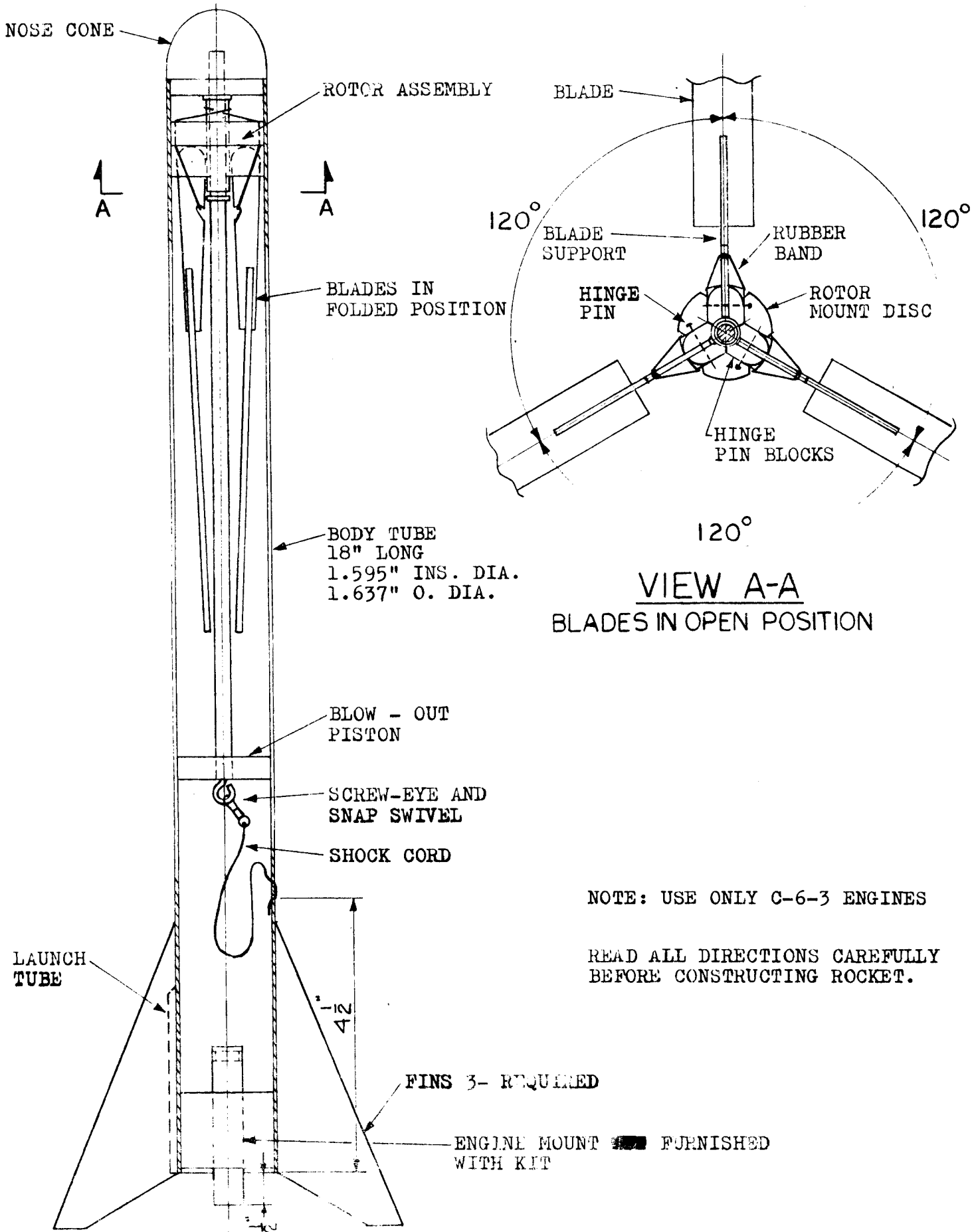


KOPTER
ROTOR RECOVERY
ROCKETS

P.O. BOX 98226
PITTSBURGH, PA. 15227

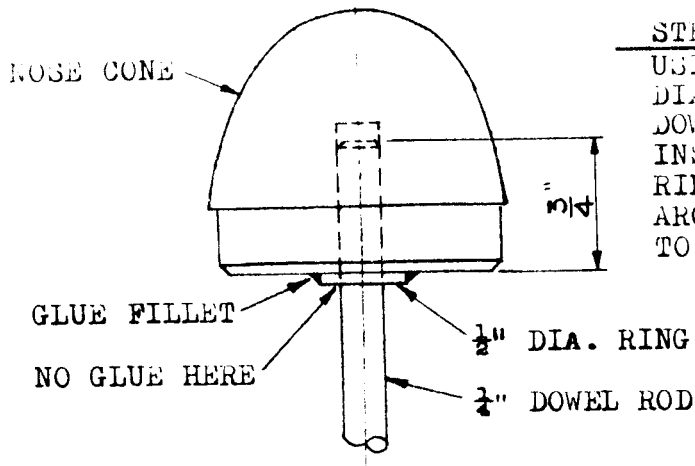


NOTE: USE ONLY C-6-3 ENGINES

READ ALL DIRECTIONS CAREFULLY BEFORE CONSTRUCTING ROCKET.

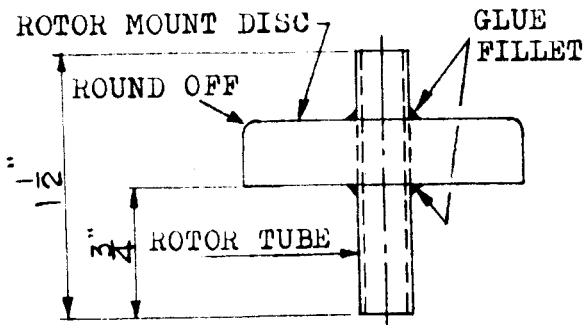
"KOPTER" ASSEMBLY

PATENT APPLIED FOR



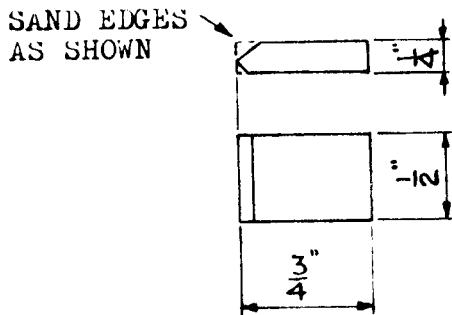
STEP - 1

USING A DRILL OR ROUND WOOD RASP MAKE A 1/4" DIA. X 1" DEEP HOLE IN NOSE CONE. BEVEL END OF DOWEL ROD. APPLY GLUE TO HOLE IN NOSE CONE. INSERT DOWEL ROD AS SHOWN. PUSH A 1/2" SPACER RING UP TO THE NOSE CONE* ADD A GLUE FILLET AROUND THE SPACER THEN SET THE ASSEMBLY ASIDE TO DRY.

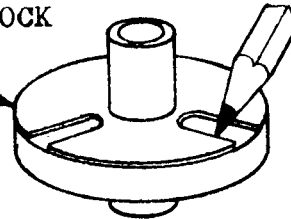


STEP - 2

USE A ROUND WOOD RASP OR A ROLLED PIECE OF SANDPAPER TO MAKE A SNUG FITTING HOLE IN THE CENTER OF THE ROTOR MOUNT DISC. PLACE DISC OVER 1 1/2" LONG ROTOR TUBE, ADD GLUE FILLET TO BOTH SIDERS OF DISC THEN SET ASSEMBLY ASIDE TO DRY.

