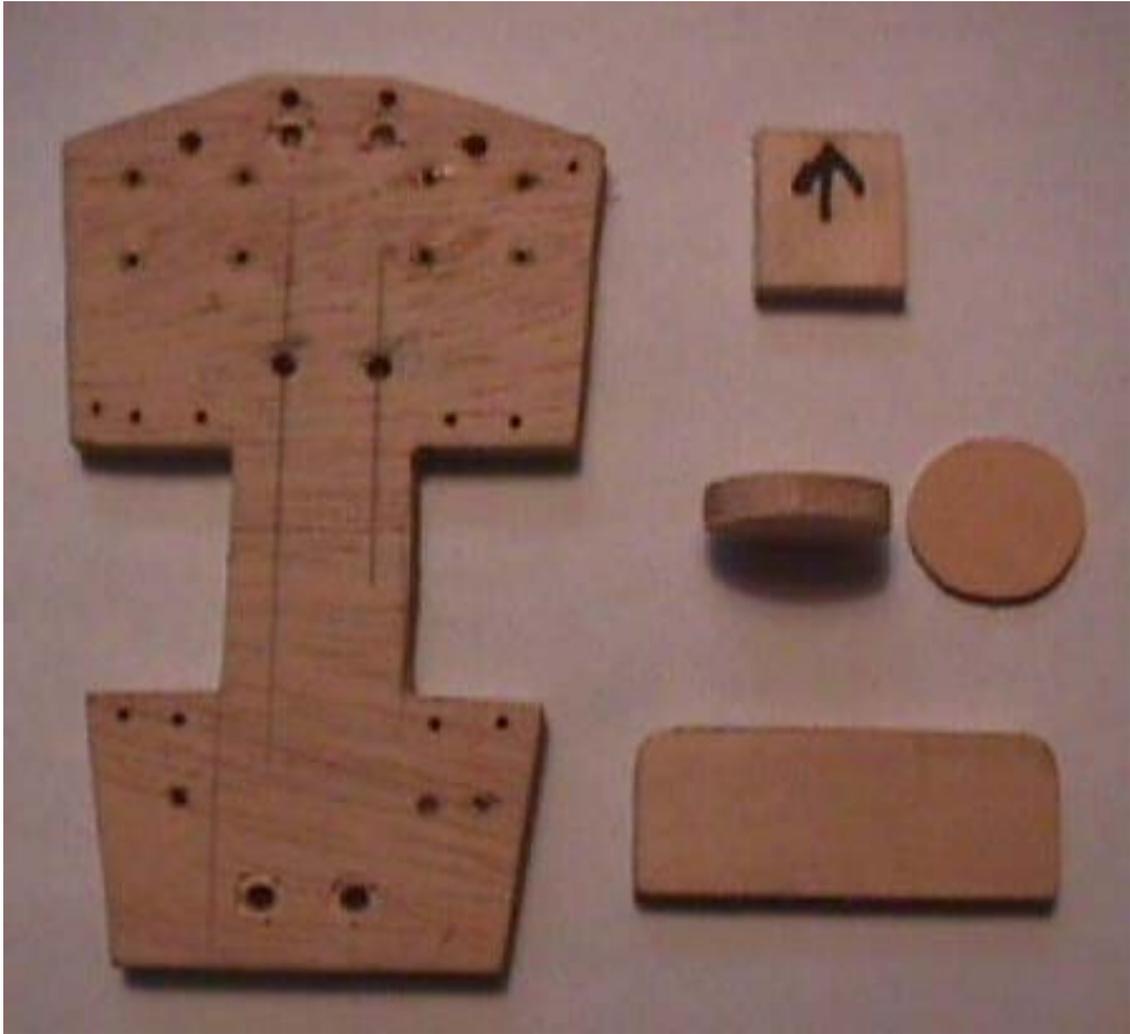


Little Juan Assembly Procedures

Little Juan is a $\frac{1}{4}$ scale Radio Controlled Parachutist. He is made up of standard wood and metal parts. This is an outline of the assembly procedures for putting him together. It is by no means a detailed set of instructions. You can get a good idea of where all the parts go by looking at the pictures. I am using standard size servos and a 700-Mah battery pack. I have also used a 270 Mah battery pack. When the RC parachutist is completed he will weigh around 1.5 lbs. You will notice in the pictures there are lead weights attached to the body of the parachutist. This is to bring his all up weight to around 1 and $\frac{3}{4}$ to 2 lbs total weight. It makes for better control of the parachutist when the parachute is open.

