

# *The E-BANSHEE*

*Based on Leon Shulman's Famous 1941 Banshee*



*Cover Photos - Courtesy of the Shulman Family*

<http://shulmanaviation.com/>



*50 " Wingspan  
332 Square Inch Main Wing  
3-Channel Electric Sport, Free Flight, or SAM "Legal" Construction*

## Introduction

This manual is intended to supplement and amplify details provided on the E-Banshee plan sheet. A seasoned model builder should be able to construct the E-Banshee using only the plans and previous experiences in model construction. In providing this supplement, we have assumed that the builder is a novice with little or no prior building experience. We provide suggested construction steps, detailed pictures, and other information that may be useful to the beginner. The details of accessory assemblies, recommended electronics, and hardware and construction materials are described throughout this manual.

In addition to the kit version described herein, a "short kit" is also available. The "short kit" includes the necessary laser cut pieces and machined small parts (user supplies standard balsa strips and hardware available from any good R/C hobby shop). Consult the Appendices for supplemental information and variations.

The E-Banshee kit may be built as a fully radio controlled (R/C) electric powered sport model. In addition, it can also be constructed as a Free-Flight (FF) model, and may also be modified as a SAM (Society of Antique Modelers) "legal" model for SAM competition. Each variation is shown on the plans and is further described herein.

### Recommended Motors:

In keeping with modern construction techniques, the model has been designed to accept any variety of rear-mount brushless motors. The motor may be mounted with a typical aluminum mount (supplied with many motors), or directly from the motor housing rear through the plywood firewall. Motor selection is left to the builder based on individual preferences and availability.

### Servos:

Two mini/micro servos are used for rudder and elevator control. High torque is not required as the control surfaces are not oversized. A good recommended torque would be 18 to 22 oz-in. A short servo arm is necessary (usually supplied with servo). A removable electronics platform assembly is supplied with the kit. We recommend the use of the platform assembly although there are many other ways that the servos may be placed and mounted. Use of the assembly also provides additional support for the motor mount / firewall. The servo mount hole will fit many mini/micro servos perpendicular fuselage. The opening may be opened further to place servos parallel to the fuselage, if desired.

### Battery Compartment:

A large battery compartment is integral to the design. Since the E-Banshee center of gravity (CG) is approximately 1/2 way back from the wing leading edge, and that the fuselage has a long "moment arm", it will be necessary to place the battery as far forward as possible and into the nose section. The builder should modify the "as supplied" parts to provide sufficient air cooling to the battery compartment volume. Cooling flow holes may be placed in the nose block and/or battery compartment sides, with air exit holes placed in the battery compartment hatch cover. There is more than sufficient room in the battery compartment to also place the receiver and motor speed control.

**Kit Contents**

The following table can be used as a reference in identifying each part. The plans identify parts using the same designations as in this table. If not identified with "Sheet #" or as "Loose" - the listed parts are supplied in stick bundles.

<b>Banshee Parts List</b>					
	<b>Part</b>	<b>Size</b>	<b>Plan #</b>	<b>Req/Plane</b>	<b>Sheet #</b>
<b>BODY</b>					
	Crutch		F-1A / F1B	1	P#2
	Pylon		F-2	1	P#7
	Pylon Rear		F-3	1	P#7
	Lower Body		F-4 / F-4 Rear	1	P#2 / P#8
	Side Panel		F-5	2	P#7
	Former		F-6	1	P#8
	Former		F-7	2	P#8
	Former		F-8	1	P#7
	Former		F-9	1	P#7
	Former		F-10	2	P#7
	Former		F-11	2	P#7
	Former		F-12	2	P#8
	Former		F-13	2	P#8
	Former		F-14	1	P#8
	Former		F-15	2	P#7 / P#8
	Floor Mtr Compartment		F-16	1	Loose
	Mtr Mount		F-17	1	Loose
	LG Block		F-18	1	Loose
	Hatch Cover Stop		F-19	1	Loose
	Pylon Angle Block	Triangle Stock	F-20	4	Loose
	Bottom Stringer	1/8X1/4X8-1/2		2	
	Dowel	3/16X2-5/16		2	Loose
	Nose Blocks		F-21	8	P#6
	Hatch Cover	1/16X1-7/16 X5-1/16 Ply	HC	1	Loose
	Body Wing Saddle		WM	2	P#2
	Wire, LG	3/32"		1	Loose
	Tube, Brass	3/32"ID, 1/8"OD		1	Loose
	F-9 Lining	1/8X1/8X8" Hardwood Strip		1	

