



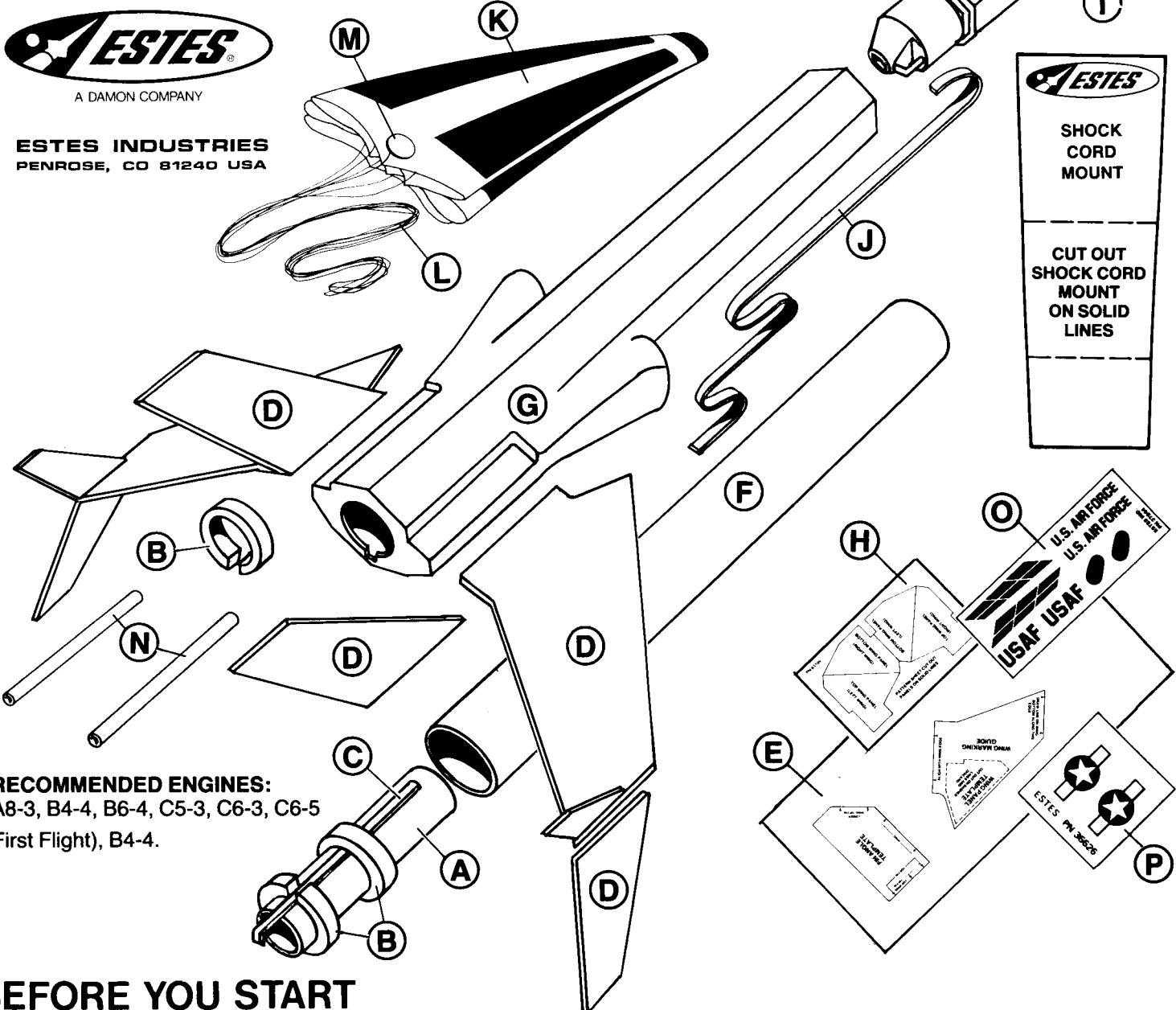
# STEALTH

SKILL LEVEL 3 RECOMMENDED FOR CRAFTSMAN ROCKETEERS



A DAMON COMPANY

ESTES INDUSTRIES  
PENROSE, CO 81240 USA



**RECOMMENDED ENGINES:**  
A8-3, B4-4, B6-4, C5-3, C6-3, C6-5  
(First Flight), B4-4.

## 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 respect.

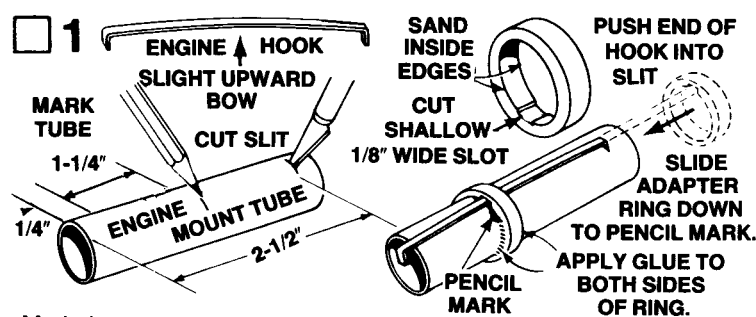
## TOOLS AND MATERIALS

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, X-acto type saw, emery board, masking tape, tube-type plastic cement, bottle of contact adhesive, household white glue or resin glue (Elmer's, Titebond, or similar), other types of glue not recommended. You will also need gull gray and gloss black enamel spray paints.

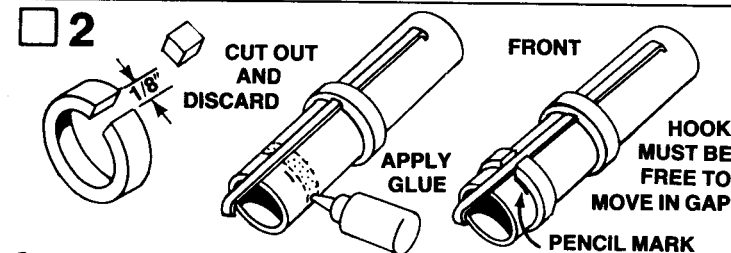
## PARTS LIST

## KIT NO. 1929

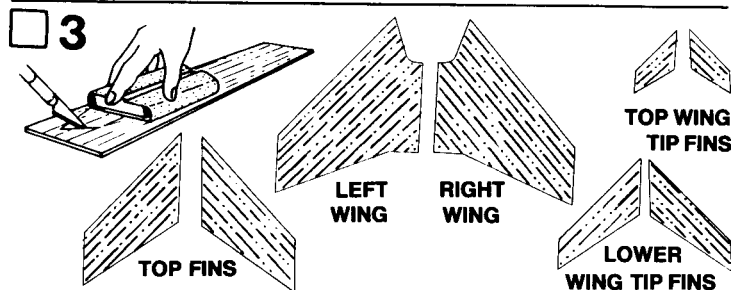
A	1	Engine Mount Tube (type BT-20J) 2-3/4" Long	30326
B	3	Centering Rings (type AR-2050)	30164
C	1	Engine Hook (type EH-2)	35025
D	1	Die-Cut Balsa Sheet (type BF-1929)	32629
E	1	Panel Templates (type KP-1929)	83707
F	1	Parachute Tube (type BT-50W) 9-1/2" Long	30372
G	1	Plastic Fuselage (type PB-50)	72300
H	1	Pattern Sheet (type SP-1929)	83709
I	1	Nose Cone (type PNC-50A)	72044
J	1	Shock Cord (type SC-1B)	85734
K	1	Parachute (type PK-12)	85564
L	1	Shroud Line (type SLT-72)	38237
M	1	Tape Discs (type TD-3F)	38406
N	2	Launch Lugs (type LL-2B) 2-3/8" Long	38178
O	1	Decal (type KD-1929)	37244
P	1	Decal (type D-15)	36626