Step 1. See Plan Sheet #1 – Cut out all of the wood parts. You will notice that on the plan sheet it shows an arm plug and Switch plate. I'm no longer using either part. The plans show the size of wood for the different parts. Below is the main body on the left. On the right hand side from top to bottom is the head attachment block and is also the top former. Below that is the neck plug, it is glued to the inside of the head of your parachutist. The plug should be at least $\frac{1}{4}$ " thick. The last piece is the bottom former.



The plan sheet shows the location of the top and bottom formers. In the body drill the holes for the Landing Gear Straps, the hold downs for the legs (They are marked in red dots on the plan sheet), the metal straps that are used for the risers and mounting holes for the servos. I've started to use screws to hold the formers in place instead of gluing them in place. Note on plane sheet #2 it shows the long part of the metal legs extending all the way to the neck of the body. I've shortened this part to 4" in length and it only goes just past where the servos are located.

Step 2: This picture shows metal pieces used. Starting from the top is the arm piece two are required one left and one right arm. In the second row on the left is the release pins for the parachute two are needed. These are made from 1/16" music wire. In the center is the nickel-plated metal steel straps used for the risers, need 2. The small metal piece to the right center is an electrical connector used for the connection for the quick link. In the third

row is the metal plate to hold down the legs to the body. This is made from any type of thin metal. I made mine from the metal plate on a 3 ½" floppy disc. I folded the metal over cut it to fit and then drilled ¼" holes and used 4-40 bolts and nuts to hold them in place. Next to that is another electrical connector used to the end of the arm to attach the control lines for the parachute. In the last row is the quick link for the control rods; I made my control rods from 2-56 threaded rod. The two white plastic pieces are the hold downs for the arms and are Dubro landing gear straps.

The legs are made from 3/16" or 1/4" steel music wire and are bent to the shape shown on Plan Sheet #2. The plan shows the bottom part of the leg bent at a 145-degree angle. You can make the angle smaller or even leave the leg straight. The bottom of the leg is bent at 90 degrees and is about 1" long for the foot. Be sure and make a right and left leg. After the legs are bent bind and solder them together with thin wire. I used to have the long part of the legs that went into the body 5 ½" long. Now I only make them 4" in length. (See the Front Detail Photo). Attach the legs to the body with the metal plates using 4-40 nuts and bolts.

On Plan Sheet #3 use the pattern for the arms and make them from 1/8" music wire or use a 2-56 wire with the threaded end. The short part of the arm that is attached to the quick link should be bent at about a 60-degree angle (See the arm details below). Solder the round electrical connector to the end of the arm and the square electrical connector to the short end of the arm. (See side detail photo). Attach the arms to the body using small nuts and bolts.



