BEFORE YOU START

Read all instructions before beginning work on your model. Make sure you have all parts and materials. When you are thoroughly familiar with the assembly procedure, begin construction. Check off each step as you complete it. In each step, test-fit the parts together before applying any glue. If some part doesn’t fit properly, sand lightly or build up as required for precision assembly.

PARTS LIST

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TOOLS AND MATERIALS

In addition to the parts included in this kit you will need white glue (Titebond, Elmer’s, or similar household white glue is recommended), scissors, hard and soft lead pencils, ruler, fine and extra-fine grit sandpaper, sanding sealer, masking tape, a medium-size modeling paint brush, modeling knife with a sharp blade, tweezers, wax paper, dowel or stick, chrome enamel spray paint, a bottle of chrome silver enamel paint, and clear flat spray paint (Testor’s “Dull-Cote” is preferred).
ASSEMBLY INSTRUCTIONS

1. Sand both sides of balsa sheet, then carefully remove the fin parts using a sharp knife to free the edges. Sand the edges of the parts slightly to remove any rough edges - but be careful to leave the edges square and sharp-cornered. Using the fin assembly patterns from the pattern sheet (part J) identify parts and make sure all mating edges match. Rub a line of glue into the mating edges of all the fin parts as shown and allow the glue to dry.

2. Cover fin with waxed paper and apply a second bead of glue to mating edges and press fin parts together, positioning them on the waxed paper over the patterns. Cover with wax paper, weight them down and set them aside to dry on a flat surface. Make three fins and forward skid.

3. Cut along line the length of the tube. Use a sharp knife cut along the line the full length of the tube. Slide the spacer tube over the engine mount tube (part C) and check to see if the engine hook (part G) fits in the space made by the two edges of the spacer tube. If not, slide spacer tube off the engine mount tube and trim one edge of the spacer tube with a pair of scissors until hook fits. Smear glue around engine mount tube where spacer tube goes and slide spacer tube into place. Wipe away excess glue.

4. Allow glue to set before going on to next step.

5. Apply glue around the engine mount tube just ahead of the notched ring. Slide retainer ring (part H) onto the tube, over the glue and against the centering ring. Slide the remaining centering ring onto the front of the engine mount tube 1/16" from the edge of the tube. Apply a line of glue at the ring/tube joint on both sides of each ring.

6. Locate nine rocket tubes (part E). Apply glue to the front and down the side of one of the rocket tubes as shown. Position the tube, as shown above, adjacent to the engine hook and against centering ring. Allow glue to set before proceeding with Step 8.

7. Remove the centering rings from die-cut ring set (part F). Cut a 1/8" wide, 1/16" deep notch in one of the rings. Slide notched ring onto the engine mount tube from the front making sure engine hook passes through notch in centering ring. Glue centering rings securely against the spacer tube.
Mark an "F" inside one end of the body tube (part B). This indicates the front of the body. Measure 3/16" from this end of the tube and place a mark on the outside of the tube. From this mark, place a mark at 2", 4", 6", 8" and 10". Cut out the marking guide from the pattern sheet (part K). Wrap the marking guide around the body and tape the ends together. Slide the guide along the tube until one end is even with the first mark. Using a hard lead pencil, draw a line around the body tube. Repeat at each mark, to establish the circular rivet course lines. Place a mark at each end of the guide for the location of the top, bottom and fin center lines. Place a letter "T" next to the mark for the top center line. Remove the guide from the body tube. Draw a line along the tube using a door jamb as a guide. Draw a light line the entire length of the tube for all the center lines.

Slide the marking guide back onto the body tube. Line up the top center line on the guide with the top center line on the tube. Place a mark on the tube at each end of the guide for all the rivet course lines. Using a hard pencil draw the lines onto the body tube in the areas shown in the illustration for both sides of the body tube.

Make several marks around the nose cone at a point 2" forward from where the nose cone sockets into the body tube. Wrap the marking guide around the nose, lined up on the marks. Scribe a line around the nose cone with a hard lead pencil. Mark the nose cone 4" forward of the body tube socket. Cut the nose cone template from the pattern sheet, wrap around the nose cone on the pencil mark, and scribe a line around the nose. This establishes the forward rivet courses.