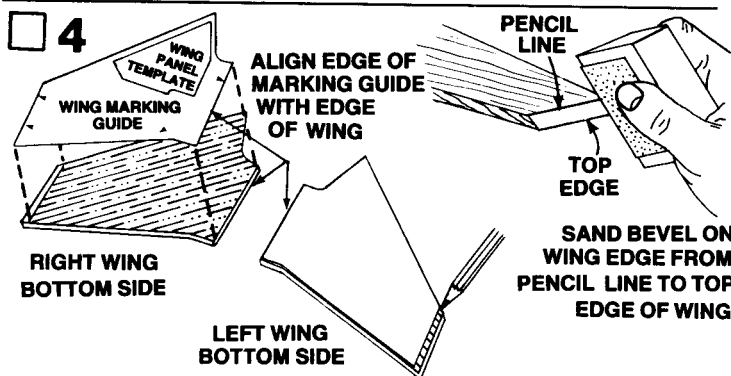
Mark the engine mount tube (part A) at 1/4", 1-1/4", and 2-1/2" from one end of the tube. Cut a 1/8" long slit at the 2-1/2" mark. Sand the inside edges of one centering ring (part B) to remove any burrs. The ring should slide easily onto the tube. Cut a very shallow 1/8" wide slot inside the ring so it will fit over the engine hook. Gently bend the engine hook (part C) so it bows upward very slightly in the middle. (Study the drawing. Don't bend hook the wrong way.) Insert one end of the engine hook into the slit in the tube. Slip the centering ring onto the front end of the engine mount tube and slide it down to the 1-1/4" mark. Make sure the engine hook runs straight down the tube, then apply glue to both sides of the centering ring.



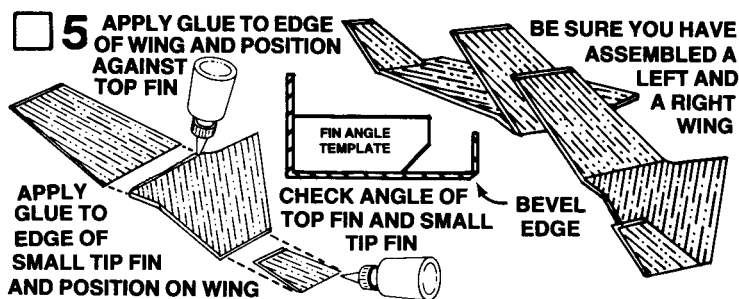
Cut a 1/8" wide section out of the two remaining centering rings. Lay one ring aside for later use. Apply a line of glue around the engine mount tube just forward of the 1/4" mark. Slide a ring onto the tube and past the 1/4" mark, so the engine hook is centered in the gap. DO NOT get glue in the gap. Wipe away excess glue. The engine hook must be free to flex slightly.



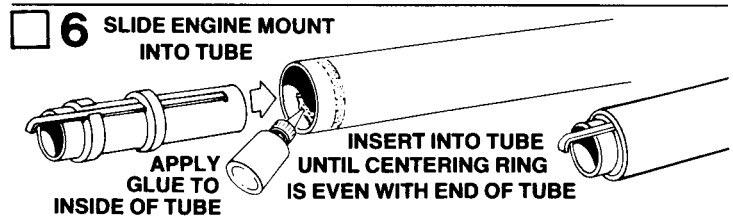
Lightly sand both sides of the die-cut balsa sheet (part D). Carefully free the parts from the sheet, using a modeling knife. Lightly sand the edges of all the parts. Make sure the edges remain square. Lay out and identify the parts as shown.



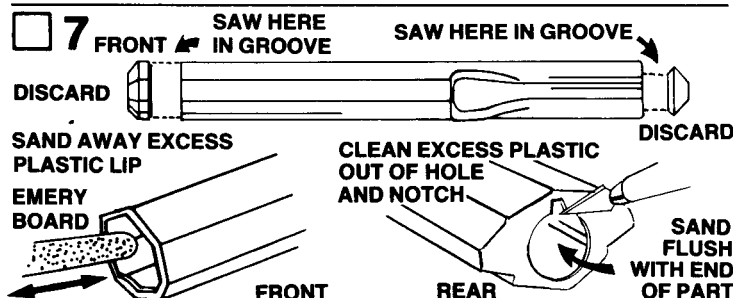
Cut out the wing marking guide and angle template from the back of the panel (part E). Lay marking guide on one wing as shown. Draw a line along the tip edge of the marking guide. Turn marking guide over and mark other wing in same way. Be sure you have a left wing and a right wing. Sand a bevel on each wing tip from the top edge of wing to the pencil line.



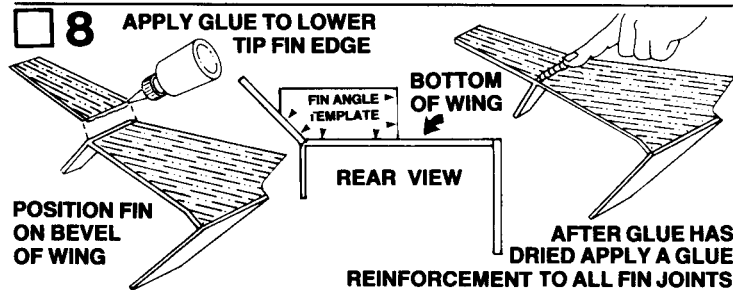
Locate the two large top fins and the two small top wing tip fins. Refer back to step 3 for part identification. Apply a bead of glue to the edge of the wing and join wing and large top fin as shown. BE SURE bevel on wing tip is facing down (on bottom side of the wing). Check angle of top fin with angle template. After glue joint has set, apply glue to the bottom edge of one small top wing tip fin and position onto wing tip as shown. Check angle with template. Assemble other wing in same way. Be sure you have a left and a right wing. Set both wing assemblies aside to dry.



