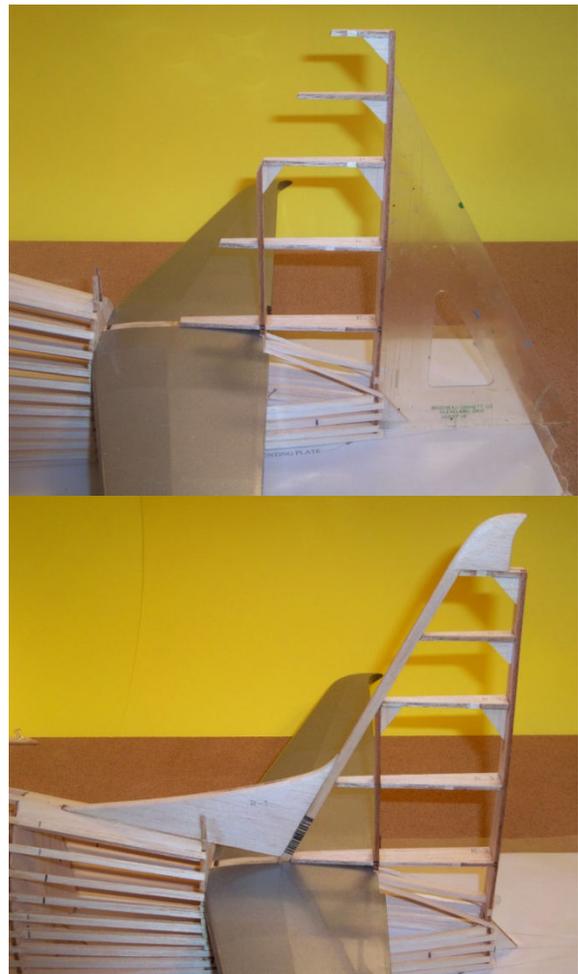
Using the plan and photos as a guide, in-fill around the canopy area and the top two stringers between F-7 and F-8 with 1/8" balsa scrap. Sand these flush with the stringers and fuse contours (see photo).



Vertical and Rudder

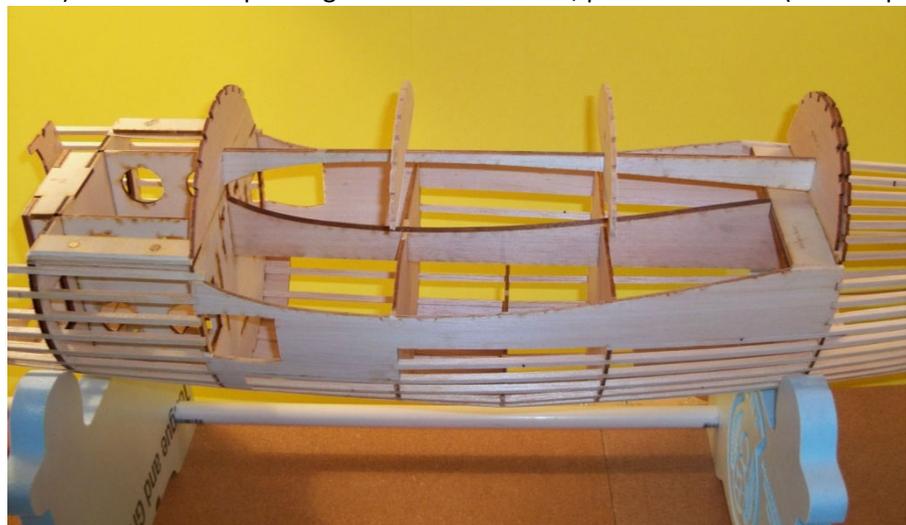
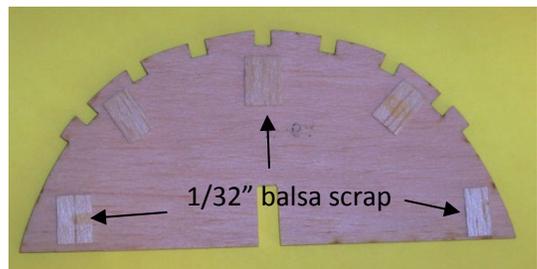
Several updates were made to the production version over the prototype model on the vertical. The basic construction is the same; it just will look slightly different than what is in the photos. Refer to the Fuse Side Plans for additional details. Cut several 90 degree triangles from scrap 1/8". Bevel the top of F-9 to match the plans and dry fit R-2 and R-3 in place. Slide a 90 triangle against the back of F-10 to ensure vertical and slide V-4 in place. Tack glue a balsa triangle (per the plans) between F-9 and R-4. Test fit VLE in place and adjust as needed. Set R-5 and R-6 in place and check alignment- view from the side, rear, and overhead to make sure true. Once satisfied, glue all the parts in place. Add the remaining support scrap balsa triangles per the plan. Glue R-1 and R-1A in place. Part R-7 is made from 2 lams of 1/4" balsa parts- glue in place. Along the centerline of the Vertical, add scrap 1/8" balsa between R-2, R-3, F-9, and F-10 per the plans. Carefully contour and sand the Vertical Leading Edge.

Slide R- 2A though R-6A and R-10 in the slots on R-9. Add part RP to the assembly and glue parts together. R-8 is made from 2 laminations of 1/4" parts and 1 1/8" part. Glue to the top of the Rudder and sand accordingly.



