# Top Notch Products Lily Pulp



## **Assembly Manual**

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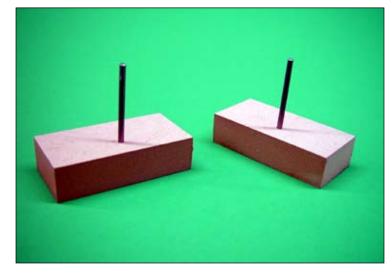
## Li'l Pup Assembly

Welcome to the wonderful world of model building. If you have never built a kit before you have picked the right one to start with. If you are an accomplished kit builder, you may be out flying your Li'l Pup by tomorrow. This kit was designed to be easily and successfully constructed by the first time builder. In addition it is a great flying model and can serve as a great trainer as well. I'll cover a little more information then I normally would in an instruction manual under the assumption that you are not familiar with the building process. A little like I am standing with you at the bench.

If you have an area that you can dedicate to a building space for a short time now is the time to stake your claim to it. While a nice building board that you can stick pins into is handy, it is not absolutely necessary to construct this kit. What works great is a 2' x 4' ceiling tile turned over to use the smooth backside. You can get one at your home supply store and they are inexpensive. For tools, an absolute must is a good hobby knife, some single edged razor blades, sand paper and a sanding block. Also very handy but not absolutely necessary is a 24" sanding bar and a razor plane. Most of these can be acquired form your local hobby shop or craft store. For adhesives you can get by with aliphatic resin, also known as carpenters glue. Two common brands are Elmer's and Titebond. However to really speed things up you may want to also get some Cyanoacrylate also known as CA type adhesives in thick and thin viscosities.

During the assembly sequences you will be directed to locate and prepare parts. If you look in the back of this manual you will see several pages called Parts Locator. Just locate the part in the alphabetical list and the sheet it is on will be listed next to it. To prepare a part you must remove it from the carrier sheet (that's the sheet with the sheet number on it) and then clean up any nubs. The parts are cut with little breaks in the cutting lines; these are called retainer breaks because they retain the part in the carrier sheet. In most cases the little retainer breaks can be broken by just flexing the sheets however some sheets may be too hard and you will have to sever the little breaks with your hobby knife. When the part has been removed, there may be a little nub (bump) left on the part from the retainer break. Just a very light pass with 150-grit sandpaper will remove this nub and the part will be ready to use.

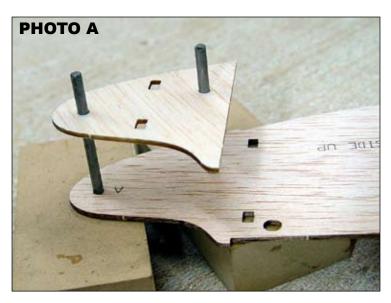
First let's assemble the registration pins; these will be used throughout the building process and will speed the process as well as assure accuracy. Locate the two 3/4" x 1-1/2" x 3" blocks and the two 1/8" register pins. The pins will be in your hardware bag. Install the pins into the holes in the blocks. They should set firmly in about one half of an inch. Now we can start assembling the Li'l Pup.



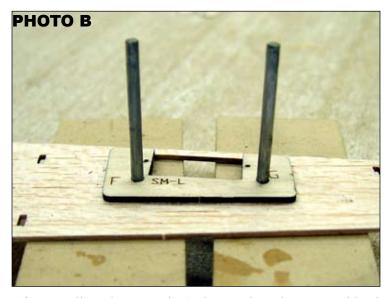
I will start numbering the steps so later we can refer back to specific sections. We will start with the fuselage. The fuselage sides are composed of several laminations of parts. Locate and prepare the following parts. The fuselage sides FS-L (left side) and FS-R (right side), also the left and right side doublers (FSD-L) and (FSD-R). Also locate and prepare two nose tripplers and two F9's and the servo mount SM-L. Note that on the fuselage doublers there are some 1/8" holes that are labeled A through E. We will be using these holes to install several parts as follows.

