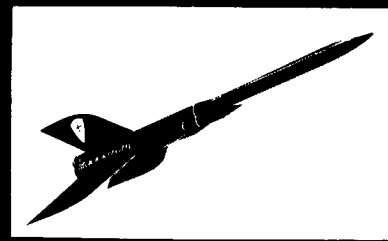


Estes Industries Rocket Plan No. 71 BLACK KNIGHT

JAN. '70

DESIGN OF THE MONTH WINNER
by Joseph Aitken, APO San Francisco, Calif.



PUBLISHED AS A SERVICE TO ITS CUSTOMERS BY ESTES INDUSTRIES, INC., BOX 227, PENROSE, CO. 81240

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PARTS LIST

1	Body Tube	BT-50W
2	Body Tubes	BT-50H
1	Body Tube	BT-20D
1	Body Tube	BT-20J
1	Body Tube	BT-5P
1	Nose Cone	BNC-20N
2	Nose Cones	BNC-5S
1	Tube Adapter	TA-2050A
2	Tube Adapters	TA-550
2	Nose Blocks	NB-50
3	Fin Stock	BFS-20
1	Engine Holder	EH-2
5	Centering Rings	RA-2050
2	Parachute Kits	PK-8
2	Screw Eyes	SE-3
2	Shock Cords	SC-1
2	Snap Swivels	SV-12
1	Launching Lug	LL-2B
3	Nose Cone Weights	NCW-2
1	Fin Pattern Sheet	FP-1-71

(Fin pattern will be sent free with order if requested, or send a stamped self-addressed envelope.)

You will also need a model knife, glue sandpaper, a brush and paint.

① Cut a slot 1/4" from end of BT-20J . . .

EH-2

BT-20J

MARK

7/8"

1/4"

. . . apply glue as shown. Insert EH-2 in slot. Mark engine holder tube 7/8" from rear as shown.

RA-2050

Cut a 1/8" piece from 4 RA-2050 centering rings. The first ring should be set at the mark and the 3 remaining rings to be equally spaced between mark and rear end of tube. The ring that was not cut is to be even with slot and against EH-2 at forward end of tube. Apply a glue fillet to all ring/tube joints and let dry completely.

TA-550

BT-50P

BNC-5S

② Cut a 1/8" x 3/8" slot for a gas port in both BT-50H tubes 1" from end. At the same end apply a ring of glue just inside tube, insert TA-550 tube adapter. Cut 2 pieces from BT-5P 1" long. Glue these 1" tube pieces into place as shown. Next glue the 2 BNC-5S nose cones into place.

Mark the BT-50H tubes for fin alignment. Guide line should be exactly straight across from gas port as shown.

180°

GAS PORT

FIN GUIDE LINE

ENGINE HOLDER ASSEMBLY

BT-50W

GLUE FILLETS

GLUE

④ Apply a ring of glue about 1-1/2" inside and at end of BT-50W body tube. Insert engine holder assembly until 4th ring is flush with body tube. This should be done in one smooth motion or the assembly may freeze in the wrong position.

③ Copy fin pattern from pattern sheet onto BFS-20 observing grain direction. Cut fins out and sand all leading and trailing edges round,

5 Mark the BT-50W body tube at 120° for 1/8" x 3/8" gas ports and rudder. Gas ports to be 2-11/16" from front of tube.

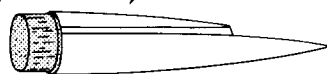
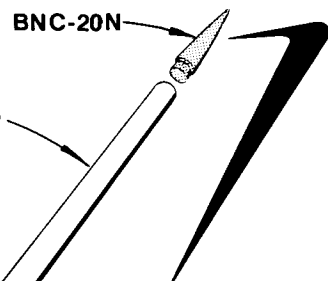
Use the marking guide in the Technical Section of your ESTES catalog.

6 Glue tube adapter TA-2050 and body tube BT-20D into place as shown. Do not glue nose cone BNC-20N if payload is desired.