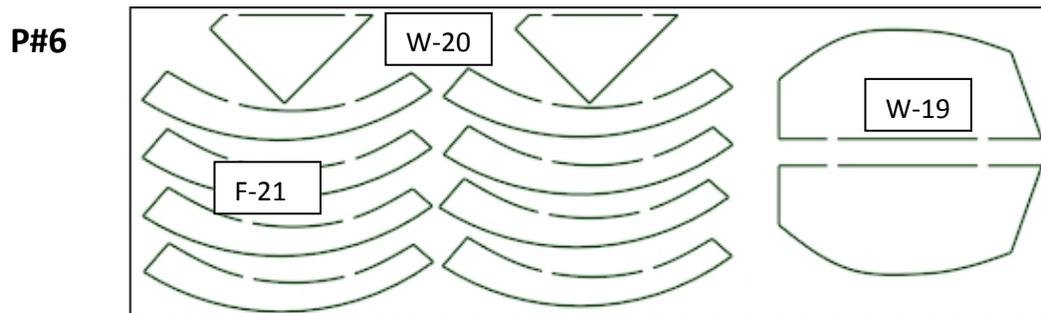
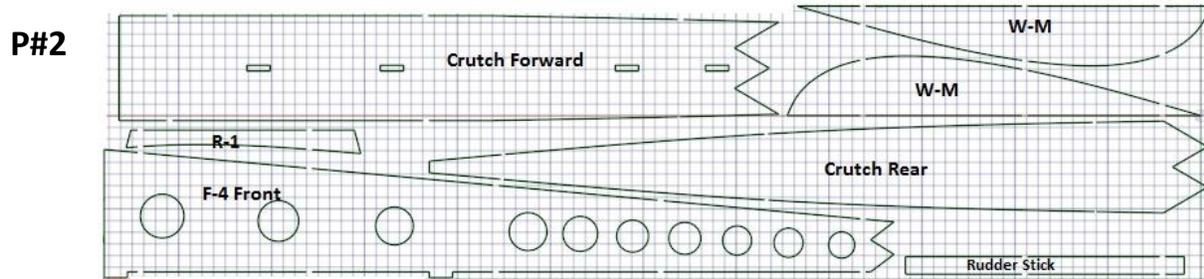
<b>ELEV &amp; RUDDER</b>	Sub-Rudder		E-1	2	Loose
	Elev Tip		E-2	2	Loose
	Elev Rear Center		E-3	1	Loose
	Fin		R-1	1	P#2
	Fin		R-2	1	P#7
<b>RIBS &amp; WINGS</b>					P#8
	W-1		W-1	2	
	W-1A		W-1A	2	P#11
	W-2		W-2	2	P#11
	W-3		W-3	2	P#11
	W-4		W-4	2	P#11
	W-5		W-5	2	P#11
	W-6		W-6	2	P#11
	W-7		W-7	2	P#11
	W-8		W-8	2	P#11
	W-9		W-9	2	P#11
	W-10		W-10	2	P#11
	W-11		W-11	2	P#11
	W-12		W-12	2	P#11
	LE Inner	1/4X1/4X14	W-13	2	
	LE Outer	1/4X1/4X11	W-14	2	
	Trailing Edge Inner	3/16X3/4X14-1/2	W-15	2	
	Trailing Edge Outer	3/16X3/4X12	W-16	2	
	Spar- Inner	1/8X1/4X14	W-17	4	
	Spar- Outer	1/8X1/4X10-1/16	W-18	4	
	Wing Tip		W-19	2	P#6
	Wing Tip Angle Brace		W-20	2	P#6
	Wing Plate		WM-1	2	P#8
	Center Wing Sheet	1/16X1-1/8X9		Pkg of 3 Pcs = 9"	Loose
	Spar Webbing	1/16X3/4X2		24/Pkg	Loose
	Gusset Material	Made From Scrap			
	Polyhedral Inner Brace		W-21	1	Loose
	Polyhedral Outer Brace		W-22	2	Loose
<b>ELEVATOR</b>	Trailing Edge	3/16X1/2X9		2	
	Main Spar	1/4X3/8X22		1	
	Elev Spar & Side	1/4X3/8X12		2	

	Piece				
	LE	1/4X1/4X12		2	
	LE	1/4X1/4X5 ("Filler")		1	
	Center Section	3/8X1/2X3-1/8		1	Loose
	Ribs	1/16X3/8X24		24+ Inch Random Length	
	Ribs	1/8X3/8X20		20+ Inch Random Length	
<b>RUDDER</b>	Strip	1/8X3/8X6		1	P#2
	Strips	1/8X1/4X12		1	
<b>Servo Tray</b>	EM Assembly			1	EM Precut Ply
<b>Hardware</b>	See Note Below *				

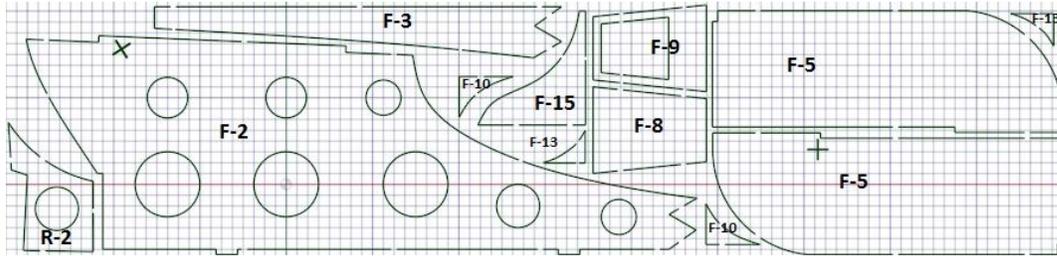
Many parts will be supplied in their laser cut sheets designated by a P#. All others will be "precut loose" in suitable packaging or supplied as bundled "sticks".