**□1** 

- **a.** Place FSD-R on the pins, use holes A and B and make sure the "This Side Up" label is up. Locate one of the nose tripplers (NT) and slide it down the pins into contact with FSD-L. You can now see how the pin register system will be used. Remove NT and apply some glue to the side that will be facing FSD-L. Place NT back onto the pins and press it firmly into contact with FSD-L until the glue has set.
- **b.** Move the pins to holes C and D. Locate F9 and test fit it onto the pins. Remove F9 and apply glue to the side that will face FSD-L, then return it to the pins and hold it firmly into contact with FSD-L until the glue has cured.
- **c**. Move the pins to holes A and E on the fuselage side (FS-L). Test fit the FSD-L assembly to FS-L and then remove it from the pins, apply glue and reinstall it onto the pins. Hold it firmly into contact with FS-L until the glue has cured.
- **d.** Move the pins to holes F and G and install the servo mount, SM-L.



NT is being installed onto FSD-L using the pin register system. This system assures that parts will be perfectly positioned every time and allows the use of quick setting adhesives without fear of setting in the wrong position.

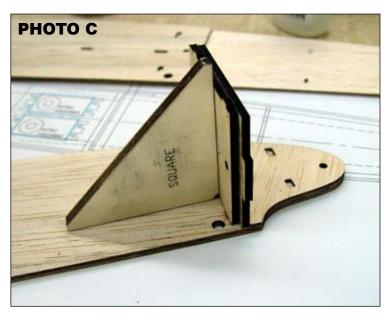


After installing the NT and F9, the pins have been moved back to holes F and G to install the servo mount. This will complete this fuselage side sub assembly.

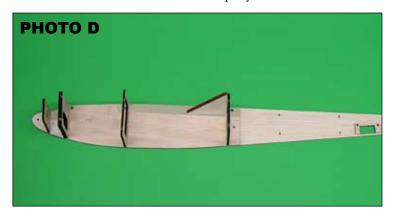
This completes the left fuselage side subassembly. Repeat the previous steps to assemble the right fuselage side in the same manner.

Your Li'l Pup can be powered with an electric or glow motor. Firewalls are provided for both. Follow the directions in step 2 for the version you are building.

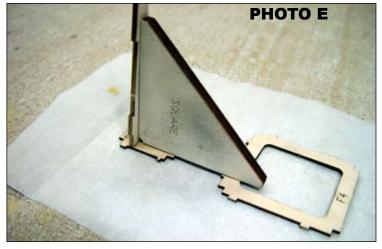
- GLOW Locate and prepare the firewall parts GFW-A and GFW-B. Place GFW-A on the registration pins. Apply glue to GFW-B and install it onto GFW-A. Apply pressure until the glue has set. Locate your motor mount bolt locations and drill the required holes. Install blind nuts if required.
- ■2 ELECTRIC Locate and prepare EFW-A and EFW-B. Plane EFW-A on the registration pins. Apply glue to EFW-B and install onto EFW-A. Apply pressure until the glue has set.
- If you are building the electric version, now is the time to install the electric motor mount (EMM) but first mark and drill two 1/8" holes for your motor. Install the two #4-40 blind nuts provided in your hardware bag. Next, apply glue to one side of EMM and install it into the notches provided in the nose trippler (NT) of the right fuselage assembly. Use the square supplied in your hardware bag to assure that it is exactly 90° to the fuselage side. Note that the blind nuts should be on the backside of the motor mount.
- □4 The next step is to install the firewall assembly. Once again, use the square and install the firewall in the notches provided in the right fuselage assembly. Note that FW-A should be facing forward. Install F2 and F3 in the same manner using the square to assure a 90° installation.
- Next we will join the fuselage sides, place the left fuselage side assembly on the bench and test fit the right fuselage side assembly to it. All tabs should fit into all the notches. Apply glue to EMM, the Firewall, F2 and F3 and install the right side onto the left side. Use some weights to keep pressure on this assembly until the glue has cured. Make sure all tabs are bottomed in there slots.
- G Former F6 and the stab mount F7 are preassembled before pulling the tail section together and installing this assembly. Use the square to insure that F7 is at 90° to F6, when assembling these two components. Glue F7 to F6.