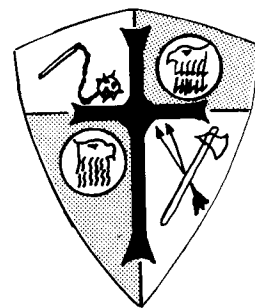
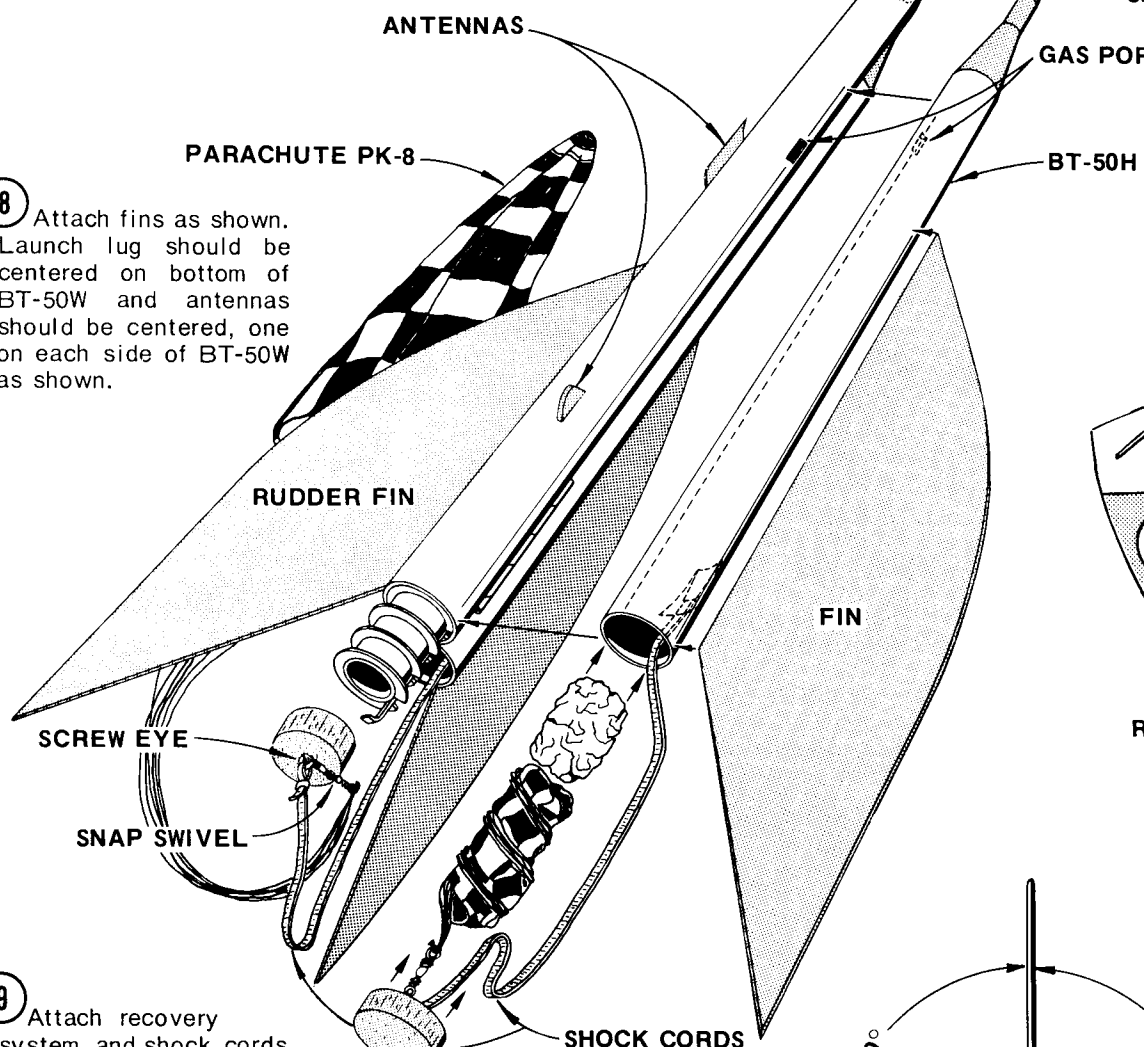
7 Attach both BT-20W tubes to the BT-50W body tube. Be sure gas ports are lined up exactly. Apply a good glue fillet to both tube joints.

8 Attach fins as shown. Launch lug should be centered on bottom of BT-50W and antennas should be centered, one on each side of BT-50W as shown.

