

# FIRECAT

"Reconnaissance Drone"  
Skill Level 2

This kit has been exclusively designed for the members of the Estes Aerospace Club.



### SPECIFICATIONS:

Length 14.32" (36.4cm)  
Body Dia. 0.976" (24.8mm)  
Weight 1.13 oz. (32.0g)  
Shipping Wt. 7 oz.

### RECOMMENDED ENGINES:

A8-3 B6-4 C6-5  
(Use A8-3 for first flights.)

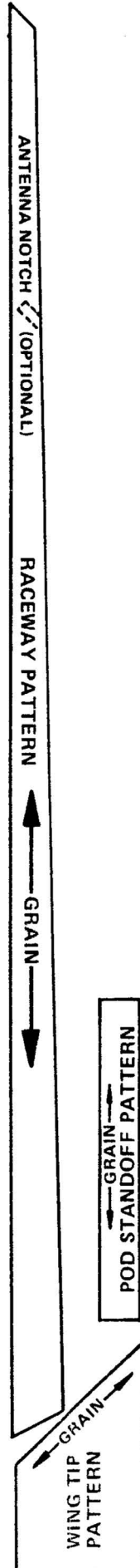
Cat. No. 0821



A SUBSIDIARY OF DANNON

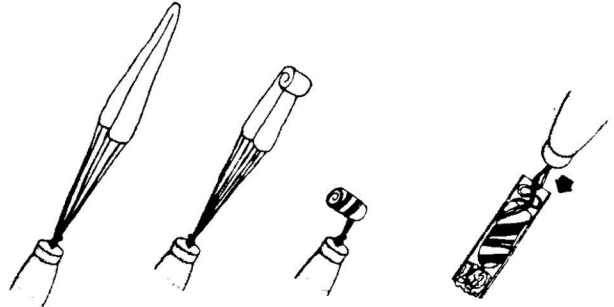
ESTES INDUSTRIES  
PENROSE, COLO. 81240

82,275



## COUNTDOWN CHECKLIST

15 Pack four squares of crumpled recovery wadding loosely into body tube.



14 Fold the parachute into a triangular shape. Roll 'chute tightly as shown and wrap shroud lines around it. If 'chute is too large, unroll and repack until it slides easily into rocket. A very tight fit may prevent parachute from ejecting properly.

13 Pack shock cord neatly into rocket. 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.

12 Slide nose cone into place. Nose cone should separate easily from rocket body tube, but not be extremely loose. If fit is too tight, sand inside of body tube end and shoulder of nose cone with extra fine sandpaper.

11 Select an engine and install an igniter as directed in the engine instructions. Engines recommended for use with this rocket are A8-3, B6-4, and C6-5. Use A8-3 for first flights.

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

9 Disarm the launch panel--remove safety key.

8 Place rocket on launch pad making sure rocket slides freely on launch rod. Clean the micro-clips and attach them to the igniter.

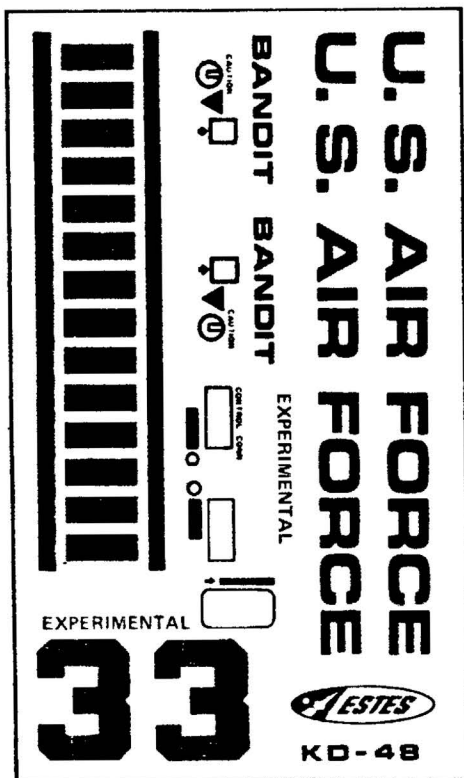
7 Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