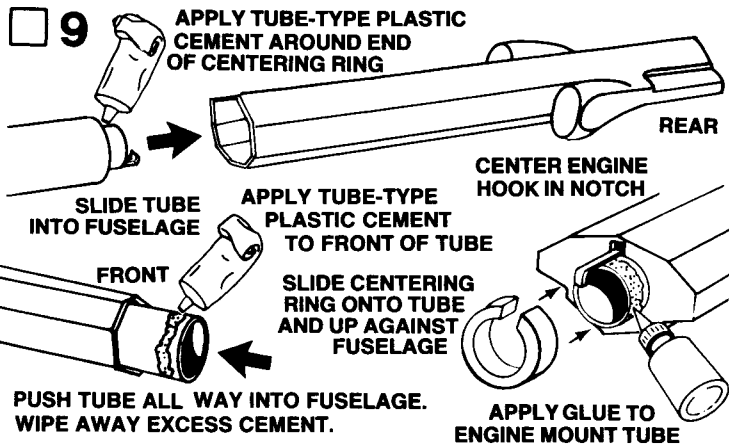
Test-fit the engine mount unit several times by smoothly inserting and removing it from the parachute tube (part F). Sand if necessary to assure a smooth fit. Apply a ring of glue around the inside of the parachute tube. Make sure that the engine hook is to the rear and insert the engine mount unit into the tube until centering ring is even with end of tube. Do not pause, or glue may "lock" with the engine mount in the wrong position.



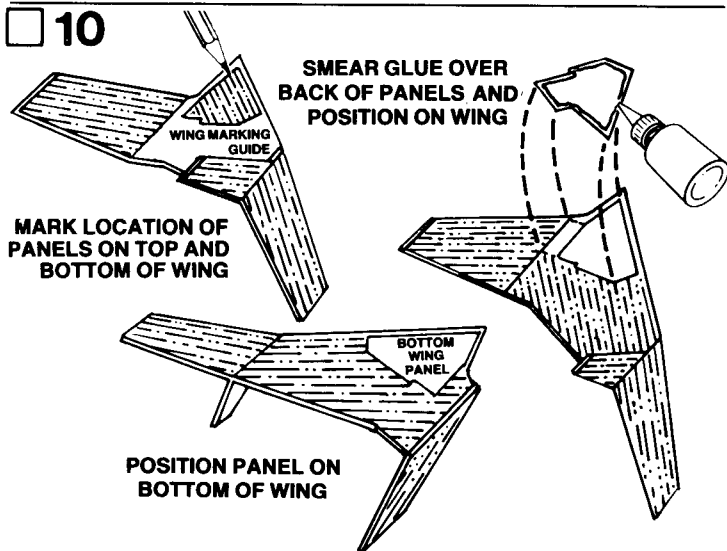
Lightly score around the front and rear of the plastic fuselage molding (part G) with an X-acto type saw. Carefully cut along the scored line with the saw to remove the scrap ends of plastic. Work slowly to avoid slipping with the saw. Sand off the small lip at the front inside edge of the fuselage with an emery board. Sand rear opening flush and clean plastic out of the notch. Make notch deeper if necessary, to allow for movement of engine hook when model is completed.



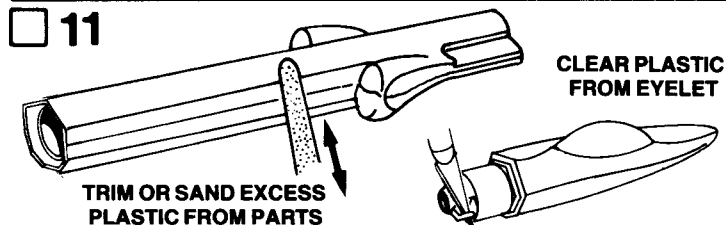
Locate the two lower wing tip fins. Apply a bead of glue to the edge of the lower wing tip fin. Position the fin on the bevel of the wing, with the tip of the fin even with the front of the wing tip as shown. Check angle of the fin and wing joint with the angle template. Assemble the other wing and tip fin in the same way. Set both assemblies aside to dry. When glue has dried, apply a glue reinforcement to each side of each fin joint. Smooth out the glue with your finger and wipe away any excess glue. **IMPORTANT** - Support the wings level, or horizontally, so wing is not supported by fins as the glue dries.



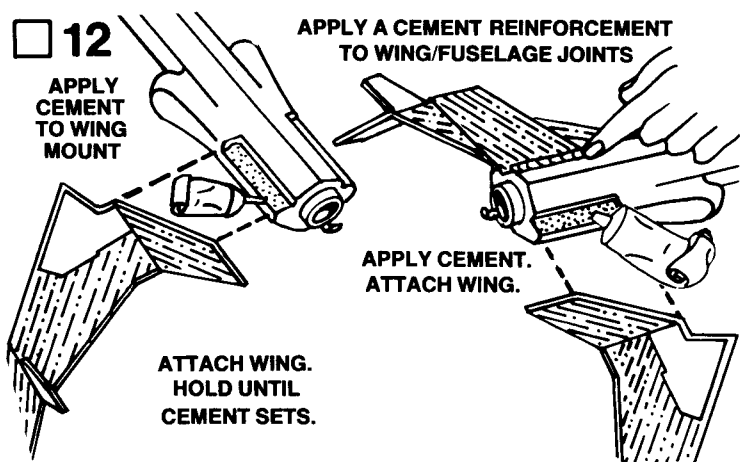
Wash the nose cone and the fuselage with lukewarm soapy water, rinse, and dry. Test-fit the parachute tube/engine mount into the fuselage. Make notch at rear of fuselage larger if necessary. Apply tube-type plastic cement around centering ring at rear of parachute tube and slide tube into fuselage. Before pushing the tube all the way in, apply tube-type plastic cement to front of tube. Push tube in all the way so engine mount tube extends out the back and is seated against the inside of the fuselage body molding. Center hook in notch and apply a bead of white glue around the end of the engine mount tube. Be careful not to get glue on engine hook. Slide remaining centering ring from step 2 onto the tube against the rear of the fuselage and even with rear of engine tube. Center engine hook in the gap of the ring. Be sure tube is all the way into fuselage and centering rings are solidly against the fuselage.



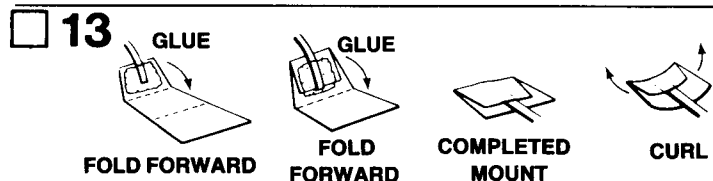
Cut out the Wing Panel Template portion of the wing marking guide and discard. Lay the wing marking guide on the wing and mark the location of the wing panels on the top and bottom of each wing. Cut out the top and bottom wing panels from the pattern sheet (part H). Check the position of the panels, small panels on bottom of wings and large panels on top of wings. Smear glue over the back of each panel and position on wing. Press into place and hold until glue sets. Check panels to make sure edges have not lifted. If an area has lifted, apply a small amount of glue to the area and press it back into place.