\* Supplied hardware may vary slightly from that pictured. Not all hardware will be used, depending on building preferences.

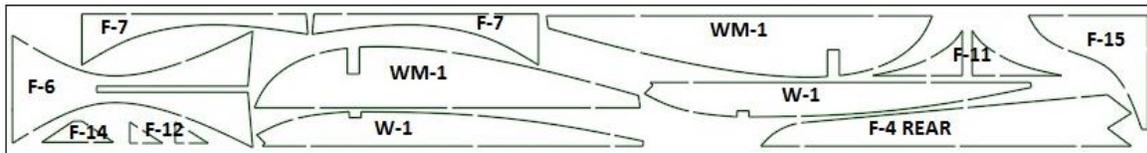
The following are "screen shots" of the various sheet-supplied panels



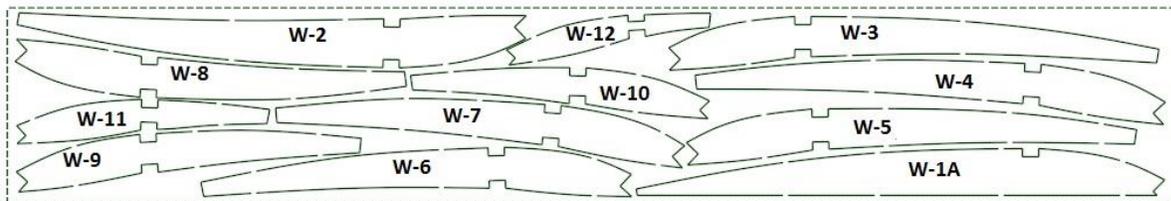
**P#7**



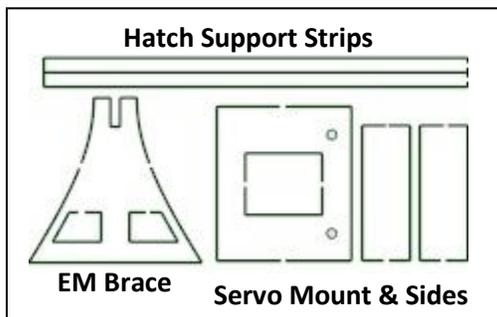
**P#8**



**P#11 (2 Sets Provided)**



**P#12 Electronics / Servo Mount Panel**



**Assembly:**

The following assembly sections are used as a guide and may be performed independently of each other. The plans show sufficient and additional details and directions for stabilizers, rudder, and other assembly pieces that are not described below. Study the plans and plan notes to become familiar with the part layout and structure. Inventory all parts against the supplied parts list. Should there be any missing or defective part, contact MexAir R/C for replacements.

**General Guidelines:**

- When removing laser cut balsa parts from their respective sheets, use a sharp hobby knife or razor blade to score the tabs for clean removal. For plywood sheets, a sharp blade or fine bladed hobby saw may be used - but may not be necessary as the parts can be gently manipulated to break the attachment points. Any browning from the laser may be removed using very fine sandpaper, if desired. The browning does not affect constructability - and is only superficial.
- Work on a flat surface to assure proper alignment of assemblies. Use medium or thick CA for joining all parts, unless otherwise recommended (such as thin CA for wing rib assembly).
- Dry fit and sand parts, if necessary, to obtain tight fits between parts.
- Work surface may be covered with a sheet of thin clear plastic film to prevent CA from sticking directly to work surface.
- Steps may contain useful hints to assist in proper assembly. Read each step - including associated "hints" prior to joining parts.
- Always first drill pilot holes for installation of self tapping screws into plywood and hardwoods.

**A. Wing Assembly: - Inner Wing Assemblies**

On flat surface - Follow plan layout. All gluing at tightly fitted joints can use thin CA, followed by filets of medium or thick CA.

1. Glue W-17 (lower inner spar) to slot of WM-1.
2. Bevel WM-1 top leading edge at 45 degree angle to fit W-13.
3. Glue W-13 to bevel of WM-1 and to leading edge of rib W-1A then Glue W-1A to WM-1.
4. Place scrap balsa spacers under ribs as needed to assure ribs are fully seated in spar when glued in place. Continue adding ribs W-2 through W-8.
5. Glue upper inner spar (W-7) to ribs with slight excess passing over wing C/L.
6. Bevel the bottom of W-1 to tilt approximately 4 degrees for inner polyhedral. The inner angle tool (provided in kit) can be used as a guide. Glue W-1 in place.
7. Layout inner trailing edge W-15 to rib trailing edges and interfaces at WM-1. Bevel / sand rib trailing edges to fit flush with W-15 and WM-1 interface. Minimal sanding should be required to maintain proper wing form. Glue W-15 in place with sufficient excess length toward inner and outer sides. This excess will be trimmed off later when joining wing sections.

