HOBBY LOBBY
INTERNATIONAL, INC. ®

Telemaster 40 Deluxe

Assembly Manual

Hobby Lobby International
5614 Franklin Pike Circle
Brentwood TN 37027 USA
Phone 866-512-1444

MADE IN THE USA

Terminology used in this manual.
With the precision of laser cut parts and notch and tab construction, the assembly and gluing sequence becomes very important. If components are glued in place to soon, they will not allow enough movement to install other components. When instructed to install a part, do only that. You will be instructed to glue it when it is no longer required to be moveable.

Test Fit:
Test fit and install but do not glue.

Install and glue:
Permanently install the part.

Locate and prepare:
Find the parts requested, you can locate them faster using the parts locator pages at the back of this manual. The parts locator will direct you to the correct sheet number as well as describe the part for easier identification. Most of the parts are supplied still in the sheet. These sheets are called the carrier sheet and the parts are held in the carrier sheet by small breaks in the cutting line. These are called retainer breaks and in most cases the parts can be extricated by simply flexing the carrier sheet and the retainer breaks will release the parts. In harder materials it may be necessary to use your hobby knife to sever the retainer breaks to remove the parts. After removing the parts, a small nub may remain where the retainer break was, this must be removed with a light swipe of sandpaper so it will not interfere with the parts fit.

Adhesives:
There are four primary types of adhesives recommended for constructing your model. They are Cyano-Acrilate (referred to as CA) in all viscosities, Aliphatic Resin Glue (carpenters glue), Polyurethane glue referred to as PU and Epoxy. CA is the primary adhesive to use however there are times when it is not the best choice.
They are:
1. When you need more time to carefully position a part than a fast setting adhesive will allow.

2. When attaching plastic such as a windshield (Use Pacer formula 560 here).

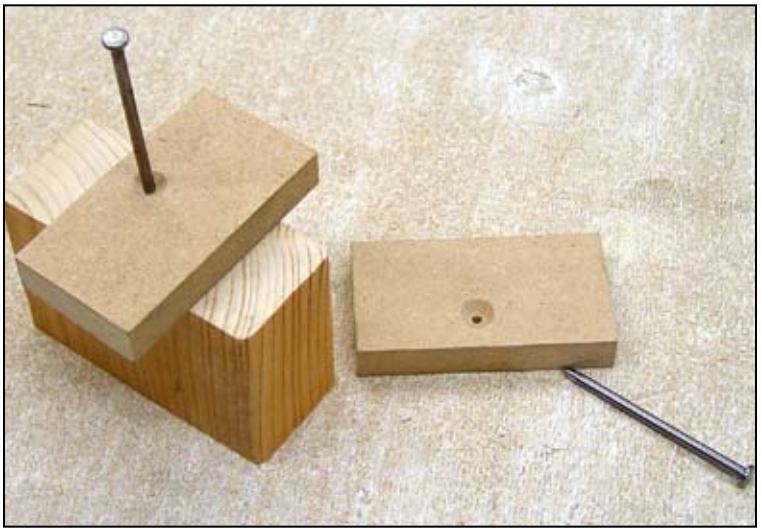
3. When gluing laser cut aircraft grade plywood's. The microwave set adhesives used in aircraft grade plywood does not ablate well under a laser beam. As a result it burns the wood fibers near by leaving a charred edge. Fast setting CA adhesives do not allow time for the adhesive to penetrate this layer of char and bond to the wood fiber underneath. Use a slower setting adhesive such as Aliphatic Resin for maximum strength use Epoxy on aircraft grade ply parts. Lite Ply's do not use this type of adhesive and do not suffer from this problem.

To apply thin CA we recommend the Dave Brown pipets available from Hobby Lobby. Be sure to stretch the end (pull it with a pair of pliers) to a thin applicator tip, as they are not supplied in this configuration.

Your Telemaster kit can be constructed with several options. You can build it as a standard gear (tail dragger), the classic Telemaster stance or a more modern tricycle gear model. You can also build either of these to accommodate the Telemaster Float kit for operation off of water. As you progress through the assembly procedures we will point out the various deviations from the basic standard gear configuration.

Assembling the registration pins.

We will be using two types of pins; registration pins and push pins. **Registration pins** are assembled from two fiber blocks and two specially prepared 2-1/2" nails. **Push pins** will be used to temporarily secure parts to the building board.



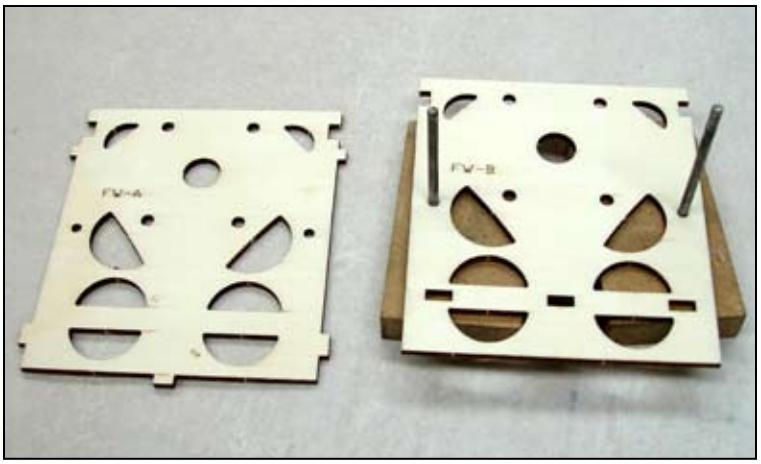
Locate the two pinning blocks supplied. Note that they have a counter sink on one side. This is the side that the nail must be inserted from. Place the block on a piece of scrap wood to prevent the fiber block from tearing out when the nail is driven through. Now hammer the nail through just far enough to exit the block. Next place the block up against the side of the bench or other heavy object and finish installing the nail. When done, the nail head should be in the recess so the block can sit flat on the bench. Repeat this process with the second pinning block assembly.

FUSELAGE ASSEMBLY

☐ 1 Locate the firewall sections, FW-A and FW-B. Place FW-B on the registration pins. Test fit FW-A; make sure you have the correct orientation so the holes line up. Apply thick CA to FW-B and then install FW-A with the labeled side up.

☐ 2 Install four #6-32 blind nuts in the holes provided from the FW-B side.

NOTE: The bolt pattern on the firewall will fit the Hobby Lobby 40 size glow motor mount Cat #MT11022 as well as the electric motor mount supplied.



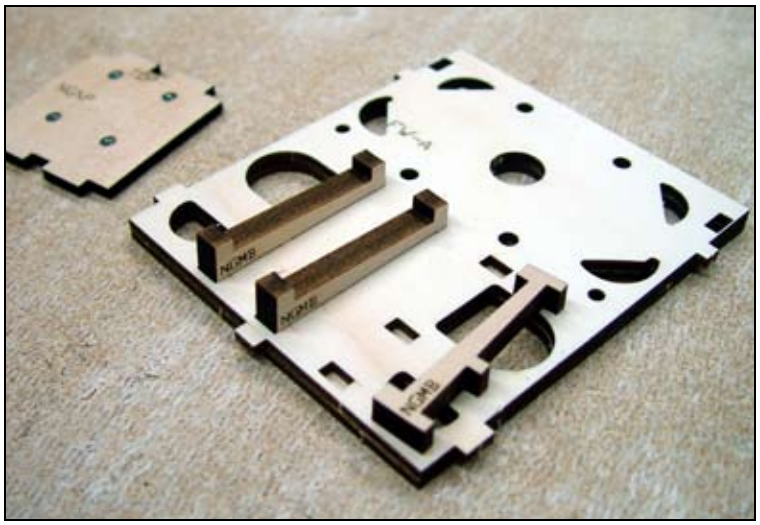
Assembly of the firewall is underway. FW-B has been installed on the pins and now glue will be applied to the top of FW-B and then FW-A will be installed on the pins and pressed into contact with FW-B.

☐ 3 **TRIKE VERSION ONLY**

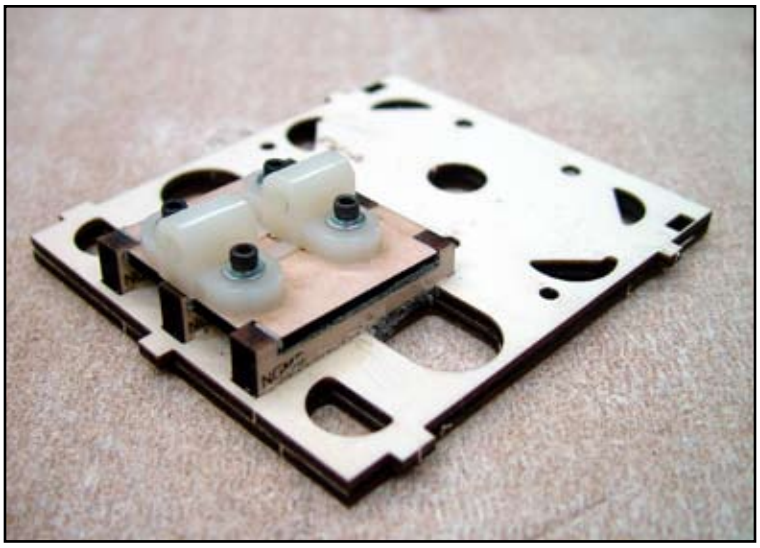
A. Locate NGNP and install four #4-40 blind nuts.

B. Install and glue three NGMB into FW-A in the slots provided. Use Epoxy or PU glue for this.

C. Install and glue NGNP to the three NGMB parts, the blind nuts should be on the side facing FW-A.



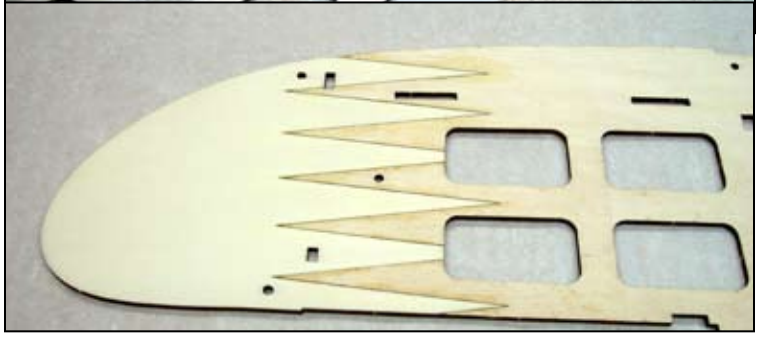
ABOVE: Three nose gear mounting brackets (NGMB) are being installed into the firewall assembly. BELOW: The nose gear nut plate NGNP has been installed onto the three nose gear mounting brackets and the nylon nose gear bearing has been installed.



☐ 4 The fuselage sides are supplied in two sections, FS-A and FS-B, they are joined by a finger joint at the front. Place the parts over a piece of parchment paper and apply thin CA. Wipe off any excess glue and sand out any bumps.

ABOVE: A straight edge is being used to force the two fuselage sections flat against the building board while thin CA is being applied.

BELOW: The finished finger joint.



