

NOVA SCOUT SHIP

FLYING MODEL ROCKET

SKILL LEVEL 2

1-Beginner 2-Intermediate 3-Craftsman
4-Advanced 5-Expert

- Starship Nova Scout Ship
- Die-Cut Balsa Fins
- Quick-Release Engine Mount
- Plastic Nose Cone
- 30" Streamer Recovery

Flights
To 900
Feet!

Engine Types: A8-3 (First Flight),
B4-2, B4-4, B6-2, B6-4, B8-5, C6-3,
C6-5

Length: 15 in. (38.1 cm)

Dia.: .976 in. (24.8 mm)

Weight: 1.29 oz. (36.5 g)



This is a hobby kit requiring assembly. Recommended for ages 10 to adult. Engines, launch system, glue and finishing supplies are not included. Adult supervision is suggested for those under 12 years of age when flying model rockets.

#1392



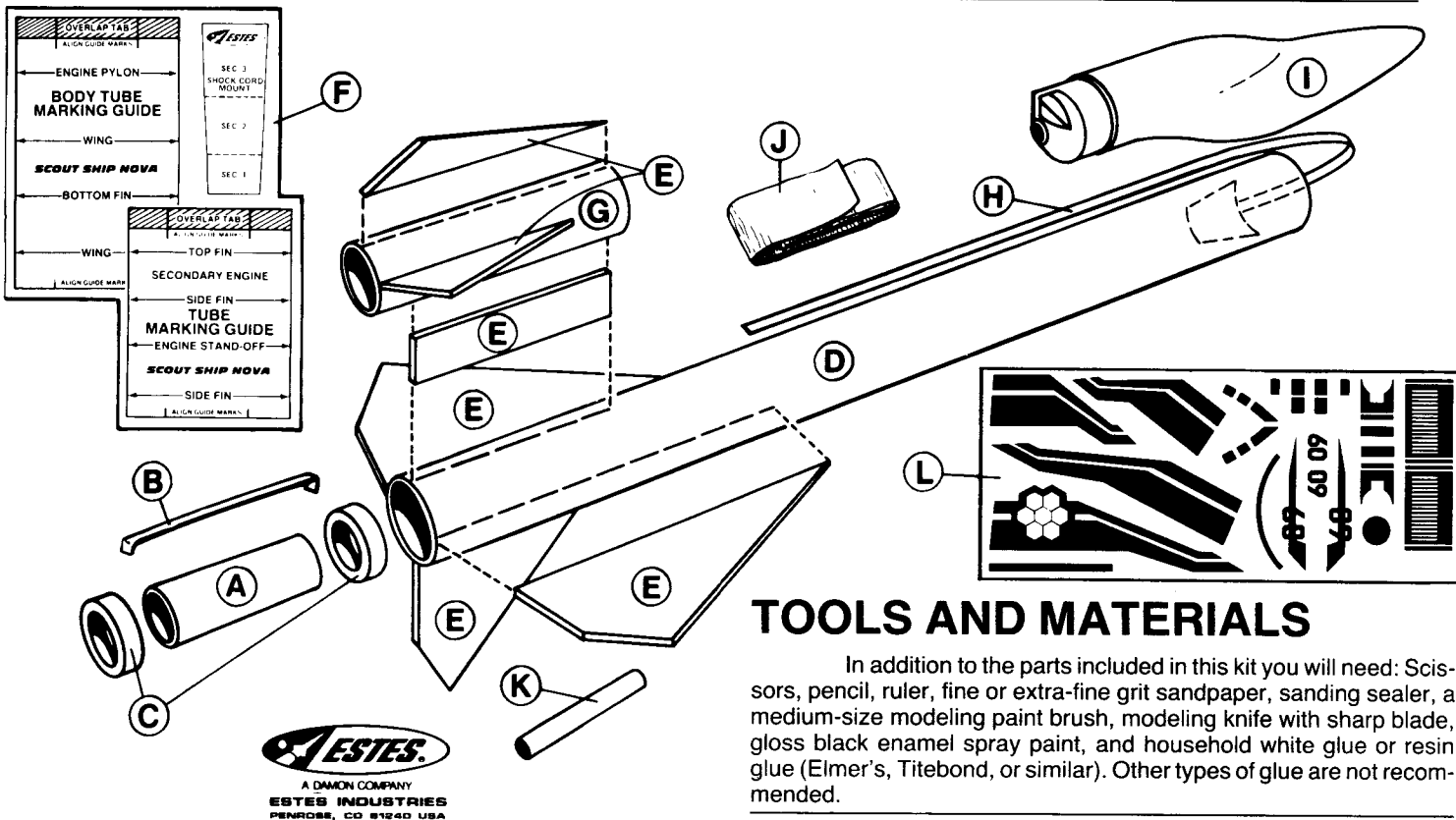
A DAMON COMPANY

ESTES INDUSTRIES
PENROSE, CO 81240 USA

SCOUT SHIP NOVA

SKILL LEVEL 2 - Recommended For The Intermediate Rocketeer

INCHES
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TOOLS AND MATERIALS

In addition to the parts included in this kit you will need: Scissors, pencil, ruler, fine or extra-fine grit sandpaper, sanding sealer, a medium-size modeling paint brush, modeling knife with sharp blade, gloss black enamel spray paint, and household white glue or resin glue (Elmer's, Titebond, or similar). Other types of glue are not recommended.