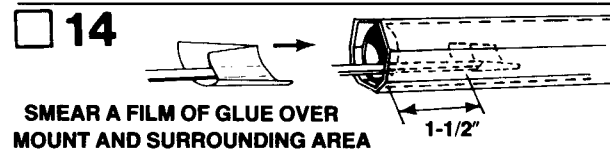
Trim or sand any excess plastic from around the sides of the fuselage and nose cone (part I). Use a sharp knife to remove any excess plastic from inside of the molded eyelet at the rear of the nose cone.



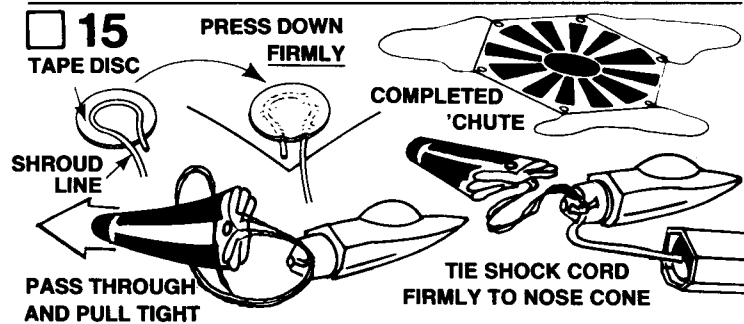
Apply plastic cement to one wing mount area on the fuselage. Position the wing in the area and press it into place. Make sure the wing contacts the mounting area completely. Hold the two pieces together until cement sets. After cement sets and is firmly secure, cement the other wing to its mount in the same manner. Set aside to dry completely. After assembly is dry, apply a reinforcement of plastic cement around wing and fuselage joints.



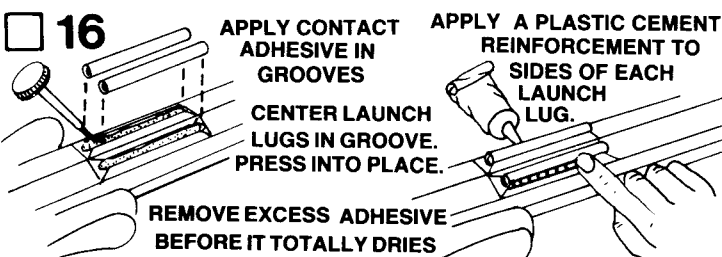
Cut out the shock cord mount from the front of instruction sheet. Fold it on the dotted lines. Spread glue on the first section (1) and lay the end of the shock cord (part J) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section (2). Lay the shock cord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



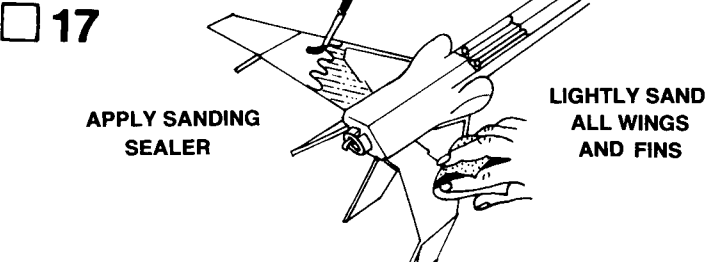
Use a finger or stick to apply glue to the inside front of the parachute tube, 1-1/2" to 2" from the front of the tube. Press the shock cord mount firmly into position in the glue far enough into the tube to allow clearance for the nose cone to fit into place. To insure a good bond use a stick or your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



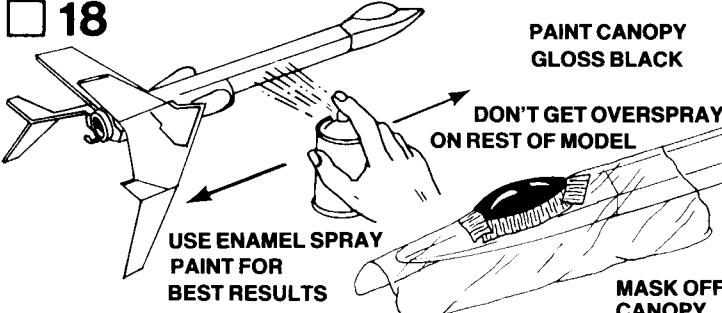
Pass through and pull tight. Cut out the parachute (part K) on its edge lines. Cut three equal lengths of shroud line (part L). Form a small loop in the end of a shroud line. Holding the loop, gently center loop inside tape disc (part M) on the sticky side. Then carefully press tape disc onto its proper place on the top of the parachute. Firmly press the tape disc into place until both tape disc and parachute material are molded around the shroud line loop. Repeat for other shroud line ends and tape discs. Pass the shroud line loops through the eyelet on the nose cone. Pass the parachute through the loops and pull the lines tight against the nose cone. Tie the free end of the shock cord firmly to the nose cone loop. A square knot or strong double knot should be used. Pack parachute and shock cord into parachute tube and slip nose cone into place.



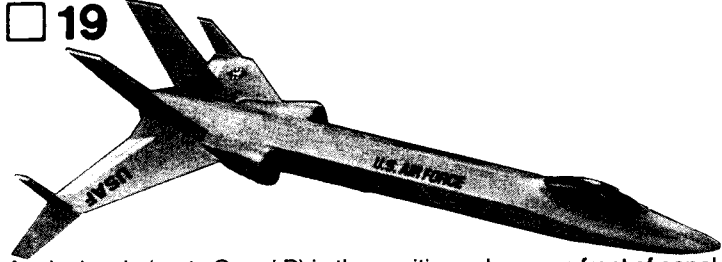
Apply contact adhesive along the bottom of the two launch lug grooves on the fuselage. Position each launch lug (part N) centered in the groove and press it firmly into the adhesive. Allow adhesive to dry, then apply a reinforcement of plastic cement around each launch lug. Smooth out the cement with your finger and wipe away excess cement.



After all the glue and cement has dried on the rocket. Apply a coat of sanding sealer to all balsa wood and paper parts. When sealer is dry, lightly sand all the sealed surfaces. Repeat sealing and sanding process until balsa grain is filled and smooth.



Paint entire model with Gull Gray spray enamel. After paint is thoroughly dry, mask off around canopy as shown and spray canopy Gloss Black. DO NOT paint the model with lacquer paints. Lacquer will attack the plastic. Follow instructions on back of spray can for best results.



