

1903 Wright Flyer – Assembly Instructions

GENERAL

For the Wings, Elevators, and Rudders select an ivory coloured glass that looks like old canvas. We used Spectrum 315.02 but there are numerous other makes and colours that would be equally suitable. Use ¼ inch foil. Thinner foil won't provide a large enough surface to safely attach the wire.

We suggest using 10, 14, and 18 gauge wire because they're easy to obtain. You can substitute 1/8" brass rod for the 10 gauge wire, or use any size wire you like. To make it easy to solder, stay with brass or copper.

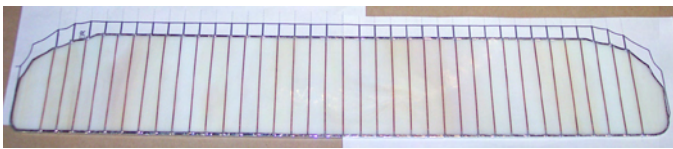
CUTTING

Attach the 2 parts of the **Wing Cutting Pattern** together to produce a single pattern for a 20 inch wingspan **MAIN WING**. Cut out 2 wings as shown in the photos. A trick will help ensure you get both wings identical is to place one on top of the other and grind to match.

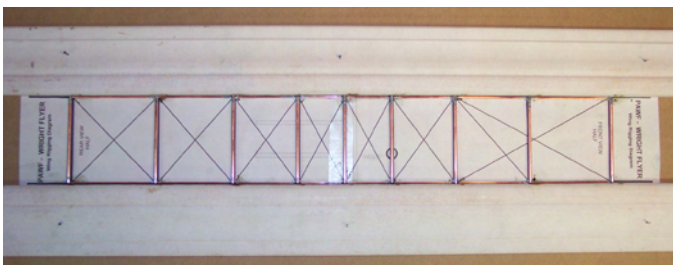
Using the **Assorted Cutting Pattern**, cut out two each of **ELEVATORS**, **RUDDERS**, and **PROPELLORS**. If you want to make the propellers that spin, make them instead from sheet copper or brass.

WING ASSEMBLY

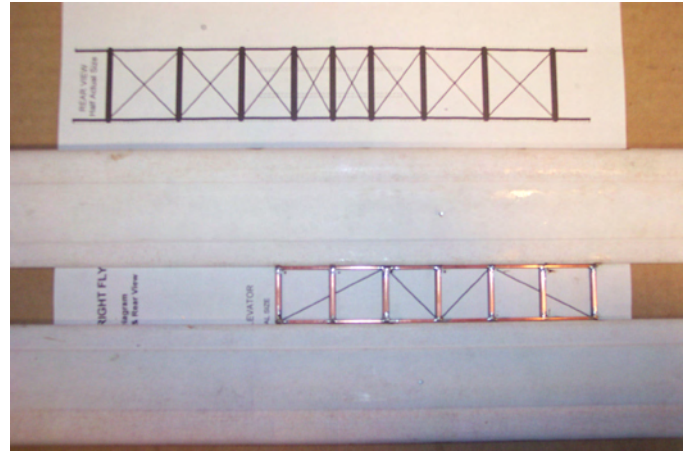
Using the **Wing Wire Diagram** as a guide, attach 18 gauge wire strips as **WING SEAMS** across each **MAIN WING** and each **ELEVATOR**.



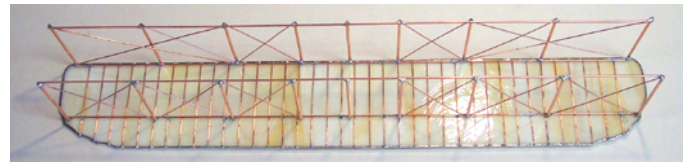
Use the **Wing Rigging Diagram** as a guide to make 2 identical sets of the **Wing Strut Assembly** as shown in the photo. Use 14 gauge wire (20 inch long) for top and bottom and 10 gauge wire for vertical **STRUTS**. Take care to cut off the 10 gauge vertical **STRUTS** flush with the 14 gauge wire. Install 18 gauge cross stays as shown for Front and Rear. An easy way to ensure correct size is to build between 2 boards as shown below.



Do the same for the **FRONT ELEVATOR** using the **Rigging Diagram** as a guide.