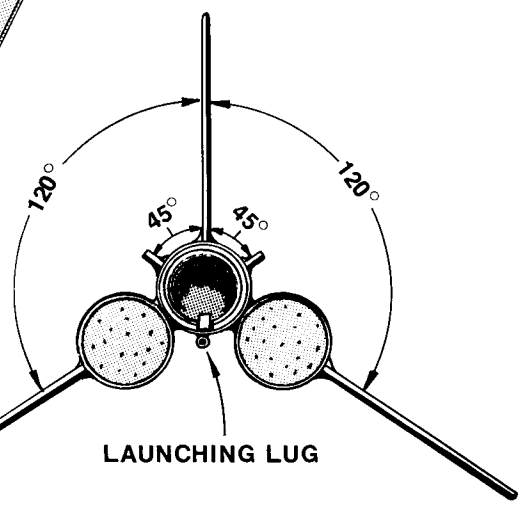
9 Attach recovery system and shock cords to the nose blocks as shown. Use standard shock cord anchor.



FOR DETAIL
NOSE CONE MAY BE
SHAPED AS SHOWN



RUDDER DECAL

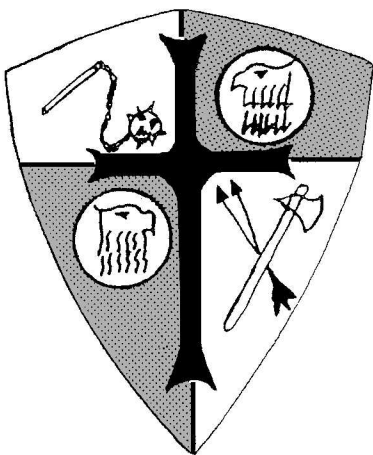
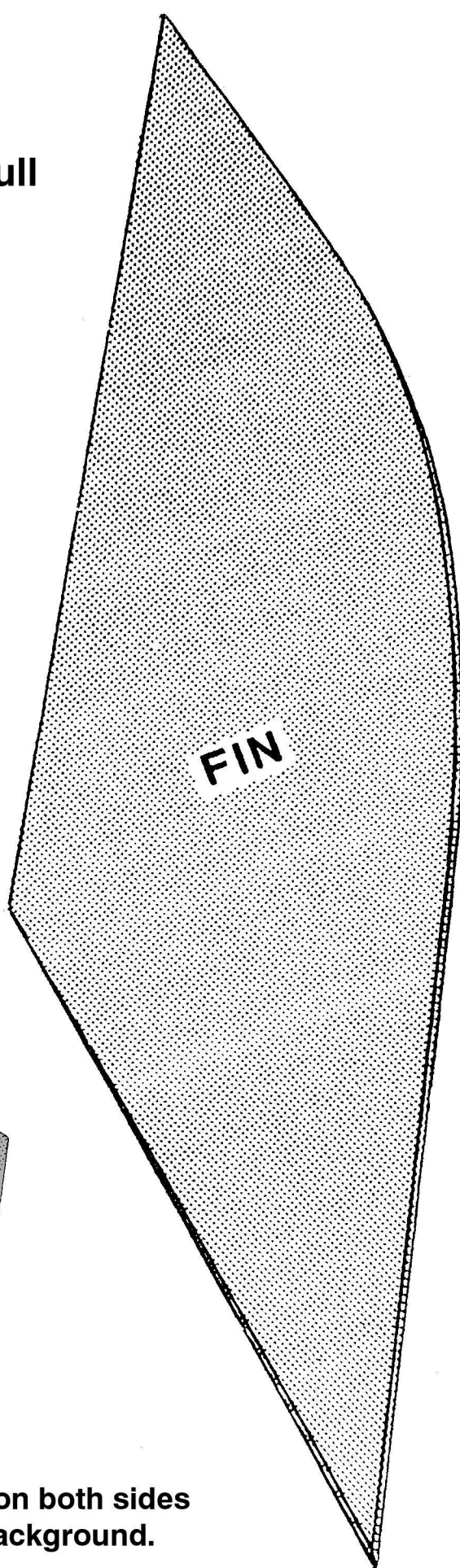


LAUNCHING LUG

Suggested color for the Black Knight is black with white trim.

RECOMMENDED ENGINES	SPECIFICATIONS
A8-3 - B6-4 - C6-5	Length ----- 24"
A8-3 for first flight.	Fin Span ----- 6.5"
	Weight ----- 2.5 oz.