6 Arm the launch panel--insert safety key.

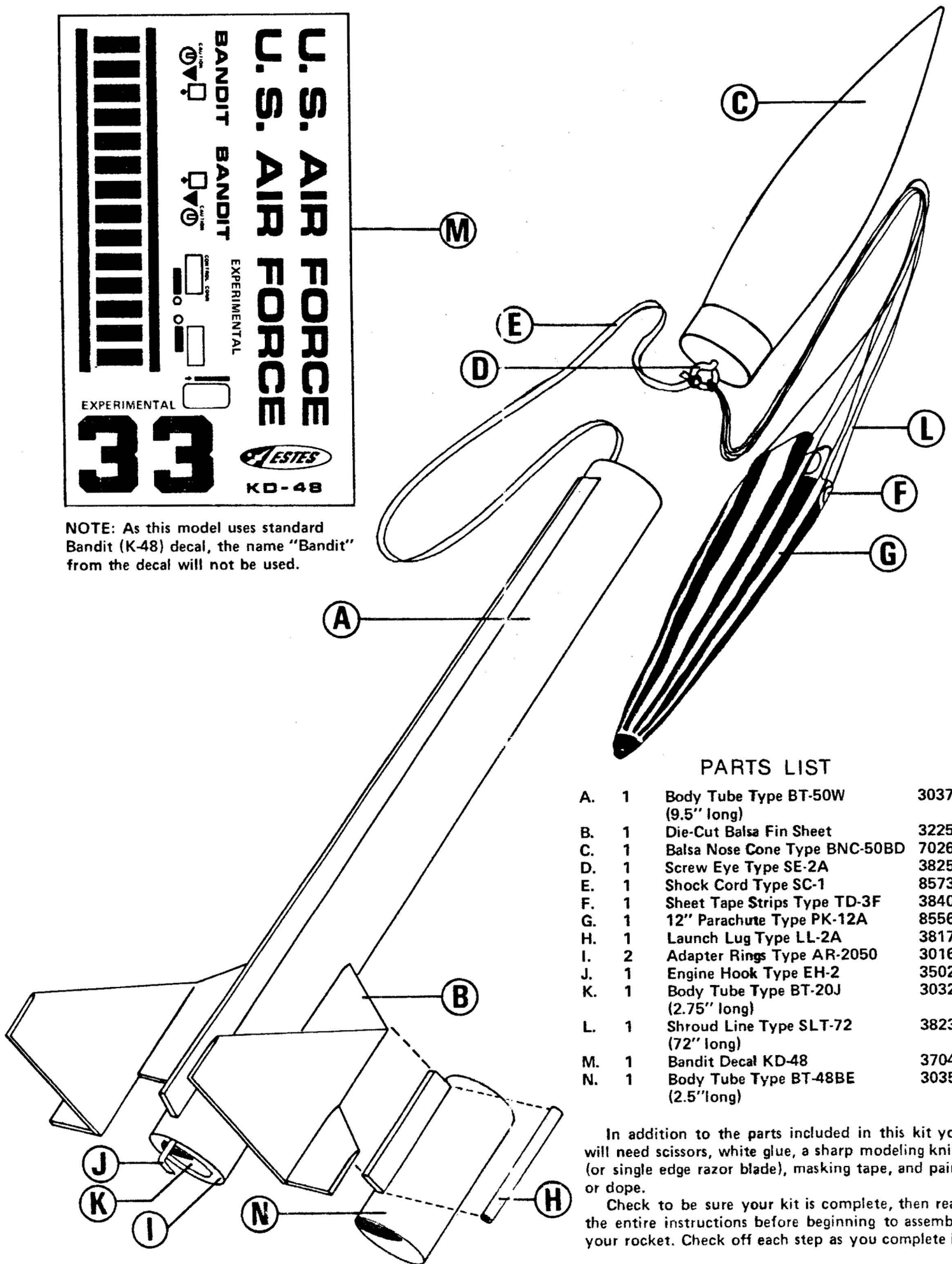
5  4  3  2  1 LAUNCH!