☐ 5

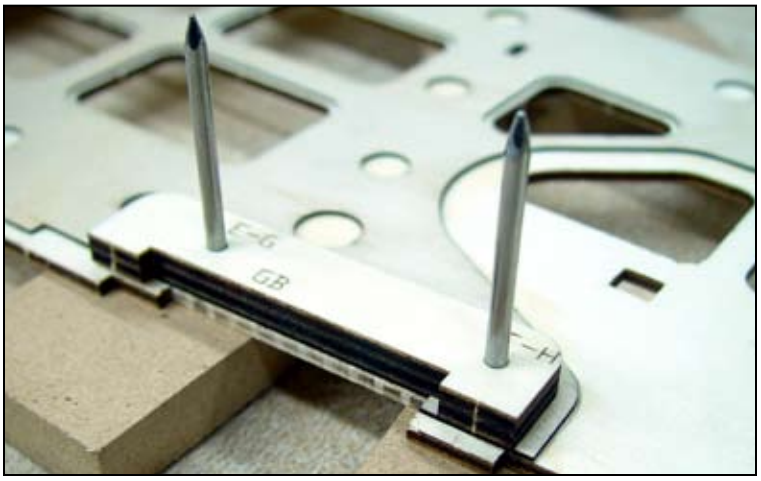
We will now start the fuselage side sub-assemblies; make sure you make a left and a right side. Place one of the fuselage sides on the registration pins using holes A and D. Slide FD down the pins to test fit. When satisfied with the fit, remove FD and apply thick CA to the back (the side facing the FS assembly) and then reinstall it onto the pins and slide it into contact with the FS assembly. Apply even pressure until the CA has cured. Repeat this process for the remaining side and remember to make it a mirror image of the side you just created.

ABOVE: The right fuselage side with a registration pin inserted in holes A and D ready to install the doubler FD.

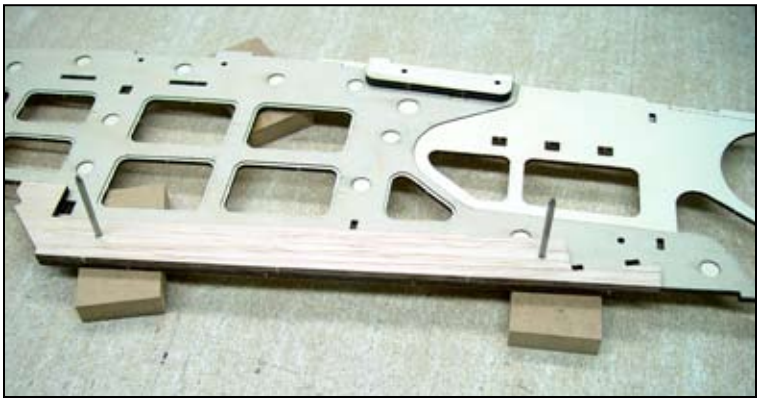
☐ 6 If you are building the trike version, remove the dash cut material by register pin holes G and H.

BELOW: With the registration pins inserted in holes G and H, the gear brace for the trike version is being installed.

☐ 7 Next we will install the mains landing gear brace (GB). If your are building the standard gear version (tail dragger) install the register pins in holes E and F and install GB. If you building the trike version, install the register pins in holes G and H and install GB

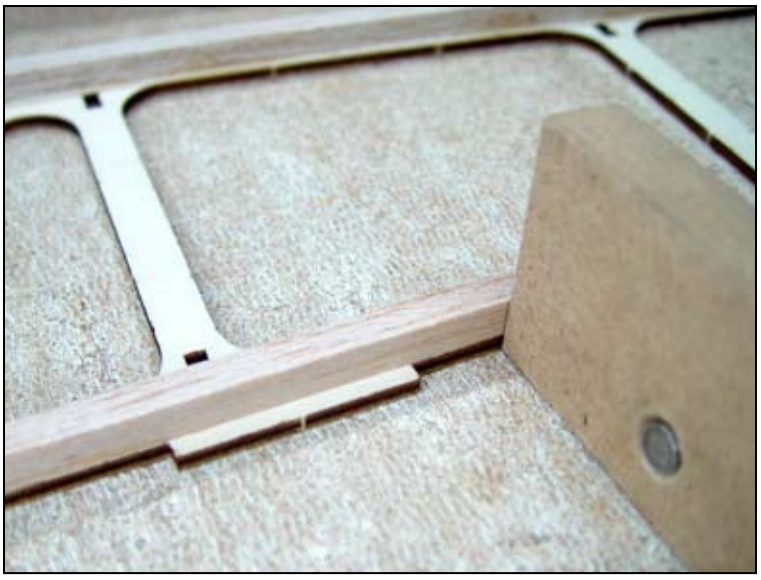


☐ 8 Place the register pins in holes B and C and install and glue the fuselage wing saddle (FWS).



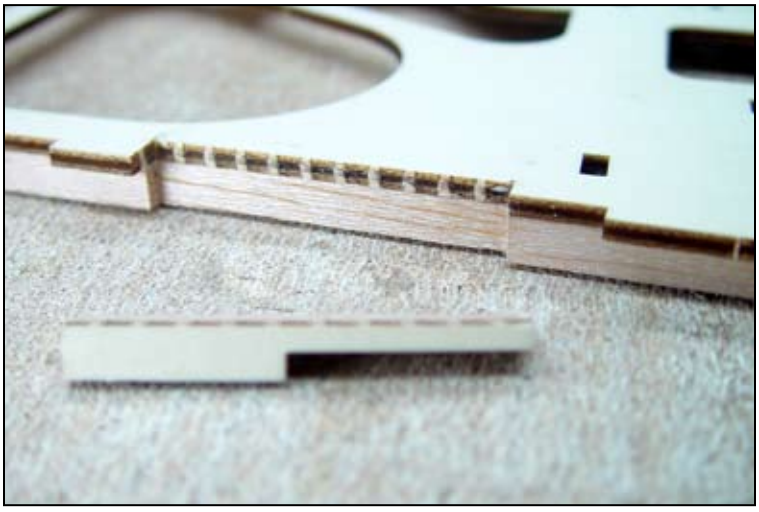
☐ 9 Locate four ¼” x ¼” x 36” sticks, they will be glued into each corner of the fuselage aft section. Start with one stick butted up against FD. Note that the stick must be glued in line with the inner notches. This stick will terminate at and to include F9.

☐ 10 Install the top corner stringer starting at the back of FWS and terminating at and to include F9.

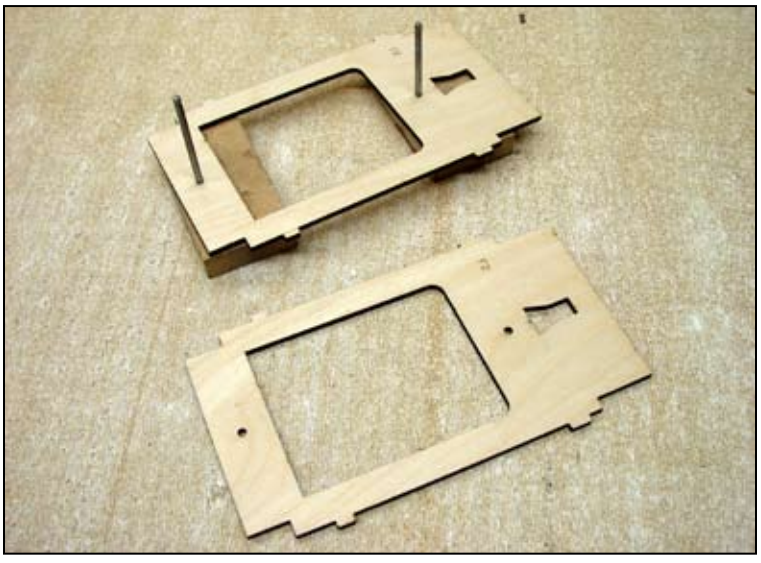


ABOVE: The 1/4” square corner stringers are being installed. One of the pinning blocks is being used to align the stringer with the edge of the fuselage side.

☐ 11 If you plan to use floats you will need to install the float hard point. Remove the dash cut material just behind F4, including a notch in the ¼” square stringer.



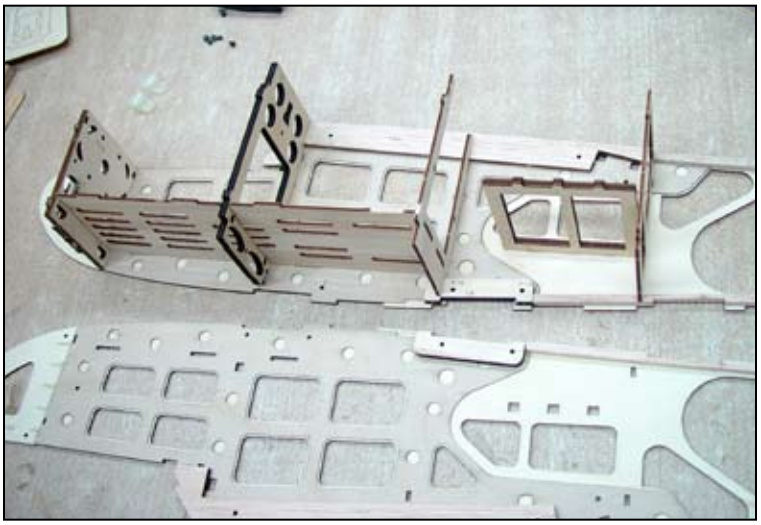
☐ 12 Assemble F2 from two 1/8” ply sections using the register pins.



ABOVE: F2 is being assembled on the registration pins, thick CA is used to laminate the two parts.

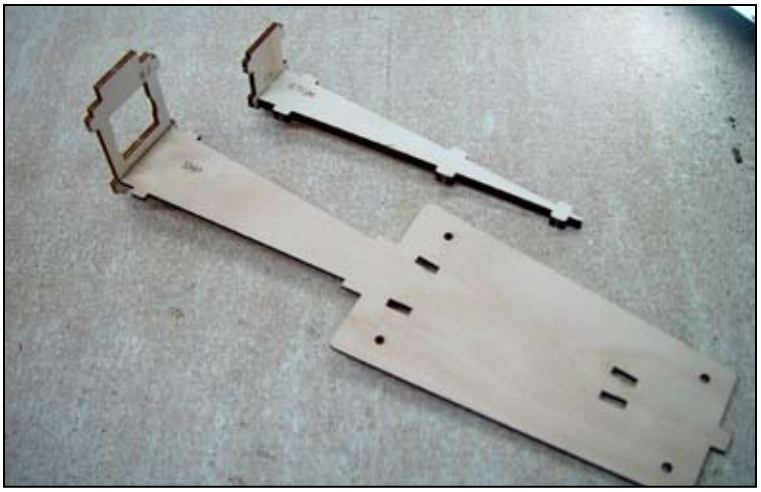
☐ 13 Install two 1/4” x 20 blind nuts into FWBP.