Fuselage- Bottom Half

With the Fuse still pinned to the board, give the overall structure a light sanding- take down any rough glue joints and remove any “fuzz” from the balsa. When ready, unpin and remove from board. It is recommended to place the fuse upside down in an adjustable airplane stand. Add the Wing Mounting Plate 2 and 2A assemblies into the slots on the rear of F-3. Use balsa scrap to fill in between Wing Saddle Outer and Wing Mounting Plate (see Photo). Glue a scrap piece of 1/8” balsa against the back of F-6 and on top of Stringer 9- this will help hold the pushrod outer sleeves in place. Slide the pushrod outer sleeves in place through F-7, F-8, and HMPO- file holes as needed. Find parts F-6A through F-10A and remove from the sheet. Glue F-6A in position, noting the angle per the plans. Add F-7A and F-8A at this time. The Tail Wheel (TW) mounting plate is made from 2 laminations of 1/8” lite ply. Glue these together and install both the TW retract and the steering servo at this time. Test to ensure retraction and left/right movement. Trim away plate material for strut as needed. With the strut in the extended position, dry fit the assembly into F-8A and test fit F-9A- sand/bevel as needed to a good fit. Once satisfied and with the TW Mounting Plate in place, glue F-8A/F-9A in place as well as the TW plate to the two formers. Add F-10A, R-11, and R-12 per the plans at this time. Find Parts F-2B, F-3A and F-6B and tack glue 1/32” balsa scrap to one side (see photo). With the scrap facing the rear of the fuse, pin F-6B to F-6A (the scrap should create a 1/32” gap between the two sub formers. Slide Wing Saddle Bottom into the slot in F-3B per the plans (note the angle) and then slide this assembly into the slot on F-6B- slide F-4A and F-5A into position on Wing Saddle Bottom (see Photo). Bevel the outside

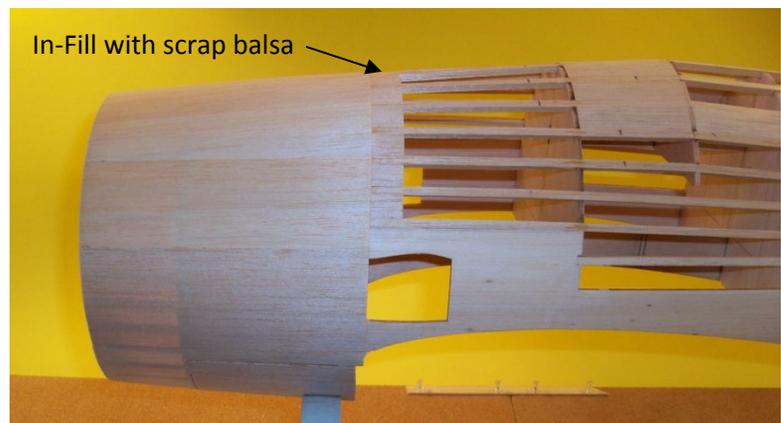


edge of Hatch Rail Lower to match the contour of the fuse. Place glossy tape or wax paper over the magnets and place the lower hatch rail in place over the tape/paper. Drop the lower hatch magnets in place and glue to the Lower Hatch Rail- back with a scrap piece of 1/8" balsa (see photo below). Using F-3B for alignment, glue F-3A to the Lower Hatch rails with the scrap 1/32 between the two sub formers to create a gap- be sure to keep the angle for these sub formers per the plans. Glue F-1 A and F-2A to F-1 and the forward F-2 respectively. Add F-2B in place (the same as what was done with F-3A) and glue to the Lower Hatch Rail. Glue F-4A and F-5A in place per the plans. Add the bottom most (center) 3/16" balsa stringer from F-1A to F-10A. Alternating sides, add the remaining bottom stringers. Once complete, use a small razor saw to cut through the stringers separating the Belly Pan and the Hatch from the Fuse- remove the 1/32" scrap at this time and sand as needed. From F-3/F-3A forward, sheet with 1/32" balsa sheet- you may wish to break the sheeting up in sections for easier application. Using scrap 1/8" balsa, infill behind F-3- this will allow more adhesion area for covering (see photo). Block in with scrap balsa around the TW area- remove pre-cut section of F-9A for TW retraction. Sheet the lower rear section Vertical per the plans with 1/32" balsa and add a balsa fillet from scrap behind F-8 (see photo)



Cowl Ring

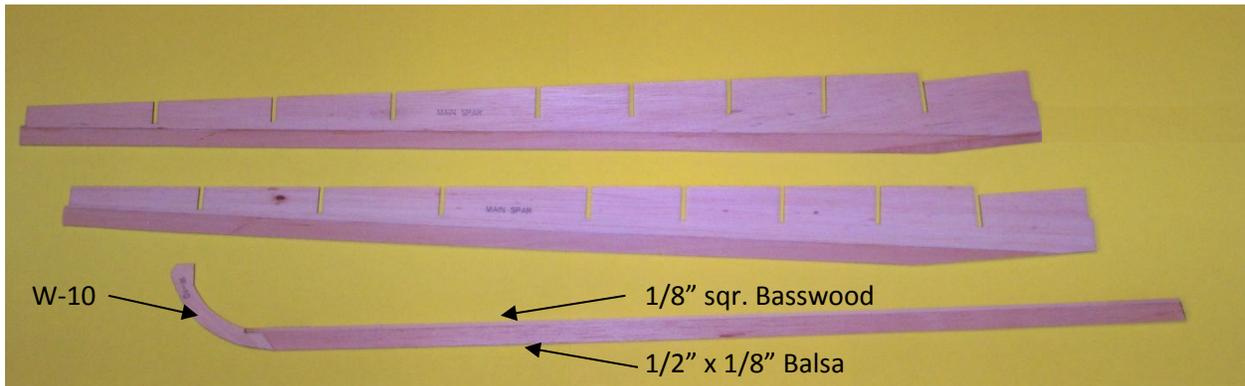
Locate and remove from the sheet the 2 Cowl Ring Alignment Tools, and all the CR parts. Slide the 2 Cowl Ring Alignment Tools together to make a "+" and pin over the Template on the plans. Starting with CR-5 (4 total parts) make the first ring around the Cowl Ring Alignment Tool. Add each consecutive ring; alternating locations of ring separation lines to add additional strength. Once complete, remove from the board and sand the inside



