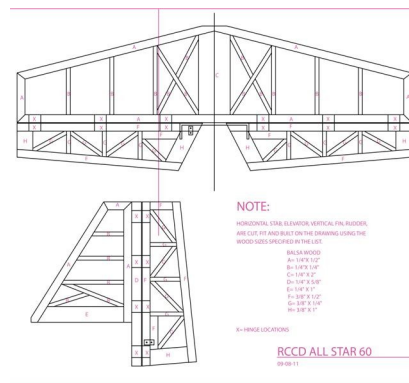


EMPENNAGE (TAIL FEATHERS) CONSTRUCTION

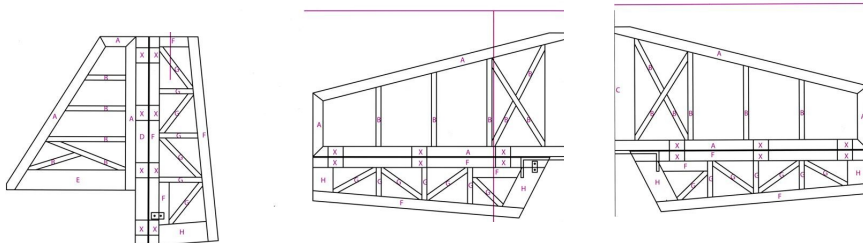
The empennage or tail feathers are built light weight using a built-up truss construction with the horizontal stab and vertical fin covered with 1/16" balsa sheeting for added strength. The control surfaces are covered with only the final covering for lightness.

The build process is a total hand built construction (no laser cut components), utilizing stock size balsa wood sticks and sheets as specified on the plans. They are hand cut to size, assembled and glued over the supplied drawing.



Note: prior to the actual start of the construction of the tail feathers, the supplied plans need to be prepared as follows:

- The supplied color plans consists of; four sheets (11" x 17"), two of which have to be joined together at the center line of the Horizontal Stab to form a complete full scale drawing of the Horizontal Stab. Those two sheets should be carefully aligned to each other by lining up the center line and the actual part lines on one sheet to another, thus forming the complete view of the part.



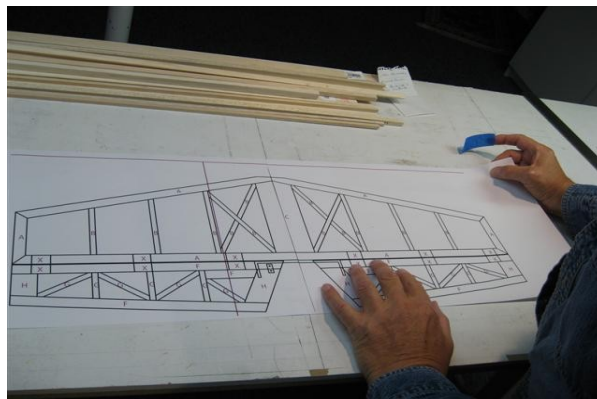
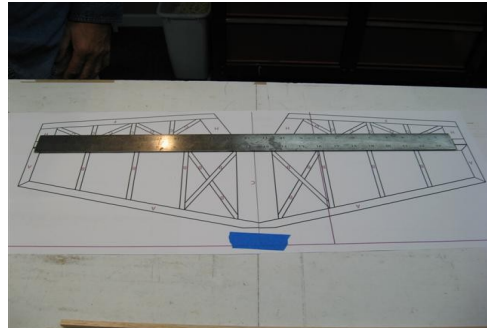
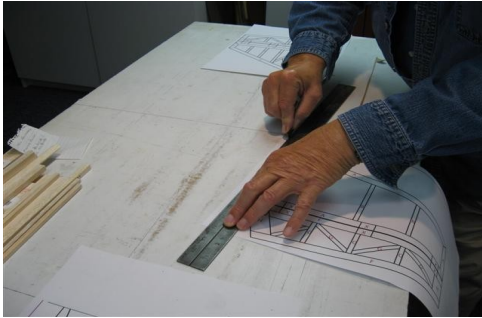
NOTE:
HORIZONTAL STAB, ELEVATOR, VERTICAL FIN, RUDDER,
ARE CUT, FIT AND BUILT ON THE DRAWING USING THE
WOOD SIZES SPECIFIED IN THE LIST.