Lightly sand the fins where the glue had been applied to the joints. Apply a coat of sanding sealer to one side of each fin. When dry,
Turn fin over and apply sealer to the other side. Apply sealer to all edges except the root edge. When the sealer is dry, lightly sand all surfaces. Repeat sealing and sanding process a second time. If balsa grain still shows, a third coat of sealer (and sanding) may be necessary.

Cut the tail shroud template from the pattern sheet. Wrap the template around the tail shroud tube (part A) and tape ends together. Make sure the straight end of the template is even with one end of the tube. Draw a line on the tube along the rear of the template. Be sure to mark the tube where shown to provide an alignment mark for gluing to the body. Remove template and carefully cut out the tail shroud. Lightly sand the edges to remove any burrs or uneven cut marks. Set aside left-over portion of tail shroud tube for later use.

Glue the tail shroud onto the rear of the body tube (remember, the front of the body tube is marked with an "F"). Line up the mark on the shroud with the top center line on the body tube and the bottom rear edge of the shroud even with the rear of the body tube. Wipe away excess glue.

Using the procedure outlined in Step 16, glue one lower fin onto the body tube with the front of the fin exactly 4" from the front of the tail shroud and centered on one of the fin center line and "rivet course C" lines. Check to see if the fin projects straight away from the body tube with the alignment guide. Let fin dry in an upright position as shown.

Cut the fin alignment guide from the pattern sheet. Locate the top fin. Apply a bead of glue to the root edge of the fin and press onto

Cut out the canopy from the printed canopy sheet (part L). Score canopy, using sharp hard lead pencil and ruler on the back (non-printed) side. Fold and glue the front tabs to the insides of canopy sides and hold until glue sets.

Cut out the parachute (part O) on its edge lines. Cut three 36" lengths of shroud line (part P). Attach the line ends to the top of the parachute with tape discs (part Q) as shown.
Glue the remaining lower fin onto the body tube with the front of the fin exactly 4\" from the front of the tail shroud and centered on its fin center line and rivet course line. Check to see if the fin projects straight away from the body tube with the alignment guide. Let fin dry in an upright position as shown in Step 18.

Cut out the shock cord mount from the pattern sheet. Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part N) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets.

Glue forward skid to the body tube's bottom center line exactly 1-3/4\" from the front of the body tube. Again check to be sure that the skid projects straight away from the tube with the alignment guide.

Apply glue to the inside front of the body tube over an area about 1-1/2\" to 2\" from the front. The glued area should be about the same size as the shock cord mount. Press the mount into the glue as shown and hold it until the glue sets.
Select the particular decal you wish to apply. Cut only that decal from the sheet, trimming as closely as possible to the printed design. For designs with straight sides, use a ruler as a cutting guide. Place the remainder of the decal sheet to one side so water will not be accidentally dripped onto it.

Submerge the decal completely in a pan of lukewarm water until it will just slide on the backing material. This may take 20-30 seconds or longer for larger decals.

Slide the decal from backing material onto model. With tweezers, move the decal until it is in the desired position. If the decal "grabs" and will not move, do not force it. Use the paint brush to apply a little water to the decal surface. The water will run under the decal so you can move it easily.

Let the decal set for a couple of minutes, then blot gently with a clean cloth to remove excess water and air bubbles. Do not rub the cloth back and forth or you may move or wrinkle the decal. After the decal has set for another 3 or 4 minutes, you may gently rub the cloth over it to remove any remaining moisture or trapped air. If you encounter a stubborn air bubble, prick the bubble with the point of the knife, place a drop of water on the area and press down with the cloth to smooth the film into place.

When applying subsequent decals, be careful that you do not disturb those previously applied.

Side decals: Body stripe is located 6-1/2" from the front edge of the tail shroud and top edge is even with rivet course B. The three port holes are centered on rivet course B and centered between the 4" and 6" lines drawn in Step 10.

Door decal is centered between the 6" and 8" lines drawn in Step 10, with the port hole centered on rivet course B.

Patrol Cruiser Excalibur decal is centered between the 8" and 10" lines drawn in Step 10, and centered on rivet course C.

Apply decals for other side in the same order. When decals have set, slit body stripe decals at the body tube/nose cone joint with a sharp knife.