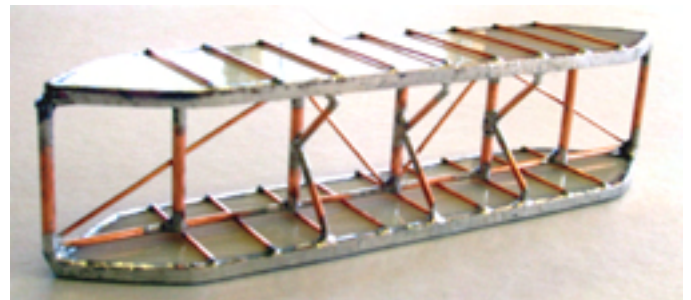
Attach the **Wing Strut Assembly** to the **MAIN WINGS** positioned as shown on the **Assembly Diagram Top View** for the Wing Trusses. Position the **Rear Wing Strut Assembly** as shown in this diagram.



Attach 18 gauge wire **CROSS STAYS** between the vertical **STRUTS** as shown on the Front & Rear View **Wing Rigging Diagram** and the **Assembly Diagram** for the Wing Trusses.

ELEVATOR ASSEMBLY

Using the **Rigging Diagram – Front & Rear View** and the **Assembly Diagram – Side View** as a guide, make the **Elevator Strut Assembly** with 10 gauge vertical **STRUTS** and 14 gauge top and bottom rail the same as done for the **Wing Strut Assembly**. As shown on the **Assembly Diagram – Side View**, these are to set in the middle of the **ELEVATOR**.



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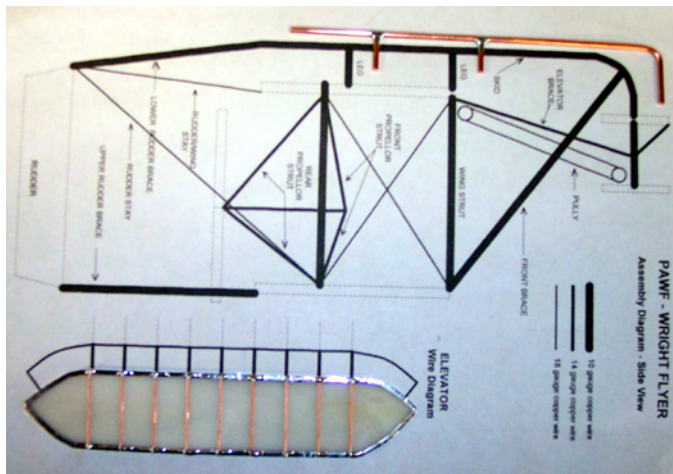
Attach 18 gauge wire **CROSS STAYS** as shown on the **Rigging Diagram**. Attach a length of 14 gauge wire from tip to tip across the full length under the middle of the **Lower Elevator Wing**.

RUDDER ASSEMBLY

Attach 14 gauge wire at each corner of each **RUDDER** to hold them $\frac{1}{2}$ " apart.

FINISHED ASSEMBLY

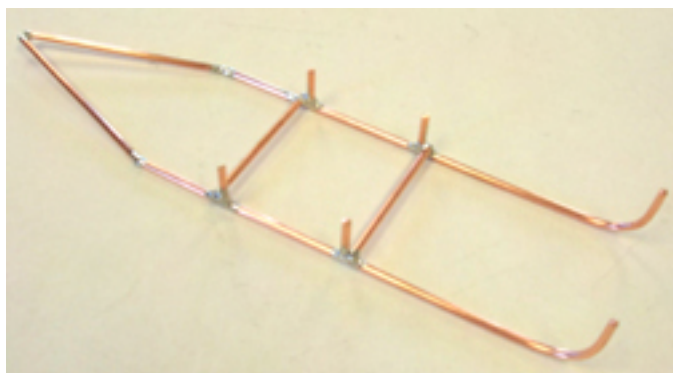
Using the **Assembly Diagram – Side View** as a guide, bend 10 gauge wire to make 2 **SKIDS** and attach 2 **LEGS** $\frac{3}{4}$ " long and attach to the **Wing Assembly**.



Using the **Assembly Diagram – Top View** as a guide, attach 2 – 10 gauge **BRACE** pieces.

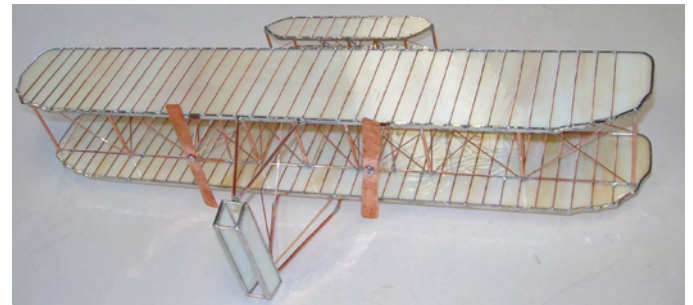
Attach 10 gauge wire braces to hold SKIDS apart as per photo.