☐ 14 The first glue up of the fuselage will consist of the firewall assembly FW-A&B, the fuselage floor FF, the F2 assembly, F3, F4, the wing bolt plate FWBP, the hatch mounting plate FHMP and the servo tray FST. Use a slow curing adhesive such as aliphatic resin to allow time to work. Glue each part and install it into the right side. Next apply glue to the left side of all these components and install the left side. Place a flat board or other object on this assembly until it has cured. Make sure all tabs are bottomed in the notches and all components fit flush to both sides.



ABOVE: Joining the fuselage side assemblies begins by installing formers, the fuselage floor, wing bolt plate and the forward hatch mounting plate in one side and then applying glue to the top side of these components and installing the remaining fuselage side. In the photo, the wing bolt plate and the forward hatch mounting plate remain to be installed.

☐ 15 Before pulling the tail section together we need to pre-assemble F9 with FTGM and F8 with SMP. Use your square to assure that these components are at 90º to each other.



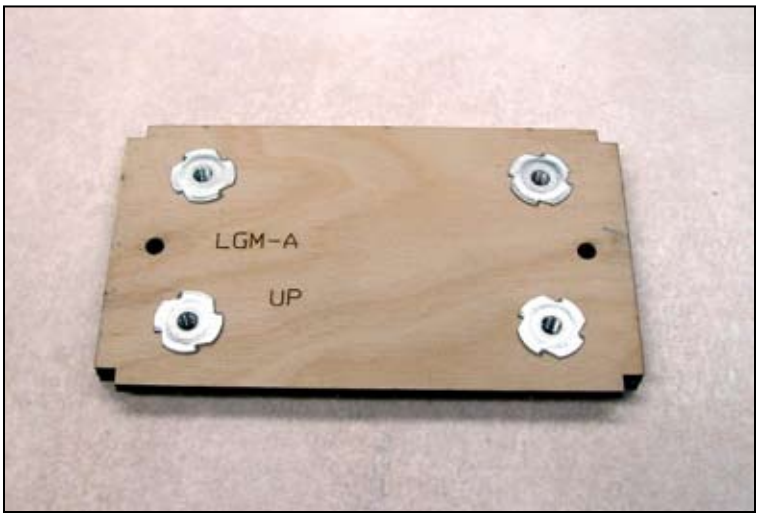
ABOVE: The fuselage tail gear mount (FTGM) has been joined with F9 and the stabilizer mounting plate (SMP) has been joined with F8

☐ 16 Install the F8 and F9 assemblies at the same time. Apply glue to both sides of these assemblies and install. Pulling the tail section together. It is very important that these parts be completely inserted into their respective notches to assure the stabilizer mount will be level. Use clamps, tape or rubber bands to assure these parts fit tightly.

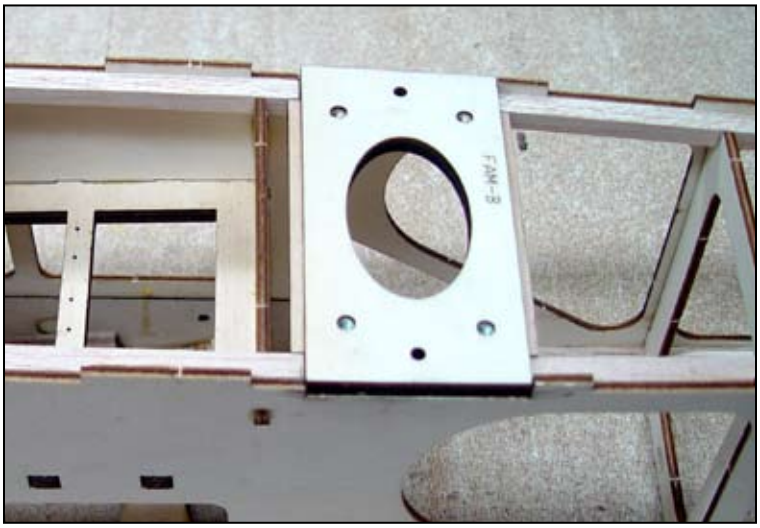
☐ 17 Install and glue F5, F6 and F7. Install each former into the notches on one side and then tip into the other side.

BELOW: The landing gear assembly is ready to be installed into the fuselage. The word UP refers to its position in the fuselage, the nuts must be facing the inside of the fuselage.

☐ 18 Using the registration pins, assemble the landing gear mount from LGM-A and LGM-B. Install four #6-32 blind nuts from the LGM-A side and install and glue it into the fuselage side at GB. Remember this can be positioned at one of two locations, forward for standard gear and aft for trike gear.



☐ 19 If you have opted to install the float hard point, now is the time to install it. Assemble FAM-A and FAM-B using the register pins. Install four #6-32 blind nuts from the FAM-A side. Install and glue it at the location indicated just aft of F4.



☐ 20 Install one ¼”magnet into the hole in FHMP, this will be part of the hatch hold down system. Make the magnet flush with the top of FHMP so the hatch can fit tightly.

☐ 21 Place the remaining magnet near the one installed in FHMP and let them join. Mark the top of the top magnet with a magic marker. Locate the hatch components FHA and two FHA-H. Place the FHA on the bench with the labeled side down and install the remaining magnet in the hole provided with the side you just marked facing down. With the labeled side still facing down, install the two FHA-H rail hooks.

☐ 22 Install and glue the 4” length of 3/8” triangle stock in the notch provided at the base of the windshield. The wide side of the triangle stock will be perpendicular to FHMP.

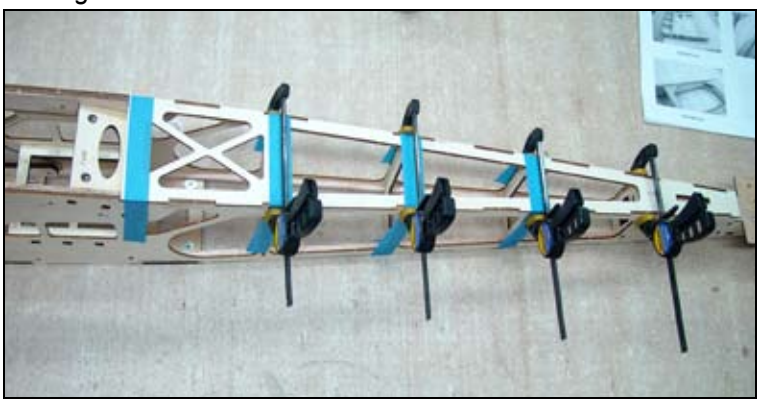
ABOVE: 3/8” Triangle stock installed.

Below: Windshield (WS) has been added.

☐ 23 Install and glue WS, note that a small chamfer must be planed into it at the top where it contacts F2.

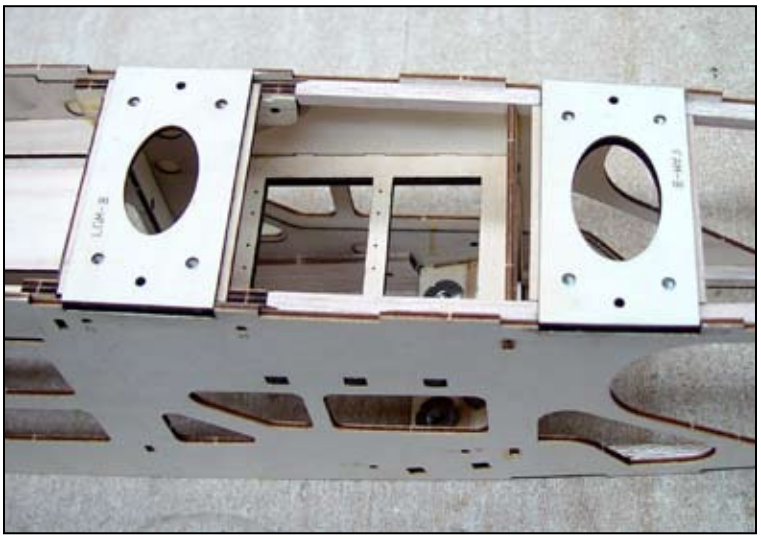
☐ 24 Place the hatch cover assembly onto the fuselage and install and glue the ¾" x 4" triangle stock onto the hatch cover. This should butt snugly up against the 3/8" triangle stock installed in step 21.

BELOW: Clamps and tape secure the sides tightly to the top as the adhesive cures, use this same method when installing the fuselage bottom.



☐ 25 Install and glue the top turtle deck FTD. Use clamps or masking tape to pull the sides snugly against FTD. Start at the tail section and work forward.

☐ 26 If you are building the trike version, install LG-PLUG assembly in the notch where the main gear would have gone. This assembly consists of LG-PLUG-A and LG-PLUG-B and assembles just like the LG assembly did.



ABOVE: Mount for the trike mains on the left and on the right for the optional float kit.

☐ 27 Next we will install the fuselage bottom FB. Note the two dash cut sections in FB, if your building the standard version both of these will remain intact. If you are building the trike version, the forward most dash cut area must be removed to accommodate the gear mounting assembly LGM-B. If you are using the float hard point you will need to remove the aft most dash cut area.

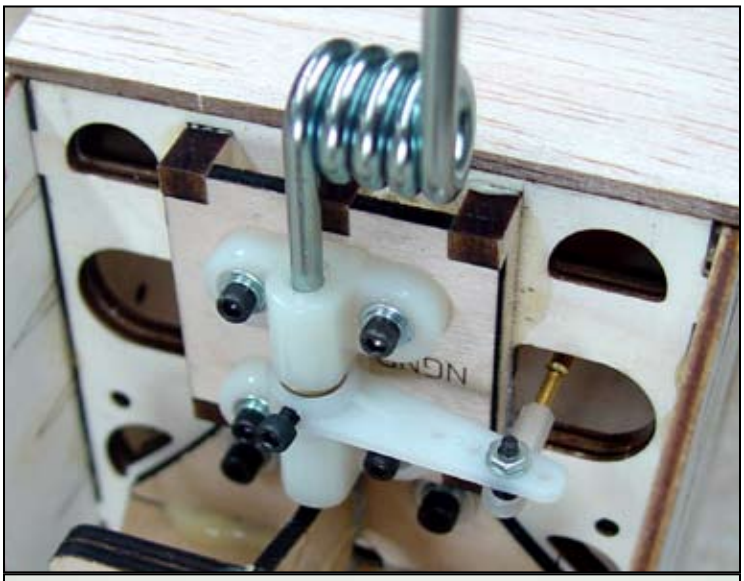
☐ 28 Install and glue one FA to the forward bottom fuselage section just behind the firewall on each side.

BELOW: The forward bottom sheeting BS-A and BS-B has been installed.

☐ 29 Assemble the forward bottom sheeting BS-A and BS-B and glue it into position between the firewall and LGM.

☐ 30 Install and glue the nose filler pieces NF.

☐ 31 If you are building the trike version, now is a good time to install and adjust the nose gear steering cable. Note that a ball link is used on the steering tiller arm.