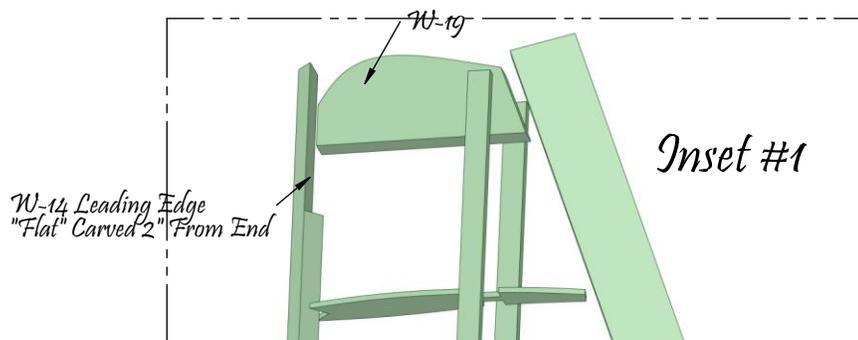
Repeat for second inside wing assembly.

**B. Wing Assembly: - Outer Wing Assemblies**

Assembly is similar to inner wing assembly, with differences noted.

1. Cut a 2" long 45 degree flat on W-14 to fit W-19 and W-20 at the wing tip. See Inset #1 Below.
2. Glue W-19 to W-20.
3. Glue W-19/W-20 to the flat of W-14.
4. Place (do not glue yet) the outside bottom spar (W-18) in position against and at the bottom of W-19. Starting with W-9 eight inches from the inside of W-19, glue W-9 through W-12 approximately 2" apart from each other to W-18 while at the same time gluing rib leading edges to W-14. Assure a tight and proper alignment of the rib leading edge against the 1/4X1/4" leading edge.
5. Glue the outside upper spar (also designated as W-18) to the ribs. Trim/sand the slight excess at the tip of W-18 to fit flush with the inside edge of W-19 when pinched downward on top of the lower spar. While pinching both spars together at W-19 and keeping the bottom spar parallel to the flat surface, glue the upper spar in place on top of the lower spar and to the inside edge of W-19.
6. Layout the outer trailing edge (W-16) to rib trailing edges and W-19. Bevel/sand the trailing edges of W-19 and trailing edges of the ribs to fit flush with W-16. Minimal sanding should be required to get a flush fit.
7. Glue W-16 in place with sufficient excess at both the inner and outer sides (to be trimmed upon final wing assembly).

Repeat for second outside wing assembly.



### C. Final Wing Assembly

This step requires the cutting and removal of thin portions of wing ribs to insert polyhedral braces. Always use a sharp hobby knife or razor blade to remove a minimal amount of material to assure a flush fit.

1. Layout all four wing sections along a straight line at the leading edges. Align adjacent intersecting leading and trailing edges and trim the excess overlaps while leaving enough excess to later bevel the edges for the proper polyhedral fit. Use the plan polyhedral diagrams as a guide.
2. Trim a 1/8" sliver from W-8, adjacent to the spars. Dry-fit the outer polyhedral brace (W-22) into the slot and adjacent to rib W-7. Note that the tip edge of W-22 is less wide than the inside edge of W-22. If necessary, sand the brace at the end for a flush fit with W-7.
3. Lay the inner wing section on a flat surface and position the outer wing tip 3-1/2" off the table. Trim/bevel any excess at the wing outer and inner assembly interfaces so as to properly set the correct polyhedral angle while maintaining a straight leading edge profile. Trim/sand any excess from W-22 where it should fit flush with rib W-9.
4. When satisfied with fitting, glue W-22 in place and glue all interfacing joints while maintaining the proper polyhedral angle.
5. Similar to step 2 above, cut a 1/8" sliver from ribs W-1 and W-1A to fit polyhedral brace W-21. W-21 fits in place at the centerline when the wing halves are joined later. Trim/sand any excess at the interface with W-2 to assure a flush fit. Do not glue W-21 in place at this time.
6. Repeat steps 2 through 5 for the other wing half.
7. Place both wing halves together at the W-1 interfaces. Verify proper bevel when fitted together. Use the polyhedral diagram on the plans and W-21's precut shape as a guide. If necessary, sand the W-1 interface to get the proper angle. The "center angle tool" supplied with the kit can also be used as a guide by simply laying each wing inner section flat and placing the tool against W-1. W-1's side should tilt outward at the top at the same 94 degree angle (4 degrees from vertical) as the edge of the tool.
8. When satisfied with the fit, use slow cure medium or thick CA to join both wing halves together at the W-1 interface. Be sure to also glue W-21 securely in place at this time while maintaining the proper polyhedral angle. Verify proper polyhedral angle prior to glue setting.
9. When all glue has set, invert the wing assembly. Apply thin CA to the seam formed at the WM-1 interface. Allow sufficient wicking of the CA into the joint.
10. Add spar webbing. Trim excess at ends to fit flush with wing ribs. Note that webbing from W-2 to W1-A and between W1-A and W-1 are two separate pieces cut from one web piece. Do not cut through W1-A to fit a single web from W-2 to W-1.
11. Add wing braces as shown on plans. Scrap balsa 1/8" (or thicker) can be used.
12. Add 1/16" top wing sheeting overlapping beyond the edges of W1-A. Sheeting should go from the apex of the leading edge to the back of the trailing edge. The surface profile at leading and trailing edges should be sanded/feathered prior to covering the wing.
13. Trim/sand excesses beyond the wing tips and spar tops/bottoms. Sand the balance of wing assembly and contour to final shape.