Fin decals: Apply as shown in decal placement photos. Make sure decals for lower fins are positioned on top of fin only.
Rivet courses around rocket body and nose cone: Cut rivet courses into strips by placing ruler on small tick marks and between rivet courses. Cut along the ruler with a sharp knife. Cut out only what you need at the time so none of the decals will be lost.

NOTE: If any of the rivet course lines drawn in Step 10 are too faint to be seen, re-draw them with a light pencil line prior to decal application.

Locate the small curved rivet course on the decal sheet. Mark the nose cone 6” from the body tube/nose cone joint. Apply this decal to the nose cone and center rivets on the mark.

Cut out eight medium size rivet courses as detailed above. Take one of the rivet courses and wrap it around the second course line from the front of the nose cone. Place a mark on the decal where the one end meets it. Cut decal at this point, save excess decal to be used later. Soak in water and apply this decal in its proper position. Follow this procedure for each of the seven circular rivet course lines, breaking for fins, canopy, and cannon doors.

Rivet courses along nose cone: Cut out two medium size courses. Measure between first course around nose cone and third course. Cut to size and apply to both sides down the side rivet course line of the nose cone.

Cut four small size courses from decal sheet. Locate top center line and measure between second course around nose cone and cannon doors. Cut one course to size and apply in this location. Locate rivet course “A” on nose cone and measure, cut, and apply decals as per previous instructions. Locate bottom rivet course line on nose cone, measure the final course, cut and apply as per previous instructions. Remember to save all excess rivet course decals to be used later.

Rivet courses A, B, C, and D along rocket body: Cut the remaining small size rivet courses from decal sheet. Locate the top center line on rocket body, measure one rivet course to fit between the first body course around the tube and the canopy. Cut rivet course to size and apply. Cut course lines to size and apply around top edges of canopy. Use any excess decal from previous steps if it can be used instead of cutting larger pieces. Cut course line to fit between rear of canopy and top fin. Cut and apply the rest of courses noting where course lines break, begin, and end.

Fin rivet course: Cut out the fin assembly patterns from the pattern sheet, lay the pattern on its appropriate fin to see how the fin rivet courses run. Cut top fin pattern as shown. Then lay the front piece on the top fin and with pencil draw a faint line using the piece for a pattern as shown. Repeat on opposite side. Do this for all the rivet course lines designated by dotted lines on the patterns.

After all rivet courses are copied on fins, cut remaining rivet courses from decal sheet. Locate where each rivet course runs on the fin, cut to size and soak in water, and apply as per previous instructions. Don’t forget to use the excess decal rivet courses whenever possible.

Cock pit decal: Trim clear from around decals with a sharp knife, close to each rivet pattern. Center all three decals in their positions as shown.

Cannon cover decal: Center this decal on the top center line approximately 1-1/4” from the nose cone/body tube.

Tail extension decal: Trim decal with a sharp knife. Apply decal so longest line on the decal is centered with the top center line/top fin. After the decal has thoroughly dried, trim away excess clear material that extends beyond the rear of the tube.
T-12 Pack parachute, shroud lines, and shock cord neatly into rocket body. Slide nose cone into place. Nose cone should separate easily from rocket body tube, but should not be extremely loose. If fit is too tight, sand inside of body tube and shoulder of nose cone with fine sandpaper. If fit is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.

NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in cold weather.

T-11

Select an engine and install an igniter as directed in the engine instructions. Use a B4-4 engine for your first flight.

T-10

Insert engine into rocket engine mount. Engine hook must latch securely over end of engine.

T-9

Disarm the launch panel -- REMOVE SAFETY KEY!

T-8

Slide launch rod through rocket launch lug and place rocket on launch pad. Make sure the rocket slides freely on the launch rod. Clean the micro-clips and attach them to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to engine as possible.

T-7

Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

T-6

Arm the launch panel -- INSERT SAFETY KEY!

-5-4-3-2-1-LAUNCH!!

Repeat Countdown Checklist for each flight.

MISFIRE PROCEDURE

Occasionally the igniter will heat and burn internal pieces without igniting the engine. This is almost always a failure to install it correctly. REMOVE SAFETY KEY and launch panel, remove the model, clean the igniter residue from the engine nozzle, and install a new igniter. Repeat the Countdown Checklist.

Kit 1339