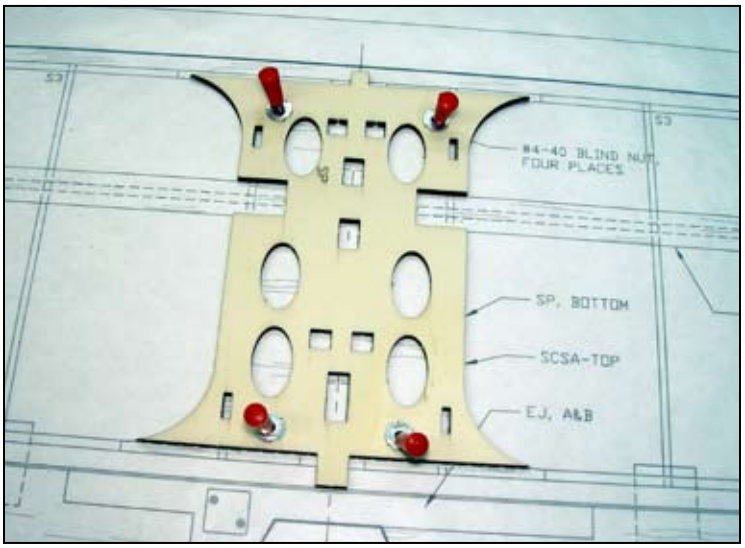
☐ 32 Locate and prepare the five electric motor mount parts, MMA, MMB, MMH, MMV and MMBP. Use Epoxy to or PU to assemble these components. Note that the bolt pattern on the motor mount bolt plate (MMBP) is the same as that used on the Hobby Lobby 40 sized glow motor mount catalog # MT11022. Use the pinning system to assemble the laminated parts MMA and MMB. Install MMH and MMV in the bolt plate MMBP. Next glue the MMA/MMB assembly to MMH and MMV.

☐ 33 Install the motor mount with four #6-32 X 3/8” socket head bolts and flat washers.

This concludes the basic fuselage assembly. You will want to install all radio gear and control linkages before covering the model. Once covered you will not have access to some parts of the model.

STABILIZER ASSEMBLY

☐ 1 Cover the stabilizer plans with parchment or waxed paper. Prepare the stabilizer plate (SP). Install four #4-40 blind nuts into the holes provided. They should be installed from the top. Pin this part in place over the plans. Place the pins through the blind nuts to keep them out of the way.



☐ 2 Iinstall the stabilizer false leading edge (SFLE). Position the tab on SP into the notch in SFLE and glue.

☐ 3 Install the stabilizer 1/8” X 1/2” basswood bottom spar. Place into the notches provided on either side of SP and glue it in place. Align the outer ends of tn
he spar with the plans and pin in place with push pins.

☐ 4 Install and glue the false trailing edge (SFTE) to the aft edge of SP. The center notch will position it correctly.

☐ 5 install and glue two S1 ribs in the notches provided.

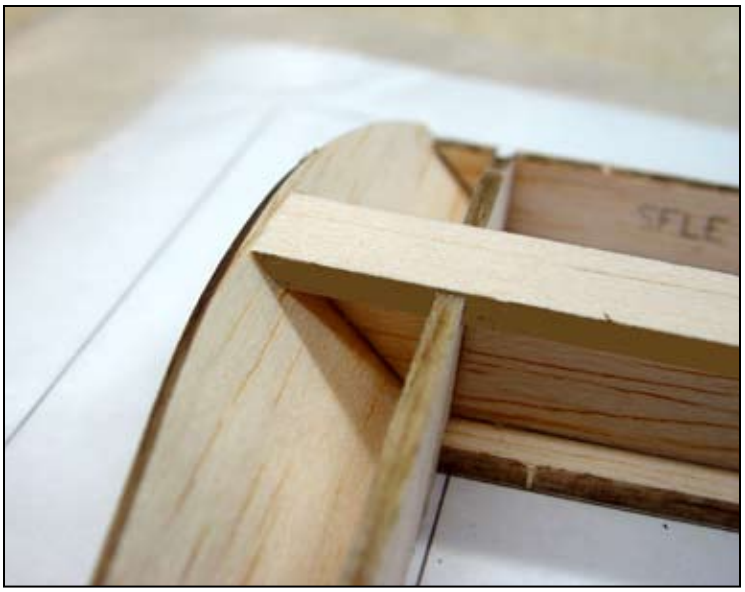
☐ 6 install but do not glue two stabilizer sheer webs (SSW). These will remain loose until all the ribs have been installed.

☐ 7 install but do not glue all remaining stabilizer ribs, S2 through S6.

☐ 8 Before gluing the assembly this far, make sure the bottom spars are aligned with the plans. Begin by gluing each rib and sheer web to the bottom spar. Make sure each rib is bottomed in the sheer web slot. Then glue the false leading and false trailing edges to each rib.

☐ 9 install the stabilizer tips (SWT). They should butt against S6 and against FLE, FTE and SW. Glue these into position.

☐ 10 Install the top spar from 1/8” X 1/2” basswood stock. Taper the ends to butt fit to the stabilizer tips SWT. When your satisfied with the fit of this bevel, glue the top spar into position.



☐ 11 Note that at the center of the false trailing edge and false leading edge there is a low spot. This is to accommodate the center section sheeting. Before installing it you will need to sand the top of the false trailing edge and the false leading flush to and at the same angle as the ribs.

☐ 12 Install and glue the center section top sheeting sections SCS-A and SCS-F. After the glue has cured, remove the dash cut material in the center to allow for installation of the vertical fin.

☐ 13 Install and glue the trailing edge STE. The center notch will determine position.

☐ 14 Install and glue the leading edge SLE. The center notch will determine position.

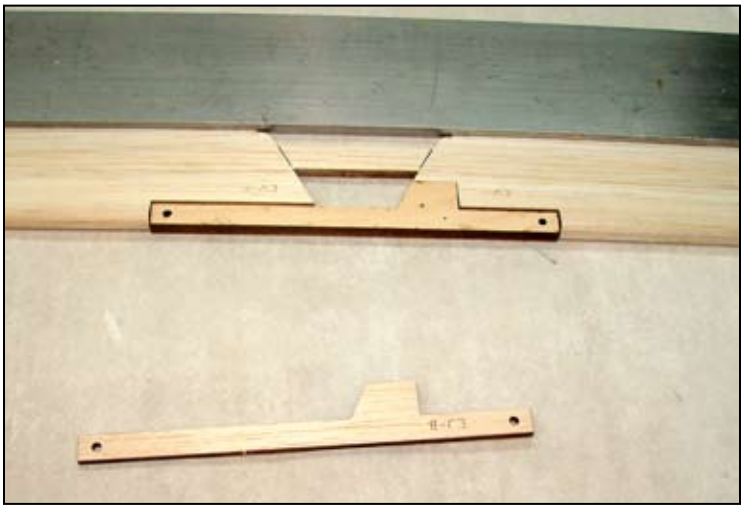
☐ 15 Use a plane and sanding bar to shape the leading and trailing edges of the stabilizer. Sand all surfaces as required in preparation for covering.

☐ 16 Use a hobby knife to continue the hinge slots TE into the false trailing edge SGTE.

This completes the assembly of the stabilizer.

Elevator assembly.

☐ 1 Locate the shaped elevator. Note that the two elevators are connected by a web at the center. Keep this web in place until after installing the elevator joiner parts EJ-A and EJ-B. Place the trailing edge against a straight edge and pin to the workbench. Then install and glue EJ-A and EJ-B. Note that the elevator horn will attach to EJ-A on the elevator half.

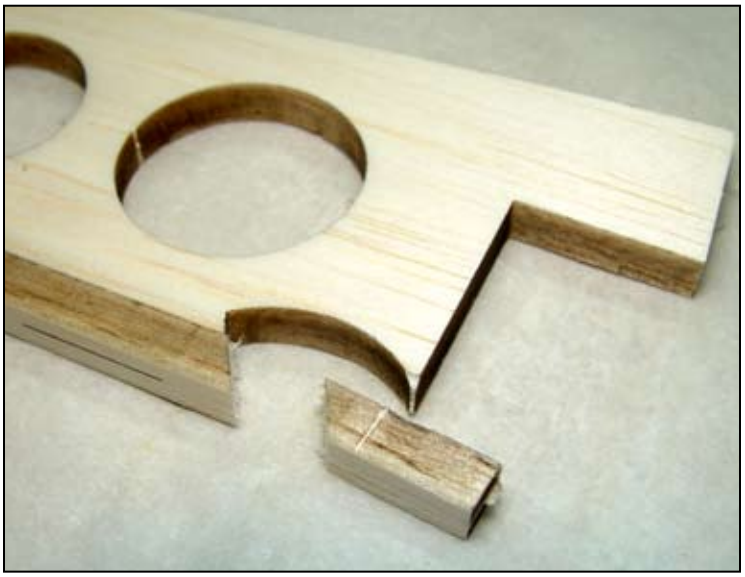


☐ 2 Sand the joiner to contour with the leading edge and then sand the taper at each end to match that of the stabilizer.

This concludes the elevator assembly.

Rudder assembly

☐ 1 Prepare all rudder components, R1, R2, R3-A and two R3-B. Glue R2 to R1; note the correct orientation. The end of R2 marked TOP should be toward the tip of the rudder. After installing it, trim the bottom to match the angle of the stabilizer opening in R1.



☐ 2 R3-A is laminated between too R3-B parts to form both the rudder horn mount and also provide a slot for the tail wheel arm. This will allow the empennage assembly to be removed easily. Glue R3-B to R3-A, then flip the assembly over and glue the remaining R3-B to R3-A. Glue this assembly into the notch provided in R1.

☐ 22 Sand the rudder assembly flat and then round off the trailing edge. Extend the hinge slots into R1 and slightly bevel both sides of the assembly to allow for movement when installed.

This concludes the rudder assembly

Vertical Fin assembly

☐ 1 Laminate the two V1 using the register pins.

☐ 2 Glue V1 to V2 and then glue V3 to V2. Note that the vertical fin assembly is self aligning and need not be built over the plans.

☐ 3 Glue V4 to the V1, V2 and V3 assembly.

☐ 4 Install and glue the cross members, V6 and V7.

☐ 5 Install and glue the trailing edge piece V5, Note the correct orientation of V5. The end marked TOP should be at the tip of the vertical fin.

☐ 6 Trim the bottom of V5 to align with the opening in V1.

☐ 7 Sand this assembly flat, Note that the leading edge will be rounded later after you can mark the location where the dorsal fin VF intersects with it. Extend the hing slots into V4.

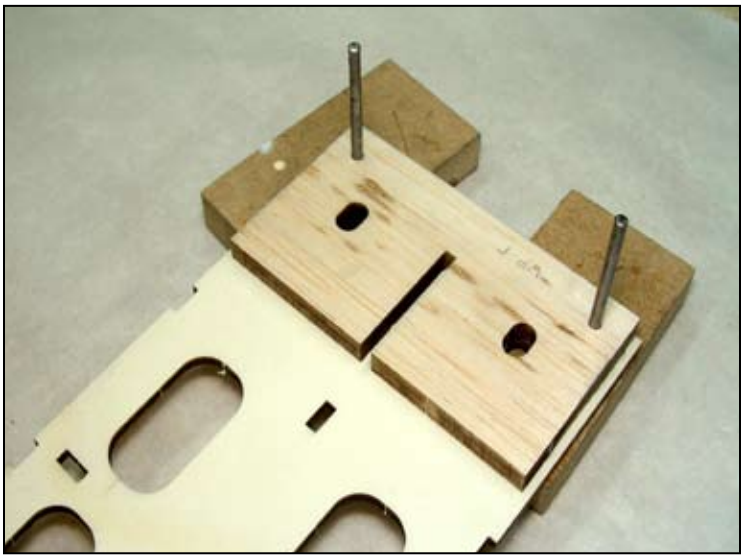
This completes the vertical fin assembly.