PARTS LIST

KIT NO. 1392

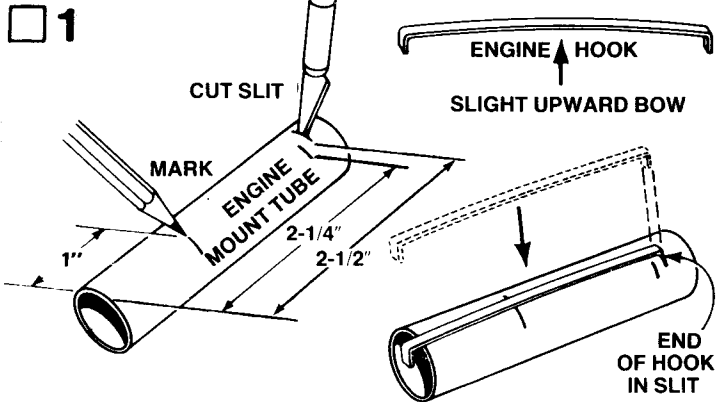
A	1	Engine Mount Tube (type BT-20J) 2-3/4" Long	30326
B	1	Engine Hook (type EH-2)	35025
C	2	Centering Rings (type AR-2050)	30164
D	1	Body Tube (type BT-50W)	30372
E	1	Die-Cut Balsa (type BF-1392)	32389
F	1	Pattern Sheet (type SP-1392)	83451
G	1	Secondary Engine Tube (type BT-20G) 3-1/2" Long	30324
H	1	Shock Cord (type SC-1)	85730
I	1	Nose Cone (type PNC-50F)	71030
J	1	Streamer (type RS-20)	38278
K	1	Launch Lug (type LL-2A)	38175
L	1	Decal (type KD-1392)	37534

RECOMMENDED ENGINES: A8-3, B4-2, B4-4, B6-4, B8-5, C6-3, and C6-5. First Flight A8-3

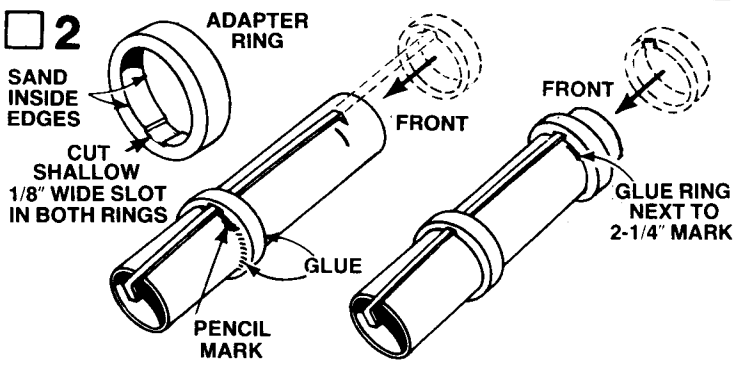
BEFORE YOU START

Read each step and study the accompanying drawings before doing any of the work called for in that step. Make sure you have all parts and materials. Check off each step as you complete it. Always test-fit parts together before applying glue. It will sometimes be necessary to sand edges of rings, tubes, etc. to obtain proper fit. If you are in doubt about the relative size or location of some parts, refer back to this exploded view drawing for clarification. Adequate glue joints are very important for a flying model rocket. Follow the instructions carefully in this regard.

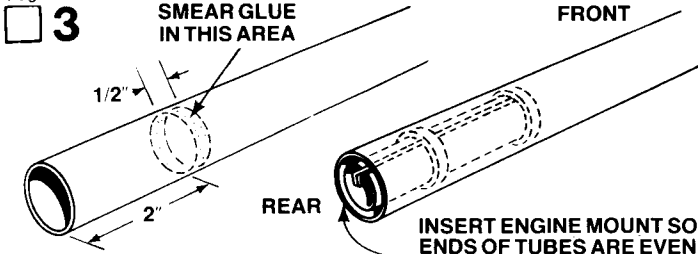
ASSEMBLY INSTRUCTIONS



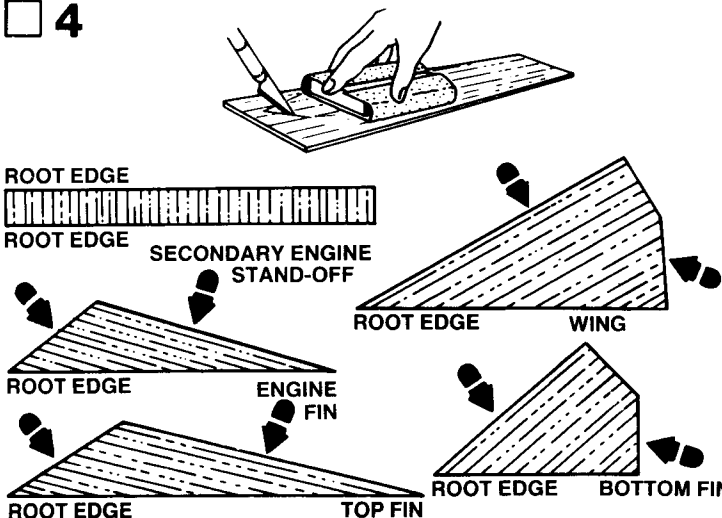
Mark the engine mount tube (part A) at 1", 2-1/4", and 2-1/2" from one end. Cut a 1/8" long slit at the 2-1/2" mark. Gently bend the engine hook (part B) so that it bows upwards very slightly in the middle. (Study the drawing.—Don't bend the wrong way.) Insert one end of the engine hook into the slit in the tube.