### MISFIRE PROCEDURE:

Occasionally the igniter will heat and burn in two without igniting the engine. This is almost always caused by a failure to install it correctly. Disarm the launch panel, remove the model, clean the igniter residue from the nozzle, and install a new igniter. Follow the launching procedure again.



NOTE: As this model uses standard Bandit (K-48) decal, the name "Bandit" from the decal will not be used.



### PARTS LIST

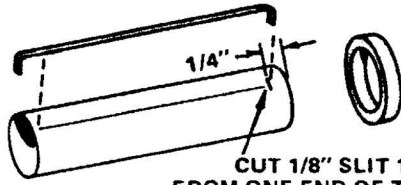
A.	1	Body Tube Type BT-50W (9.5" long)	30372
B.	1	Die-Cut Balsa Fin Sheet	32256
C.	1	Balsa Nose Cone Type BNC-50BD	70260
D.	1	Screw Eye Type SE-2A	38252
E.	1	Shock Cord Type SC-1	85730
F.	1	Sheet Tape Strips Type TD-3F	38406
G.	1	12" Parachute Type PK-12A	85564
H.	1	Launch Lug Type LL-2A	38175
I.	2	Adapter Rings Type AR-2050	30164
J.	1	Engine Hook Type EH-2	35025
K.	1	Body Tube Type BT-20J (2.75" long)	30326
L.	1	Shroud Line Type SLT-72 (72" long)	38237
M.	1	Bandit Decal KD-48	37046
N.	1	Body Tube Type BT-48BE (2.5" long)	30351

In addition to the parts included in this kit you will need scissors, white glue, a sharp modeling knife (or single edge razor blade), masking tape, and paint or dope.

Check to be sure your kit is complete, then read the entire instructions before beginning to assemble your rocket. Check off each step as you complete it.

# ASSEMBLY INSTRUCTIONS

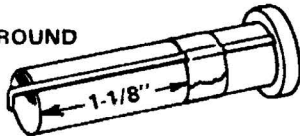
Read the entire assembly instructions carefully before beginning work on your rocket. Then start construction, following each step in order, checking off each step as it is completed.



CUT 1/8" SLIT 1/4" FROM ONE END OF TUBE

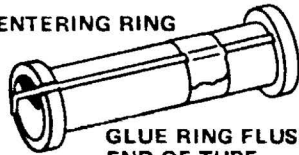
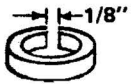
- 1** Mark the BT-20J engine mount tube 1/4" from one end. Punch an 1/8" wide slot on the mark and insert the EH-2 engine hook as shown. Glue one AR-2050 ring on the end of the tube with the edge of the ring touching the hook.

WRAP MASKING TAPE AROUND ENGINE TUBE 1-1/8" FROM END OF TUBE



- 2** Wrap a 4" long by 1/2" wide piece of masking tape around the engine tube and engine hook 1-1/8" from the end of the tube opposite the AR-2050 ring.

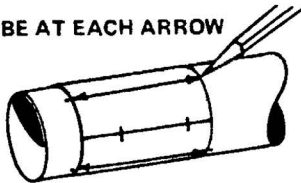
CUT 1/8" SLOT IN CENTERING RING



GLUE RING FLUSH WITH END OF TUBE

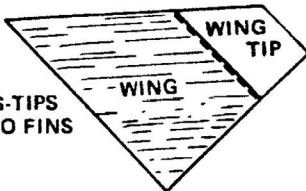
- 3** Cut an 1/8" wide slot in the remaining AR-2050 ring. Glue this ring to the end of the engine tube with the engine hook positioned in the slot. Be careful not to get glue in the slot or on the engine hook. Set entire assembly aside and allow to dry.

