**Build Instructions for**
**ESTES 0810 220 Swift Rocket**

This document is a supplement to the instructions that are provided with the rocket kit, based on initial build experience.

**Supplies**
You will need to following items in addition to the rocket kit.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Use Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil or Pen</td>
<td>Marking</td>
</tr>
<tr>
<td>Scissors</td>
<td>Need to cut pattern</td>
</tr>
<tr>
<td>Utility knife</td>
<td>Cut balsa fins</td>
</tr>
<tr>
<td>Ruler</td>
<td>Cut/mark straight lines</td>
</tr>
<tr>
<td>Sandpaper 150 or 200 grit</td>
<td>Sand fins</td>
</tr>
<tr>
<td>Glue - fast drying type.</td>
<td>Glue fins and launch guide</td>
</tr>
<tr>
<td>LOCTITE GO2 Glue dries in 6 minutes.</td>
<td></td>
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<tr>
<td>Paint - primer and colors</td>
<td>Provide unique rocket design</td>
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<tr>
<td>Painters tape</td>
<td>Tape pattern and mask areas during painting</td>
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</table>

**Step 1: Tube Marking**

- The fin guide pattern is part of step 1 on the instruction sheet
- Cut out the pattern
- Put pattern around rocket tube and tape in center.
- There are three lines on the pattern that indicate where the fins should be placed on the rocket tube. Mark on both end of the line
- Draw a straight line between the two marks to indicate where the rocket fins should be placed. Make sure they go to the bottom of the tube.
Step 2: Prepare Fins

- The fin pattern is part of step 2 on the instruction sheet
- Cut out the fin pattern. **NOTE:** You can add an additional 1/4 - 1/2 inch to the fin pattern if you want the rocket to be a little taller. Adjust size when marking balsa wood.
- Place the fin pattern on the balsa wood and draw the fins.

  ![Fin Template Image]

- Use the ruler and utility knife to cut the fins out of the balsa wood. **NOTE:** cut big and sand to size. **NOTE:** There is wood for 4 fins if you make a mistake.

  ![Ruler and Utility Knife Image]

- Place the fins together as a group and sand to the same size along all the edges.

  ![Fins Together Image]
Step 3: Attach Fins

- Put line of glue along root end of fin. Root end is a little larger than other narrow end.
- Let dry for 1/2 the dry time of the glue
- Add second line of glue will give it more stick, but may extend dry time.

- Place fin on guide line on rocket tube and HOLD in place until set
- Repeat for other two fins.
Step 4: Assemble Nose Cone and Launch Lug

- Apply line of glue along Launch Lug which is small straw like item
- Attach Launch Lug along fin and let dry
- Put glue along Nose Cone and place in rocket body tube
- Apply second line of glue along Launch Lug between fin and rocket body.
- Apply second line of glue where balsa fins meet rocket body.

Step 5: Rocket Finishing

- After all glue is dry and rocket is solid, you are ready to paint
- Apply primer paint to entire rocket and let dry
- If you want different colors, use tape to mask areas. Nose cone or fins are option.
  NOTE: paint soaks into balsa wood and you will need several coats.
- Spray selected colors where you want on the rocket.
- Apply Decals when paint is dry (if desired)

NOTE: Try to make your rocket unique so it can be distinguished from the other rockets in the group. Definitely put your name or initials on the rocket.