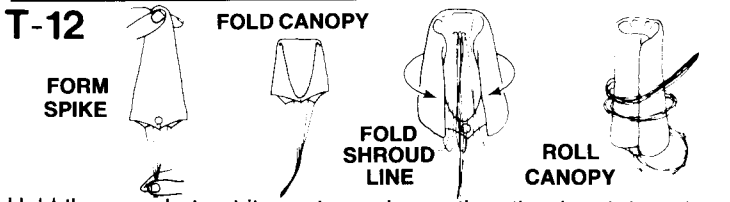
Apply decals (parts O and P) in the positions shown on front of panel. (A) Cut decals apart. (B) Dip one decal at a time in lukewarm water for 10-20 seconds. Hold until it starts to uncurl. (C) Slip decal from backing paper onto model. (D) Move decal into exact position. If decal sticks before it is in position, apply water to the decal so it can be moved. (E) Carefully blot away excess water with soft cloth. Smooth out all wrinkles and air bubbles before decal dries. We recommend that the completed model be sprayed with a clear flat or clear gloss to protect 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, B4-4, B6-4, C5-3, C6-3, or C6-5 model rocket engines only. Use B4-4 Engine for your first flight.

# COUNTDOWN CHECKLIST

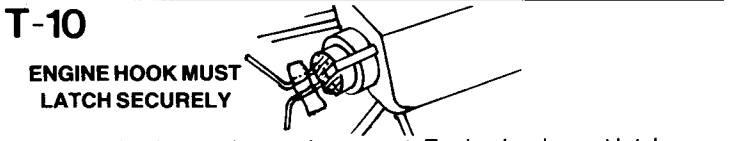
**T-13** Remove nose cone. Pack 3 squares of loosely crumpled recovery wadding into the body tube.



Hold the parachute at its center and pass the other hand down it to form a "spike" shape. Fold this spike in half. Fold shroud lines back along parachute and then back down to lower edge of parachute to reduce length of shroud line "left over". Roll parachute into tube shape to fit easily into body. Any remaining shroud line should be loosely wrapped around parachute. Pack chute into the body tube on top of the wadding. Pack the shroud lines and shock cord in on top of the parachute and slip the nose cone into place.

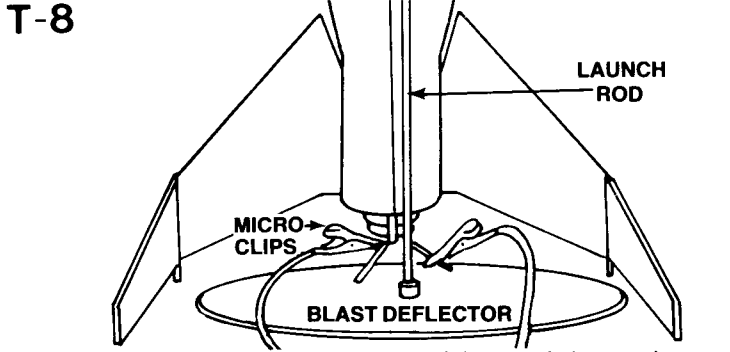
NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the chute with ordinary talcum powder before each flight, especially in cold weather.

**T-11** Select an engine and install an igniter as directed in the engine instructions. The engines recommended for use with this rocket are the A8-3, B4-4, B6-4, C5-3, C6-3, or C6-5 made by Estes. B4-4 first flight.



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!



Slide the launch rod through rocket launch lugs 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.

PLEASE READ AND BECOME FAMILIAR WITH THE MODEL ROCKETRY SAFETY CODE ON THIS CARD. PLEASE SIGN WHERE INDICATED AND KEEP THIS CODE WITH YOU DURING ALL YOUR MODEL ROCKETRY ACTIVITIES

**CAUTION: WARNING:** for your safety **DO NOT** alter, dismantle, or unwrap model rocket engines or their ingredients in any way. Soak unwanted engines in water to destroy.

**FULL ONE YEAR  
WARRANTY**

Your Estes product is warranted against defects in materials or workmanship for one year from the date of the original purchase. Any Estes product which, because of a manufacturing mistake, malfunctions or proves to be defective within the one-year warranty period will be repaired or replaced, at Estes' option and at no charge to you, provided it is returned to Estes with proof of purchase.

This warranty does not cover incidental or consequential damage including injury or damage to persons or property caused by the use, abuse, misuse, failure to comply with operating instructions or improper storage of the warranted product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

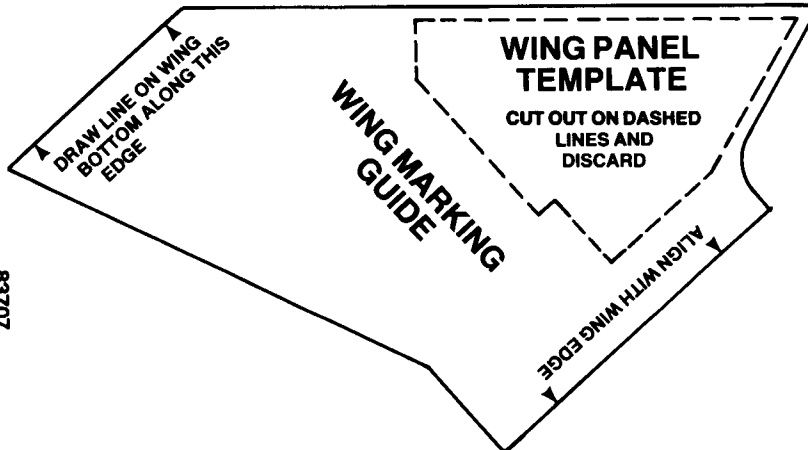
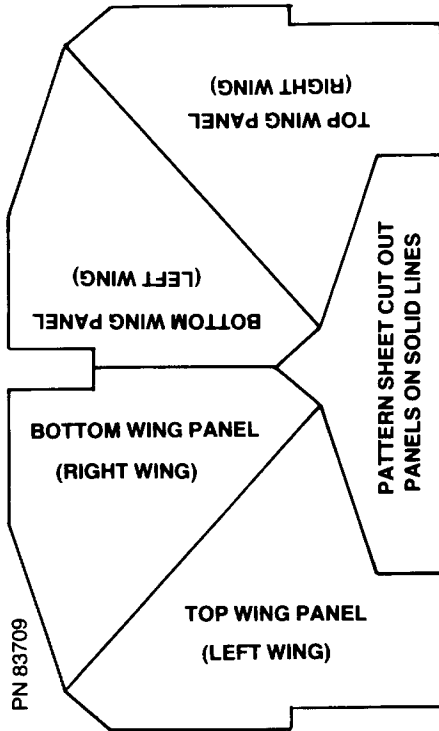
This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For repair or replacement under this warranty, please return the defective part of your Estes product with proof of purchase to: Estes Industries, Customer Service Department, Penrose, Colorado 81240.