BALSA WOOD
A=1/4"X1/2"
B=1/4"X1/4"
C=1/4"X2"
D=1/4"X3/8"
E=1/4"X1"
F=3/8"X1/2"
G=3/8"X1/4"
H=3/8"X1"

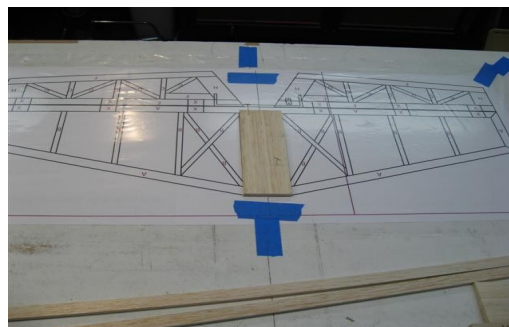
X=HINGE LOCATIONS

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- *Cut the sheet of the right hand view of the Horizontal Stab on the center line of the stab.*
- *Over lay the cut sheet of the right hand view of the Stab and place it on the sheet of the left hand view, lining up the center line and the part lines and tape them together.*



-
- *The assembled plan should be laid flat on the work surface, alignment of the sheets double checked and then taped on your work surface. Prior to building on the assembled plan, cover them with a protective film (wax paper or clear wrap).*

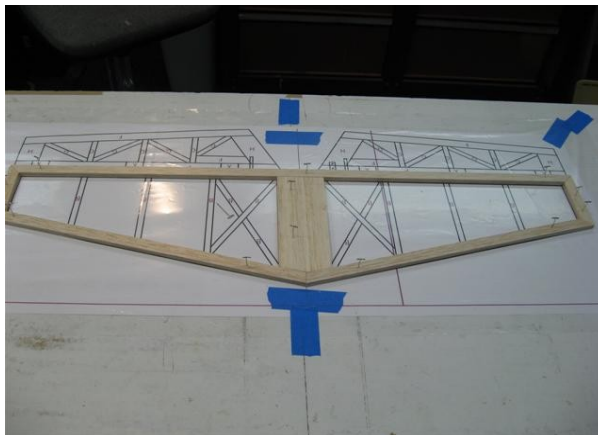


HORIZONTAL STABILIZER CONSTRUCTION:

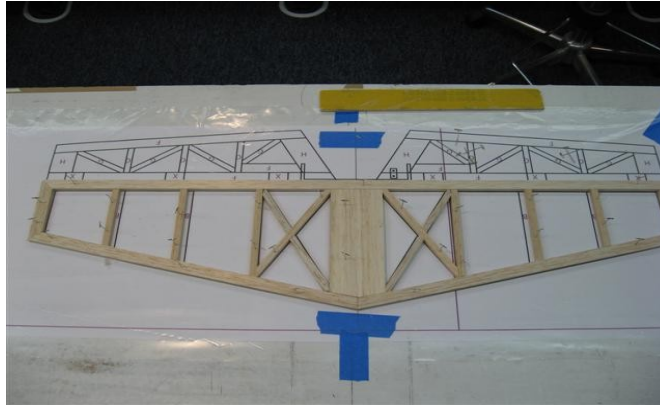
- *Cut, fit and pin the 1/4" x 2" balsa stick (C) to the plan, to form the center support of the horizontal stabilizer.*



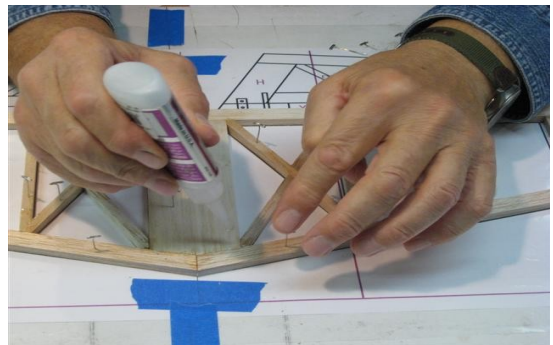
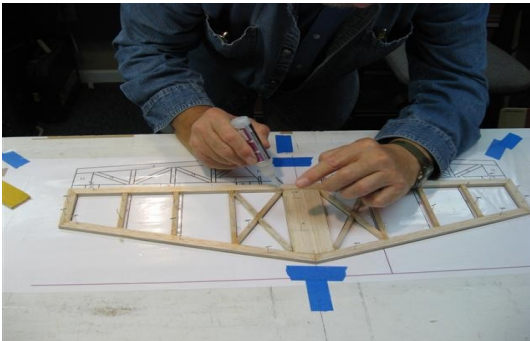
-
- *Cut, fit and pin the 1/4" x 1/2" balsa sticks (A) to the plan, to form the leading edge, the side edges, and the trailing edge of the horizontal stabilizer.*