Using trhe Square to insure that the firewall, EMM, F2 and F3 are perfectly perpendicular to the fuselage sides. The firewall and MM1 should be installed with Epoxy or thick CA.



EMM, the firewall, F2 and F3 have been installed onto the right fuselage side. Now this assembly can be married up to the left side. Note that the fuselage sides are perfectly paralell from the nose back to F3 so all tabs must be bottomed in their slots.



F6 and F7 are assembled using the square. Note that F4 is being used as a shim to leven the square. F7 is inserted into the notch in F6 and positioned as shown in the photo above.

- Pull the tail section together and install F6 into the slots provided, make sure the tabs are fully inserted. Glue only F6 to the fuse-lage sides at this time. Next make sure that F7 is bottomed in the notches provided at the bottom of the stab slot and then glue it to both sides.
- Locate BD and install it by sliding in into F2 and F3. Push it forward until it butts the firewall and then glue it to the firewall, F2 and F3. See the plans and photo H for position
- Locate and prepare the corner stringers, (TOP STR) and (BOT STR). Install and glue the top stringers (TOP STR) to the fuselage sides. They should be flush with the fuselage sides. Install the bottom stringers (BOT STR) in the same manner. Note both the top and bottom stringers should butt up against the fuselage doublers FDS-L&R.
- □**10** Locate and prepare F8, the aft fuselage top. Test fit this part onto the tabs on formers F4, F5 and F6. To assure that the fuselage is straight, the slots in F8 must fully engage the tabs on the formers. Use a piece of scrap 1/8" balsa to spread the tail section when gluing the sides to the top. Install and glue F8.
- ☐ 11 Locate and prepare the hatch components
  HA and HA-B. Place HA onto the registration pins and then glue and install HA-B.
  Note and observe the correct direction of
  HA-B labeled on the part.
- **12** The fuselage bottom sheeting is composed of seven sections that must be assembled before installing. They are BS-1 through BS-7. Note that BS2 and BS7 are 1/16" ply and all remaining sections are 1/16" balsa. Locate and prepare BS1, BS2, BS3, BS4, BS5, BS6 and BS7. Test fit these sections together before attempting to glue them. If using CA, use the following method. Place BS1 and BS2 on a piece of parchment paper. Butt them together at the splice line. Apply a liberal bead of thin CA. Immediately (with a quick wipe) wipe away any excess CA with a piece of paper towel, flip the parts over and wipe away any excess CA on the back as well as the parchment paper. Repeat this process until all seven sections have been as-



As viewed from the top, the top and bottom corner stringers (top str & bot str) are visible here. Place these in position and then apply CA from the opposite side. Make sure they stand flush with the fuselage sides.



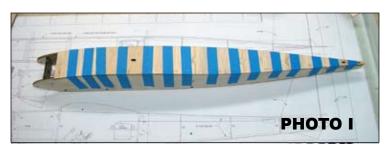
The aft top sheeting (F8) is installed. To insure a perfectly straight fuselage, make sure the tabs in F4, F5 and F6 are fully engaged in the slots in F8. Install F8, turn the fuselage over and apply CA through the open bottom of the fuselage.



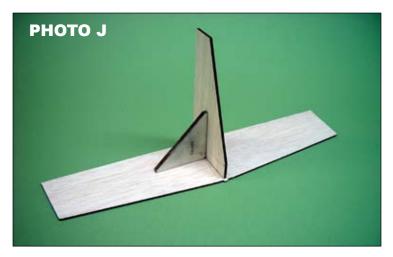
The seven sections of bottom sheeting have been preassembled and will be installed as a single part.

sembled. Test fit this assembly to the bottom of the fuselage. When satisfied with the fit, apply a liberal bead of aliphatic resin glue to the entire bottom of the fuselage from FW to the tail. Use strips of masking tape about every 2" to hold the sheeting firmly against the fuselage until the glue has cured.