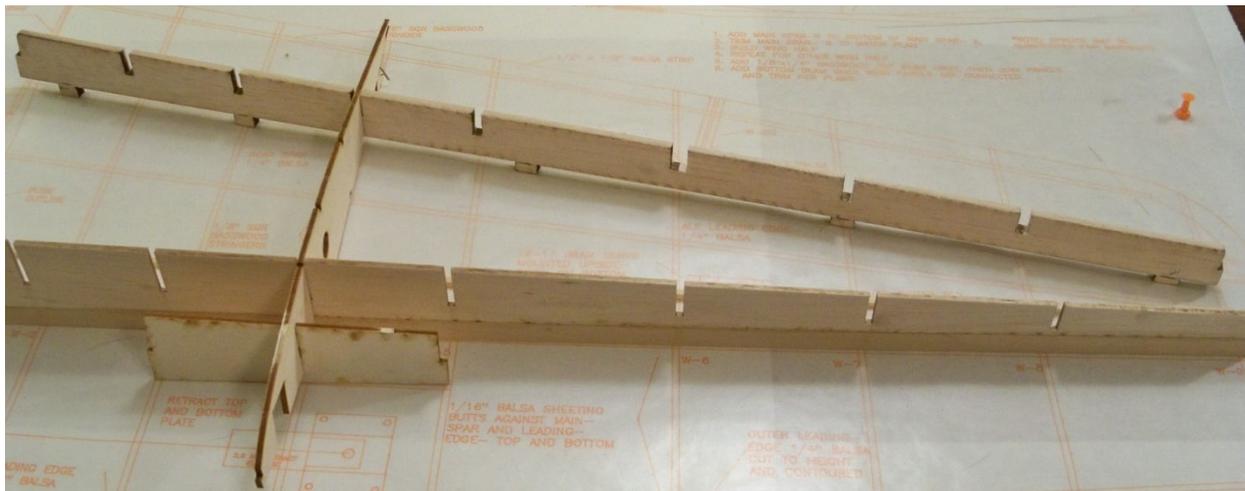
smooth; you may want to sand the inside lip/curve at this time. Test fit to the front of F-1 and glue in place. Contour outside edge/curve to match the plans.

Wing

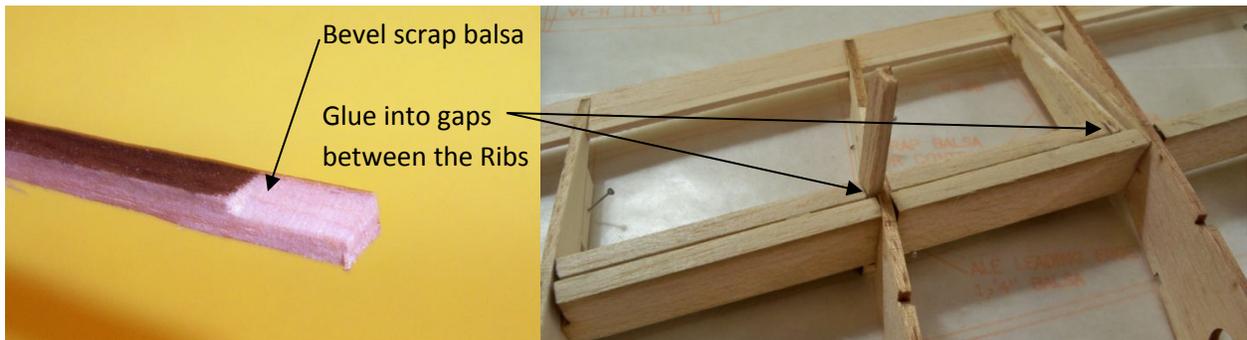
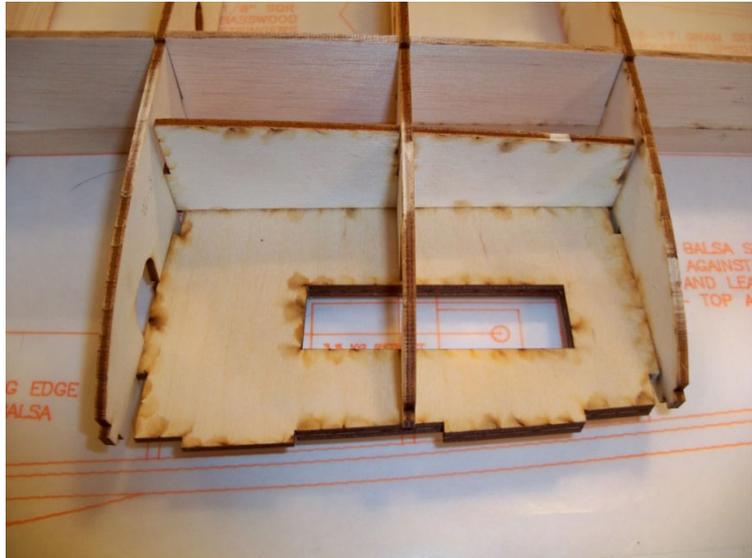
The wing has several sub-assemblies. Locate the Main Spar (2), W-10 (2), Retract Mounting Plate parts (4), Wing Tips (10), Wing Mounting Plate 3 (2), and Wing Mounting Plate 1 (1). Create the Laminations of the Wing Tips (5 per side) and for the Wing Mounting Plates. Per the notes on the Wing Plan- Main Spar Detail (and see photo), glue a 1/2" x 1/8" Basswood plank to the bottom of both Main Spars- trim according to the plan detail. Cut 2 strips of 1/2" x 1/8" balsa and trim per the plans for the Wing Trailing Edge; glue to the forward edge a 1/8" sqr. Basswood stringer and add W-10 (see photo) but allow a little extra length at the center section (Wing Mounting Plate 3 will sit on top of this overhang). You may want to bevel the top edge of the Rear Spar and Aileron Leading Edge to match the rib contours at this time.



Pin Main Spar, main 1/8" sqr. Basswood stringers (these are NOT the ones listed as "Bottom Only") and the Rear Spar over the plans- note the Rear Spars height tabs on the bottom. Slide the Sub Spar into the forward slot on W-4, and then slide this assembly onto the Main Spar and Rear Spar per the plans.