Attach the **ELEVATOR ASSEMBLY** to the top of the **STRUTS** as shown on the **Assembly Diagrams – Side View**



Using the **Assembly Diagram – Side View** as a measuring guide, cut 2 lengths of 10 gauge wire as **UPPER RUDDER BRACES**. Attach from the Upper Wing to the top of the **RUDDER**.

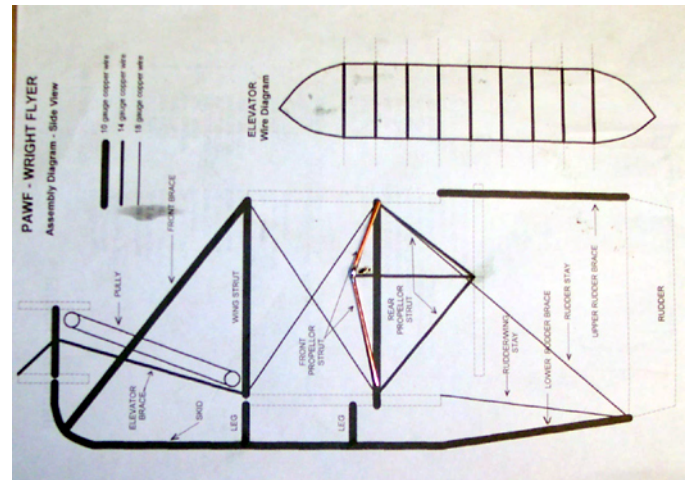
Attach the **LOWER RUDDER BRACE** from the **STRUTS** to the bottom of the **RUDDER**.



As shown on the **Assembly Diagram – Top View**, attach 18 gauge wire **RUDDER STAYS** and 18 gauge wire **ELEVATOR STAYS**. Attach 18 gauge wire **RUDDER/WING STAY**.

PROPELLER

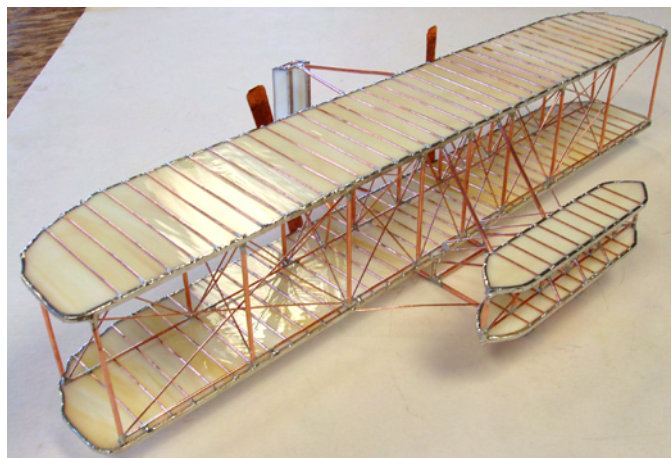
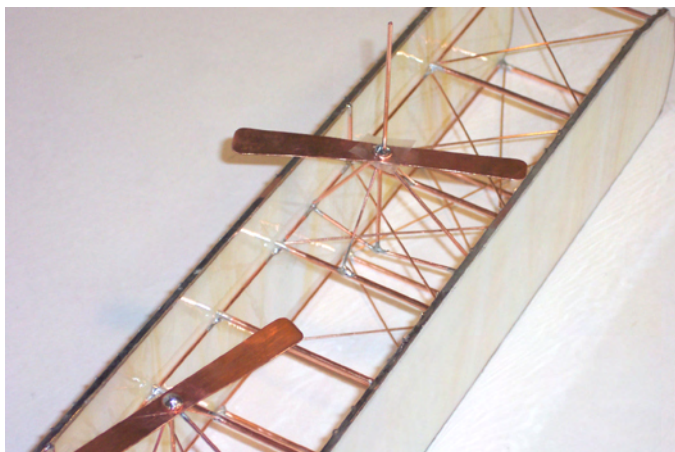
Using the **Assembly Diagram – Side View** as a guide, make 2 sets 14 gauge wire **FRONT & REAR PROPELLOR STAYS**. Attach to **TOP & BOTTOM WINGS** at the first **WING STRUT** left right from the center.



Attach 10 gauge **PROPELLER SHAFTS** (leave $\frac{1}{4}$ " out from).

If using a glass **PROPELLER**, attach direct to the **SHAFT**.

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If using a sheet copper or brass **PROPELLER**, drill a hole in it to fit over the **SHAFT**. Solder a small wire ring onto the **SHAFT**. Install the **PROPELLER** and push a piece of electrician's tape onto the **SHAFT** (this is to prevent the holding ring from soldering to the propeller). Solder a small wire ring onto the shaft to hold the propeller in place.