Wing joiner platform assembly

☐ 1 Locate and prepare the wing platform WP. Note that the wing platform is not built over the plans.

☐ 2 Use the registration pin system to install WP-F at the aft end of WP.

☐ 3 The wing joiner WJ, must be laminated from two 3/32” ply parts. Use the register pins to glue these two together to form WJ. Place the parts back to back (label out on both pieces) to neutralize any potential warp.



☐ 4 Glue the joiner assembly into WP, use your square to assure that WJ is perfectly perpendicular to WP. As shown in the photo on the next page

☐ 5 Install and glue WP-FLE to the leading edge of WP.

☐ 6 Use Epoxy or thick CA to install and glue WP-1A to WJ, WP and WP-FLE.

☐ 7 Install and glue WP-1B to WJ and WP.

☐ 8 Install WP-B1 and WP-B2.

☐ 9 Install and glue rib WP-2 on both sides of SP.

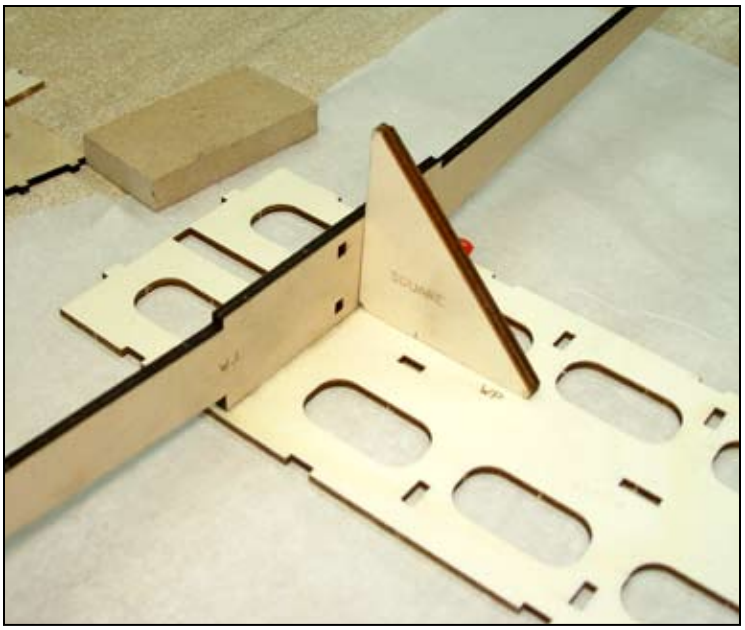
☐ 10 Use one of your register pins to install and glue one WP-DS to the inside of each W1 rib. These will support the 1/8" alignment dowels we will install next.

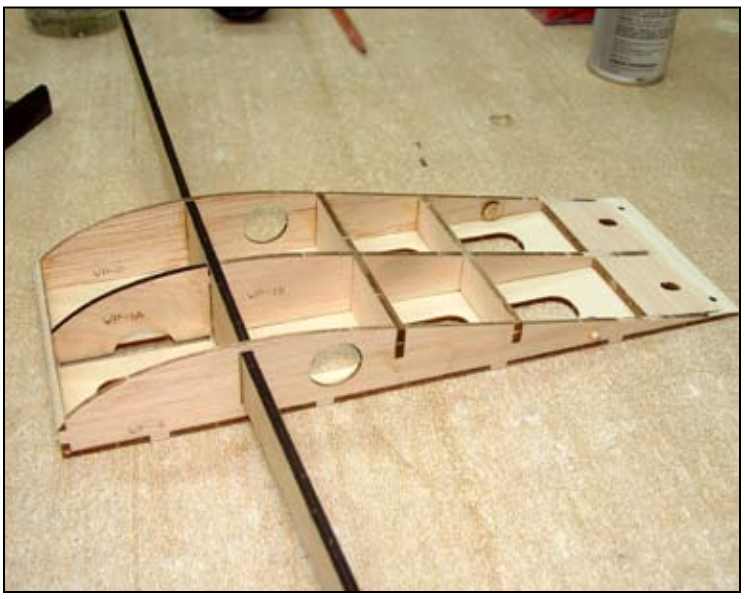
☐ 11 Locate the 1/8" hardwood dowel. Use sandpaper to round off both ends and then cut the ends off to make two 3/8"lengths with rounded ends. Glue the cut ends into the holes at the aft end of the WP-2 ribs. These will insure correct wing alignment when assembling the wing panels.

☐ 12 Use a plane to remove the bulk of material on WP-F to contour with the ribs in preparation for installing the top sheeting.

☐ 13 Plane or sand the false leading edge WP-FLE to contour with the ribs.

☐ 14 Locate and assemble the platform top sheeting sections CS-A, CS-B, CS-C and CS-D. Place CS-A on a piece of parchment paper with the labeled side up. Butt CS-B up against CS-A but with the labeled side down on CS-B. Apply thin CA along the joint and then immediately wipe up any excess with a QUICK wipe with a paper towel. Flip the piece over and wipe off any excess CA on the parchment paper or the back of the assembly. Continue with this process until all sections are joined. By flipping every other section over you are improving the fit between parts, there is a very slight expansion of the kerf from top to bottom and this technique eliminates any gap. Determines the best side of this assembly and sand it while still flat on the bench.





☐ 15 Use the register pins to position the top sheeting and glue it into position. Use tape or weights to hold it in position until the adhesive has set.

☐ 16 Install and glue WP-LE into position on the leading edge.

☐ 17 Plane and sand LE to contour with the ribs.

☐ 18 Locate the wing hook parts, two WH-A and one WH-B. Use the register pins to laminate these parts with one WH-A on either side of WH-B.

☐ 19 Test fit but DO NOT Glue this assembly into the opening provided in WP. When installed correctly it should fit flat on WP. Epoxy this permanently in position After covering the model.

This completes the assembly of the wing platform.

Wing assembly

Lay one of the wing plans on the bench and cover it with a piece of waxed paper. You will be building the wing over the plans. If the plans are slightly out of size, do not be concerned. The paper they are printed on will shrink and stretch with changes in humidity and temperature. The parts will always determine the correct location of components so only use the plans to insure alignment and location of parts. Place the plans with the leading edge of the wing away from the edge of the bench you will be working from. We will begin by building the LEFT wing. Some of the procedures will be reversed for the right wing.

☐ 1 Locate and prepare one false leading edge (FLE).

☐ 2 Align a straight edge with the aft edge of FLE on the plans and secure it in this position with push pins.

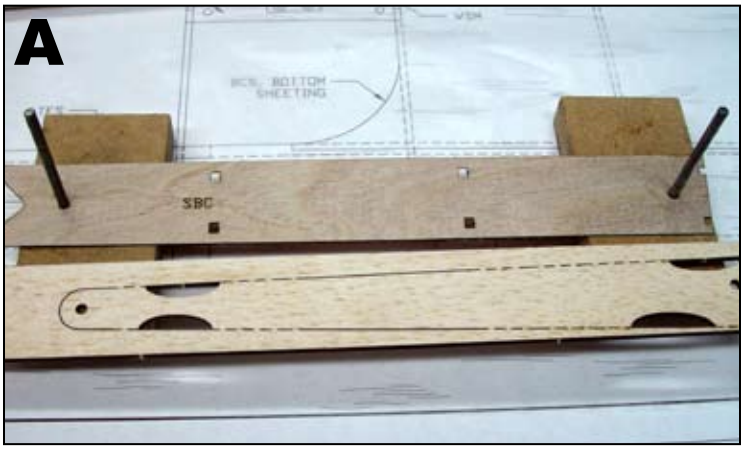
☐ 3 Place FLE in front of the straight edge, note alignment lines at the front of W2 on the plans. Align the notch in FLE with the lines in front of W2 and use a pinning tab to press FLE up against the straight edge. Tack glue the pinning tab to FLE and then secure the tab to the building board with push pins.

☐ 4 Moving down the wing, install a pinning tab in the same manner at every other rib. This will secure the false leading securely to the building board and insure a straight wing. Make sure it is flat on the building board.

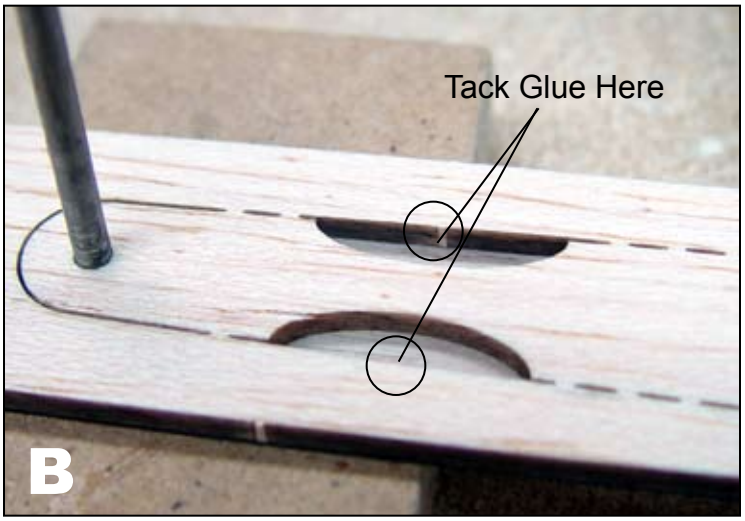
☐ 5 Prepare TE, TES and TESB. Note that the notches in TESB are 1/4” deep on one side and 3/16” deep on the other. Place it on the bench with the 1/4” side facing you. Install and glue TES in the front (3/16”) notches. It is best to place this up against a straight edge to insure that the assembly will be straight.

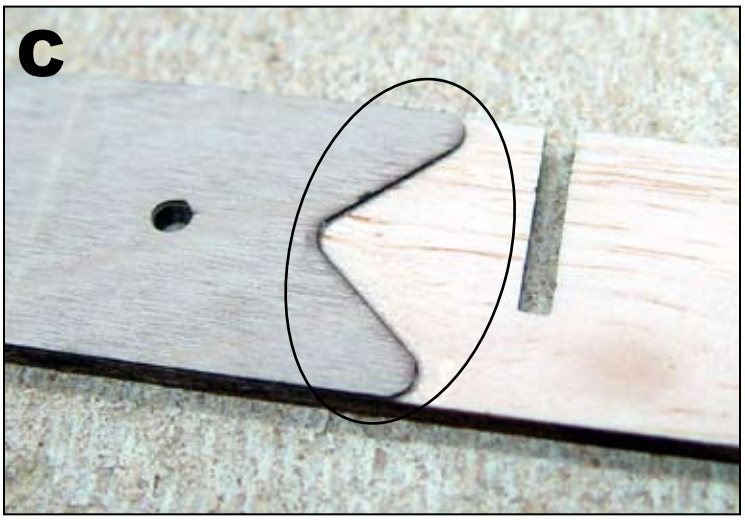
☐ 6 Install TE into the 1/4” notches facing you, this is the trailing edge sub-assembly.