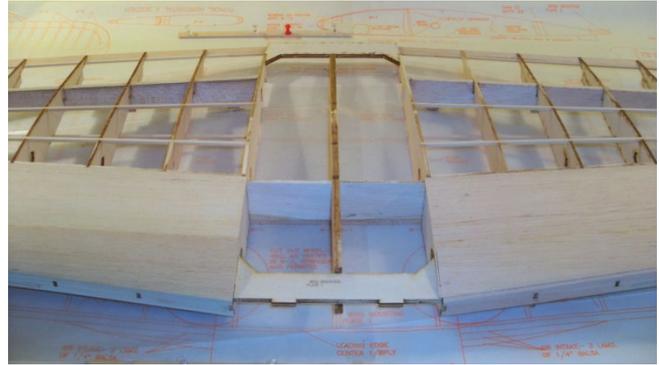
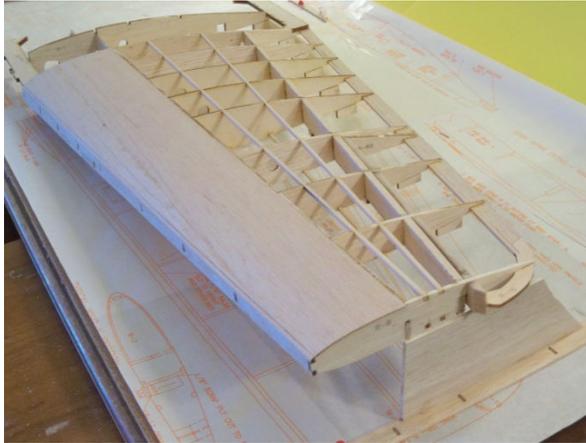
On the Wing Plan, review the Retract Plate Detail- make a Left and a Right lamination set. The correct configuration of the plates is the smaller plate (Bottom) is on the under/outer side of the larger plate. Test fit W-3, W-5, and the Retract Mounting Plate assembly per the plans. Slide W-1 Outer, W-2, and W-6 in place. Locate the Aileron Leading Edge, and on the forward facing side, add 1/32" shims. Slide in place the remaining Ribs. Test fit the 1/8" balsa Leading Edge- sand the Retract Plate tabs as needed for a flush fit and slide the Trailing Edge assembly into the slots at the rear of the Ribs. Once satisfied with the fit and alignment, glue all the parts together on this assembly. There will be some gap between the surfaces of the Ribs and the Rear Spar/Aileron leading edge; use scrap balsa sanded to a triangular shape to fill in these areas and sand flush (see photos).

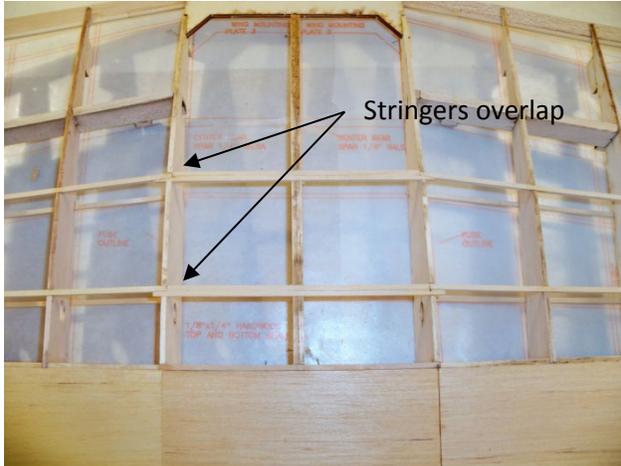


Bevel the 1/8" balsa Leading Edge top to match the contour of the Ribs. Sheet the top front of the wing with 1/16" balsa- this will butt up against the Main Spar and will overhang the top of the Leading edge. The overhang will be trimmed off once the wing half is removed from the board. Add the top 1/8" sq. Basswood stringers at this time- allow for some overhang (see photo). Remove the Wing half from the board and sand the Leading edge smooth. Remove the pre-cut section from the Retract Mounting Plates . Repeat the same for the other half of the wing. Add Bottom 1/4" x 1/8" Basswood Beam per Main Spar Detail step #5 on one Wing panel.



Place one Wing half over the plan, raising the tip to be 3 1/8" off the board. Slide W-1 in place- be sure the Main Spar is at the rear of the slot in W-1- there should be a 1/8" gap in the slot in front of the Main Spar- Main Spar Doubler will be added later. Test fit Wing Mounting Plates; removing the pre-cut parts of W-1. Pin the other Wing half to the board with the same amount raised at the tip (3 and 1/8"). Ensure the 2 halves of the Main Spar edges are flush against each other and resting on top of the Bottom Beam (1/4" x 1/8" Basswood).