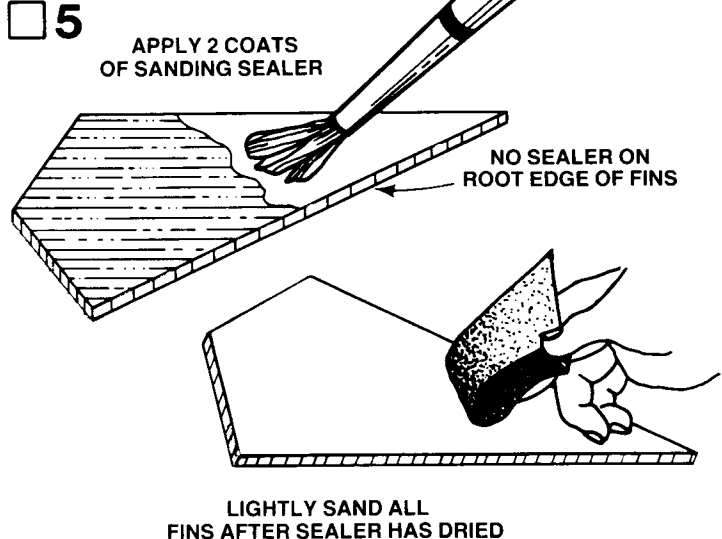
Sand the inside edges of the two centering rings (part C) to remove burrs. The rings should slide easily onto the engine mount tube. Cut a very shallow 1/8" wide slot inside the two centering rings so they will fit over the engine hook. Slip one ring into the front end of the engine mount tube and slide it down to the 1" mark. Make sure the engine hook runs straight down the tube, then apply glue to both sides of this ring. Apply glue around the tube at the 2-1/4" mark and slide the remaining ring into place down to the 2-1/4" mark.



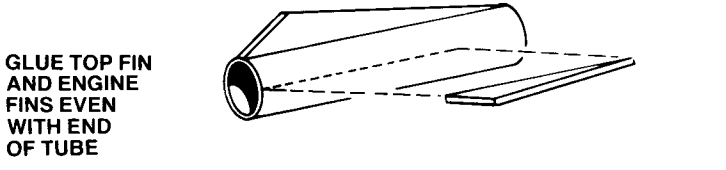
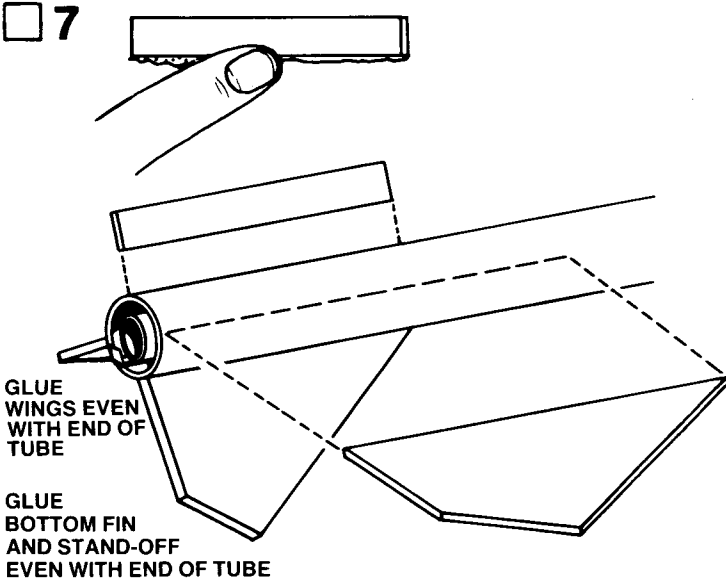
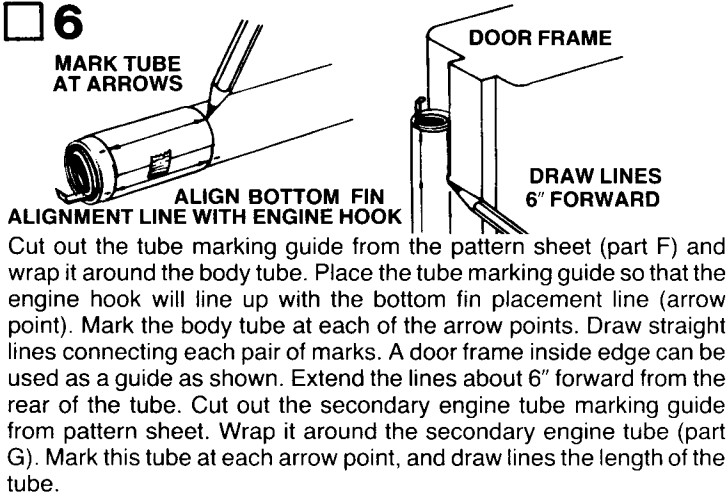
The engine mount unit will be pushed into place so that the rear of the engine mount unit (end with engine hook projecting) is even with the rear of the body tube. Test-fit the engine mount unit several times by smoothly inserting and removing it. Sand if necessary to assure a smooth fit. Once this can be smoothly and easily done, remove the engine mount unit. Apply a ring of glue around the inside of the rear of the main body tube (part D) about 2" to 2-1/2" from the end of the tube. Make certain that the engine hook is to the rear and insert the engine mount unit with one smooth motion. Do not pause, or the glue may "lock" with the engine mount unit in the wrong position.