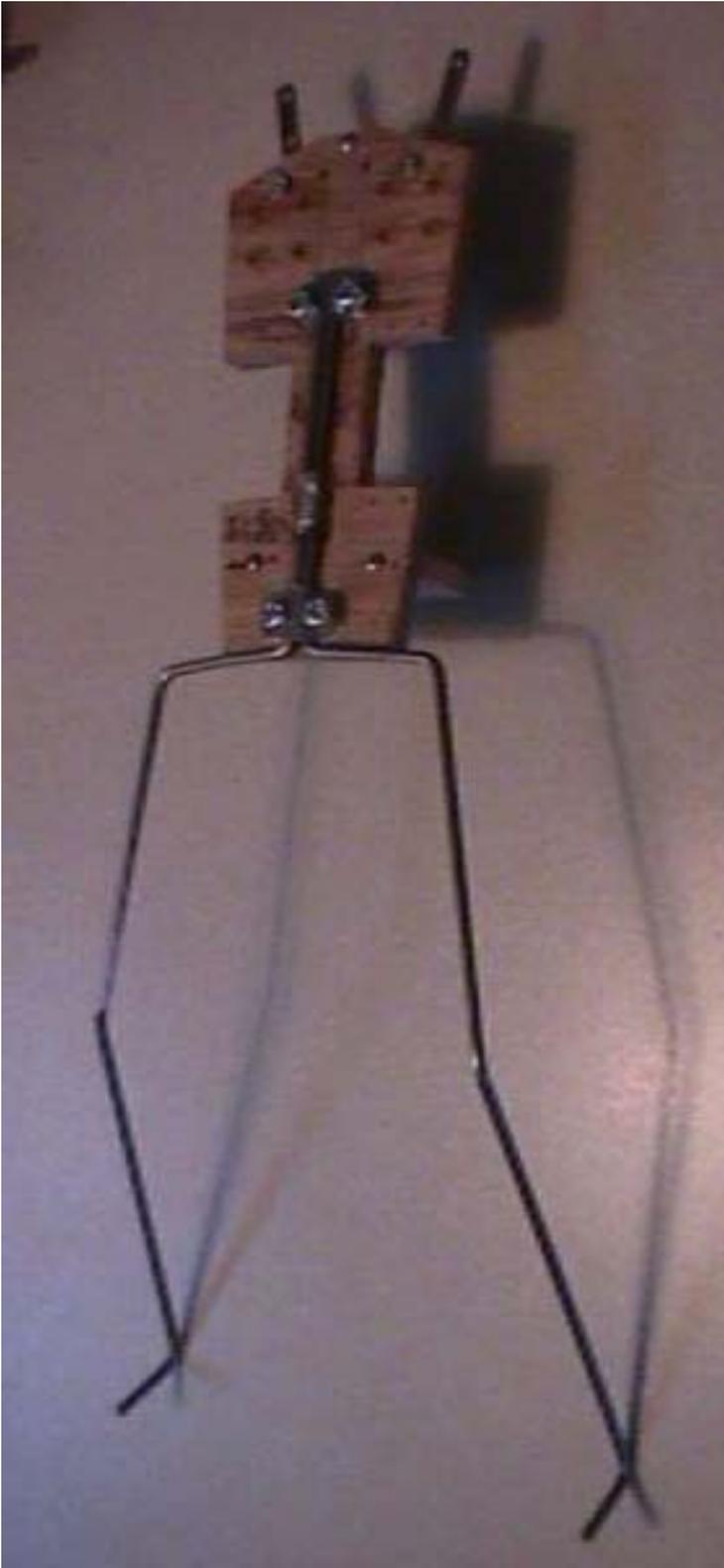
Metal Parts



Side Details (Note angle for square electrical connector)



Front Detail



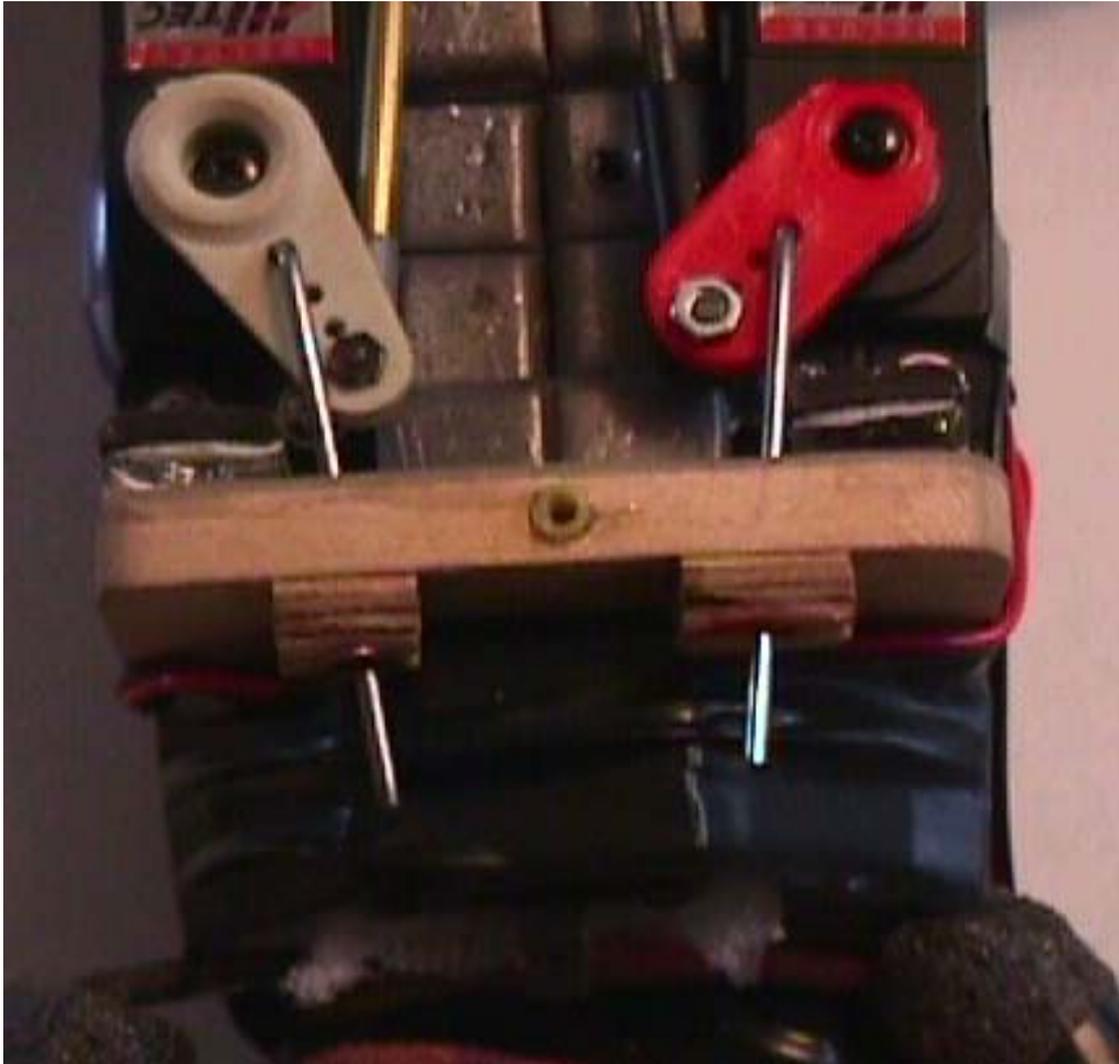
Front: Showing leg and riser attachment.