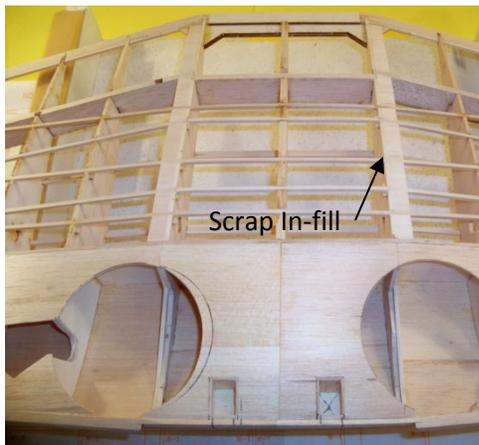
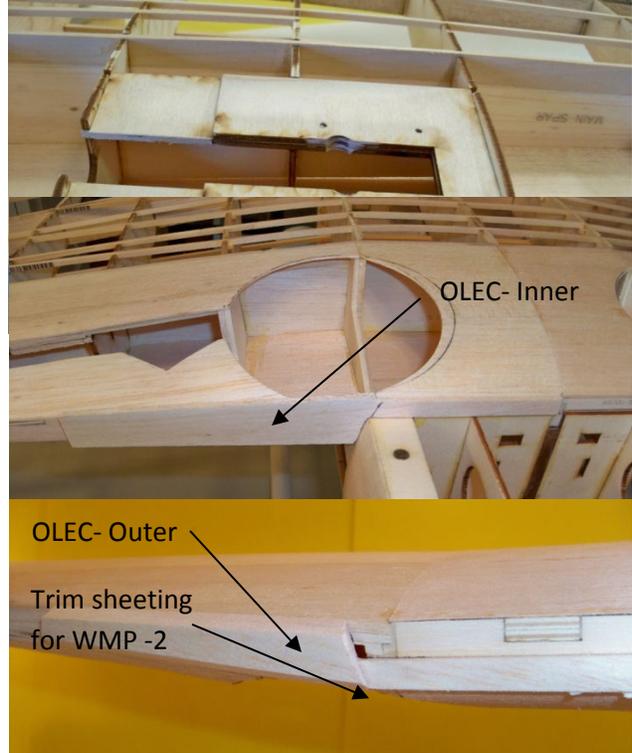
Once satisfied with the fit and alignment, glue together with wood glue. Add the Leading Edge Center at this time and the small curved part removed from W-1 and add over the Wing Mounting Plate to aid in sheeting. Sheet the center forward section with 1/16" balsa. You may want to overlap the top 1/8" sq. Stringers for additional strength (see photo). Add Center Rear Spar at this time. Use the template in the manual as a guide, and cut the Main Spar Doubler from scrap 1/8" lite ply and glue in place (see photo). Add the 1/8" sq. Basswood Stringers-



Bottom Only per the plan and remove the pre-cut sections on W-1 Outer and the Rib/Spar tabs. Fill in under Wing Mounting Plate 3 with scrap 1/8" lite ply. Test fit the retracts and struts at this time. If using the FMS wheels/struts, make strut extenders from 3/16" piano wire and note the bend. This is a starting point for a "90 degree" retract- adjust the bend or shim the retract as needed for a clean retraction into the wheel-well (see photo). Bevel the bottom of the Leading Edge, Leading Edge Center, and Retract Mounting Plate to match the rib contour. Add scrap balsa and W-4A to block in the wheel-wells (see photo). Sheet the underside of the Wing the same as the top- 1/16" balsa butts against the Main Spar and overhangs the Leading edge. This can be done in sections (see photos). Block in around the retract as needed. If you plan on making your gear doors from fiberglass, now would be a good time in the construction process to do so- use the template in the manual for the door outline. Trim the overhang of sheeting and sand flush with the leading edge.

Trim the overhang of sheeting and sand flush with the leading edge.

Remove the sheeting on the Wing Center Section-Top Side for the Wing Mounting Plate 2 (see photo) Test fit the Wing to the Fuse; making sure the wing sits flush in the Wing Saddle and that in correct alignment with the fuse. When satisfied with the fit and alignment, mark and remove sheeting for the 2 forward bolts- block in around this area with scrap balsa. Drill 4 holes for the wing mounting bolts- 1/4" nylon bolts were used on the prototype. Use scrap balsa 1/2" wide to fill in to the outside of W-1 Outer. Once the Wing is mounted to the Fuse, use the templates in the Manual as a guide and make the Outer Leading Edge Center (Inner and Outer) from 1/8" balsa scrap. Per the plans, glue in place OLEC Inner first, and then add OLEC Outer afterwards. Add the 1/2" balsa Triangle stock for the outer section of the Leading edge. Sand all Leading Edges to shape. Glue the Wing Tip Laminations (5 layers) to the tip and contour to shape. Glue 2 laminations of 2 pieces each for the Intakes from the 4 1/4" balsa parts and glue in place per the plan. Block in behind the intake with



scrap balsa- top and bottom of the Wing. Test Fit the Belly Pan in place, trim the top of F-3B if needed to be in alignment with F-3A (on the prototype, the Wing Saddle Bottom was needed to be removed between F-3B and F-4A to obtain the best fit.). Glue the Belly Pan in place and add additional stringers/in-fill as needed (see photo). Cut the Ailerons free, remove the 1/32" shims, and contour the Aileron Leading edge to shape. Hinge as desired (CA hinges were used on the prototype). Mount the Aileron servo per your choice or per the plans.





Covering

Cover the model with your choice, silk or film can be used. The prototype used Coverite Micro-lite and was applied only using a trim iron. The surface was "scuffed" lightly

with fine sandpaper to allow better adhesion of paint. Start with the Belly Pan first, working in sections. Using paper templates for the sections can help reduce wasted material. Cover the intakes separately from the main Wing panels. The main Wing panels can be covered in one sheet- both top and bottom, then cover the Ailerons. Cover the fuse by starting at the tail- bottom first and moving forward. Leave a small section on either side under the Rudder uncovered (see photo), this area can be used to lead ballast to help with balancing the model. Cover the Vertical, Rudder, and the top of the Fin (see photo). Continue covering the Fuse in sections. Once the model is covered, make the Exhaust Ducting, Tail Wheel Cover, and Fin Fairing from cardstock with templates found in the manual. Trim as needed and glue in place. Trim the provided Canopy and add cockpit detail as desired. Mount the motor and the remaining electronics (see photos).

Finishing

Paint any Cardstock parts to match your covering. Glue the Canopy in place with canopy glue or with epoxy. The Gear Doors were made with the template provided in the manual. They are a



lamination of .03 plastic and 1/32" ply. Lay the plastic part over the Wheel Well and bend the leading and trailing edges to best match the Wing/Intake. Once satisfied with the fit, lay the 1/32" ply door over the well. Lay the plastic over the ply, and press down to form the curves of the lamination- these should be close to what the plastic part was originally. This process may take a few dry runs to get it right- when



ready, apply CA to the top of the ply door, and press the plastic door over the top, holding to keep the formed curves. Dubro Heavy Duty pinned hinges (257) were used to connect the top of the door to the Wing. Attach one half of the hinge to the door using the holes marked on the template. The other half can be mounted to the Retract Plate, or on the prototype- on the retract itself. The top half of the door is attached with wire to the strut. Use the template in the manual and bend the wire to shape (you can only bend 1/2 of the wire off the strut, the other half the wire needs to be in the strut when being bent). Two Dubro Micro EZ connectors were used to retain the wire from the strut. Review the photos provided- some adjustments and readjustments will be needed to get the doors to close correctly.