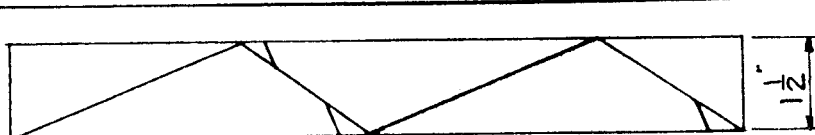
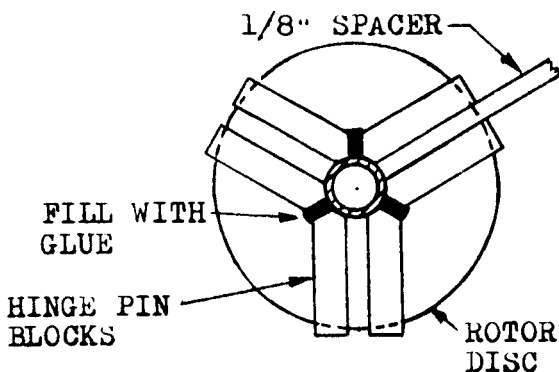


HINGE PIN BLOCK
MARKING
TEMPLATE



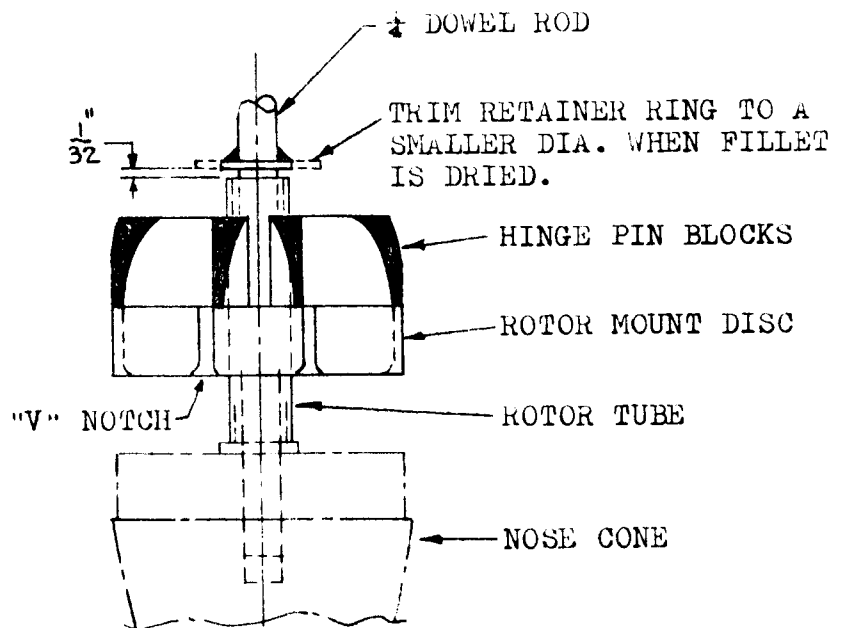
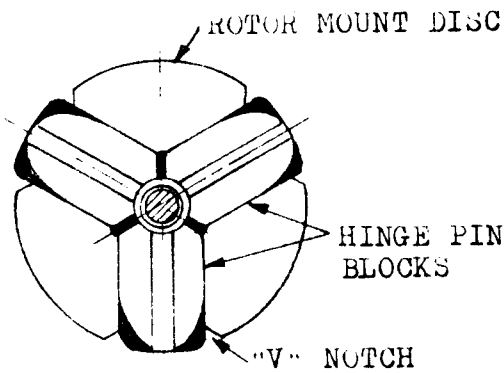
STEP - 3

CUT OUT HINGE PIN BLOCK AND BLADE SPACING TEMPLATE FROM TEMPLATE SHEET. PLACE OVER 3/4" LGTH OF ROTOR TUBE AND MARK OFF LINES ON EACH SIDE OF SLOTS. CUT SIX HINGE PIN SUPPORT BLOCKS FROM 1/4 X 1/2 Balsa Stock, SHAPE AS SHOWN AND GLUE TO ROTOR DISC AND TUBE. USE A SCRAP PIECE OF Balsa AS A SPACER TO PROPERLY ALIGN HINGE PIN BLOCKS. CAREFULLY REMOVE SPACERS THEN SET ASIDE TO DRY. THIS ASSEMBLY SHOULD BE THOROUGHLY DRY BEFORE PROCEEDING WITH STEP - 8.