MARK TUBE AT EACH ARROW

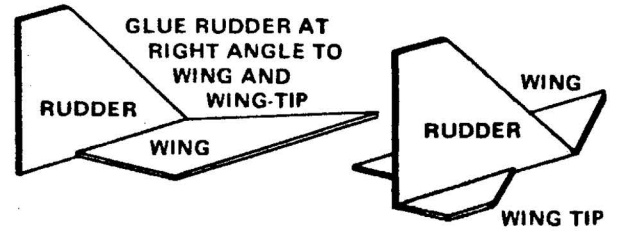


- 4** Cut out the body tube marking guide. Wrap it around the rear of the body tube and mark the tube at each arrow point. Remove the guide and draw a straight line connecting each matching front and rear mark. Retain marking guide for use as shock cord mount in step 15.

CUT WING-TIPS FROM TWO FINS



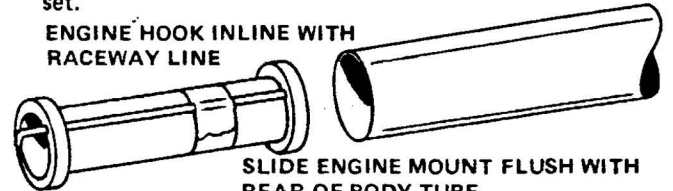
- 5** Remove two fins from the die-cut fin sheet. Cut out the wing-tip fin pattern and place it on top of each fin, marking the cut line as shown. Using a straight edge for a guide, cut the wing-tips from each fin with a sharp modeling knife.



- 6** Each fin will now be in two sections, a wing-tip section and a wing section. Lightly sand all newly-cut edges flat. Remove two remaining fins from die-cut fin sheet. These fins will be used for rudders. Glue one rudder fin to each wing exactly as shown. Next glue one wing-tip to each wing/rudder assembly as shown.

- 7** Sand root edge of each wing assembly flat and all other edges round. Rub a priming coat of glue into the root edge of each wing assembly and allow glue to set.

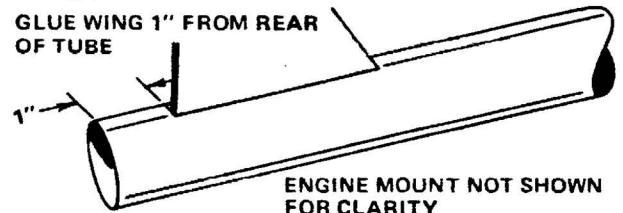
ENGINE HOOK IN LINE WITH RACEWAY LINE



SLIDE ENGINE MOUNT FLUSH WITH REAR OF BODY TUBE

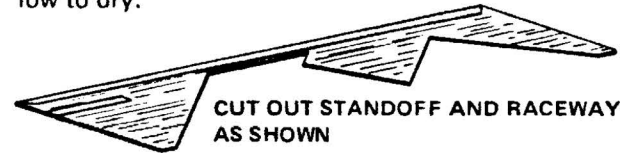
- 8** Smear glue around the inside of the rear end of the body tube about 3/4" from the end. Immediately slide the engine mount unit into place so the end of the engine mount tube is even with the rear of the body tube. The engine hook should be in line with the raceway fin line. Do not pause during this operation as the glue may stick with the mount in the wrong place.

GLUE WING 1" FROM REAR OF TUBE



ENGINE MOUNT NOT SHOWN FOR CLARITY

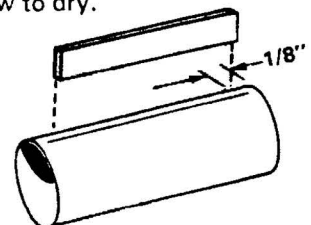
- 9** Using guide lines, glue each wing assembly 1" from the rear of the body tube as shown. Align wing assemblies straight away from the body tube and allow to dry.