Balance the model per the plans, using the uncovered section on the tail to allow for weight (the prototype needed tail weight to balance properly). Secure all the control surfaces and hinges per your choice and connect all the control surfaces to the servos. The prototype flew with the following control surface deflections: Aileron +/- 3/4", Elevator +/- 5/8", and Rudder +/- 3/4". There are many options to paint your Bearcat after; the prototype's paint scheme was found here: <http://wp.scn.ru/> . Callie Graphics was used to make the markings: <http://www.callie-graphics.com/> . Further information can be found on the build at <http://www.rcgroups.com/forums/showthread.php?t=2524535>

Flying

Before flying give the model a thorough check to ensure all control surfaces are moving in the correct direction and the gear retract and extend smoothly. Test the power plant and taxi test to check for proper tracking- adjust as needed. Take-offs are fairly straight forward, the wide gear help with tracking. The prototype used a Power 60 motor, 100amp ESC, FMS P-47 1700mm 17" 4-blade prop, and a 6s 5000 mah Lipo battery. The model cruises well at 1/2 throttle with this power combination. Rolls and loops are straight forward and the stalls are gentle; the nose lowers and one wing drops but does not snap. Recovery is standard for stalls. Landings are straight forward as well- power is kept on throughout the approach, gradually reducing to achieve the glide slope. The large prop causes a lot of drag, so some power is needed until the wheels touch.

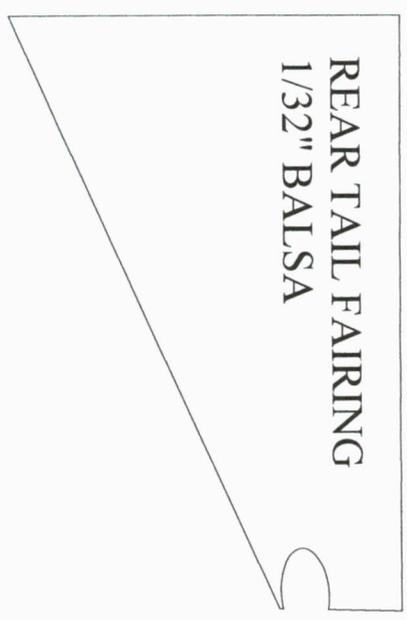
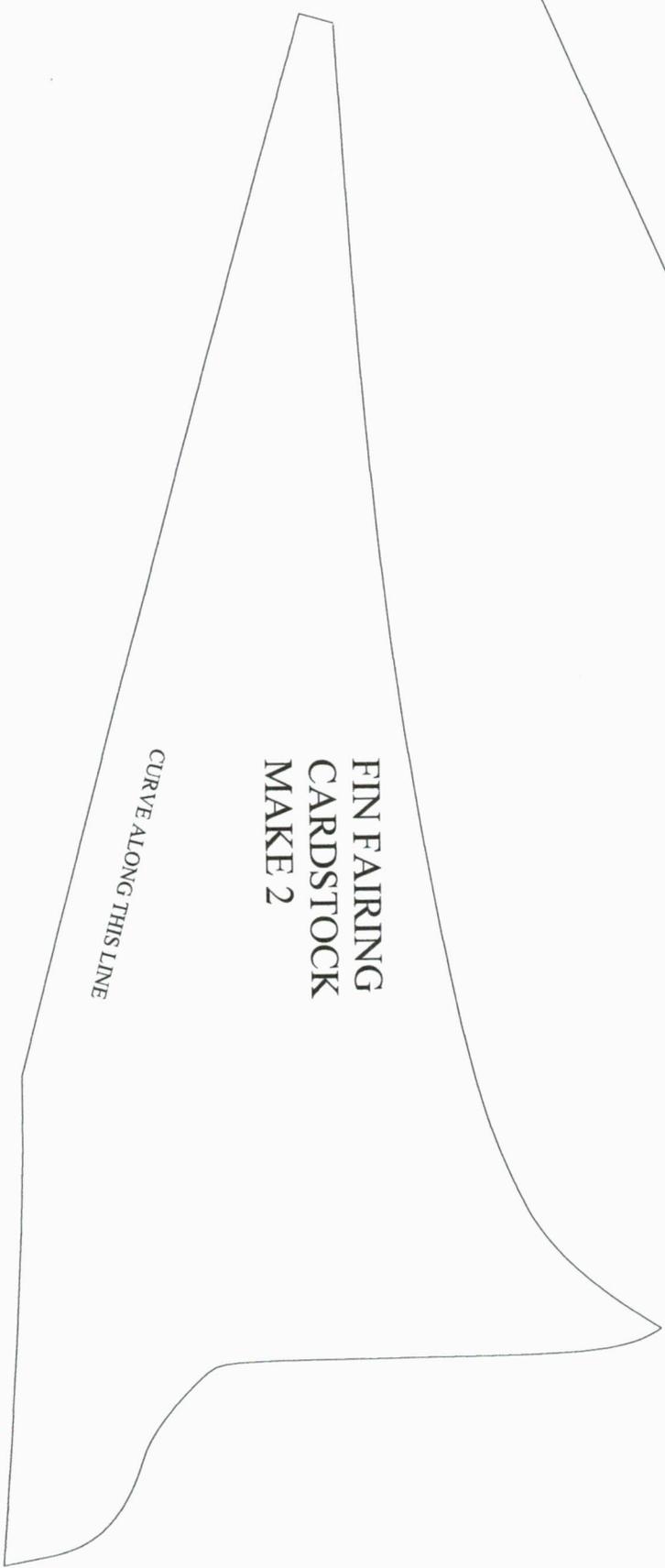
We hope you enjoy building and flying your Fun Scale Bearcat. Happy Landings!