STEP - 4

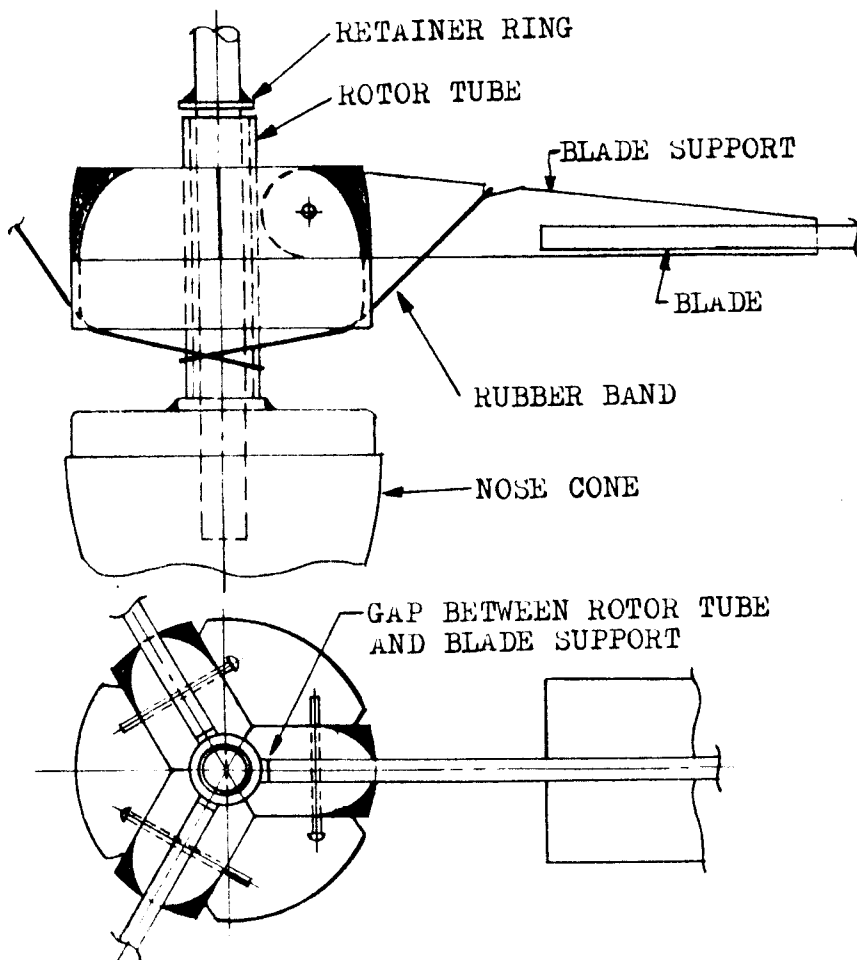
CUT OUT FIN PATTERN FROM TEMPLATE SHEET. TAPER FIN LEADING EDGE.



DEVELOPED VIEW OF ROTOR

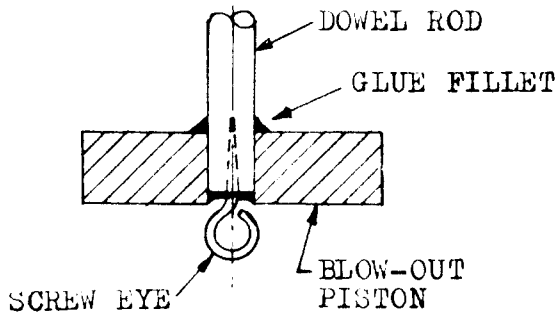
STEP - 8

SAND ENDS OF HINGE PIN BLOCKS TO CONTOURS AS SHOWN BY SHADED AREAS. CUT A "V" NOTCH, $\frac{1}{8}$ DEEP ON EACH SIDE OF PIN BLOCKS, IN THE ROTOR DISC. ROUND OFF EDGES OF NOTCHES. PLACE ROTOR ASSEMBLY ON DOWEL ROD. SLIP RETAINER RING ON END OF DOWEL ROD AND PUSH UP TO ROTOR MOUNT DISC TUBE LEAVING A $\frac{1}{32}$ GAP TO ALLOW ROTOR TO TURN FREELY. ADD A GLUE FILLET TO ONE SIDE OF THE RETAINER RING. WHEN FILLET HAS DRIED SAND RETAINER RING TO A SMALLER DIAMETER AS SHOWN ABOVE.