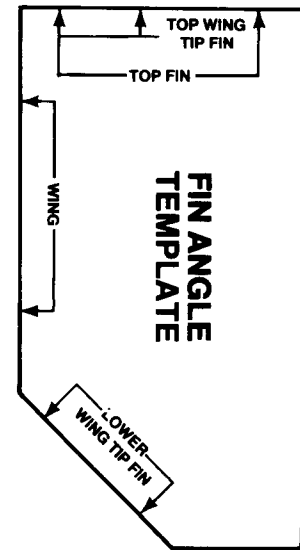
1. **CONSTRUCTION** — My model rockets will be made of lightweight materials such as paper, wood, plastic and rubber, without any metal as structural parts.
2. **ENGINES** — I will use only pre-loaded factory made NAR safety certified model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.
3. **RECOVERY** — I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.
4. **WEIGHT LIMITS** — My model rocket will weigh no more than 453 grams (16 ozs.) at liftoff, and the engines will contain no more than 113 grams (4 ozs.) of propellant.
5. **STABILITY** — I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
6. **LAUNCHING SYSTEM** — The system I use to launch my model rockets must be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 15 feet away from any rocket that is being launched.
7. **LAUNCH SAFETY** — I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.
8. **FLYING CONDITIONS** — I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.
9. **LAUNCH AREA** — My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use flame resistant recovery wadding in my rockets.
10. **JET DEFLECTOR** — My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.
11. **LAUNCH ROD** — To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.
12. **POWER LINES** — I will never attempt to recover my rocket from a power line or other dangerous place.
13. **LAUNCH TARGETS & ANGLES** — I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.
14. **PRE-LAUNCH TEST** — When conducting research activities with unproven designs or methods, I will when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

*As a member of the Estes Model Rocketry Program, I promise to faithfully follow all rules of safe conduct as established in the above code.*

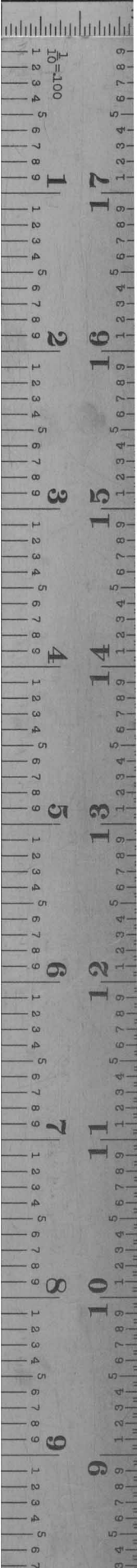
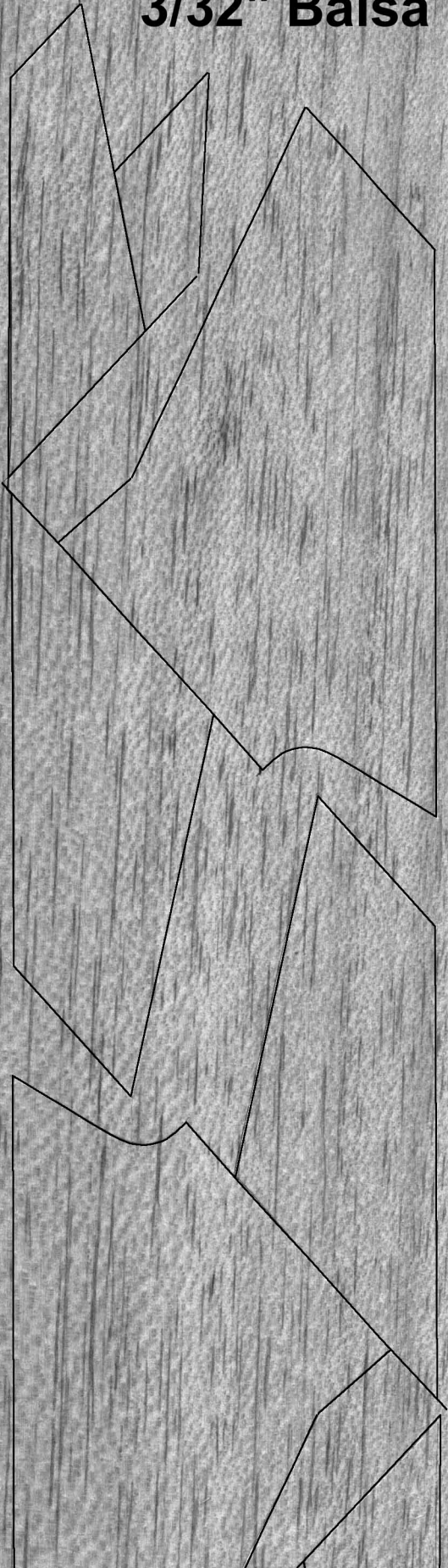
Signed \_\_\_\_\_ (Keep this Code in your Range Box.)