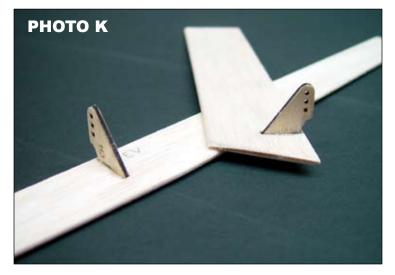
- □13 Sand the fuselage assembly smooth, radius the corners slightly for a pleasant look. The bottom skid and tailskid can be installed now or after covering. It is easier to cover the model without the skids, dowels and empennage installed. If you want to paint your model you can install the 3/16" dowels and the skids now.
- □14 Locate the stabilizer (ST) and the vertical fin (FN) and prepare them. Use the square and glue the vertical fin to the stabilizer. Sand the leading edges to a slight radius. This assembly can be installed now or after covering if desired.
- □**15** Locate the rudder (RU) and one of the control horns (CH). The control horn must be installed on the right side of the rudder. Glue the control horn to the rudder.
- □**16** Locate the elevator (EV) and the remaining control horn. The elevator control horn must be installed on the top left side of the elevator. Glue the control horn to the elevator.



After applying aliphatic resin to the bottom fuselage sides and formers, the bottom sheeting assembly is installed and held firmly in place with strips of masking tape until the adhesive has cured.



Assembly of the stabilizer and vertical fin could not be simpler. Use the square to insure that the fin is 90° to the stabilizer.



Elevator and rudder control horns have been installed. Note that the rudder control horn must be positioned on the right side and the elevator horn must be on the top left side.

This completes the fuselage and empennage assembly.

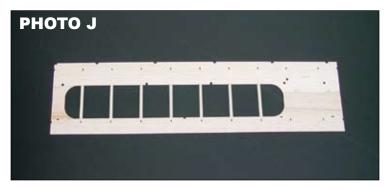
# Wing assembly

The wing is not built on the plans but instead it is built on a 1/16" balsa base that we will assemble next. Keep the plans handy to refer to for part locations.

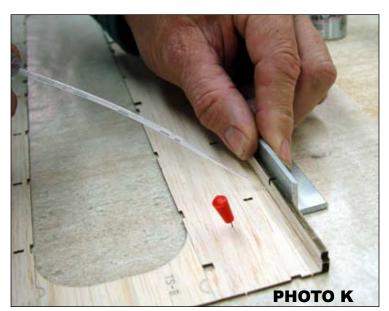
- □1 Locate and prepare LES-B (Leading Edge Sheeting-Bottom), TES-B (Trailing Edge Sheeting –Bottom) and the tip sheeting (TS). Place LES-B and TES-B on piece parchment paper large enough for the entire wing panel. Press them firmly together at the splice line and apply a liberal bead of thin CA. As you did on the fuselage bottom sheeting, immediately wipe away any excess CA, flip the parts over and wipe off the backside.
- Use the same method to install the tip sheeting (TS).
- ☐3 Locate and prepare seven bottom cap strips (Bottom Caps). Glue one into each location between LES-B and TES-B. Note that they will fit into the notches provided.
- Locate and prepare the false leading edge (FLE). Test fit this into the notches in the leading edge sheeting. When satisfied with the fit, Glue to LES-B. Make sure FLE is bottomed in the slots and held firmly into contact with LES-B until the glue has set.
- □5 Locate and prepare the bottom spar section (SP-B). Test fit the bottom spar section and when satisfied with the fit, glue it to LES-B. Once again make sure SP-B is aligned with LES-B when gluing.



The wing bottom sheeting consists of these three sections, LES-B, TES-B and TS-B. When assembled they will provide the base for the wing to be built on.

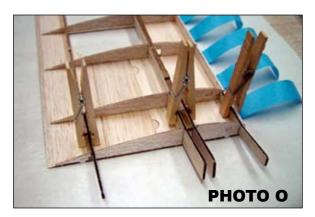


After assembling LES-B, TES-B and TS-B, the seven bottom cap strips are installed into the notches provided. The wing platform is now complete and ready for internal components.



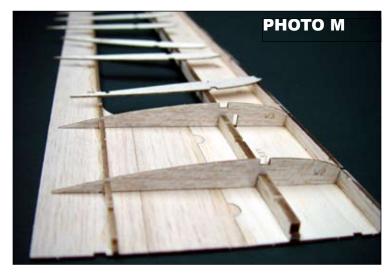
A short length of aluminum angle is used to align FLE with the leading edge of LES-B while thin CA is applied with a pipette applicator.