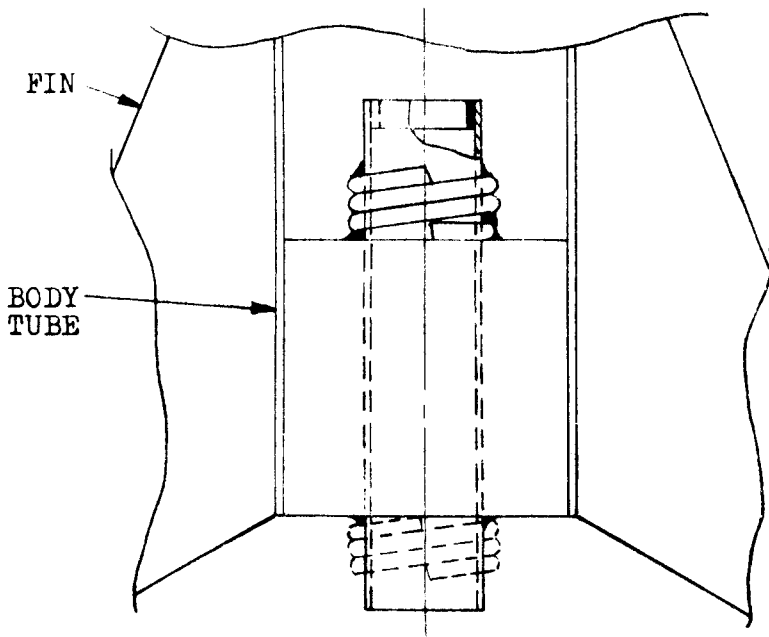
STEP - 9

PLACE BLADE SUPPORT BETWEEN THE HINGE PIN BLOCKS. LEAVING A SMALL GAP BETWEEN THE BLADE SUPPORT AND THE ROTOR TUBE, DRILL A SMALL HOLE THROUGH THE BLOCKS AND SUPPORT. INSERT PIN AND VERY CAREFULLY FOLD BLADE BACK INTO RETRACTED POSITION. IF BINDING OCCURS, REMOVE PIN AND SAND OFF HIGH SPOT OF BLADE SUPPORT UNTIL BLADE CAN MOVE FREELY. SLIP RUBBER BAND OVER BLADE NOTCH AND STRETCH OVER NOSE CONE. REPEAT THIS PROCEDURE FOR REMAINING BLADE ASSEMBLIES. WHEN BLADES ARE ATTACHED TO ROTOR FOLD THEM TO RETRACTED POSITION AND PLACE IN BODY TUBE. CHECK FOR HIGH SPOTS THAT WOULD KEEP ROTOR UNIT FROM BEING BLOWN OUT PROPERLY DURING FLIGHT.



STEP - 10

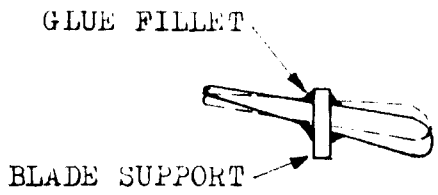
SLIP BLOW-OUT PISTON OVER END OF DOWEL ROD. DRILL A SMALL HOLE IN THE END OF THE DOWEL. PLACE SCREW EYE IN HOLE, REMOVE; ADD GLUE AND REPLACE SCREW EYE. ADD A GLUE FILLET TO BOTH SIDES OF THE PISTON. WHEN GLUE IS DRIED, SLIDE THE PISTON INTO THE BODY TUBE TO CHECK FOR HIGH SPOTS THAT WOULD PREVENT DISC FROM BEING BLOWN OUT OF THE BODY TUBE PROPERLY. WHEN THIS STEP IS COMPLETED, CONSTRUCT AND INSTALL ENGINE MOUNT. ROCKET IS NOW READY FOR FLIGHT.