D. Fuselage Assembly - the fuselage is assembled using the plan as a guide. The order of assembly can vary depending on the builder. Study the plans and dry-fit parts prior to gluing. We recommend a basic assembly sequence as follows:

1. Prior to removing F-9 from its panel, cut the hardwood strip lining into the four pieces to frame the opening using the plan as a guide. The uppermost piece will provide the ledge that will support the motor mount base (F-16).
2. On a flat surface, glue F2 to F-3. Similarly, glue F-4 to "F-4 rear" and F-1A to F-1B.
3. Align F-2 to crutch F-1 slots.
4. Assemble / glue in place F-6, F-7, F-1, F2, F10, F-12, and F-14 maintaining vertical, horizontal, and perpendicular alignments.
5. Bevel center edge of W-M's to fit flush and at the proper angle when placed on the top of F-6 and F-7's. Assure a flush fit at the pylon interface. Sand interfacing edges as necessary. Glue W-M's in place and wick thin CA into the W-M interfacing joint.
6. Invert the assembly. Similar to step 3 above, add F-4, F-11, and F-13.
7. Add F-8, F-9, and F-5's, to Crutch as shown on plans. Dry-fit F-5's to the F-8 and F-9 sides onto the Crutch holding the assembly together with masking tape. The F-9 hardwood strip lining faces forwards {see plans for details}. Adjust as necessary for proper alignment and fit. Spot glue in place and then remove tape and complete gluing using thin CA, wicked between joints.
8. The front nose piece is made from the eight F-21 nose pieces by first gluing the eight pieces together - side-to-side. Careful alignment must be maintained during gluing. The sides of the glued assembly are then cut/contoured to fit neatly into the forward opening between the perimeter formed by F-5's, F-18, and the forward/bottom of F-16. Work slowly and work carefully to obtain the correct angles for a flush fit to the fuselage sides. Do not remove too much material at any one time - multiple dry-fits may be necessary prior to a satisfactory fit. During finishing, the nose may be permanently glued into place, or screwed on from the outside of the F-5's. Ventilation holes/openings may be made to assist battery compartment cooling.
9. The Battery Compartment Hatch is supported by ply strips (P#12 EM Panel) cut to length. The supplied single larger nylon hinge is used both as the hatch hinge and LG hold-down. Attach with 3 or 4 short self tapping screws. Install the supplied hatch latch at the rear of the hatch using the 4 longer self tapping screws - trim excess length after installation.

#### E. Horizontal Stabilizer and Rudder Assembly

1. Follow the framing details as shown on the plans. For the R/C option, be sure to plan ahead and add a support within the framing to firmly add the control horns at the desired positions. For the elevator horn, cut the desired piece from the scrap of P#6. For the rudder, the forward/lower brace will likely be acceptable to mount a control horn. In general, the pushrods run from the servos and should be straight lengths exiting near the top of F-14. The rudder horn should be placed so there is no bend and the wire can be pulled out completely from the front when using the EM assembly. Similarly, the elevator pushrod wire should be a straight length that can be pulled from the front. In both cases, this will require the use of the supplied "E/Z compression connectors" so the wire will not need a bend and can therefore be pulled straight through to the front. The elevator can use the supplied 180 degree bell crank mounted to the horizontal stabilizer and aligned with the elevator horn and the pushrod from the servo. A scrap piece from P#6 may be placed in the appropriate position in the stabilizer framing. This will allow for the use of the straight pushrod wire.

#### F. Electronics Mount (EM) Assembly (See Inset 2):

The supplied plywood electronics/servo mount is optional, depending on your desired placement of servos and linkages. If used, the motor mount (F-17) is glued to the forward edge of the servo tray assembly and NOT to F-16, F-15, or F-5's . There are many variations for servo placement , depending on the builders preferences and electronics used. If the EM assembly is used, note that the cowl sides F-15's will protrude 1/8th inch further forward and will need additional contouring in the front to match the profile of the F-5's.

The bottom sides of the EM assembly should be beveled at the top to fit at the proper angle when placed against the inner walls of F-5's. To get the proper side placement, simply dry-fit the EM sides and servo tray between the F-5 sides. Bevel and then "spot-glue" the EM sides to the bottom of the servo tray without inadvertently gluing to the F-5 sides. Remove the assembly and complete gluing, including gluing the motor mount F-17 to the face of the assembly.