CUT OUT STANDOFF AND RACEWAY AS SHOWN

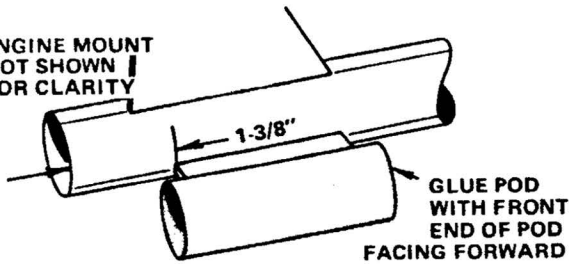
- 10** Cut out pod standoff and raceway in patterns as shown. Using patterns, trace and cut out standoff and raceway from remaining fin sheet balsa. Sand root edges flat and all other edges round. Rub a priming coat of glue into the root edges of standoff and raceway and allow to dry.

GLUE STANDOFF 1/8" FROM ONE END OF TUBE



- 11** Draw a straight line the entire length of the BT-48BE tube. Glue pod standoff 1/8" from one end of the tube and allow to dry. This end will be the front

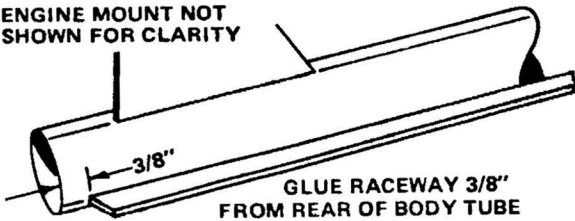
ENGINE MOUNT NOT SHOWN FOR CLARITY



GLUE POD WITH FRONT END OF POD FACING FORWARD

of the pod. Glue pod assembly on its alignment line with end of the standoff 1-3/8" from the rear of the body tube as shown. Be sure pod is facing right direction. (See illustration).

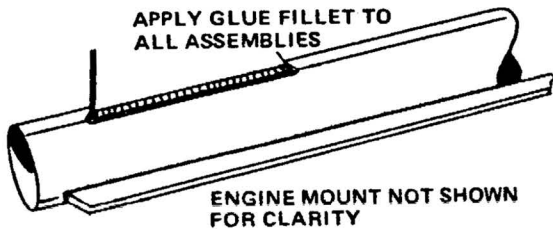
ENGINE MOUNT NOT SHOWN FOR CLARITY



GLUE RACEWAY 3/8" FROM REAR OF BODY TUBE

12 Glue raceway on its guide line 3/8" from the rear of the body tube. Be sure tapered end of raceway is facing forward. (Optional: A 1-1/4" long toothpick can be inserted and glued into raceway for antenna. See raceway pattern for correct position.)

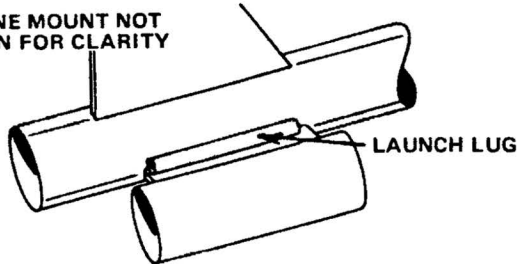
APPLY GLUE FILLET TO ALL ASSEMBLIES



ENGINE MOUNT NOT SHOWN FOR CLARITY

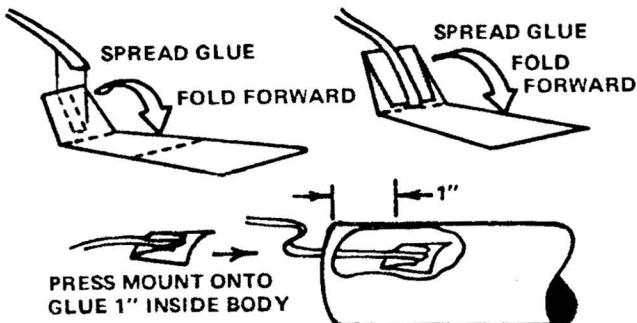
13 When glue is completely dry, apply a glue fillet to both sides of wing assemblies, pod standoff, and raceway.