ENGINE MOUNT WEIGHT ADDITION

IF THE 'KOPTER' ROCKET IS FLOWN AND SOME WEIGHT IS REQUIRED, IT CAN BE ADDED IN THE FOLLOWING MANNER.

1. MAKE A RING OF LEAD WIRE OR SOLDER. PLACE IT DOWN INTO THE BODY TUBE AROUND THE END (TOP) OF THE ENGINE MOUNT. WITH A LONG STICK ADD A GOOD SUPPLY OF GLUE. DO NOT GET ANY GLUE ON THE INSIDE OF THE BODY TUBE.
2. THE WEIGHT CAN BE ADDED TO THE BOTTOM OF THE BODY TUBE AS SHOWN BY THE DOTTED LINES AT LEFT. BE SURE THAT ENOUGH GLUE IS USED AND THOROUGHLY DRY BEFORE NEXT FLIGHT.



ROTOR BLADE PITCH CORRECTION

IF ROTOR BLADES FAIL TO ROTATE AT ALL A STEEPER PITCH IS REQUIRED. THIS CAN BE DONE ~~*****~~ BY REMOVING BLADES AND RE-GLUING AS SHOWN BY SOLID LINES AT LEFT.

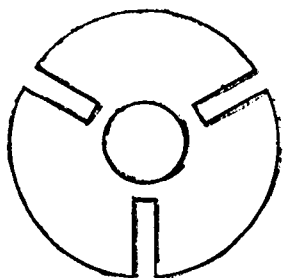
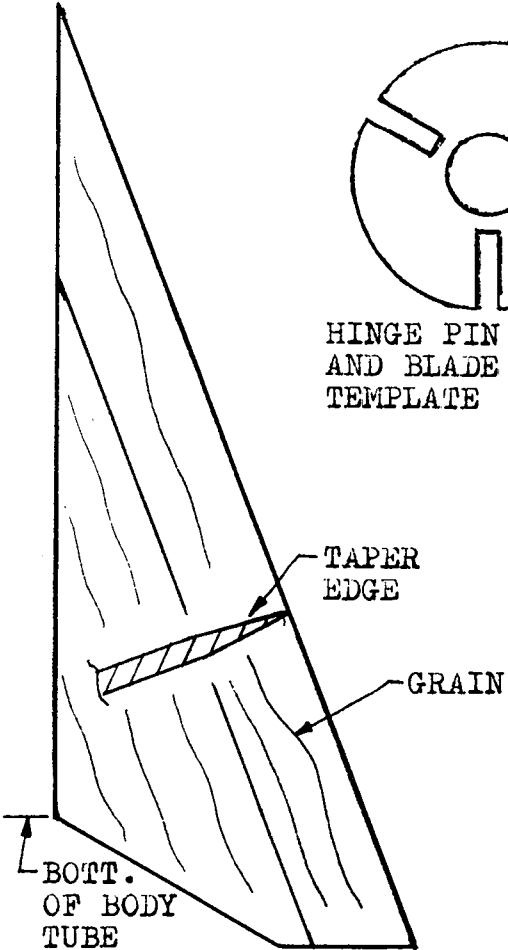
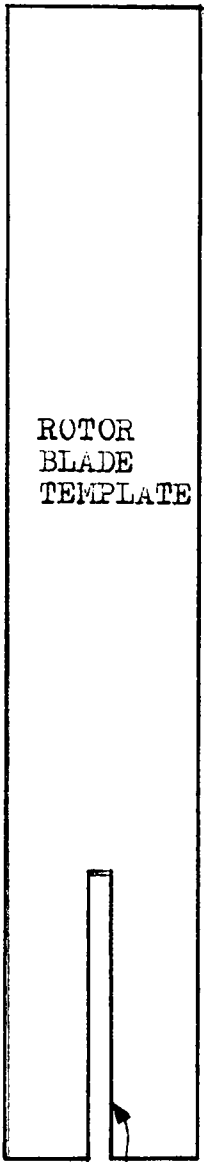
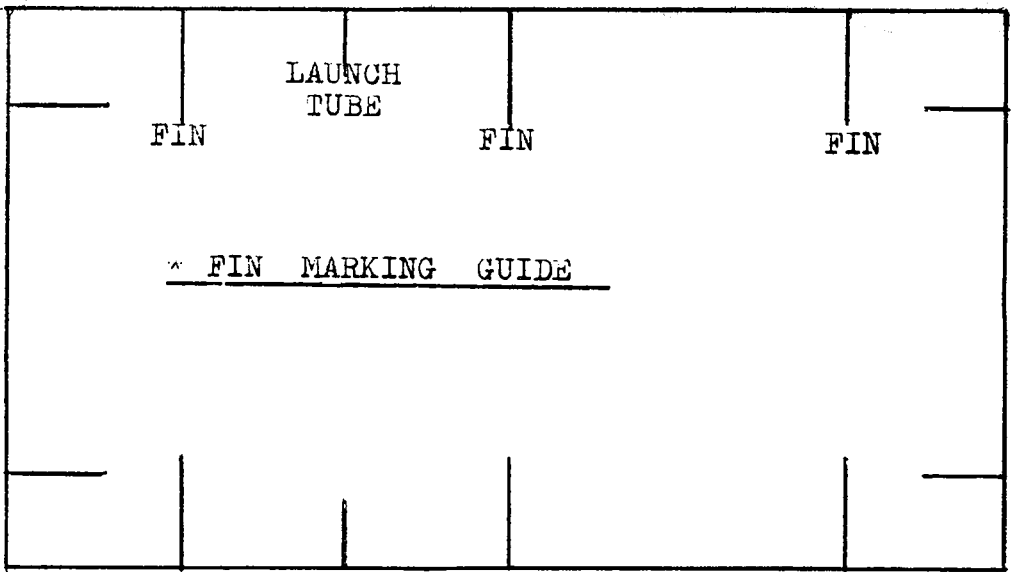
'KOPTER' PARTS LIST