☐ 7 Prepare the top and bottom sheer webs SW-T and SW-B. When preparing the sheer webs, remove the small half ellipse shaped pieces at the root ends but DO NOT remove the dash cut material



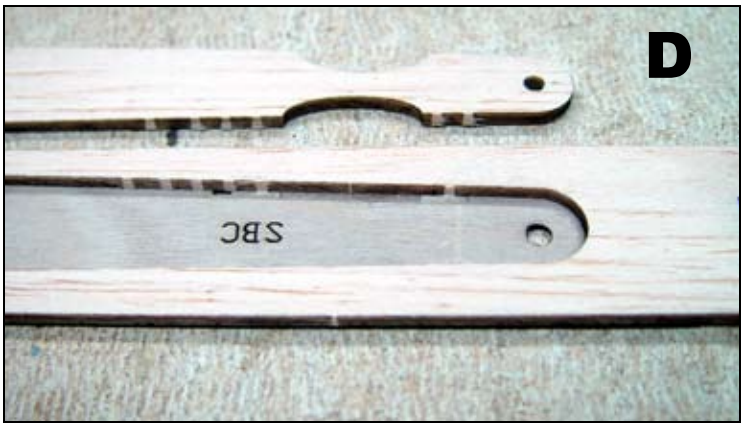
☐ 8 Prepare two spar box caps SBC. We will be gluing these to each sheer web in the following steps. Lay the sheer webs on the bench with the labeled side up. (NOTE: When assembling the right wing you will want these on the bench with the labeled side down.) Place one SBC on the register pins as shown in the same orientation as SW-T. **(Photo A)** Slide SW-T down into contact with SBC. Very lightly, tack glue SW-T to SBC through the small half ellipse openings **(Photo B)**. Tack glue to the outside edge, NOT the inside edge. When cured, carefully remove from the pins and flip the assembly over. Glue SBC to SW-T at the inboard end **(Photo C)** then flip the assembly over with the labeled side up. Carefully cut along the dash cut lines and remove the internal section of balsa from SW-T **(Photo D)**. This will become the socket for the wing joiner and is intentionally a snug fit. If there is any material inside the pocket it must be removed now. Glue SW-T and SBC along the entire inside line of the joiner opening.



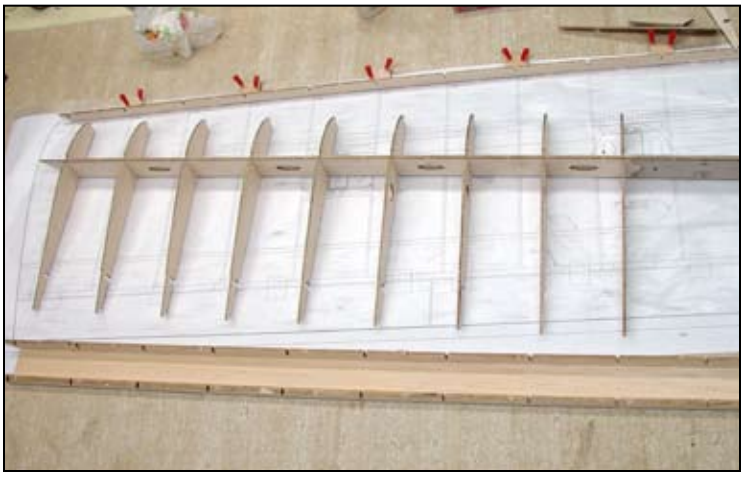


☐ 9 Locate and prepare all wing ribs W1 through W12. Note that W1, W2 and W3 are two piece ribs.

☐ 10 Starting with W4 in the first slot next to SBC, slide each rib into the appropriate notch in SW-B.

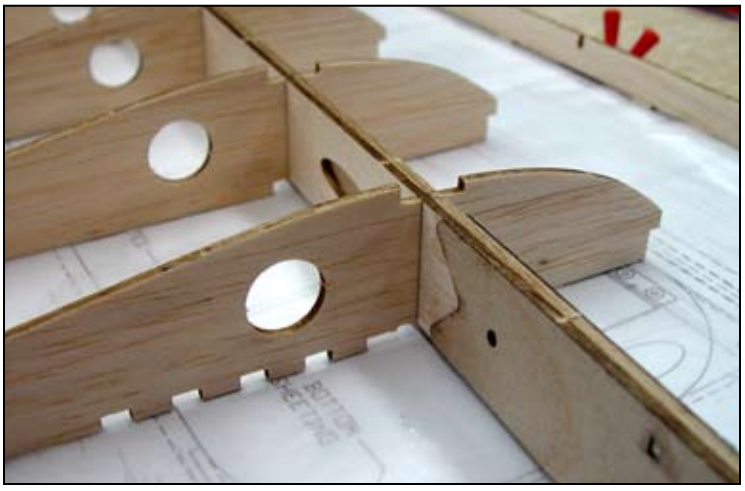


☐ 11 Slide SW-T down into the slots just behind SW-B. Use finesse not force, when everything is lined correctly they will fall in place. IMPORTANT next we will tack glue SW-T and SW-B together capturing all ribs from W4 through W12 however it is very important that SW-T and SW-B be exactly aligned before applying glue. Use finger pressure on top and bottom of the sheer web assembly to assure they are aligned and then glue them. Do not glue the ribs. Use the glue ports (ellipses) cut into each sheer web.



☐ 12 Place each rib into its respective slot in the trailing edge subassembly, do not glue.

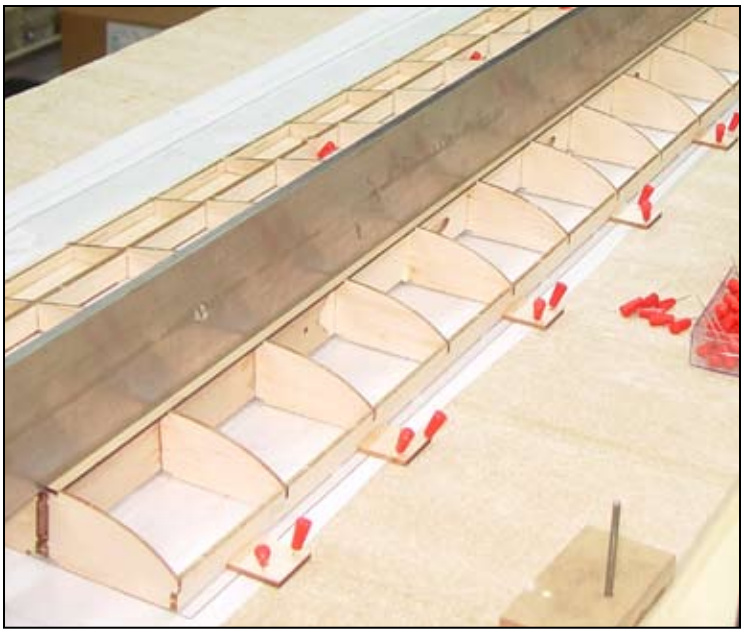
☐ 13 Slide the leading edge tab of each rib into the appropriate notch in FLE. Carefully check the alignment of the assembly and then pin the trailing edge subassembly to the building board.



☐ 14 This much of the wing assembly is now ready fore some glue. Start with the leading edge making sure all parts are bottomed in there notches in FLE.

☐ 15 Install and glue the two-piece ribs, W1, W2 and W3.

☐ 16 Install the top spar flange SPF-T. Apply glue to the top of the sheer webs from W12 to the root and to each rib in the flange notch at the top of each rib. Place SPF-T onto the wing and use a straight edge to weigh it down until it cures. Check that the flange is in good contact with the sheer webs along the entire length.

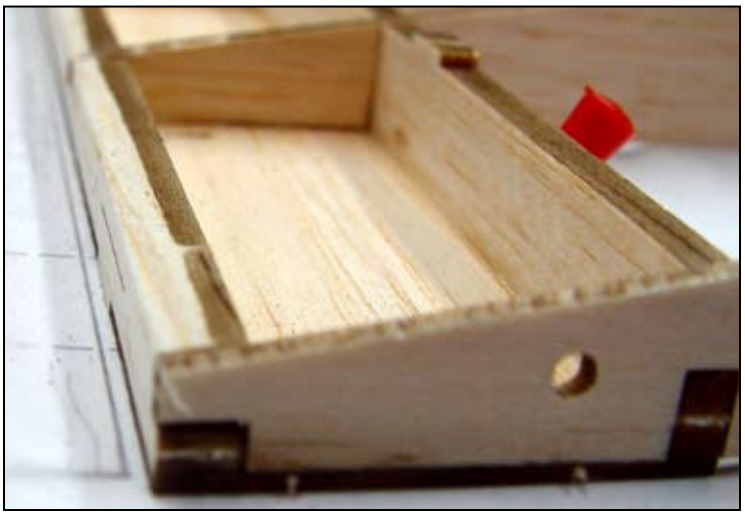


☐ 17 Locate and prepare the wing tip WT. Install and glue WT to W12, FLE, the sheer web assembly, FTE and TE.

☐ 18 Locate and prepare the trailing edge top sheeting TES-T. Plane a small amount of material off of the trailing edge to bring it into contour with the trailing edge of the ribs. Install and glue TES-T in place. Assure that it is bottomed in the notches. Note the indentation at the root end. Remove any glue that squeezes out into this area, as it will interfere with the center sheeting when it is installed later.

☐ 19 Locate the cardboard cable tunnel tube and cut one piece 6-3/8” long and another 9-3/8”long. Install the 9-3/8” section first into the holes in the wing ribs. Push this tube through until it just protrudes through W7. Install the 6-3/8” tube until it just protrudes through W3. Glue both tubes in place.

☐ 20 Locate and prepare one top center section sheeting TCS. Install and glue this part. TCS should butt snugly up against TES-T.



☐ 21 Locate and prepare the top leading edge sheeting LES-T. Before we can install LES-T we will need to sand the top of WT to contour with W-12. Test fit LES-T and sand WT until you gat a good fit. LES-T will lay on top of the top wing spar flange SPF-T and butt up against the ribs at the aft edge of the spar flange. It should also butt up against the center section sheeting TCS.

☐ 22 Use slow CA, apply a liberal bead to the top of the spar flange the full length including the tip section of the sheer webs. We will glue it to the ribs and the leading edge from the bottom later. Install LES-T and hold in place with a straight edge until cured.

☐ 23 Locate and prepare the top wing tip sheeting WTS-T. Install and glue this between the leading and trailing edge sheeting on top of W12 and WT.

☐ 24 Remove the push pins and then remove the wing assembly from the building board. Snap off all the pinning tabs from FLE. Do not be concerned about minor damage to FLE; it will be covered by LE later.