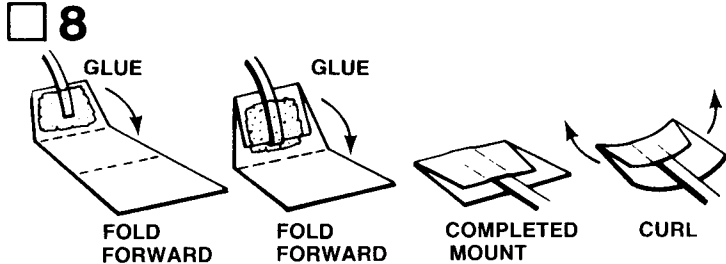
Sort and identify all balsa parts. Sand round all edges shown with an arrow point. All other edges remain square. Fine-sand the balsa die-cut sheet (part E), then carefully remove the die-cut fins from the sheet. Free the edges with a sharp knife. Sort and identify all the balsa parts. Sand the edges of the fins as shown, and leave all other edges square.



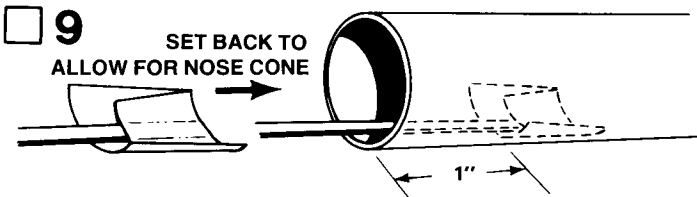
Apply a coat of sanding sealer to each balsa part. Apply sealer to all edges except the root edges. When sealer is dry, lightly sand all the sealed surfaces. Repeat sealing and sanding process until balsa grain is filled and smooth. Resand root edge lightly to remove any trace of sealer.



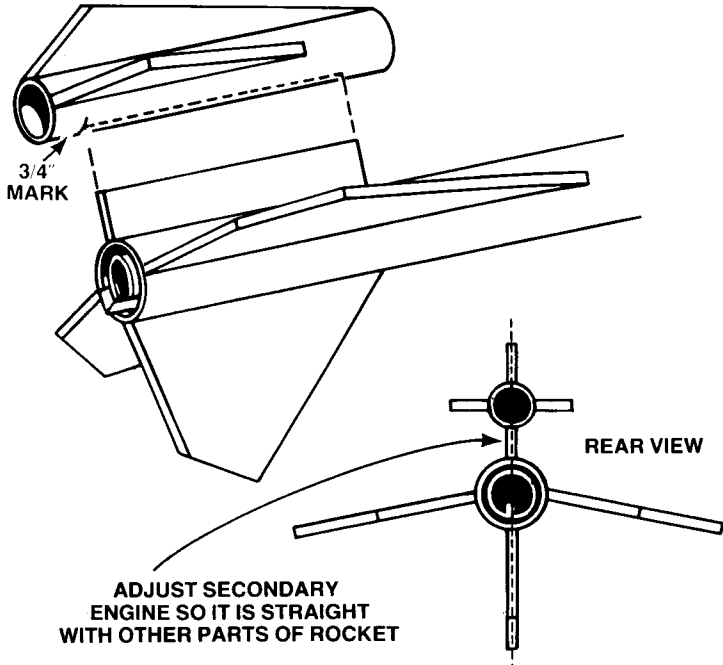
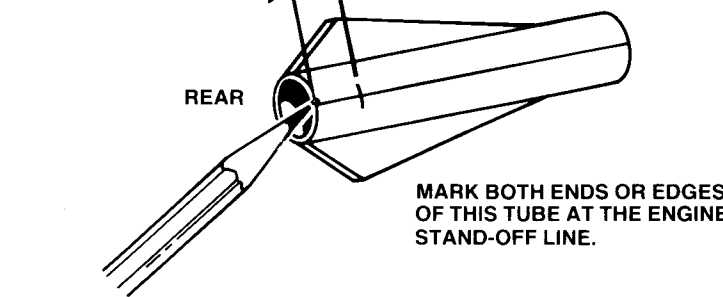
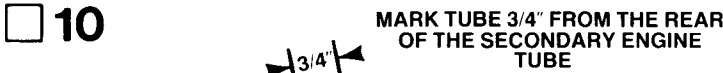
Rub glue into the root edge of each fin, stand-off, and wing and allow to dry. Apply glue to the fin, wings or stand-off again and position fin, wings or stand-off on the alignment lines in positions shown. Adjust the fin, wings or stand-off so they project straight away from the body tube. DO NOT set the rocket on its fins, wings or stand-off while the glue is wet.



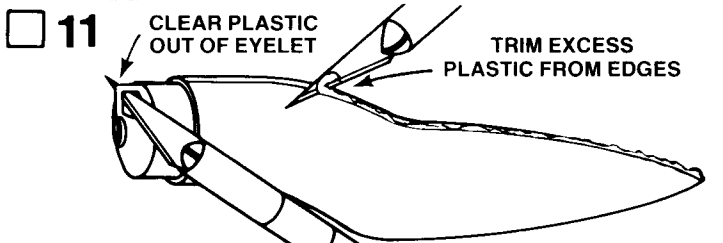
Cut out the shock cord mount from the pattern sheet. Fold on dotted lines, then unfold and apply glue to Section 1. Lay the end of the shock cord (part H) into the glue. Fold over and apply glue to the back of Section 1 and the exposed portion of Section 2. Fold again to complete mount. Curl the edges of the mount up so it will match the contour of the body tube and hold with your fingers until the glue sets.



