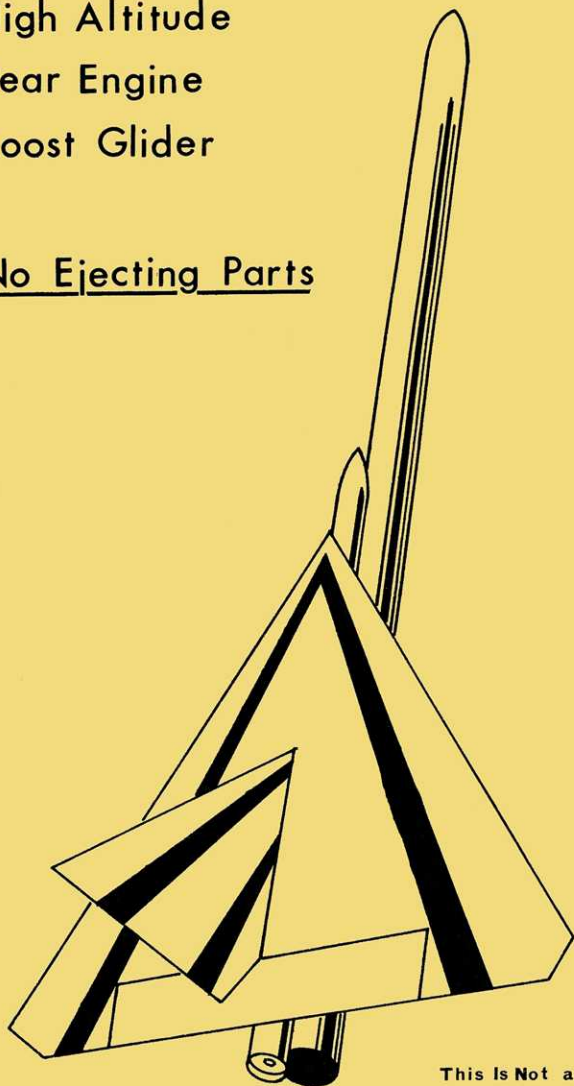


High Altitude
Rear Engine
Boost Glider

No Ejecting Parts



This Is Not a Toy

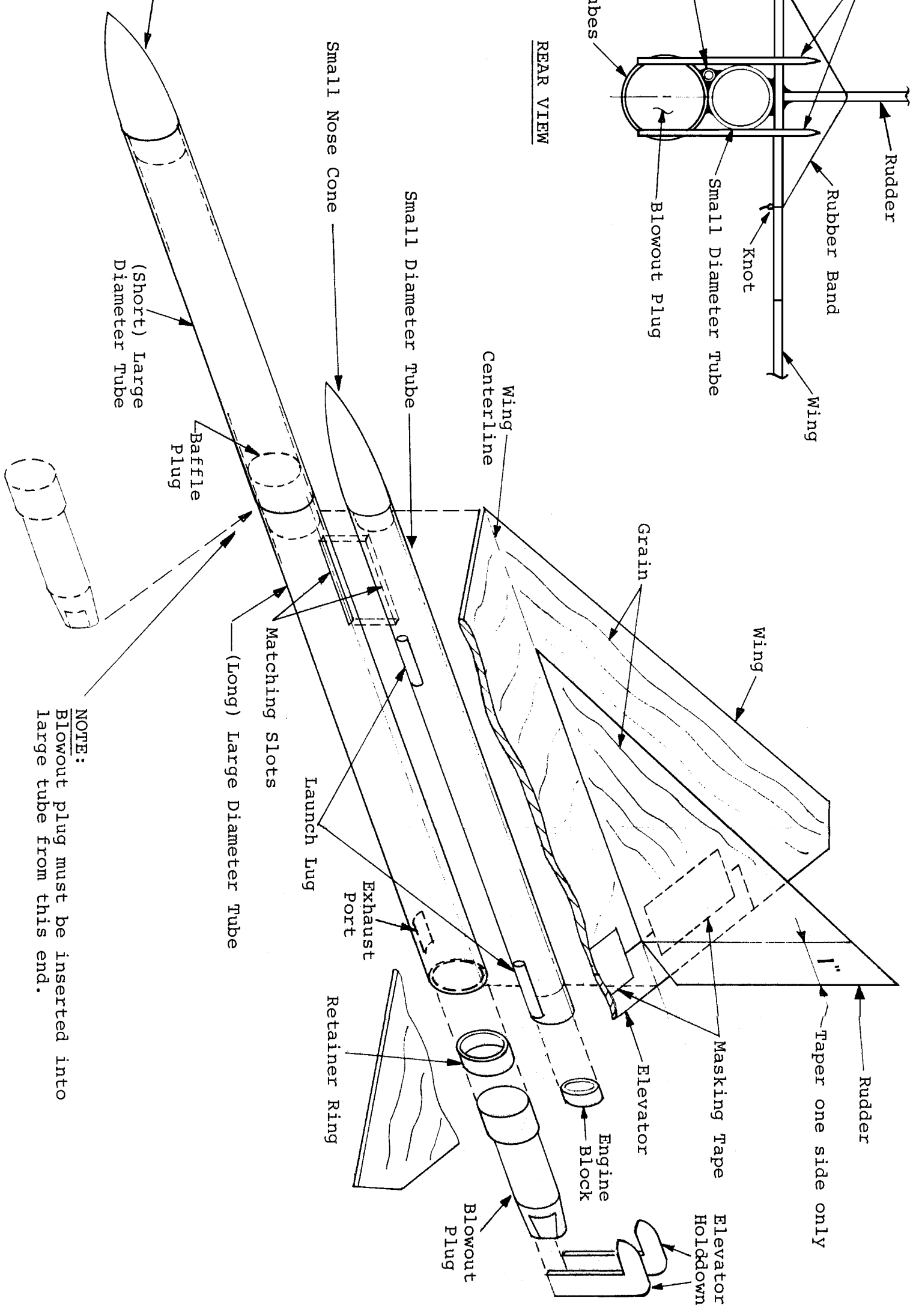
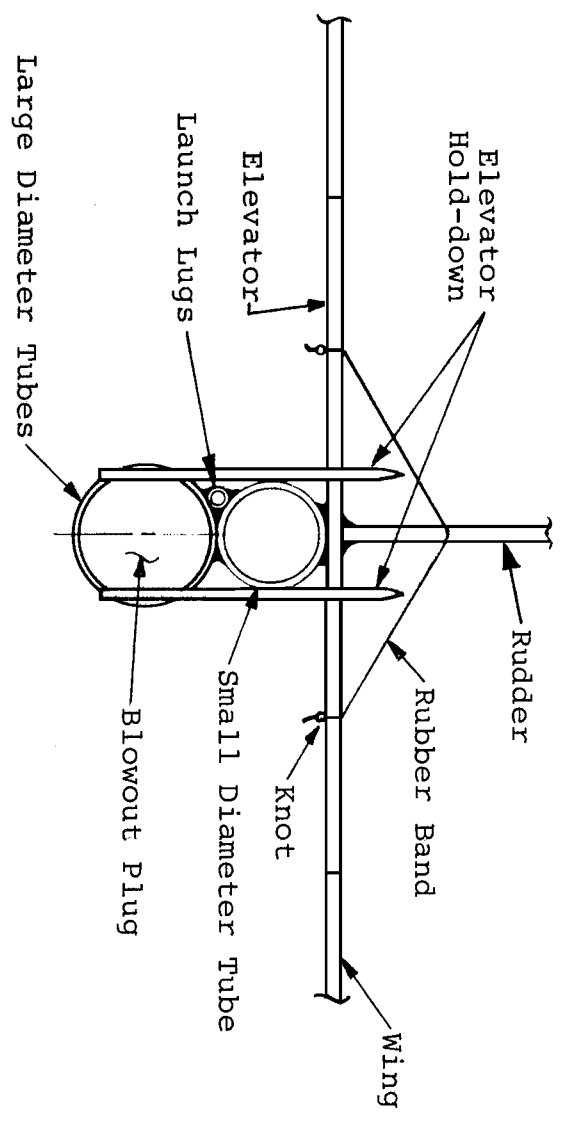
PTEROSAUR*

Specifications:

Length_____	28.5"
Wing Span_____	20.0"
Large Body Dia.____	1.32"
Small Body Dia.____	0.97"

* PATENT NO. 3,888,178

Recommended Engines D-12-3, D-12-5



Large Nose Cone
(Do not glue to body tube until glider balance is completed.)

NOTE:
Blowout plug must be inserted into large tube from this end.

FIG. 1

- a) Use a stick or brush to apply a ring of glue 2-1/4" into one end of small diameter tube.

FIG. 2

- a) Mark a used "D" engine casing with a line 1/4" from one end.
- b) Push the engine block into the tube with the casing until mark is even with tube. Remove casing quickly with a twisting motion.

FIG. 3

- a) Place ring of glue in one end of the long large diameter tube.
- b) Insert retainer ring into tube flush with end.
- c) Wipe off excess glue from inside ring.
- d) Round off sharp edges of ring with sandpaper.

FIG. 4

- a) Cut out large and small tube marking guides.
- b) Wrap small guide around small tube; tape in place 3/4" from end of tube having engine ring. Mark off top and bottom centerlines. Draw a ring around tube 3/4" from end.
- c) Remove guide and draw connecting lines entire length of tube (top and bottom).
- d) Wrap large tube marking guide around tube and repeat marking sequence for top and bottom centerlines only.