☐ 25 Turn the wing assembly over and install and glue the bottom spar flange SPF-B in the same manner as you did the top spar flange.

☐ 26 From the bottom of the wing assembly, glue the leading edge sheeting to each rib and the leading edge. This is easily done by applying finger pressure to the sheeting at each rib and applying thin CA. Start at the center of the wing and work out in one direction to the end. Then return to the center and complete the process in the other direction.

☐ 27 Locate and prepare two wing servo mounts WSM and four wing servo mount screw rails, part B. Use the pin register system to install two WSMB screw rails to the back of each servo mount WSM.

☐ 29 Install and glue one servo mount assembly into position between W3 and W4. The screw rails should be facing in.

☐ 30 Install and glue the remaining servo mount assembly into position between W7 and W8.

☐ 31 Locate and install the bottom center section sheeting BCS.

☐ 32 Install and glue two wing sheeting gussets WGS. These will install at the wing tip at the corners of W12 and TES and W12 and the bottom spar flange SPF-B. These will support the wing tip sheeting and should be glued in flush with the bottom of W12.

☐ 34 Install and glue the bottom wing tip sheeting, WTS-B.

☐ 35 Install and glue the bottom leading edge sheeting BLE.

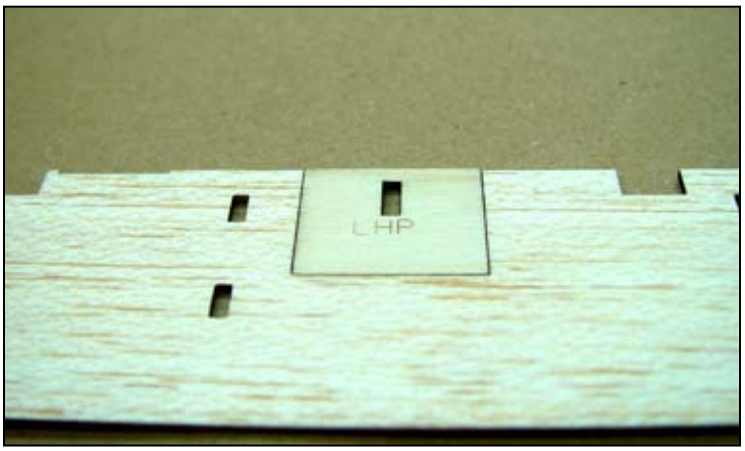
☐ 36 Plane or sand the leading edge perfectly flat in preparation for installing the leading edge. Locate and install LE, use push pins and tape to secure it until the adhesive has set. Plane and sand the leading edge to contour with the ribs. It is important to use the lite ply Wing Leading Edge Template supplied to shape the leading edge. A leading edge that is misshaped can have undesirable flying characteristics.

This concludes the assembly of the left wing panel. Return to step one of the wing assembly instructions and repeat steps 1 through 35 for the right wing panel. Remember to reverse the procedure to install SBC onto the sheer webs. Sand all surfaces in preparation for covering. Cover the wings with your preferred covering system.

Use Epoxy or PU glue to assemble the wing platform and the wing halves.

Flap assembly

☐ 1 When assembling the flaps, you will be making a left and a right flap. It is best to assemble both flaps at the same time to avoid making two of the same hand. Place the flap base (FLB) on the bench and glue the flap hard point (FLHPB) in the notch provided. The correct orientation is with the labeled edge toward the leading edge.



ABOVE: FHP has been glued into FB, note the correct orientation. The notch should be closest to the leading edge.

☐ 2 Glue the flap leading edge (FLE) to the flap base assembly.

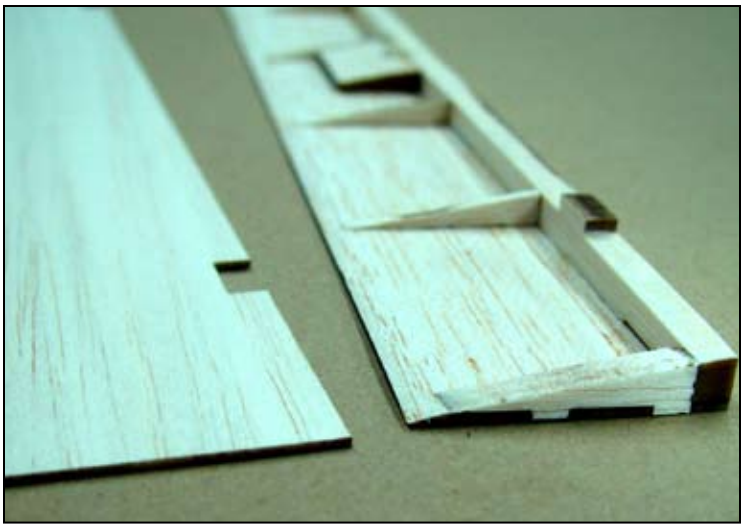
☐ 3 Glue all flap ribs (FL-2 & FL-1) to the flap base assembly.

☐ 4 Carefully align the slot in the flap hard point block (FLHPB) with the slot in FLHP and glue in place.

☐ 5 Before installing the top sheet, the leading and trailing edges as well as FLHPB must be sanded to contour with the flap ribs. Take care not to sand into the ribs or the position tabs on the leading edge, just sand down to them and then glue on the top sheeting (FLT).

☐ 6 The flap control horn can be installed after the flap has been covered.

☐ 7 When installing the flap onto the wing, it is a good idea to pin the hinges after gluing. This can easily be accomplished bu drilling a 1/16th inch hole through the bottom sheeting, the hinge and the flap leading edge and wing trailing edge and the gluing in a round tooth pick. Trim the tooth pick



ABOVE: The flap assembly has been sanded to contour with the ribs and the top sheet is ready to be installed. Note that the position tabs on the leading edge have not been sanded.

ABOVE: The assembled flaps, on the right with the control horn and the hinges temporarily installed. These will be removed and the final installation will be after the flaps are covered.

Wing loading chart

Aircraft Weight Lbs.	Oz.	Oz. Per Sq. Ft. Wing Loading
5	0	13.7
5	4	14.3
5	8	15.0
5	12	15.7
6	0	16.4
6	4	17.1
6	8	17.8
6	12	18.4
7	0	19.1
7	4	19.8

The following pages contain the parts locator list. Use this to quickly locate required parts.

Part #	Qty.	Sheet #	SIZE	Material	Description
ACP	1	1	1/16” X 2-2/2” X 4”	AC PLY	Anti crush plate
AH	2	24	3/32” X 4” X 48	AC PLY	Aileron horn
BCS	2	2	1/16” X 6” X 36”	BALSA	Bottom center sheeting, wing
BLE	1	8	1/16” X 4” X 36”	BALSA	Bottom leading edge sheeting, wing
BLE	1	9	1/16” X 4” X 36”	BALSA	Bottom leading edge sheeting, wing
BS-A	1	17	1/8” X 4” X 36”	BALSA	Bottom sheeting part A, fuselage
BS-B	1	17	1/8” X 4” X 36”	BALSA	Bottom sheeting part B, fuselage
CS-A	1	3	1/16” X 4” X 36”	BALSA	Center section sheeting part A, wing platform
CS-B	1	3	1/16” X 4” X 36”	BALSA	Center section sheeting part B, wing platform
CS-C	1	3	1/16” X 4” X 36”	BALSA	Center section sheeting part C, wing platform
CS-D	1	3	1/16” X 4” X 36”	BALSA	Center section sheeting part D, wing platform
EH	1	24	3/32” X 4” X 48	AC PLY	Elevator horn
EJ-A	1	33	1/4” X 4” X 7”	BASSWOOD	Elevatot joiner part A
EJ-B	1	17	1/8” X 4” X 36”	BALSA	Elevatot joiner part B
F2	2	16	1/8” X 12” X 12”	AC PLY	Fuselafe former #2
F3	1	19	1/8” X 12” X 48”	LPLY	Fuselafe former #3
F4	1	21	1/8” X 6” X 17”	LPLY	Fuselafe former #4
F5	1	19	1/8” X 12” X 48”	LPLY	Fuselafe former #5
F6	1	19	1/8” X 12” X 48”	LPLY	Fuselafe former #6
F7	1	20	1/8” X 12” X 48”	LPLY	Fuselafe former #7
F8	1	19	1/8” X 12” X 48”	LPLY	Fuselafe former #8
F9	1	20	1/8” X 12” X 48”	LPLY	Fuselafe former #9
FA	2	11	1/4” X 4” X 36”	BALSA	Fuselage side part A
FAM-B	1	20	1/8” X 12” X 48”	LPLY	Float aft mount part A
FB	1	19	1/8” X 12” X 48”	LPLY	Float aft mount part B
FD	2	10	1/32” X 12” X 30”	AC PLY	Fuselage doubler
FF	1	19	1/8” X 12” X 48”	LPLY	Fuselage floor
FH	2	24	3/32” X 4” X 48	AC PLY	Flap horn
FHA	1	21	1/8” X 6” X 17”	LPLY	Fuselage hatch part A
FHA-H	2	16	1/8” X 12” X 12”	AC PLY	Fuselage hatch part H
FJ-A	1	33	1/4” X 4” X 7”	BASSWOOD	Hatch magnet retainer
FLE	2	18	1/8” X 3” X 36”	BALSA	False leading edge, wing
FLHP-A	1	19	1/8” X 12” X 48”	LPLY	Float hard point part A
FLHP-B	1	19	1/8” X 12” X 48”	LPLY	Float hard point part B
FS-A	2	20	1/8” X 12” X 48”	LPLY	Fuselage side part A
FSB	2	19	1/8” X 12” X 48”	LPLY	Fuselage side part B
FST	1	14	1/4” X 5” X 12”	LPLY	Fuselage servo tray
FTD	1	19	1/8” X 12” X 48”	LPLY	Fuselage turtle deck
FTGM	1	14	1/4” X 5” X 12”	LPLY	Fuselage tail gear mount
FW-A	1	19	1/8” X 12” X 48”	LPLY	Firewall part A
FW-B	1	19	1/8” X 12” X 48”	LPLY	Firewall part B
FWBP	1	14	1/4” X 5” X 12”	LPLY	Fuselage wing bolt plate
FWS	23	23	3/16” X 4” X 36”	BALSA	Fuselage wing saddle