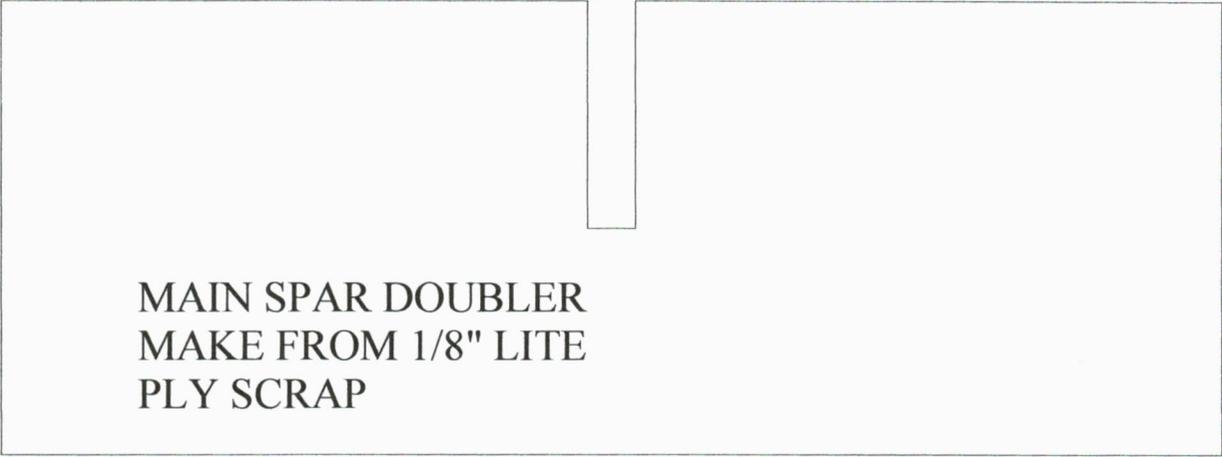
OLEC INNER
ADD TO BOTH WING HALVES
1/8" Balsa