The supplied plywood servo tray accepts two mini/micro servos with short servo horns (usually provided with the servo). The precut servo tray opening is oriented to fit the servos perpendicular to the crutch. The opening may be modified for servos that will be oriented parallel with the crutch, if desired. The servo tray has pre-cut holes to run 4-40 screws down and into the pre-cut holes of the motor mount plate (F-16). Blind nuts ("T-Nuts") are inserted/glued in place from the bottom of F-16.

The assembly is designed to be removable and slid forward to access the servos, pushrods, and motor mount . The ply brace with control linkage openings fits the lower contour of F-6 and is glued directly to F-6. It should be placed such that the rear edge of the servo tray fits directly under the brace edge. The servo tray assembly is NOT GLUED to the ply brace nor to F-16. The assembly, including motor mount F-17, is held in place by the 4-40 screws and the slip-fit under the ply brace. The servo tray assembly acts as a back-brace for the motor mount F-17.

Following the opening profile of the brace, F-6 openings are made to pass the pushrods through the fuselage and small holes made in the fuselage braces up to the tail end.

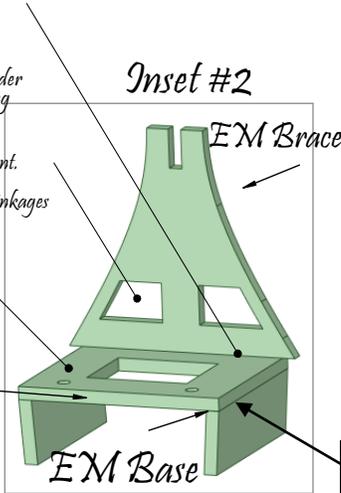
*Do Not Glue Here!  
This acts to hold the  
Servo Tray in Place.*

*Servo Tray Slips Under  
Edge When Inserting  
Electronics Mount*

*EM Brace is Glued directly to F-6 Front.  
Carve Out Openings in F-6 to the  
EM Brace Opening Profile. Control Linkages  
Pass Through These Openings Parallel  
to Fuselage*

*Servo Mount Base  
Use 4-40 Bolts and T-Nuts  
to Mount assembly to Motor  
Mount Plate F-16*

*Glue Motor Mount F-17 to Face  
of Electronics Mount Assembly*



**Servo Mount Base & Sides Dry Fitted Inside F-5 Sides**



**Glue Servo Mount Base To Mount Sides  
at Same Angle as F-5**

**Do Not Glue Assembly To F-5's!**

*Bevel to fit F-5 Sides*



**Motor Mount Glued to Servo  
Mount Assembly**

**Do Not Glue Assembly to  
Fuselage - It Is Intended To Be  
Removable**

**For questions and orders:**

**Contact Us:  
MexAir R/C**

**Ph: 315.532.6826**

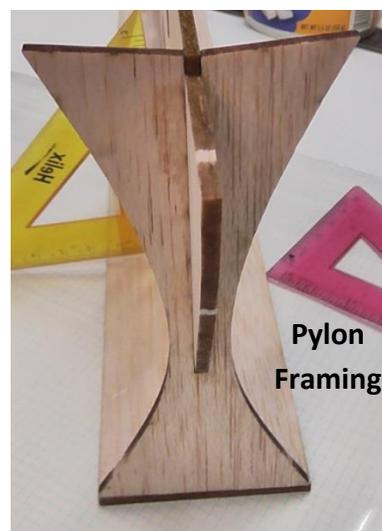
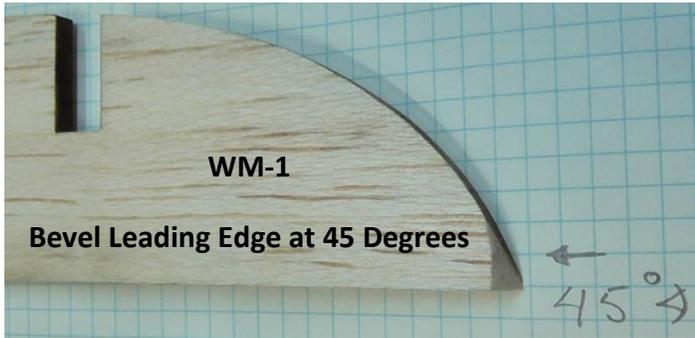
**Web: [www.mexairrc.com](http://www.mexairrc.com)**

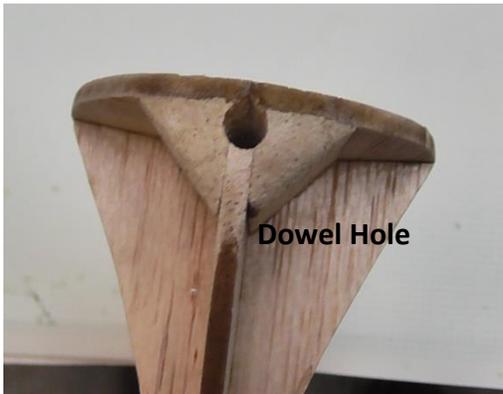
**On-Line Manual found at:  
<http://www.mexairrc.com>**