ENGINE MOUNT NOT SHOWN FOR CLARITY



LAUNCH LUG

14 Glue launch lug between pod and standoff as shown.



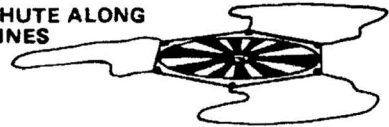
15 Cut out shock cord mount from body tube marking guide and assemble as shown. When gluing mount into body tube, press it down until glue sets.

INSERT SCREW EYE, REMOVE, SQUEEZE GLUE INTO HOLE, AND REPLACE



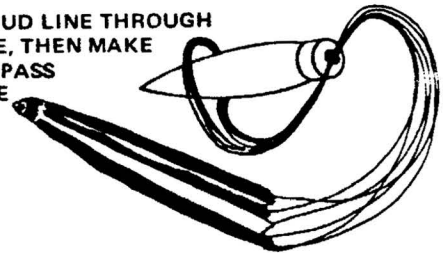
16 Make sure back of nose cone is flat. Insert screw eye into base of nose cone. Remove screw eye and squeeze small amount of glue into the hole. Reinsert the screw eye.

CUT PARACHUTE ALONG ITS EDGE LINES



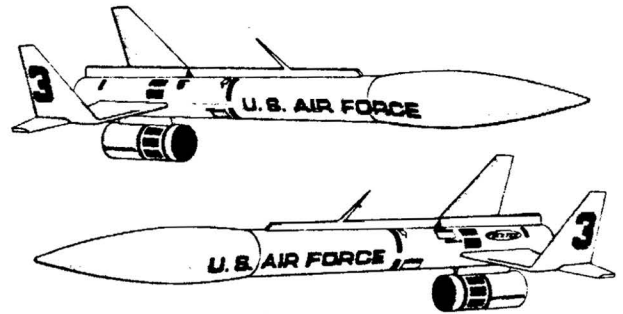
17 Cut out the parachute along its edge lines. Cut the shroud line into three equal lengths. Pieces should be approximately 24" long. Attach lines to chute top with tape discs as shown.

PASS SHROUD LINE THROUGH SCREW EYE, THEN MAKE LOOP AND PASS NOSE CONE THROUGH AND PULL TO KNOT



18 Pass the shroud line loop ends through the screw eye and over the forward end of the nose cone. Draw the lines tight against the screw eye and set the knot with a drop of glue. Tie the free end of the shock cord to the screw eye.