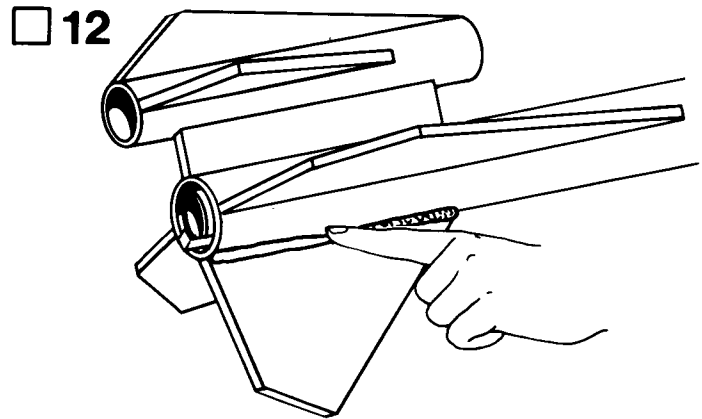
Use a finger or stick to apply glue to the inside of the front of the body tube, 1" to 2" from the front of the tube. Press the shock cord mount firmly into position in glue far enough from the front edge of the tube to allow clearance for the nose cone to fit into place. To insure a good bond use a stick or your finger to smear a film of glue over the mount and surrounding area in the body tube.



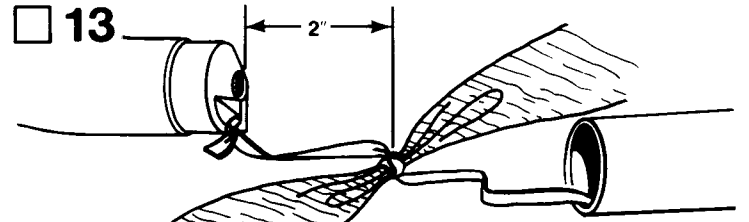
Mark the secondary engine tube 3/4" from the rear of the tube. Rub glue into the root edge of the engine stand-off and allow to dry. Apply glue to the stand-off again and position the secondary engine tube so the 3/4" mark is at the rear of the stand-off and the stand-off is straight on the alignment line of the tube. Adjust the tube so it is straight with other parts of rocket.



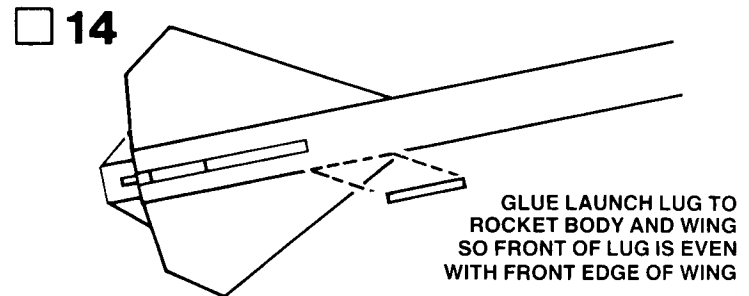
Trim or sand any excess plastic from around the sides of the nose cone (part I). Use a sharp knife to remove any excess plastic from the inside of the molded eyelet at the rear of the nose cone. Wash the nose cone with lukewarm soapy water, rinse well, and dry.



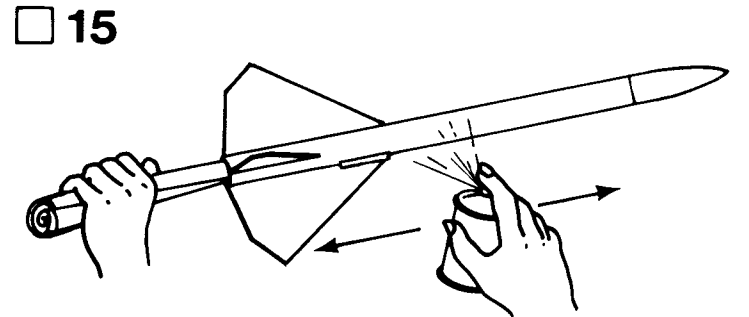
When the glue on the fin joints has dried, apply a glue reinforcement to each fin/body tube joint. Holding the model level, apply a line of glue to both sides of each fin joint and on both sides of the launch lug. Smooth out the glue with your finger. IMPORTANT - Support the rocket on table edge until the glue dries.