- | | |
|---|-----------------------------|
| 1 - NOSE CONE | 3 - HINGE PINS |
| 1 - BODY TUBE (1.595" DIA.) | 1 - 1/4 x 12 LONG DOWEL ROD |
| 1 - FIN SHEET | 1 - SCREW EYE |
| 3 - ROTOR BLADES | 1 - SNAP SWIVEL |
| 1 - ROTOR MOUNT DISC | 2 - RETAINER RINGS |
| 1 - BLOW-OUT PISTON | 1 - RUBBER SHOCK CORD |
| 1 - 1/4 x 1/2 x 6 HINGE PIN BLOCK STOCK | 1 - ROTOR TUBE |
| (CUTS 6 PIECES) | 1 - LAUNCH TUBE |
| 3 - BLADE SUPPORT BLOCKS (HARD WOOD) | 3 - RUBBER BANDS |

USE C-6-3 ENGINES ONLY

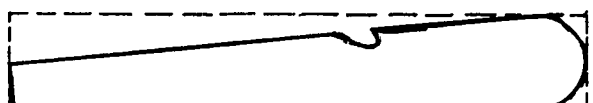
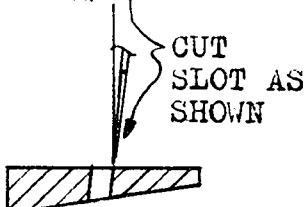
NOTE : ENGINES AND ENGINE MOUNTS CAN BE PURCHASED FROM YOUR HOBBY SHOP. ENGINE MOUNTS SHOULD BE SPECIFIED FOR A 1.595" DIA. TUBE.

ADDITIONAL ROTOR MOUNTS ARE AVAILABLE FOR \$1.00. INCLUDED ARE: NOSE CONE, ROTOR BLADES, DISCS, DOWEL, PINS AND PIN BLOCKS.
SEND TO: 'KOPTER' P.O. BOX 98226 PITTSBURGH, PA. 15227



HINGE PIN SUPPORT AND BLADE SPACING TEMPLATE

FIN PATTERN



BLADE SUPPORT TEMPLATE

TEMPLATE SHEET

"KOPTER" nose cone