- ☐6 Locate and prepare the trailing edge spar (TES). When satisfied with the fit, glue LES to TES-B.
- □7 Locate and prepare the wing ribs W1 through W11. Put W1 aside for now, it will be installed after the top spar section has been installed. Place each rib into its respective location. Make sure each tab is bottomed in the appropriate notches before applying and glue.
- □8 Locate and prepare the top spar section (SP-T). Test fit this to the bottom spar section and when satisfied with then fit, glue it to the bottom spar section. Secure it with straight pins until the glue has cured.
- Install W1 at this time. Note that the spar, FLE and TES all have the dihedral angle cut into them. Make sure W1 is seated into these components for the correct dihedral angle
- □10 On the first wing panel we will also install the wing joiners. To do this we must first cut the openings in W1 for them Cut and remove the material indicated just behind FLE, both sides of the spar and just ahead of the trailing edge spar. See the photo N for the correct locations.
- □11 Locate and prepare WJ1, two WJ-2's and one WJ-3. Test fit these parts and when satisfied with the fit, apply glue and install. Use some cloths pins or other clamps to assure good contact with the mating surfaces.





The wing bottom sheeting assembly with FLE (right), SP-B (Center) and TES (left) installed.



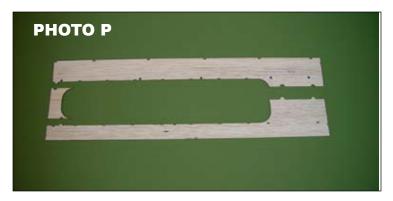
When installing ribs, make sure they are bottomed in there slots and in good contact with the bottom sheeting before applying glue.



Photo N: In preparation for installing the wing joiners on this wing section, the material indicated must be removed.

Poto O: The ply wing joiners have been attached and are clamped in place with cloths pins until the adheasive has set.

- ☐ **12** Locate and prepare the top sheeting, LES-T, TES-T and the tip sheeting TS-T. As you did with the bottom sheeting, assemble LES-T and TES-T, then install TS-T. Test fit this assembly to the wing panel. All tabs should engage all slots. Note that the sheeting will align half way through the top spar. This is the correct position.
- ☐ **13** Before installing the top sheeting, the leading and trailing edges must be shaped to the proper contour. Use a razor plane, hobby knife or sanding bar to taper FLE to contour with the ribs as shown. Do the same to the trailing edge sheeting. See photo Q and photo R.
- ☐ **14** Test fit the top sheeting to the wing panel assembly and when satisfied with the fit, remove it.
- ☐ 15 Place five inch strips of masking tape on the bottom leading edge about every one and one half inches. Pull the up and over the leading edge and temporarily tack them to the spar. Place the wing panel on the building board and then pull the tape forward to clear the wing panel in preparation for installing the top sheeting. Apply aliphatic resin glue to ribs W1, W2, W3 and W11 in their entirety. Apply glue to all remaining ribs from the spar to the false leading edge and from the trailing edge to the trailing edge spar. Along the entire false leading edge and along the entire trailing edge spar. At this point everything under the top sheeting except the trailing edge and the top spar will have glue applied. Apply a bead of thick CA to the trailing edge and install the top sheeting assembly. Apply pressure to the trailing edge section with a straight edge or other tool between the trailing edge and the trailing edge spar. Use a straight edge to press the sheeting into contact with the top spar and glue along the entire length with thin CA. Now pull the forward portion of the sheeting down and forward into contact with FLE. Pull each piece of tape up and back to firmly hold the top sheeting into contact with FLE. Let this cure thoroughly before removing from the board.





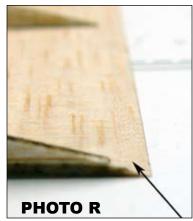
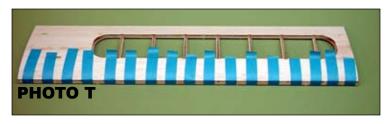


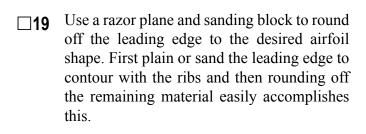


Photo S: In preparation for installing the top wing sheeting, masking tape has been applied to the bottom leading edge of the wing.