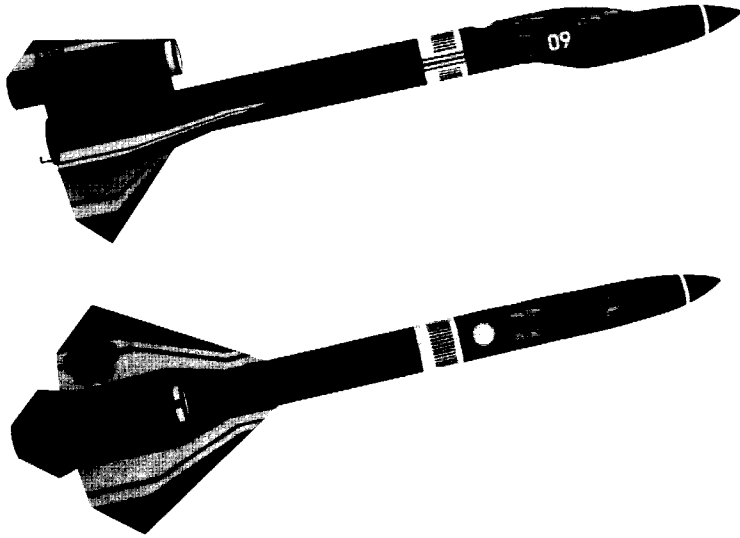
Using a double knot, tie the shock cord around the middle of the plastic streamer (part J) about 2" from the end of the shock cord. Attach the free end of the shock cord to the nose cone with a firm knot. Roll streamer up and slide streamer, shock cord, and nose cone into body tube.



Glue launch lug (part K) to rocket body tube/wing joint so front of launch lug is even with the front edge of the wing. Align the launch lug straight with the body.



After the glue is completely dry, paint the entire model gloss black. Follow instruction on the spray can for best results. We recommend spray enamel. Do not paint the model with lacquer paint. Shake can before spraying. Hold the can straight up and spray in long, smooth "strokes". Spray the model with several light, dry mist coats of paint to avoid "runs". Shake can periodically. To obtain a gloss, final coat should be applied slightly heavier. Let this coat dry overnight. Be sure paint is completely dry before applying decals.



When all paint is dry, apply the decals (part L) in the positions shown. (A) Cut only one decal at a time from sheet. (B) Submerge decal in lukewarm water until decal slides on backing paper (usually 15 to 30 seconds). (C) Gently slide decal from backing paper onto model. (D) Move decal into exact position and carefully blot away excess water with a soft cloth. (E) If the decal "sticks" before you have it in position, apply water over the decal with a brush. This will permit the decal to be moved. (F) Smooth out all wrinkles and air bubbles before the decal dries. We recommend that the completed model be sprayed with Tes-tor's "Dull-Cote" or "Gloss Cote". This is a clear spray paint that pro- tects the model's finish.

LAUNCHING COMPONENTS

To launch your rocket you will need the following items:
 —An Estes model rocket launching system
 —Flame resistant recovery wadding (Estes Cat. No. 2274)
 —Estes A8-3, B4-2, B4-4, B6-4, B8-5, C6-3, or C6-5 model rocket engines. Use an A8-3 engine for your first flight.

Be sure to follow the HIAA-NAR* Model Rocket Safety Code when carrying out your model rocket activities.
 *HIAA—Hobby Industry of America
 *NAR—National Association of Rocketry

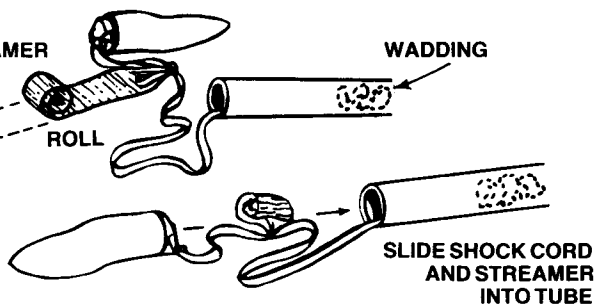
COUNTDOWN CHECKLIST

T-13 RECOVERY WADDING

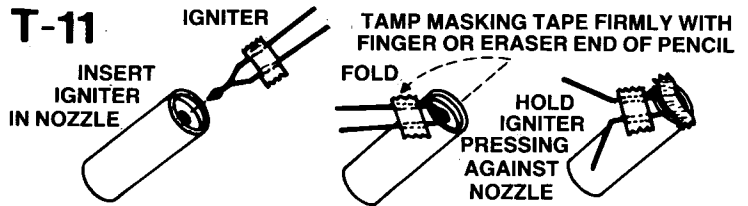


Pack 2 or 3 squares of loosely crumpled recovery wadding into the body tube. Usually this will fill the body tube for a distance equal to about 1-1/2 times its diameter.

T-12 FOLD STREAMER IN HALF TWICE



Fold the streamer in half lengthwise. Fold again, then roll streamer lightly until the streamer fits loosely into the rocket body. Pack the shock cord neatly into the rocket body. Slide nose cone into place.

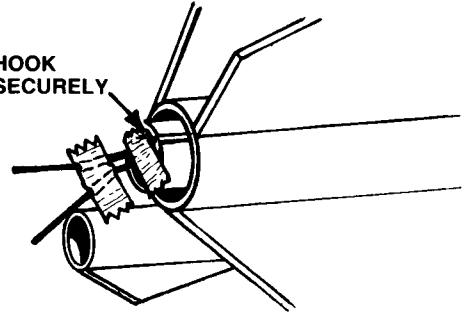


Select an engine and install an igniter as directed in the engine instructions. The engines recommended for use with this rocket are the A8-3, B4-2, B4-4, B6-4, B8-5, C6-3, and C6-5 made by Estes.