**Black Knight
Fin Template - Full
Size**



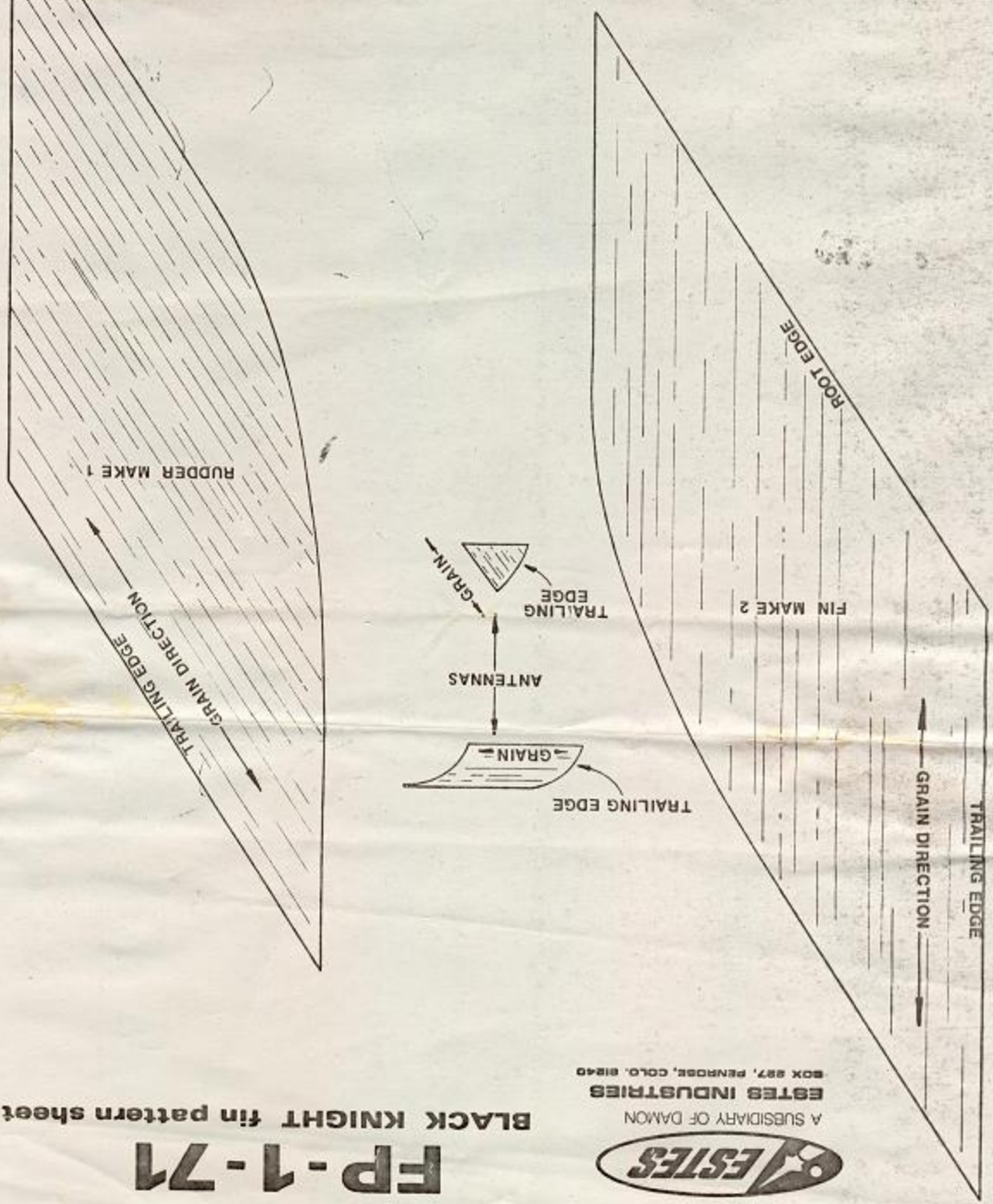
**Decal: Make 2 and place on both sides
of one fin. Use white background.**



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FP-1-71

BLACK KNIGHT fin pattern sheet



Sand all leading and trailing edges round and all root edges flat.