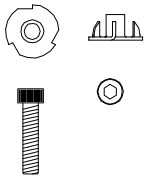
Part#	Qty.	Sheet#	Size	Material	Description
GB	2	14	1/4” X 5” X 12”	LPLY	Gear brace
HB	4	33	1/4” X 4” X 7”	BASSWOOD	Horn block
HB	2	18	1/8” X 3” X 36”	BALSA	Horn block filler
LE	2	13	1/4” X 3” X 36”	BALSA	Leading edge, wing
LES-T	1	4	1/16” X 4” X 36”	BALSA	Leading edge sheeting, wing top
LES-T	1	5	1/16” X 4” X 36”	BALSA	Leading edge sheeting, wing top
LGM-A	2	16	1/8” X 12” X 12”	AC PLY	Landing gear mount part A
LGM-B	1	20	1/8” X 12” X 48”	LPLY	Landing gear mount part B
LG-PLUG	4	22	1/8” X 4” X 36”	BALSA	Landing gear plug
MMA	1	16	1/8” X 12” X 12”	AC PLY	Motor mount part A
MMB	1	16	1/8” X 12” X 12”	AC PLY	Motor mount part B
MMH	1	16	1/8” X 12” X 12”	AC PLY	Motor mount horizontal
MMV	1	16	1/8” X 12” X 12”	AC PLY	Motor mount vertical
MMBP	1	16	1/8” X 12” X 12”	AC PLY	Motor mount bolt plate
NF	2	11	1/4” X 4” X 36”	BALSA	Nose filler
NGMB	3	33	1/4” X 4” X 7”	BASSWOOD	Nose gear mounting bracket
NGNP	1	16	1/8” X 12” X 12”	AC PLY	Nose gear nut plate
PINNING TABS	14	17	1/8” X 4” X 36”	BALSA	Pinning tab
R1	1	12	1/4” X 4” X 36”	BALSA	Rudder part #1
R2	1	12	1/4” X 4” X 36”	BALSA	Rudder part #2
R2-B	2	1	1/16” X 2-2/2” X 4”	AC PLY	Rudder hard point part B
R3-A	1	20	1/8” X 12” X 48”	LPLY	Rudder hard point part A
RU	1	24	3/32” X 4” X 48	AC PLY	Rudder
S1	2	12	1/4” X 4” X 36”	BALSA	Stabilizer rib #1
S2	2	26	3/32” X 3” X 36”	BALSA	Stabilizer rib #2
S3	2	26	3/32” X 3” X 36”	BALSA	Stabilizer rib #3
S4	2	26	3/32” X 3” X 36”	BALSA	Stabilizer rib #4
S5	2	26	3/32” X 3” X 36”	BALSA	Stabilizer rib #5
SBC	4	15	1/64” X 5” X 10”	AC PLY	Spar box cap, wing
SBS	2	18	1/8” X 3” X 36”	BALSA	Stabilizer bottom spar
SCS-A	1	3	1/16” X 4” X 36”	BALSA	Stabilizer center sheeting, aft
SCS-F	1	3	1/16” X 4” X 36”	BALSA	Stabilizer center sheeting, for
SFLE	1	17	1/8” X 4” X 36”	BALSA	Stabilizer false leading edge
SFTE	1	17	1/8” X 4” X 36”	BALSA	Stabilizer false trailing edge
SLE	1	12	1/4” X 4” X 36”	BALSA	Stabilizer leading edge
SMP	1	24	3/32” X 4” X 48	AC PLY	Stabilizer mounting plate
SP	1	21	1/8” X 6” X 17”	LPLY	Stabilizer plate
SPF-B	2	24	3/32” X 4” X 48	AC PLY	Spar flange bottom, wing
SPF-T	2	24	3/32” X 4” X 48	AC PLY	Spar flange top, wing
SQUARE	1	14	1/4” X 5” X 12”	LPLY	Square
SSW	2	18	1/8” X 3” X 36”	BALSA	Stabilizer sheer web
ST	2	26	3/32” X 3” X 36”	BALSA	Stabilizer tip

Part#	Qty.	Sheet#	Size	Material	Description
STE	1	12	1/4” X 4” X 36”	BALSA	Stabilizer trailing edge
STS	1	17	1/8” X 4” X 36”	BALSA	Stabilizer top spar
TCS	2	2	1/16” X 6” X 36”	BALSA	Wing top center sheeting
TE	2	13	1/4” X 3” X 36”	BALSA	Wing trailing edge
TES	2	23	3/16” X 4” X 36”	BALSA	Wing trailingf edge spar
TES-B	2	6	1/16” X 4” X 36”	BALSA	Trailing edge sheeting bottom, wing
TES-T	2	7	1/16” X 4” X 36”	BALSA	Trailing edge sheeting top, wing
V1	2	22	1/8” X 4” X 36”	BALSA	Vertical fin part #1
V2	1	12	1/4” X 4” X 36”	BALSA	Vertical fin part #2
V3	1	12	1/4” X 4” X 36”	BALSA	Vertical fin part #3
V4	1	12	1/4” X 4” X 36”	BALSA	Vertical fin part #4
V5	1	12	1/4” X 4” X 36”	BALSA	Vertical fin part #5
V6	1	12	1/4” X 4” X 36”	BALSA	Vertical fin part #6
V7	1	12	1/4” X 4” X 36”	BALSA	Vertical fin part #7
VF	1	11	1/4” X 4” X 36”	BALSA	Vertical fin
W1	2	27	3/32” X 3” X 36”	BALSA	Rib #1, wing
W1	2	28	3/32” X 3” X 36”	BALSA	Rib #1, wing
W10	1	29	3/32” X 3” X 36”	BALSA	Rib #10, wing
W10	1	30	3/32” X 3” X 36”	BALSA	Rib #10, wing
W11	1	29	3/32” X 3” X 36”	BALSA	Rib #11, wing
W11	1	30	3/32” X 3” X 36”	BALSA	Rib #11, wing
W12	1	29	3/32” X 3” X 36”	BALSA	Rib #12, wing
W12	1	30	3/32” X 3” X 36”	BALSA	Rib #12, wing
W2	2	27	3/32” X 3” X 36”	BALSA	Rib #2, wing
W2	2	28	3/32” X 3” X 36”	BALSA	Rib #2, wing
W3	2	27	3/32” X 3” X 36”	BALSA	Rib #3, wing
W3	2	28	3/32” X 3” X 36”	BALSA	Rib #3, wing
W4	1	27	3/32” X 3” X 36”	BALSA	Rib #4, wing
W4	1	28	3/32” X 3” X 36”	BALSA	Rib #4, wing
W5	1	27	3/32” X 3” X 36”	BALSA	Rib #5, wing
W5	1	28	3/32” X 3” X 36”	BALSA	Rib #5, wing
W6	1	27	3/32” X 3” X 36”	BALSA	Rib #6, wing
W6	1	28	3/32” X 3” X 36”	BALSA	Rib #6, wing
W7	1	29	3/32” X 3” X 36”	BALSA	Rib #7, wing
W7	1	30	3/32” X 3” X 36”	BALSA	Rib #7, wing
W8	1	29	3/32” X 3” X 36”	BALSA	Rib #8, wing
W8	1	30	3/32” X 3” X 36”	BALSA	Rib #8, wing
W9	1	29	3/32” X 3” X 36”	BALSA	Rib #9, wing
W9	1	30	3/32” X 3” X 36”	BALSA	Rib #9, wing
WH-A	2	TBD	3/32” X 3” X 7”	AC PLY	Wing hook part A
WH-B	1	16	1/8” X 12” X 12”	AC PLY	Wing hook part B
WJ	2	24	3/32” X 4” X 48	AC PLY	Wing joiner

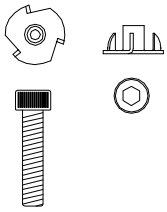
Part#	Qty.	Sheet#	Size	Material	Description
WP	1	19	1/8” X 12” X 48”	LPLY	Wing platform
WP-1A	1	16	1/8” X 12” X 12”	AC PLY	Wing platform part A
WP-1B	1	17	1/8” X 4” X 36”	BALSA	Wing platform part B
WP-2	2	26	3/32” X 3” X 36”	BALSA	Wing platform part 2
WP-B1	1	17	1/8” X 4” X 36”	BALSA	Wing platform brace #1
WP-B2	1	18	1/8” X 3” X 36”	BALSA	Wing plarform brace #2
WP-DS	2	26	3/32” X 3” X 36”	BALSA	Wing platform dowl support
WP-F	1	11	1/4” X 4” X 36”	BALSA	Wing platform filler
WP-FLE	1	18	1/8” X 3” X 36”	BALSA	Wing platform false leading edge
WP-LE	1	11	1/4” X 4” X 36”	BALSA	Wing platform leading edge
WS	1	23	3/16” X 4” X 36”	BALSA	Windshield, fuselage
WSG	4	22	1/8” X 4” X 36”	BALSA	Wing sheeting gusset
WSM	4	19	1/8” X 12” X 48”	LPLY	Wing servo mount
WSMB	8	16	1/8” X 12” X 12”	AC PLY	Wing servo mount brace
WT	2	25	3/32” X 4” X 36”	BALSA	Wing tip
WTS-B	2	3	1/16” X 4” X 36”	BALSA	Wing tip sheeting, bottom
WTS-T	2	2	1/16” X 6” X 36”	BALSA	Wing tip sheeting, top

HARDWARE KEY

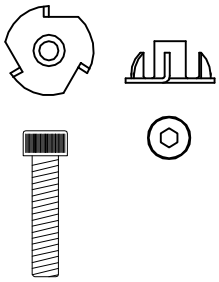
Note, your kit may not contain all of the hardware items displayed on this page.



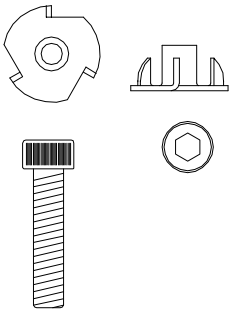
#2-56 SOCKET HEAD
BOLT AND BLIND NUT
5/64" DRIVER



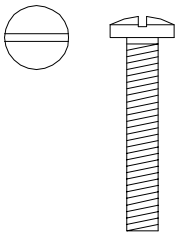
#4-40 SOCKET
HEAD BOLT AND
BLIND NUT
3/32" DRIVER



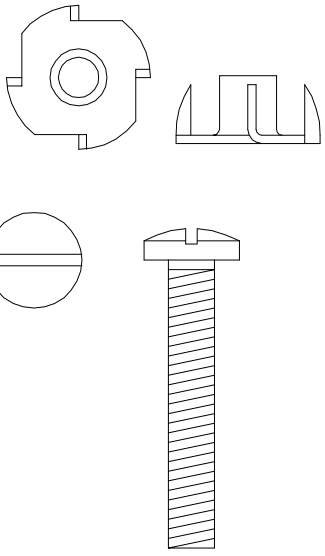
#6-32 SOCKET HEAD
BOLT AND BLIND NUT
7/64" DRIVER



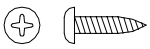
#8-32 SOCKET HEAD
BOLT AND BLIND NUT
9/64" DRIVER



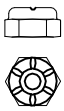
#8-32 Binding head
nylon bolt



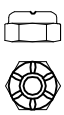
#1/4-20 SOCKET HEAD
BOLT AND BLIND NUT



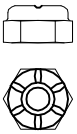
#2 SHEET
METAL SCREW



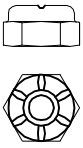
#2-56 NYLOCK NUT
1/4" DRIVER



#4-40 NYLOCK NUT
1/4" DRIVER



#6-32 NYLOCK NUT
5/16" DRIVER



#4-40 NYLOCK NUT
3/8" DRIVER

Hobby Lobby International
5614 Franklin Pike Circle
Brentwood TN 37027 USA
Phone 866-512-1444