REAR TAIL FAIRING
1/32" Balsa

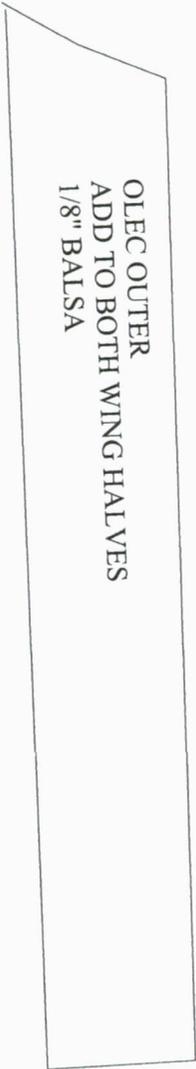
FIN FAIRING
CARDSTOCK
MAKE 2

CURVE ALONG THIS LINE

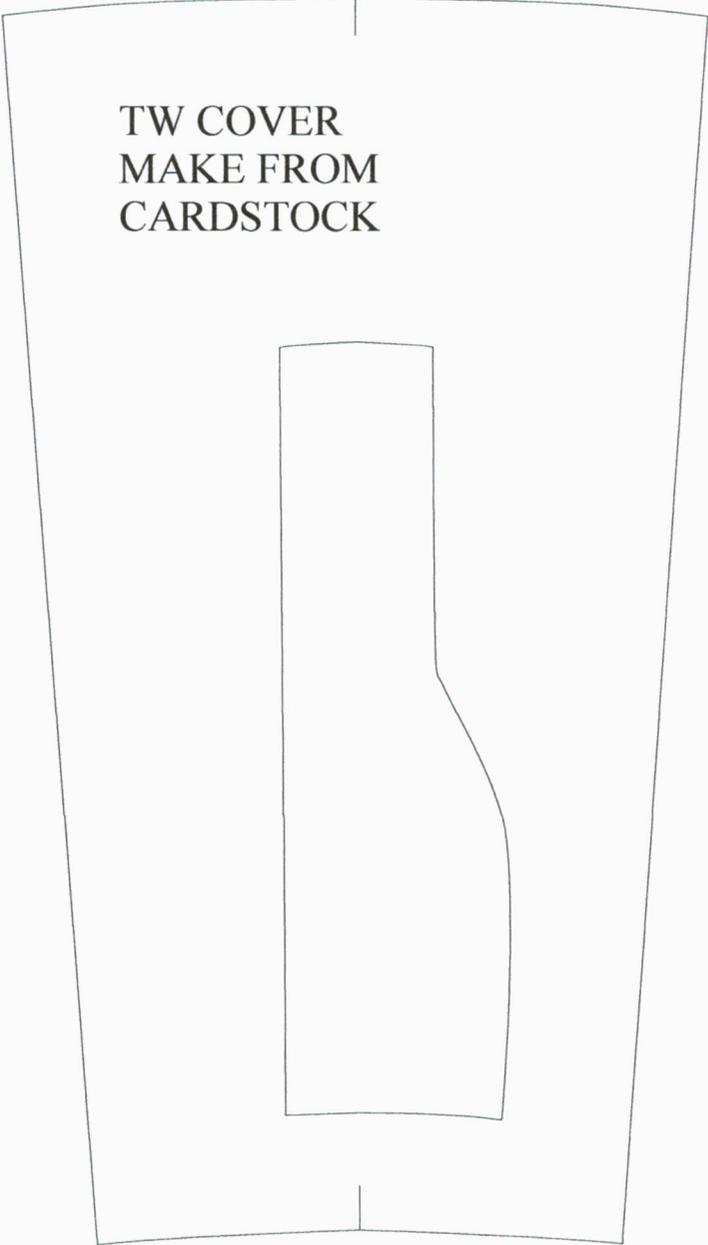




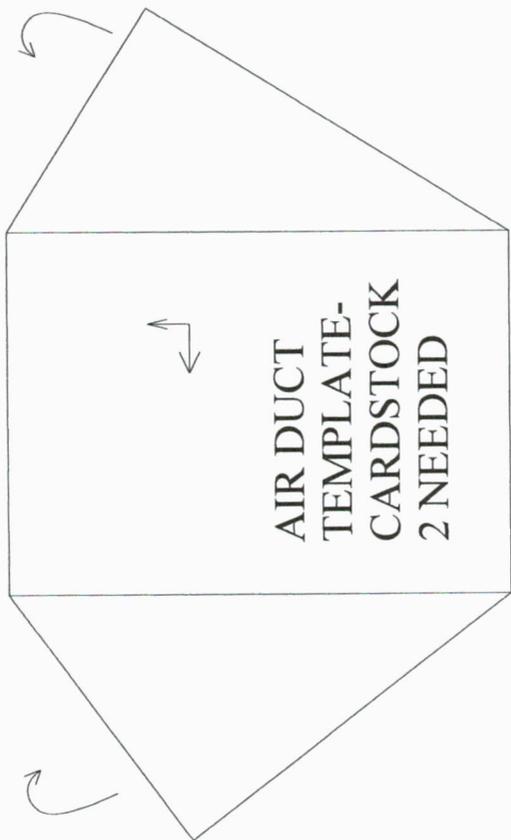
MAIN SPAR DOUBLER
MAKE FROM 1/8" LITE
PLY SCRAP



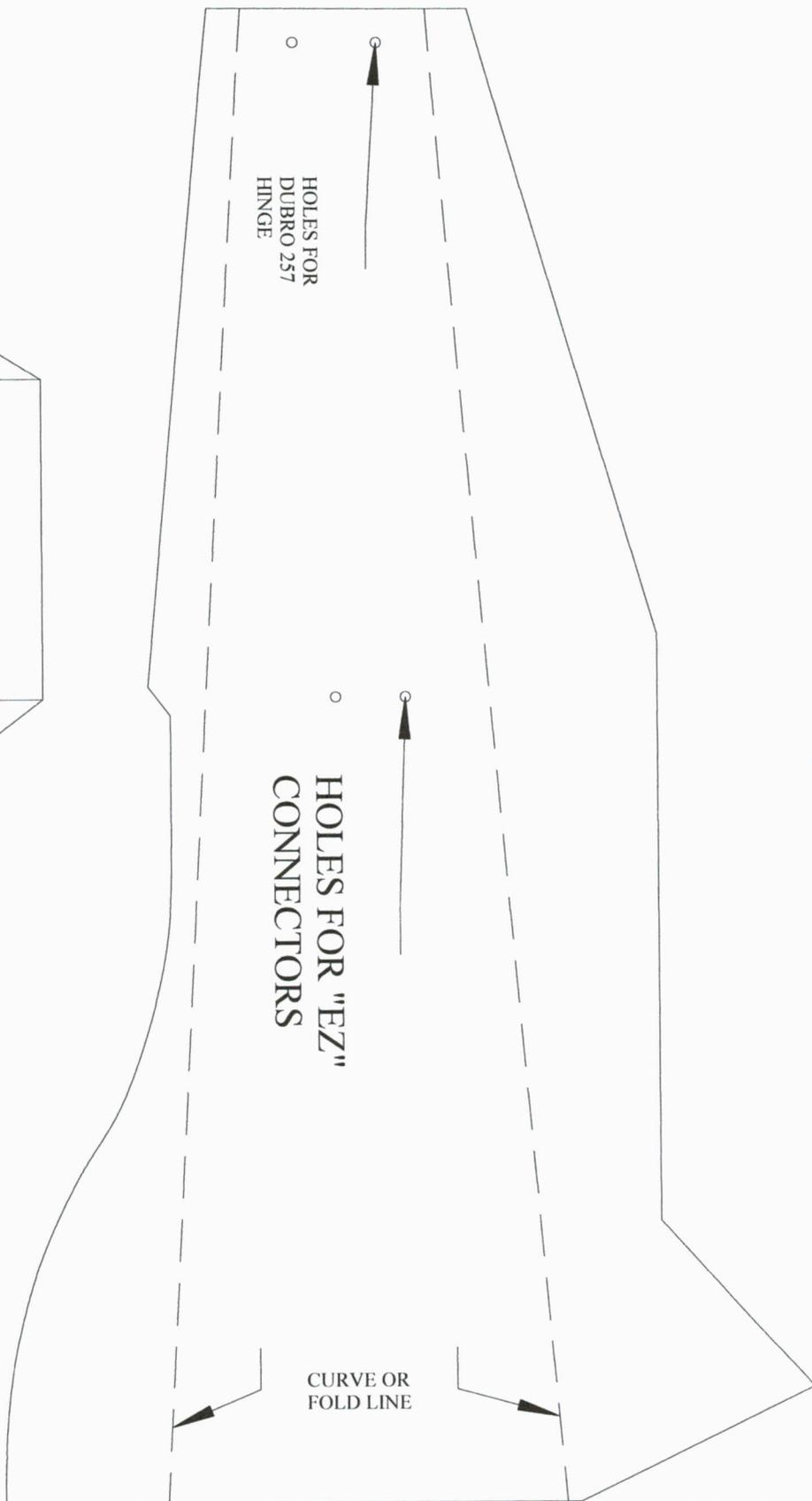
OLEC OUTER
ADD TO BOTH WING HALVES
1/8" Balsa



TW COVER
MAKE FROM
CARDSTOCK



GEAR DOOR
CONNECTOR
1/16" WIRE



GEAR DOOR TEMPLATE
MAKE FROM 2 LAMS OF
1/32" PLASTICE AND
1/32" PLY- (2 NEEDED)