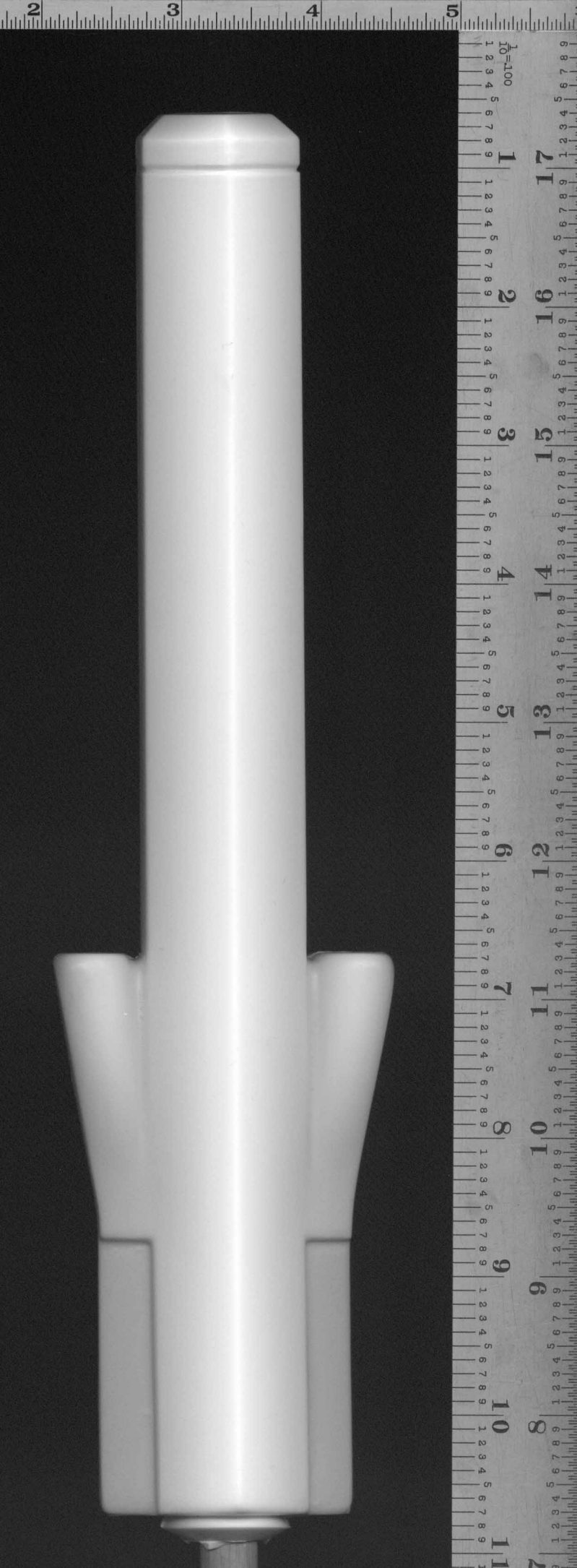
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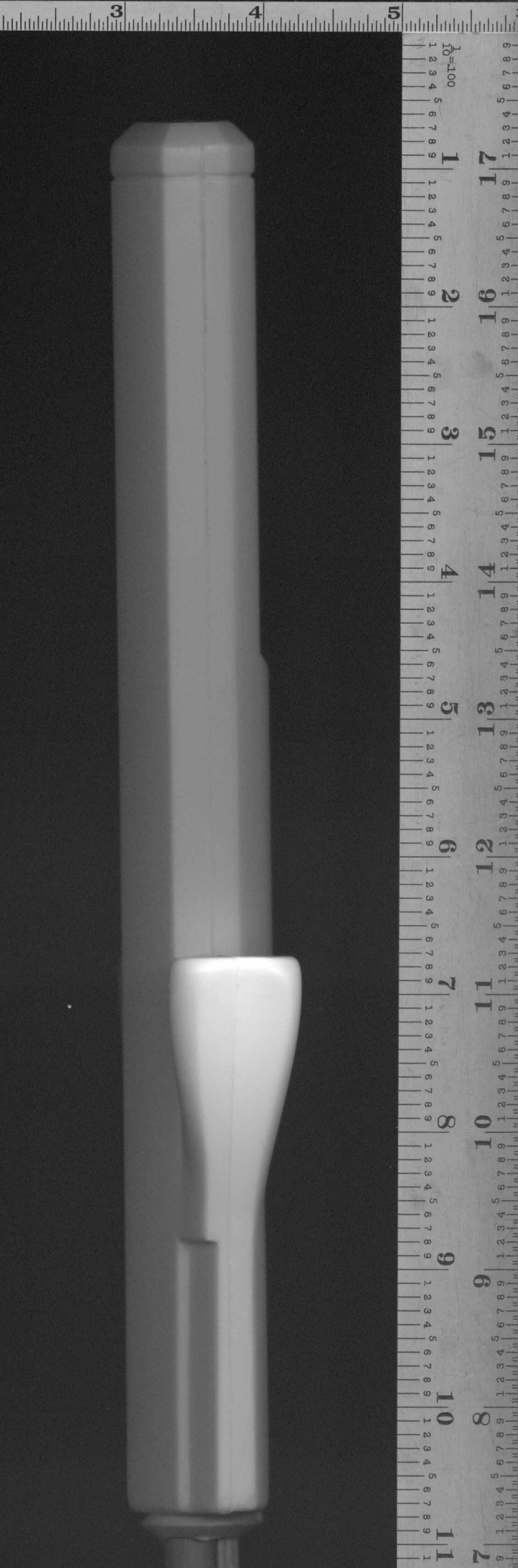
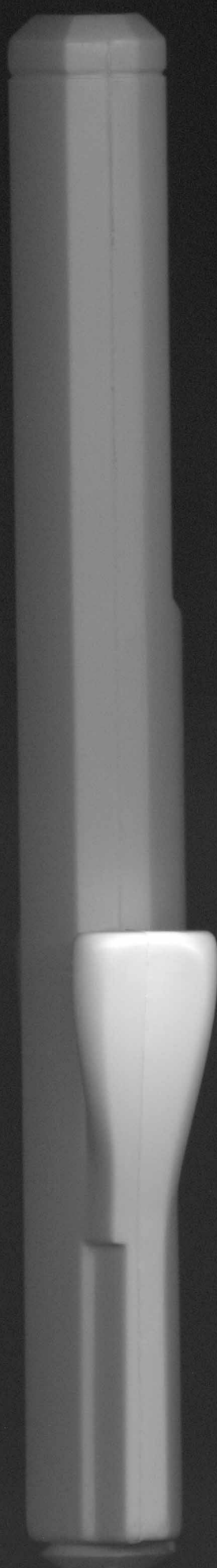
# 3/32" Balsa