**Mexico Air, Sea & Land Radio Control Hobbies, LLC  
329 Pople Ridge Road  
Mexico, New York 13114**

**(Yes – There truly is a “Mexico” in New York)**

Appendix 1 – Photos of Some Construction Details







**Slot Cut for Elevator Wire**



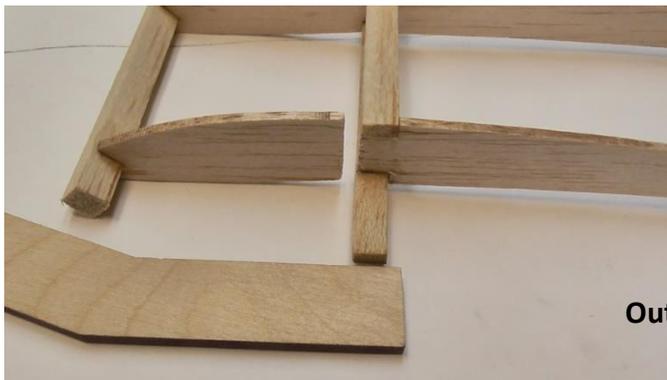
**Horizontal Stabilizer & Elevator Framing**



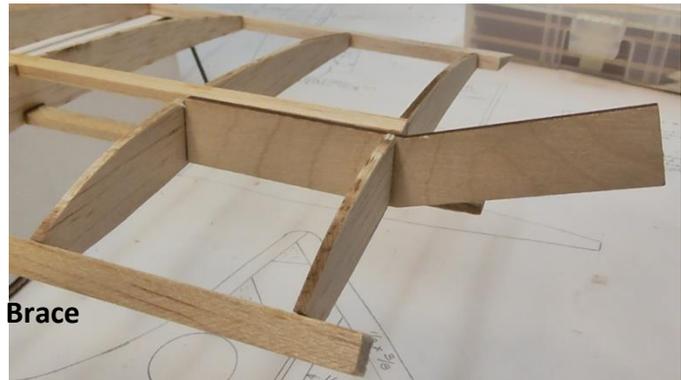
**Mid Wing Brace**



**Dry Fitting Polyhedral Braces**



**Outer Brace**





Servo Lead and Pushrod Openings



Underside - Servo Leads Through Opening



Servo Mount Marked for Servo Openings



Servos With Pushrods Installed

Pushrod Supplied E/Z-Link at Servo Horn End



Pushrod Through Opening



Pushrod Through Forward Hole



Pushrod Through Rear Hole



Motor Mount Holes



Slot in Mounting Plate Cut For Motor Wires

Depending on Motor orientation, wires may be run over the top and then down through the mount base



Motor Screws Mounted From Behind



Bell Crank and elevator horn dry fitting:

The Full Kit is supplied with bell crank and horn packages. The bell crank is mounted inverted (nylon bearing surface faces wood) to gain additional clearance from the surface. Alternately, additional washers / spacers may be used. In addition, the steel 6-32 screw and nut should be replaced with the supplied nylon screw and blind-nut. The assembly does not require the use of the packaged lock washer. When properly installed, the bell crank should move freely.

Appendix 2 – "Plans Screenshot"

Full Size Plans Supplied With Kits - 36" X 48" (3' X 4')

*Leon Shulman's Banshee - Modified for Electric Radio Controlled Flight*  
- The E-Banshee -

*These plans come accompanied with instructions showing additional construction details. Photos are an accurate representation as of the release of these plans and may be updated as necessary to reflect future modifications.*

**Polyhedral Dimensions for SAM Legal Model**  
- Modify Wing Saddle Accordingly -

**Polyhedrals Drawn Not to Scale**  
Polyhedral Below Shown For Electric R/C Sport Flight - Not SAM Legal - See Above Text For SAM Legal Polyhedral

**Horizontal Stabilizer / Elevator Assembly**  
Assemble on a flat surface using plan as a guide. Note that structures and E-3 are temporarily tack glued to stabilizer until final assembly/contouring is complete. Bend elevator leading edge prior to gluing. Permanently glue E-2 to Spar only after inserting elevator control wire.

**Rudder / Vertical Stabilizer Assembly**  
Assemble on a flat surface using plan as a guide. Shape and contour per plan. Add balsa to form. Secure the rudder control horns (one is sufficiently large for horn placement). "Harden" the horn horns using thin CA wicked into the wood.