- *Cut, fit and pin the 1/4" x 1/4" balsa sticks (B) to the plan, to form the trusses of the horizontal stabilizer.*



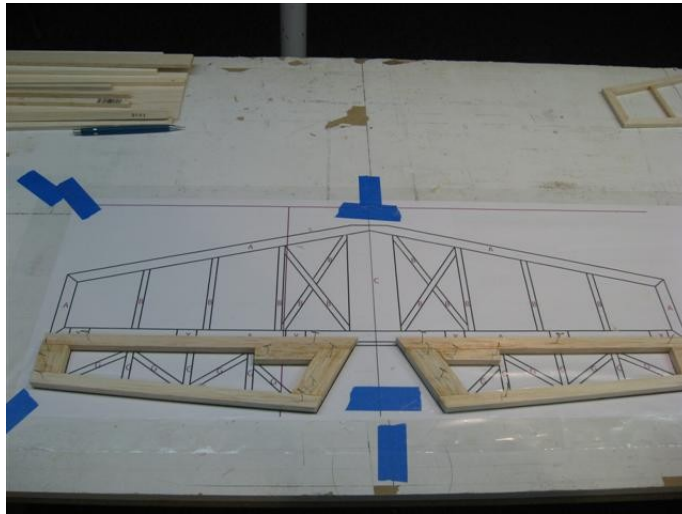
-
- *Glue all the joints.*



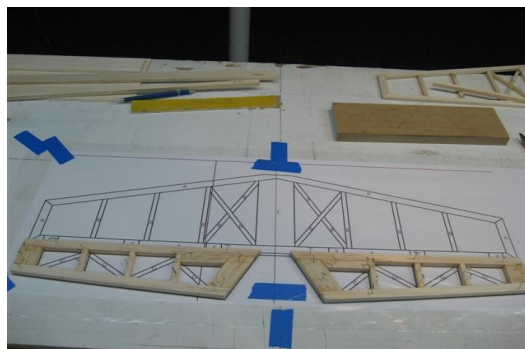
-
- *Remove the assembly from the plan, when the glue dries, and lightly sand both sides of the surfaces flat while laying the assembly flat on the work surface.*
 - *Set the horizontal Stab assembly aside to be sheeted later.*

ELEVATOR CONSTRUCTION BOTH RIGHT & LEFT SIDES:

- *Cut, fit and pin the 3/8" x 1/2" balsa sticks (F) to the plan, to form the leading edge, the control horn/connecting rod support and the trailing edge of the elevators.*
- *Cut, fit and pin the 3/8" x 1" balsa sticks (H) to the plan, to form the four side edges of the elevators.*



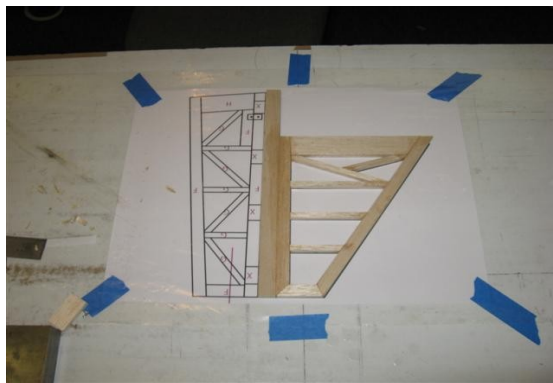
Cut, fit and pin the 3/8" x 1/4" balsa sticks (G) to the plan, to form the trusses of the elevators.