Use an A8-3 engine for your first flight

T-10

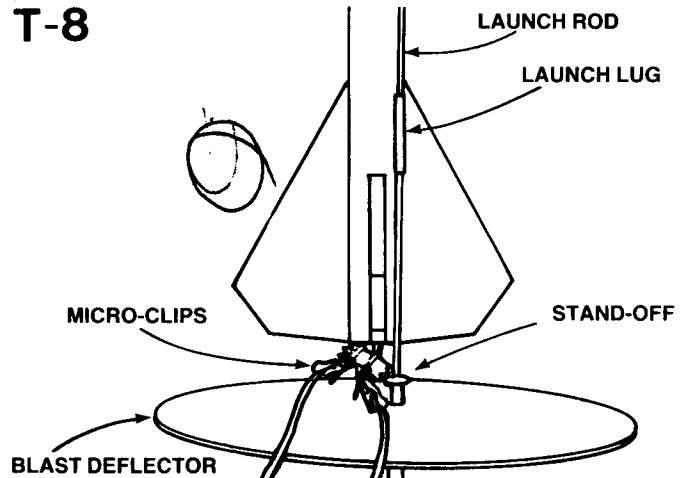
ENGINE HOOK MUST LATCH SECURELY



Insert engine into rocket engine mount. Engine hook must latch securely over end of the 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 protective tape on igniter 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!

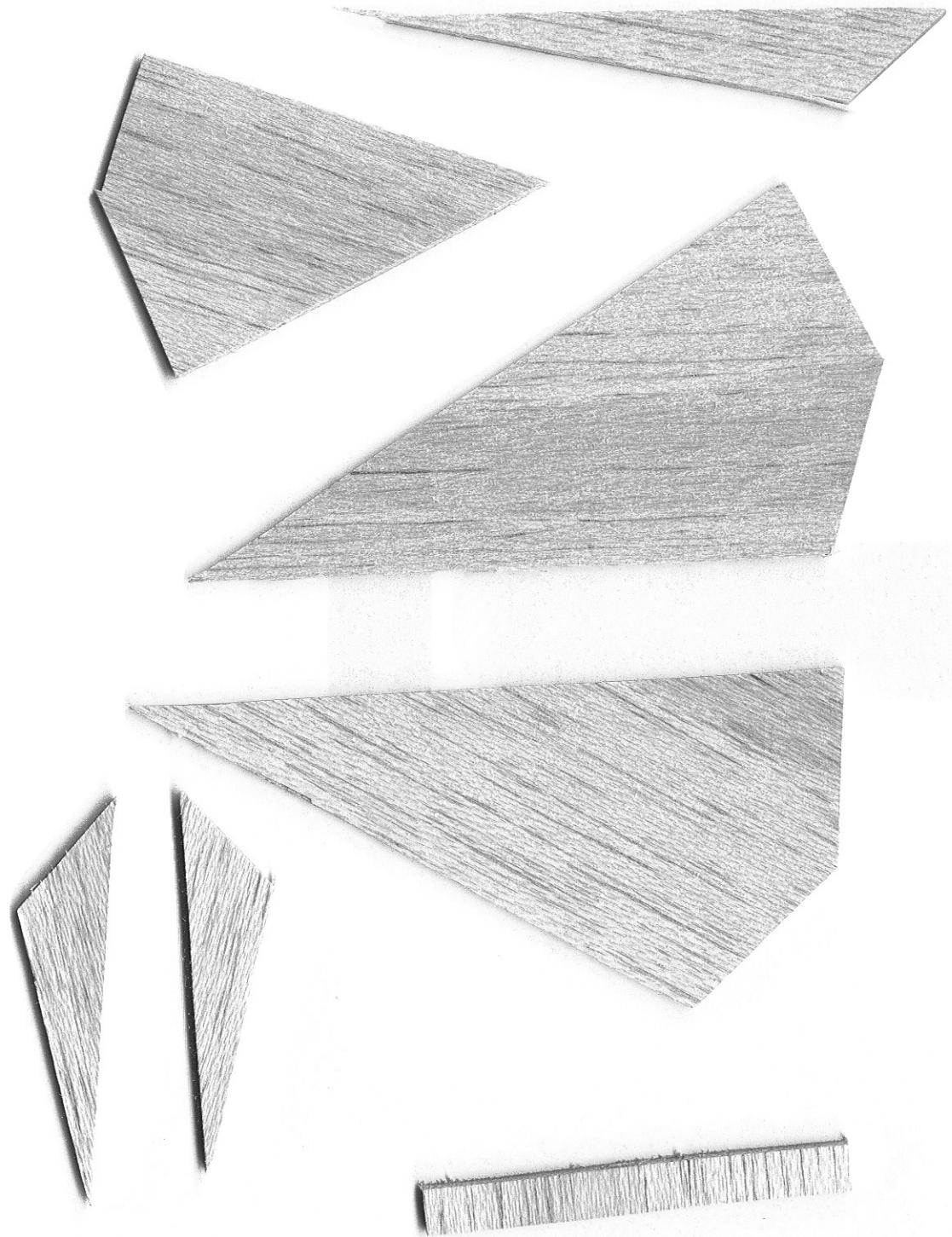
5-4-3-2-1-LAUNCH!!