**From Leon Shulman's Banshee Comes - The E-Banshee -**

Part Name	Quantity	Notes
Wing	2	
Fuselage	1	
Tail	1	
Landing Gear	1	
Motor	1	
Propeller	1	
Battery	1	
Receiver	1	
Transmitter	1	
Antenna	1	
Control Surfaces	1	

## Appendix 3 – Kit Contents:

Part	Size	Plan #	Full Kit Contents	Packaging	Short Kit Contents
Laser Cut Panel			1	P#2	1
Laser Cut Panel			1	P#6	1
Laser Cut Panel			1	P#7	1
Laser Cut Panel			1	P#8	1
Laser Cut Panel			2	P#11	2
Laser Cut Panel			1	P#12 EM Precut Ply	1
Floor Mtr Compartment		F-16	1	Loose	1
Mtr Mount		F-17	1	Loose	1
LG Block		F-18	1	Loose	1
Hatch Cover Stop		F-19	1	Loose	1
Pylon Angle Block	1/2" Triangle Stock	F-20	4	Loose	
Dowel	3/16X2-5/16		2	Loose	
Hatch Cover	1/16X1-7/16 X5-1/16 Ply	HC	1	Loose	1
Sub-Rudder		E-1	2	Loose	2
Elev Tip		E-2	2	Loose	2
Elev Rear Center		E-3	1	Loose	1
Center Wing Sheet	1/16X1-1/8X9		Pkg of 3 Pcs = 9"	Loose	
Spar Webbing	1/16X3/4X2		24/Pkg	Loose	
Polyhedral Inner Brace		W-21	1	Loose	1
Polyhedral Outer Brace		W-22	2	Loose	2
Elev Center Section	3/8X1/2X3-1/8		1	Loose	1
Bottom Stringer	1/8X1/4X8-1/2		2	Stick	
F-9 Lining	1/8X1/8X8" Hardwood Strip		1	Stick	
LE Inner	1/4X1/4X14	W-13	2	Stick	
LE Outer	1/4X1/4X11	W-14	2	Stick	

Trailing Edge Inner	3/16X3/4X14-1/2	W-15	2	Stick	
Trailing Edge Outer	3/16X3/4X12	W-16	2	Stick	
Spar- Inner	1/8X1/4X14	W-17	4	Stick	
Spar- Outer	1/8X1/4X10-1/16	W-18	4	Stick	
Trailing Edge	3/16X1/2X9		2	Stick	
Main Spar	1/4X3/8X22		1	Stick	
Elev Spar & Side Piece	1/4X3/8X12		2	Stick	
LE	1/4X1/4X12		2	Stick	
LE	1/4X1/4X5 ("Filler")		1	Stick	
Ribs	1/16X3/8X24		24+ Inch Random Length	Stick	
Ribs	1/8X3/8X20		20+ Inch Random Length	Stick	
Strips	1/8X1/4X12		1	Stick	
Plans					
Instructions			Obtain On-Line		Obtain On-Line
<b>Hardware</b>					
<b>Pushrods</b>			2		
<b>Bell Crank Set</b>			1		
<b>Control Horn</b>			2		
<b>4-40 Screw Set w/ T-Nuts</b>			2		
<b>Small Hinges</b>			8		
<b>2" Wheel</b>			1		
<b>Wheel Collar</b>			2		
<b>Large Hinge</b>			1		
<b>Hatch Latch</b>			1		
<b>Self Tapping Screws</b>			8		
<b>Soft Wire - Elevators</b>	6"		1		
<b>LG Wire</b>	3/32"		1		
<b>Tube, Brass</b>	3/32"ID, 1/8"OD		1		
<b>Nose Mount Screws</b>			6		

### Representative Hardware Supplied With Full Kit\*



\* Kit hardware may vary in color or configuration

#### **Appendix 4 – Free Flight & SAM Modifications:**

For Free Flight, make the following modifications:

The horizontal and vertical stabilizer and elevator/ rudder assemblies will not be hinged. There is no need to drill holes in the elevator side pieces for the control wire since the elevator is fixed in place. In addition, no slot is required in E-3.

- First, permanently fix R-2, R-1, and all "rudder" sticks to frame the outer perimeter of the vertical stabilizer - use the plan as a guide. Modify the internal stick configuration as desired, keeping sufficient structural strength while minimizing weight where possible.
- Permanently fix E-3 to the to the 1/4 X 3/8" horizontal stabilizer spar.
- Then construct the balance of the horizontal stabilizer by permanently attaching the spar and trailing edges of the "elevator" sections, in addition to eliminating the gap between E-3 and the 1/4 X 3/8" elevator side pieces.
- Add E-2's as shown on the plans.
- Complete the balance of horizontal stabilizer framing and then add the ribs as shown on the plans.

SAM (Society of Antique Modelers) Modifications:

SAM "Legal" requires that certain configurations are consistent with the original aircraft. The E-Banshee, with the exception of the polyhedral angles, meets those criteria. To bring the polyhedral up to SAM requirements, it will be necessary to modify the polyhedral braces and the wing saddle angles as shown on the plan "SAM Legal" insets. The new braces should be made from 1/8" aircraft grade plywood. The wing saddle angle can be modified by any number of means - the easiest being modifying the pylon (F-6 & F-7) angles and the top interface of F-2 prior to gluing the saddle in place.