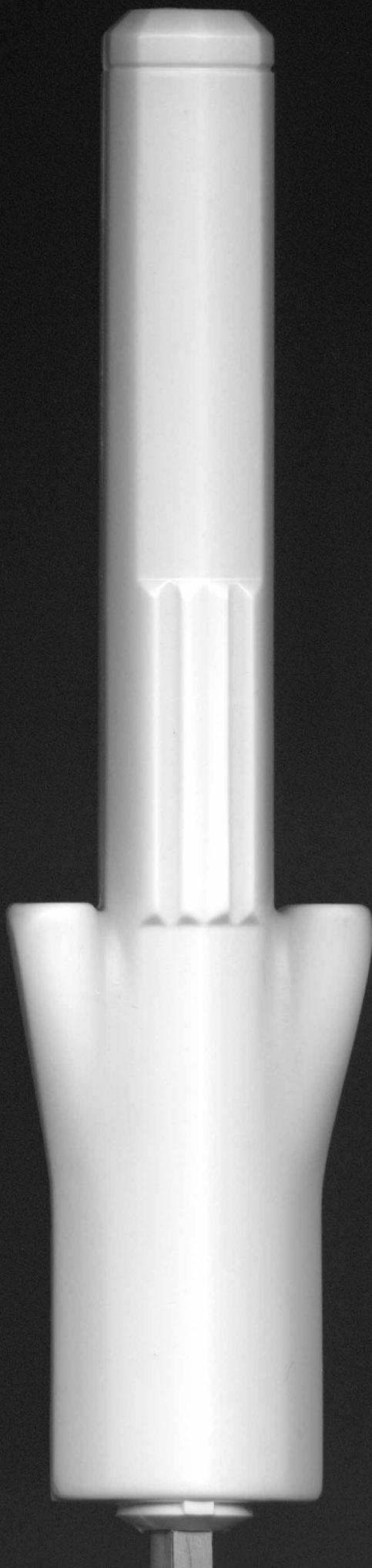


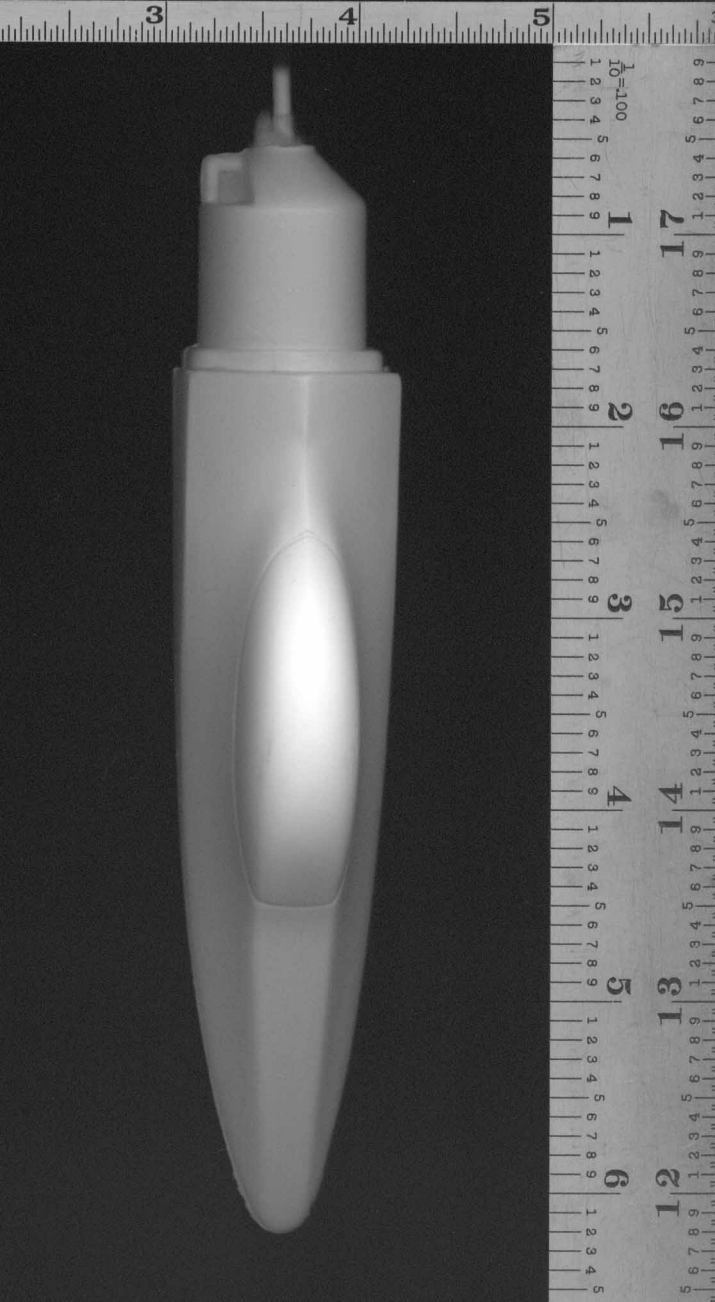
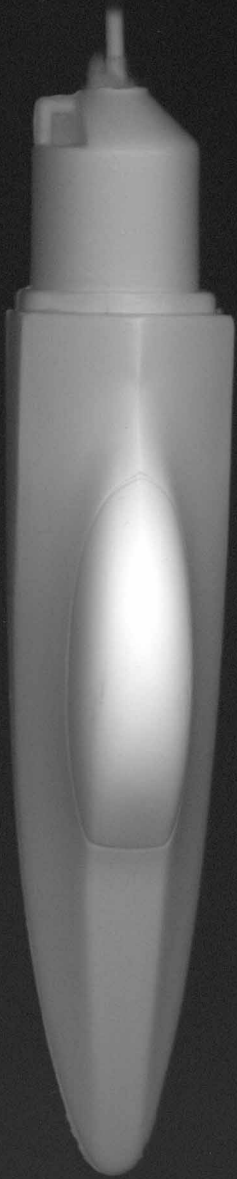












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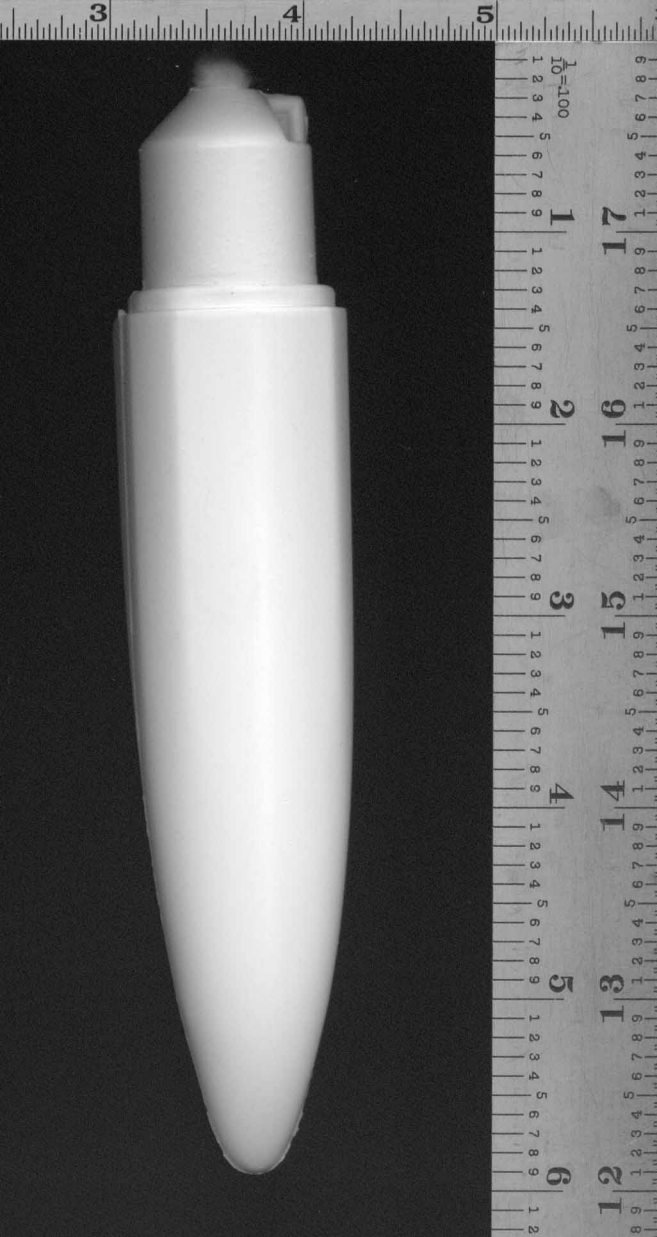
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$\frac{1}{10} = 100$

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**U.S. AIR FORCE**

**U.S. AIR FORCE**

**USAF USAF**



**ESTES IND.  
PN 37244**



**ESTES PN 36626**



# STEALTH

## FLYING MODEL ROCKET



- Futuristic, Radar Invisible Fighter
- High Tech Plastic Fuselage
- Flights Over 900 Feet

Length: 16.25 in. (41.3 cm)  
Diameter: 1.125 in. (28.6 mm)  
Weight: 2.3 oz. (64.8 g)  
Engine Types: A6-3, B4-4 (First Flight)  
B6-4, C5-3, C6-3, C6-5  
Recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years of age when flying model rockets. This is a hobby kit requiring assembly. Engines, launch system, glue and finishing supplies are not included.



A HUNTINGTON COMPANY

ESTES INDUSTRIES  
PENROSE, CO 81240 USA



**SKILL LEVEL 3**

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



#1929