**Photo T:** After securing the sheeting at the trailing edge and the spar, it is pulled forward and secured with the masking tape until cured.



□16	Sand the leading edge of the wing panel flat. Apply aliphatic resin glue and install the leading edge. Use pins and tape to secure it until cured.
□17	Sand the wing tip flat and then install W12. Secure it with pins and tape until cured.
□18	Sand the root section flat.





A strip of fiberglass cloth over the center joint will add considerable strength to the wing. This one was brushed with thinned Epoxy resin but you can also use thin CA to attach it.

This completes the assembly of one-wing panel repeat steps 1 through 19 for the second panel. Note that you will not need to install wing joiners in the second panel.

□20 Test fit the two wing panels together. They should fit snugly with very little gap at the center. Sand as required to get a good fit. Apply Epoxy or aliphatic resin glue to all mating parts and then slide the wing halves together. When cured, apply the 1" fiberglass tape with thin CA.

□21 Place the finished wing on the bench. Generally one panel will be slightly heavier then the other. Add weight to the lighter panel until the wing balances.

This completes the wing assembly.

#### Covering your Li'l Pup.

If you going to fly the Li'l Pup with glow power you will need to cover the entire model to fuel proof it. However if you are going to fly your Li'l Pup with electric power the only part that must be covered is the wing. The fuse-lage and empennage can be covered, painted or just left as raw wood if desired.

Follow the instructions supplied with the covering material that you select. It is much easier to cover all the individual parts before the final assembly.

After covering you can install and glue the empennage and the 3/16" dowels permanently.

#### Balancing the Li'l Pup.

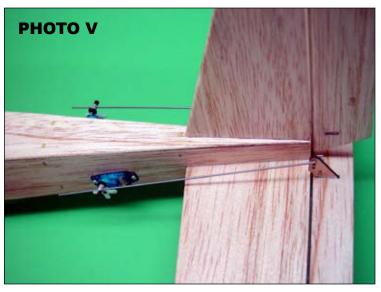
To balance the Li'l Pup for first flights, install the Balance Points into the slots provided in the bottom of the wing just ahead of the spar at W3. Temporarily slide one balance point into each these slots, the model should balance level when supported on your fingers at these points. Place the wing onto the model and secure it with rubber bands. If the model does not balance, move the battery pack and controller to achieve balance. In some cases you may have to ad weight to achieve the correct balance. Make sure that your battery pack and all radio components are securely fastened before flying your Li'l Pup. Once balance has been achieved you can remove the balance points.

#### Servo Installation

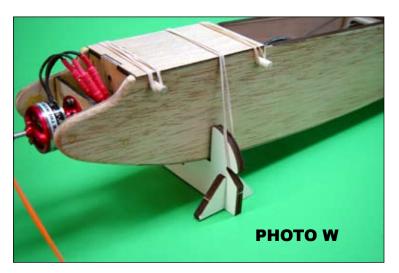
Installing and connecting the servos could not be simpler. Mount a servo into each servo hole in the fuselage with the lead side facing forward, pull the servo leads forward into the wing opening. Install one Eazy Connector into the outboard hole of each servo arm and install the supplied push rod. Insert the Z-bend end into the control horn and the straight end into the Eazy connector. Secure it with a screw. Plug the rudder servo into channel one of your receiver and plug the elevator servo into channel two of your receiver. Turn on your radio and receiver and check that all surfaces are neutral when the sticks and trims are neutral. Adjust your pushrods at the Eazy connector if needed to achieve this. Check your throws, you should have about 3/8" up and down on the elevator (when measured at the center of the trailing edge) and about ½" left and right on the rudder.

**Photo W:** To simplify working on your Li'l Pup, a handy plywood stand is included. This stand will keep the model stable on the bench as well as during transport in the car. When your ready to fly, just pull it off and go.

When attaching the wing, use 6 to 8 #33 rubber bands to assure the wing will not move during acrobatic maneuvers. Use at least two on the hatch cover as well. In the event that the battery should come loose, the hatch cover should retain it. If not, the model could easily be lost.