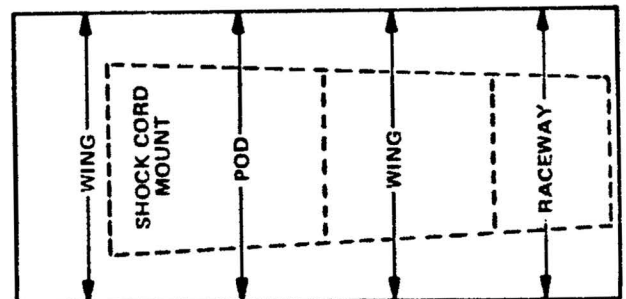
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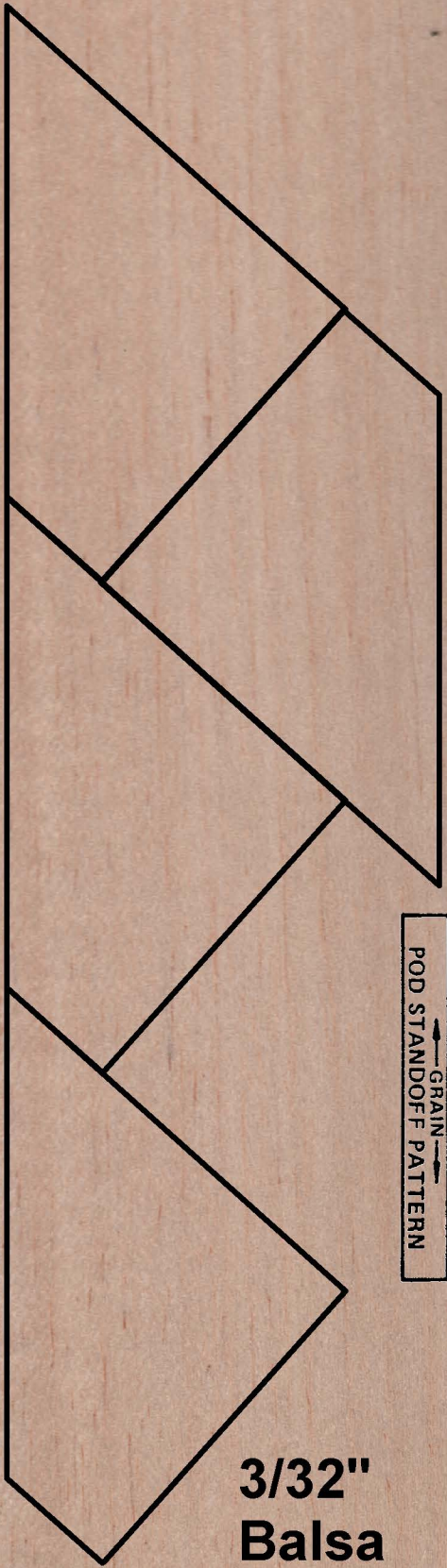
FLAT RED  FLAT WHITE

19 Finishing procedure: Sand all balsa surfaces smooth, apply sanding sealer, and let dry. Repeat this procedure until the balsa surface is very smooth and all pores in the wood are filled. Refer to photo and drawings for color scheme and decal positioning.

MARKING GUIDE AND SHOCK CORD MOUNT







**3/32"**  
**Balsa**

POD STANDOFF PATTERN

GRAIN → RACEWAY PATTERN ← GRAIN → ANTENNA NOTCH (OPTIONAL)