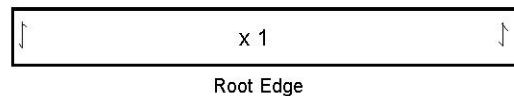
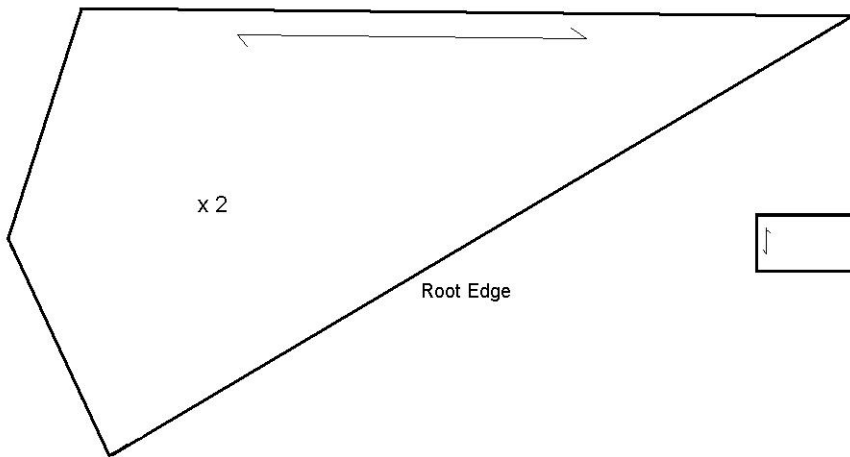
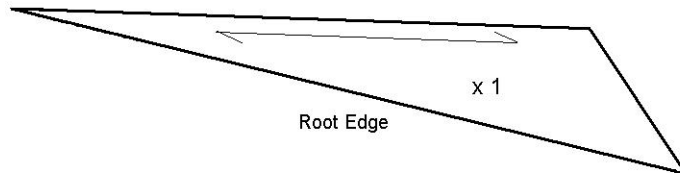
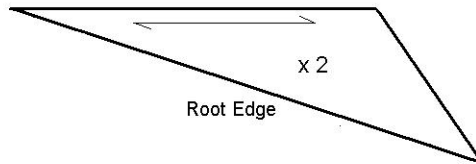
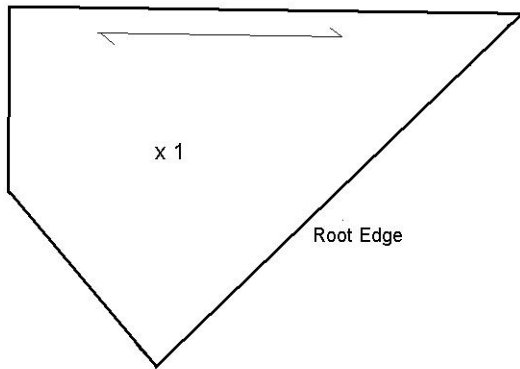
Repeat Countdown Checklist for each flight.

MISFIRE PROCEDURE

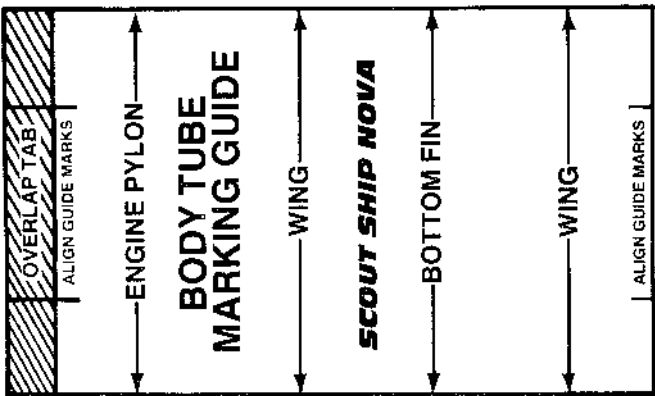
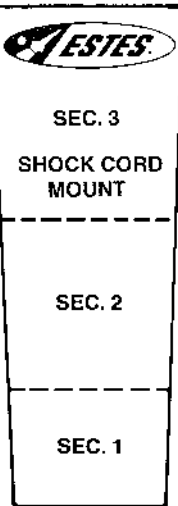
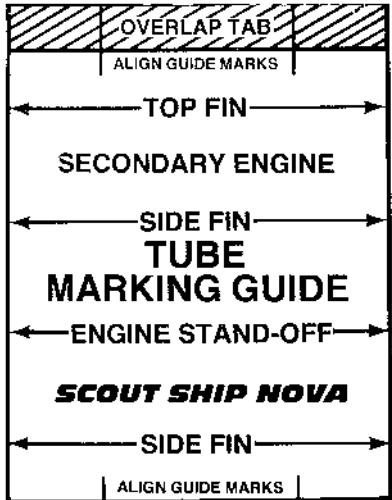
Disarm the launch panel. Wait one minute before approaching the rocket on the launch pad. Remove the rocket, clean the igniter residue from the nozzle of the engine, and carefully install a new igniter. Repeat the Countdown Checklist.

Failure of the rocket engine to function properly is nearly always caused by a failure to install the igniter correctly. This failure permits the igniter to heat and burn into two pieces without igniting the engine.

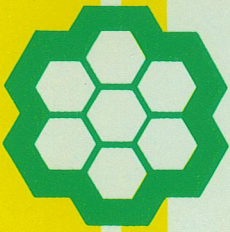




Make fins out of 3/32" balsa fin stock in the quantities noted on each template above.



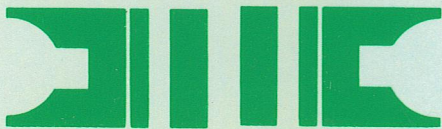
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