As you can see, The servo installation is quick and simple. The Eazy connector makes any adjustment simple and no servo extensions are required on the inside of the fuselage.



#### **Flying**

You have had a great time building your Li'l Pup and you have learned some new skills along the way but now is the time you have been working for. Flying your own creation. I cannot emphasize enough the importance of seeking help if you have no experience or have not soloed. You can contact any club and they will arrange to help you get up to speed so you can enjoy the greatest hobby-sport on the planet. To locate a club in your area and get a contact number, ask at your local hobby shop or check the Academy of Model Aeronautics web site (http://www.modelaircraft.org/) For information on a club and sanctioned flying site near you.

To launch the model, just apply full power and give the model agent letossaimed at the horizon. The model should be gin an aggressive climb. When the model is several mistakes high you can pull some power off and trim for straight and level flight. With a little practice you will see that your Li'l Pup is capable of many aerobatic maneuvers including inverted flight. Fly safely and enjoy your Li'l Pup.

#### Lil Pup Parts Locator

Part	Sheet#	Qty.	Size	Material	Description
BALANCE POINTS	11	2	1/8" X 4" X 36"	Balsa	Balance Points
BD	11	1	1/8" X 4" X 36"	Balsa	Battery Deck
BOT STR	11	2	1/8" X 4" X 36"	Balsa	Bottom Corner Stringer
BS-1	4	1	1/16" x 4" x 36"	Balsa	Bottom Sheeting
BS-2	1	1	1/16" X 4" X 7"	AC Ply	Bottom Sheeting
BS-3	4	1	1/16" x 4" x 36"	Balsa	Bottom Sheeting
BS-4	5	1	1/16" x 4" x 36"	Balsa	Bottom Sheeting
BS-5	5	1	1/16" x 4" x 36"	Balsa	Bottom Sheeting
BS-6	5	1	1/16" x 4" x 36"	Balsa	Bottom Sheeting
BS-7	1	1	1/16" X 4" X 7"	AC Ply	Bottom Sheeting
СН	13	2	3/32" X 4" X 8"	Ply	Control Horn
EFW-A	10	1	1/8" X 3" X 21"	Ply	Electric Firewall
EFW-B	10	1	1/8" X 3" X 21"	Ply	Electric Firewall
EMM	10	1	1/8" X 3" X 21"	Ply	Electric Motor Mount
EV	14	1	3/32" X 4" x 36"	Balsa	Elevator
F2	10	1	1/8" X 3" X 21"	Ply	Fuselage Former
F3	10	1	1/8" X 3" X 21"	Ply	Fuselage Former
F4	1	1	1/16" X 4" X 7"	AC Ply	Fuselage Former
F5	1	1	1/16" X 4" X 7"	AC Ply	Fuselage Former
F6	1	1	1/16" X 4" X 7"	AC Ply	Fuselage Former
F7	14	1	3/32" X 4" x 36"	Balsa	Fuselage Former
F8	14	1	3/32" X 4" x 36"	Balsa	Fuselage Former
F9	16	2	1/64" X 2" X 8"	Ply	Fuselage Wing Saddle
FLE	11	2	1/8" X 4" X 36"	Balsa	False Leading Edge
FN	11	1	1/8" X 4" X 36"	Balsa	Vertical Fin
FSD-L	5	1	1/16" x 4" x 36"	Balsa	Left Fuselage Side Doubler
FSD-R	5	1	1/16" x 4" x 36"	Balsa	Right Fuselage Side Doubler
FS-L	15	1	1/16" x 4" x 36"	Balsa	Left Fuselage Side
FS-R	2	1	1/16" x 4" x 36"	Balsa	Right Fuselage Side
GFW-A	10	1	1/8" X 3" X 21"	Ply	Glow Firewall
GFW-B	10	1	1/8" X 3" X 21"	Ply	Glow Firewall
HA	13	1	3/32" X 4" X 8"	Ply	Hatch
HA-B	11	1	1/8" X 4" X 36"	Balsa	Hatch
LE	12	2	3/16" X 3" X 36"	Balsa	Wing Leading Edge
LES-B	6	1	1/16" X 3" X 36"	Balsa	Wing Bottom Leading Edge Sheeting
LES-B	9	1	1/16" X 3" X 36"	Balsa	Wing Bottom Leading Edge Sheeting
LES-T	7	1	1/16" X 3" X 36"	Balsa	Wing Top Leading Edge Sheeting
LES-T	8	1	1/16" X 3" X 36"	Balsa	Wing Bottom Leading Edge Sheeting
NT	15	2	1/16" x 4" x 36"	Balsa	Nose Tripler
RU	11	1	1/8" X 4" X 36"	Balsa	Rudder
SKID	10	1	1/8" X 3" X 21"	Ply	Landing Skid