- *Glue all the joints.*
Remove the assembly from the plan when the glue dries, and lightly sand both sides of the surfaces flat while laying the assembly flat on the work surface.
-

VERTICAL FIN CONSTRUCTION:

- *Cut, fit and pin the 1/4" x 1/2" balsa sticks (A) to the plan, to form the leading edge, the top edge and the rear edge support of the vertical fin.*
- *Cut, fit and pin the 1/4" x 1" balsa stick (E) to the plan, to form the bottom edge of the vertical fin.*
- *Cut, fit and pin the 1/4" x 5/8" balsa stick (D) to the plan, to form the trailing edge of the vertical fin that extends down beyond the bottom edge of the vertical fin.*
- *Cut, fit and pin the 1/4" x 1/4" balsa sticks (B) to the plan, to form the trusses of the vertical fin.*

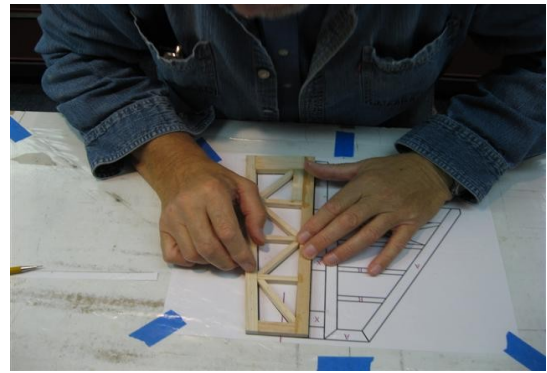


- *Glue all the joints.*
-
- *Remove the assembly from the plan when the glue dries, and lightly sand both sides of the surfaces flat while laying the assembly flat on the work surface.*
 - *Set the vertical fin assembly aside to be sheeted later.*

RUDDER CONSTRUCTION:

- *Cut, fit and pin the 3/8" x 1/2" balsa sticks (F) to the plan, to form the leading edge, the top edge, the control horn support and the trailing edge of the rudder.*

- *Cut, fit and pin the 3/8" x 1" balsa stick (H) to the plan, to form the bottom edge of the rudder.*
- *Cut, fit and pin the 3/8" x 1/4" balsa sticks (G) to the plan, to form the trusses of the rudder.*

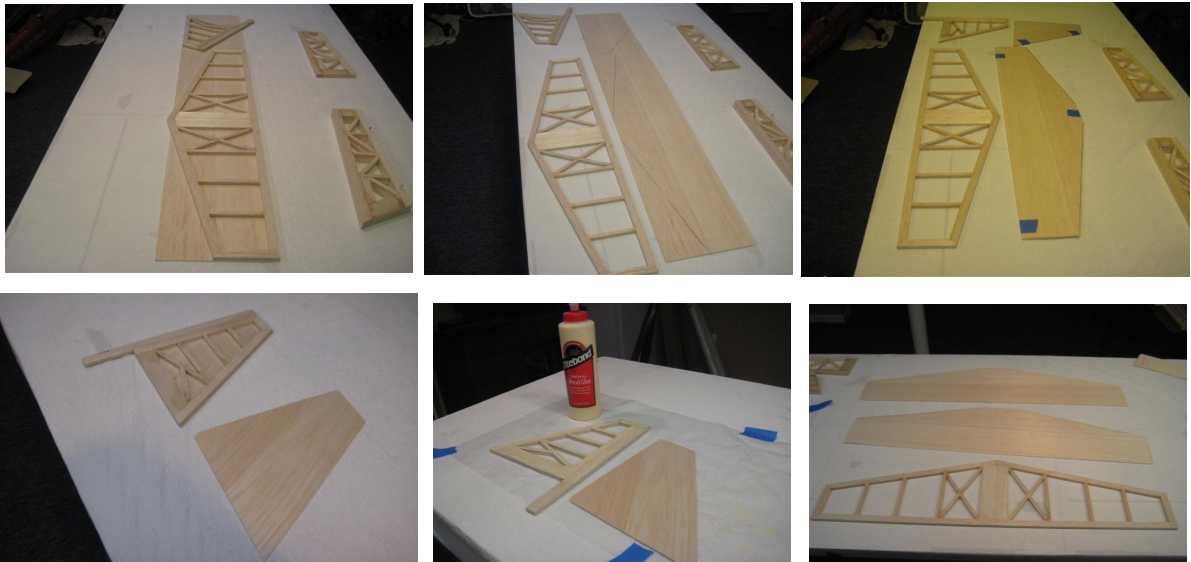


- *Glue all the joints.*
-
- *Remove the assembly from the plan when the glue dries, and lightly sand both sides of the surfaces flat while laying the assembly flat on the work surface.*



SHEETING THE HORIZONTAL STABILIZER AND VERTICAL FIN:

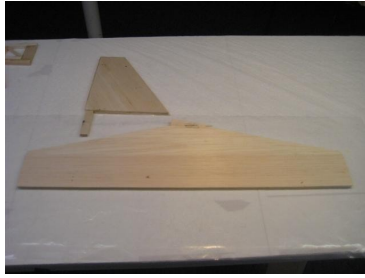
- *Mark and then rough cut, (approx. 1/16" larger) the periphery of the stab and fin on the 1/16" balsa sheets making two pieces each, one to cover each side of the parts. Note, cover only the side surfaces of the vertical fin to the bottom edge of the fin and do not cover the 1/4" x 5/8" extended surface. Some splicing of the 1/16" sheets may be required to cover both sides of both parts.*



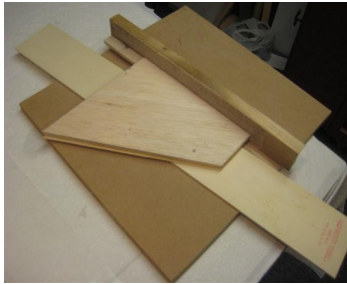
- *Apply wood glue to one side of the stab and fin assemblies and place them on their respective rough cut 1/16" sheets while they lay flat on the work surface. Place a weight on top of the parts to hold them flat on the work surface while the glue dries.*



- *After the glue dries, repeat the process on the opposite side on the stab and fin.*

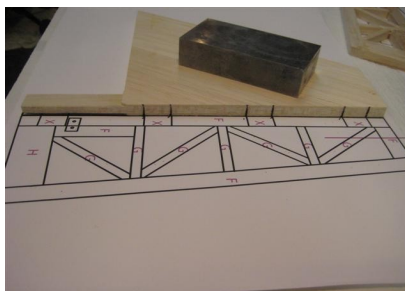
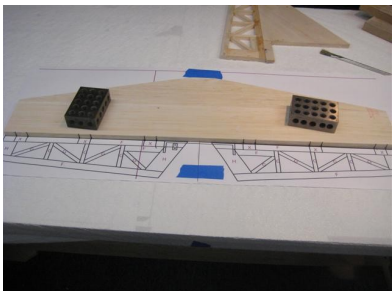


-
- *When both sides of the stab and fin sheeting is dry, sand the 1/16" sheeting flush to the periphery of parts.*

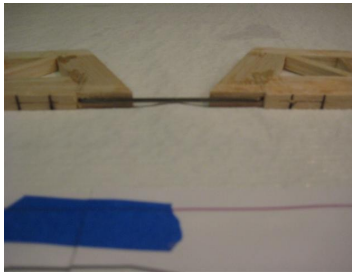


PREPARING & JOINING THE TAIL FEATHERS

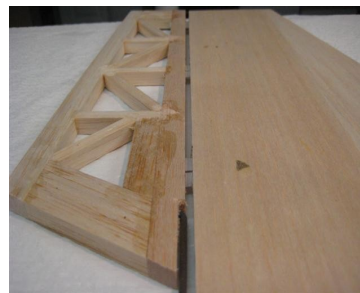
- *Lay the assemblies back in place on their respective views on the plan and mark all the hinge locations (marked "X" on the plans). Lay the actual supplied connecting rod on the elevators and mark the location.*



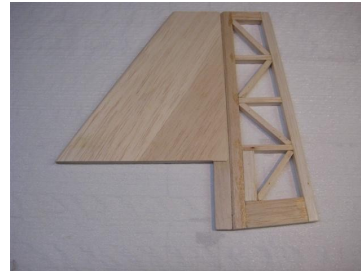
- *Clear the front edge of the elevator to accept the "U" shaped connecting rod and drill 1/8" dia. holes on center in the front edge of the elevator halves. Insert the ends of the connecting rod into the holes and carefully line up the rod and the two halves of the elevator. This will temporarily unite the two halves of the elevator into one unit. Do not glue the connecting rod into the elevators at this time. The connecting rod will be glued in the elevators after the covering is applied and when assembled to the horizontal stabilizer and fuselage.*



-
- *Cut in the slots for the hinges in the marked locations centered on the rear edge of the of the vertical fin and the rear edge of the horizontal stab and the front edge of the rudder and the front edge of the elevator.*



- *Bevel the hinged edges of the tail feathers to create clearances for the flying surface movements.*
- *Temporarily assemble the hinged joints of the tail feathers (do not glue in the hinges) and round over the remaining edges of the periphery of the assemblies.*



- *Set these assemblies aside at this point.*