Arm detail showing the electrical connector soldered to the end of the arm and also round weather stripping used to cover the arms. I found some 5/8" round weather-stripping at the local Home Depot. 1/8" landing gear straps used to attach the arms. Also note the attachment for the nickel-plated steel metal strap.



View of the angle of the short end of the arm. Note: the short piece of wood between the arms to keep the arms from running into each other (This replaces what was the spine on the plan). Fabricate this from a 3/16" piece of wood.



Release pins. Drill two holes in the former for the release pins. Install your servo and then lay a small piece of 1/16" music wire on top of the servo arm. Then push the end up against the rear former and mark the position to drill the holes for the release pins. Note the angle of the servo arms; this will give you the proper throw for the servo arms. The release pins are kept in place using 1/16" Dubro Dura-Collars. I also used Dubro 1/16" Threaded ball link to connect the 2-56 threaded wire to the quick link. Notice the small block used where the release pins exit the former. These are 1/4" thick.

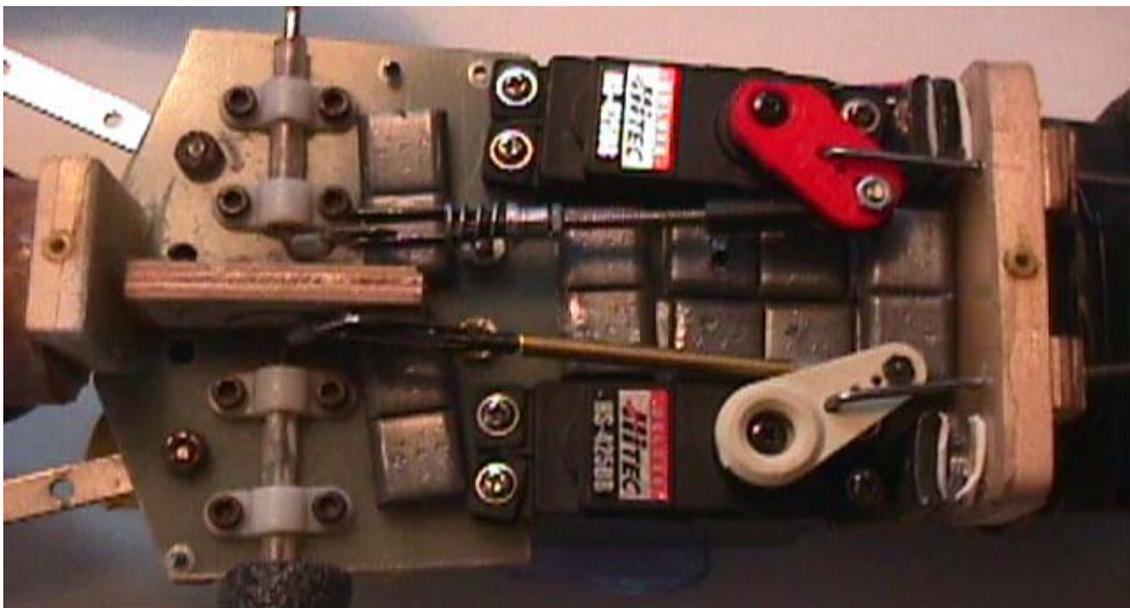
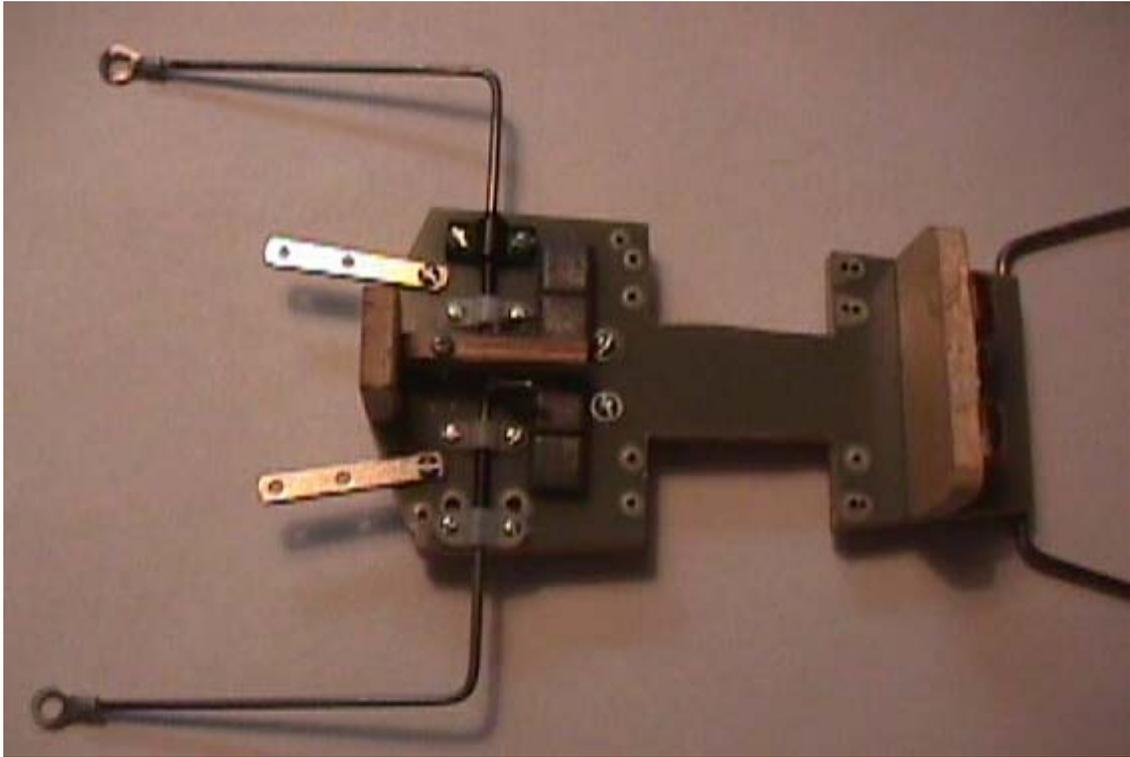