#### Lil Pup Parts Locator

Part	Sheet#	Qty.	Size	Material	Description
SM-L	13	1	3/32" X 4" X 8"	Ply	Left Servo Mount
SM-R	13	1	3/32" X 4" X 8"	Ply	Right Servo Mount
SP-B	12	2	3/16" X 3" X 36"	Balsa	Wing Spar Bottom Section
SP-T	12	2	3/16" X 3" X 36"	Balsa	Wing Spar Top Section
SQUARE	15	1	1/4" X 4" X 5"	Lite Ply	Construction Square
ST	14	1	3/32" X 4" x 36"	Balsa	Stabilizer
STAND	15	1	1/4" X 4" X 5"	Lite Ply	Fuselage Stand
TES	14	2	3/32" X 4" x 36"	Balsa	Wing Trailing Edge Spar
TES-B	4	2	1/16" x 4" x 36"	Balsa	Wing Bottom Trailing Edge Sheeting
TES-T	6	1	1/16" x 4" x 36"	Balsa	Wing Top Trailing Edge Sheeting
TES-T	3	1	1/16" x 4" x 36"	Balsa	Wing Top Trailing Edge Sheeting
TOP CAPS	3	14	1/16" x 4" x 36"	Balsa	Top Cap Strips
TOP STR	11	2	1/8" X 4" X 36"	Balsa	Top Corner Stringer
TS	13	1	3/32" X 4" X 8"	Ply	Tail Skid
TS-B	3	2	1/16" x 4" x 36"	Balsa	Wing Tip Sheeting Bottom
TS-T	5	2	1/16" x 4" x 36"	Balsa	Wing Tip Sheeting Top
W1	2	1	1/16" x 4" x 36"	Balsa	Wing Rib #1
W1	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #1
W10	4	1	1/16" X 3" X 36"	Balsa	Wing Rib #10
W10	9	1	1/16" X 3" X 36"	Balsa	Wing Rib #10
W11	4	1	1/16" X 3" X 36"	Balsa	Wing Rib #11
W11	9	1	1/16" X 3" X 36"	Balsa	Wing Rib #11
W12	14	2	3/32" X 4" x 36"	Balsa	Wing Rib #12
W2	2	1	1/16" x 4" x 36"	Balsa	Wing Rib #2
W2	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #2
W3	2	1	1/16" x 4" x 36"	Balsa	Wing Rib #3
W3	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #3
W4	2	1	1/16" x 4" x 36"	Balsa	Wing Rib #4
W4	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #4
W5	4	1	1/16" x 4" x 36"	Balsa	Wing Rib #5
W5	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #5
W6	4	1	1/16" x 4" x 36"	Balsa	Wing Rib #6
W6	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #6
W7	4	1	1/16" x 4" x 36"	Balsa	Wing Rib #7
W7	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #7
W8	6	1	1/16" X 3" X 36"	Balsa	Wing Rib #8
W9	4	1	1/16" x 4" x 36"	Balsa	Wing Rib #9
W9	9	1	1/16" X 3" X 36"	Balsa	Wing Rib #9
WJ-1	13	1	3/32" X 4" X 8"	Ply	Wing Joiner #1
WJ-2	13	2	3/32" X 4" X 8"	Ply	Wing Joiner #2
WJ-3	13	1	3/32" X 4" X 8"	Ply	Wing Joiner #3

### **Top Notch Products Company**

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