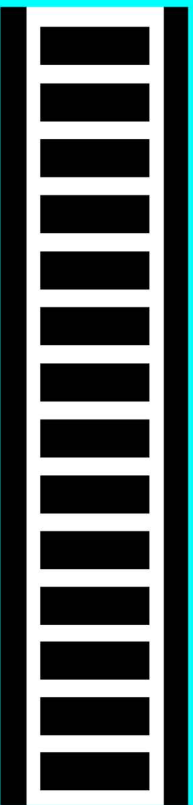
# U. S. AIR FORCE U. S. AIR FORCE



37046  
KD-48

BANDIT BANDIT

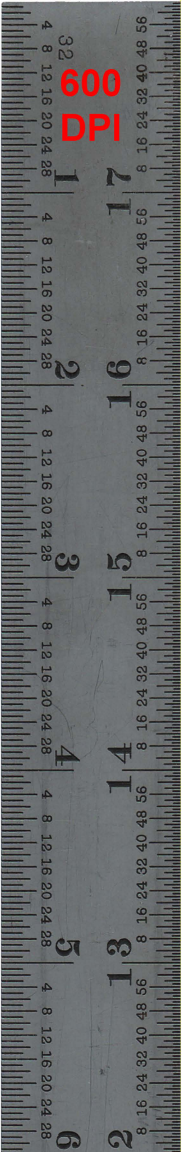
EXPERIMENTAL



EXPERIMENTAL

# 33





600  
DPI

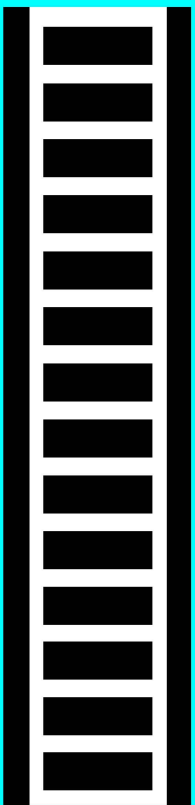
# U. S. AIR FORCE U. S. AIR FORCE



37046  
KD-48

## BANDIT BANDIT

## EXPERIMENTAL



## EXPERIMENTAL

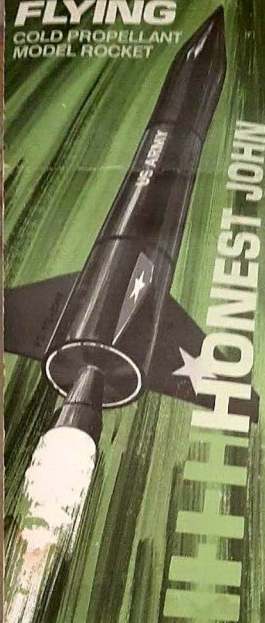
# 33



PARTS LIST KIT NO. 0821 - Firecat								
Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
1	PAPER BODY TUBE	BT-50W	30372	9.5" long	0.950" ID	0.976" OD	0.013" wall	Glassine
1	BALSA FIN STOCK	*BFS-30	3168	3" wide	9" long	3/32" thick		Scan
1	BALSA NOSE CONE	BNC-50BD	70260	5.0" long	.976" dia.	.5" shoulder		
1	Screw Eye (Small)	SE-2A	38252	3/4" long				
1	Shock Cord	SC-1	85730	18" long	1/8" wide			Rubber
1	Tape Disc	TD-3F	38406	1/2" dia.				6x
1	Parachute	PK-12A	85564	12" dia.				
1	LAUNCH LUG	LL-2A	38175	5/32" ID	1/8" rod	1.25" long		Mylar
2	CENTERING RINGS	AR-2050	30164	0.25" long	0.737" ID	0.949" OD	0.106" wall	Green
1	ENGINE HOLDER	EH-2	35025	2.8" long	.100" wide	.025" thick		Reg. & D
1	PAPER BODY TUBE	BT-20J	30326	2.75" long	0.710" ID	0.736" OD	0.013" wall	Glassine
1	Shroud Line	SLT-72	38237	72"				
1	Decal	KD-48	37046				Bandit K-48	Scan
1	PAPER BODY TUBE	BT-48BE	30351	2.5" long	0.902" ID	0.928" OD	0.013" wall	'D' spacer tube
*Die-Cut #32256 is BFL-4 from cold power Honest John #1104. It would appear that all these parts are repurposed from this kit except for the decal.								

ESTES  
A LIBRARY OF ILLUSTRATIONS

**FLYING**  
COLD PROPELLANT  
MODEL ROCKET



**HONEST JOHN**

**DEGREE OF CHALLENGE: THREE**  
(Propellant and launcher not included)

Realistic, high-flying scale model of the U.S. Army's surface-to-surface ballistic missile. Will reach altitudes of several hundred feet again and again with pre-assembled engine using Estes RP-100 cold propellant, and can be converted for use with Estes solid-propellant engines. Die-cut balsa fins and press-on decals for easy, quick construction. Parachute recovery. A truly historical model.

**SPECIFICATIONS**

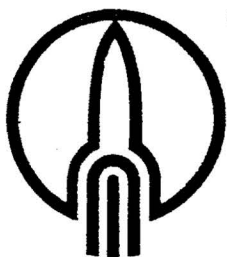
Length: 14.5"

Diameter: 0.976"

Weight (with engine): 2.06 oz.

1104 - 495





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B6-4

C6-5

(Use A8-3 for first flights.)

Cat. No. 0821



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