Top view servo arm detail.



Bottom view servo arm detail.

Servo Arm details: I am using 2-56 threaded rod for the pushrod and attaching the rod to a 1/16" ball link. The release pin is mad from 1/16" music wire and is held in place with a 1/16" Dubro dura collar.



This is an overall view of the backside of the parachutist. Note that both the front and rear former have holes drilled into them. These are used for holding the back plate and packtray to the body. I use the yellow inner Ny-rod as a plug in the front and rear former. Also note the small piece of wood separating the two control arms.



This is the back plate that goes inside of the packtray. Make this from some very stiff material should be 1/8" X 2 1/2" X 5" long. The length can be adjusted to fit the distance between the front and back former.



This is how it fits inside of the packtray and is screwed into the top and bottom former.



Front view showing the battery installed. I use a standard 700 Mah battery. Hold the battery down using some type of strap. Below the battery are the servos with all the wires stuffed in between them and then taped over with black electrical tape.



The Receiver is mounted in the front just below the servos. I am using a Spektrum DX6 radio and as you can see the short antennas are taped to the front of the legs. If you are using a regular receiver with a long antenna then you can run it down the outside of one leg then inside the leg continue inside the other leg and then outside. I did it this way before I changed to the Spektrum radio and it worked quite well.



The packtray hold down wires are made from fishing leader wire material. Use small brass tubing cut to size or buy some leader wire sleeves. Pack the parachute into the Pack Tray and then measure the length of the hold down wires. Then sew them unto the outside of the top flap on the packtray.



Front view of the assembled parachutist.



Sideview of the assembled parachutist.

I have included a set of plans for a pilot chute. I've always used one on my parachutist. It makes for a more positive opening.

There are patterns included for the jumpsuit. You are on your own there. The drawings should pretty much explain the sewing procedure for the jumpsuit.

You can use any 1/4 scale pilot's head for the parachutist and get the hands and boots/shoes at a hobby craft store.

If you have any questions you can contact me at juanf@olywa.net. I would appreciate any comments about improvements to this instructions sheet. I would also very much appreciate pictures of your parachutist.

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