FIG. 5

- a) Place both marked tubes side by side with the end of the large tube in line with the 3/4" mark on the small tube.
- b) Mark and cut two (2) 1/8" x 3" long slots exactly as shown in diagram.

FIG. 6

- a) Place glue entire length of large tube, making sure glue is completely around slot.
- b) Place tubes together matching the slots and centerlines.
- c) When glue has dried, add an extra glue fillet on both sides of the slots. Wipe off excess glue with finger.
- d) Glue small nose cone to front of tube.

FIG. 7

- a) Cut out wing and rudder templates, trace outlines on balsa sheets before cutting (wing parts "B" and "C" cut from 20-1/4" balsa, parts "D", "E", and "F" cut from 15-3/4" balsa).
- b) Using a flat board, waxed paper, and straight pins, glue parts together wiping off excess glue from joints. Place pins diagonally to prevent warping or lifting.
- c) Tape elevator in place.
- d) When wing and rudder are completely dry, remove pins and sand leading and trailing edges of wing and rudder as shown.
- e) Cut two (2) 1/8" slots in elevator 1-1/4" on each side of centerline.

FIG. 8

- a) Cut a 1/2" notch on each side of blowout plug (see rear view on assembly diagram).
- b) Cut out elevator hold-down from hardwood stock using templates.
- c) Place on piece of waxed paper and glue together.
- d) Glue a thin piece of cardboard across the seam; when dry, add a piece of cardboard to other side.

FIG. 9

- a) Glue wing to small body tube centerline.
- b) Glue rudder to wing; make sure elevator can lift and seat against rudder.

FIG. 10

- a) Insert notched end of blowout plug into front end of large tube; make sure it slides freely and seats against the retainer ring.
- b) Mark and locate a small hole in rudder. Insert rudder band through hole, tie knots in both ends of band, and place in slots in elevator. Cut off excess rubber band.

FIG. 11

- a) Remove rubber band and tape elevator to body tube.
- b) Locate blowout plug in forward position using a straight pin to hold plug in place.
- c) Glue both hold-downs to blowout plug using pins or tape until glue dries thoroughly. Remove tape and pins.

FIG. 12

- a) Hook up rubber band to elevator. (NOTE: Rubber band should hold elevator firmly against hold-downs.)
- b) Withdraw plug until seated against retainer ring.
- c) Mark and cut a slot (1/2" square and 1" from bottom end of tube) using a pin to hold plug in retracted position.
- d) Glue front and rear launch lugs to body tubes. Rear lug to be flush with end of small tube.

FIG. 13

- a) Tape large nose cone to remaining tube.
- b) Place a ring of glue in the other end of tube, mark and insert baffle plug halfway into tube.

FIG. 14 - PRE-FLIGHT TEST

- a) Place a ring of glue into front end of large diameter tube, insert baffle plug and tube assembly, making sure of good alignment of tubes. Let assembly dry.
- b) Place used "D" engine casing into rear of engine tube. Use tape to hold casing in firmly.
- c) Retract plug so elevator is in raised position.
- d) Check balance; glider should balance at 7" to 7-1/4" from rear of large tube.
- e) Throw glider into wind. Correct with weights as shown in Fig. 15.

FIG. 15 - PRE-FLIGHT BALANCING

- a) If glider stalls, remove tape, make hole, add one weight to nose cone. Repeat throwing sequence.
- b) Add extra weight (if required); add glue to hole.
- c) If glider dives, make hole in rear of blowout plug. Add one weight and repeat throwing sequence. Add second weight if required; add glue to hole.
- d) Remove tape and glue nose cone to front tube.

FIG. 1
Stick
Glue
Small Diameter Tube
Diameter Tube

FIG. 2
Engine Block
Glue
Small Diameter Tube
Used "D" Engine Casing
Mark

FIG. 3
Glue
Large Diameter Tube
Retainer Ring
Round Sharp Edges
Plush with End

FIG. 4
Make Line Around Tube
Marking Guide
Tape
Top and Bottom Centerlines
Large Diameter Tube
(Long)

FIG. 5
Small Diameter Tube
Engine Block
Retainer Ring
1/8" x 3" lg. Matching Slots
3"
9 3/4"
3/4"

FIG. 6
Glue Small Nose Cone to Tube
Matching Slots
Mark
3/4"
Glue

FIG. 7
Waxed Paper
Pins
"A" (pre-cut)
"B"
"C"
"D"
"E"
"F"
1/8" Slots
1/4"
1/4"
Tape
Front
Rear

FIG. 8
Blowout Plug
Notch Both Sides
Thin Cardboard
Taper Edges
Hardwood
Waxed Paper
Elevator Hold-down

FIG. 9
Glue
Rudder
Wing
Elevator
Check Fit
Rudder in line with mark

FIG. 10
Rubber Band
Locate Small Hole
Blowout Plug
Retainer Ring
3/4"

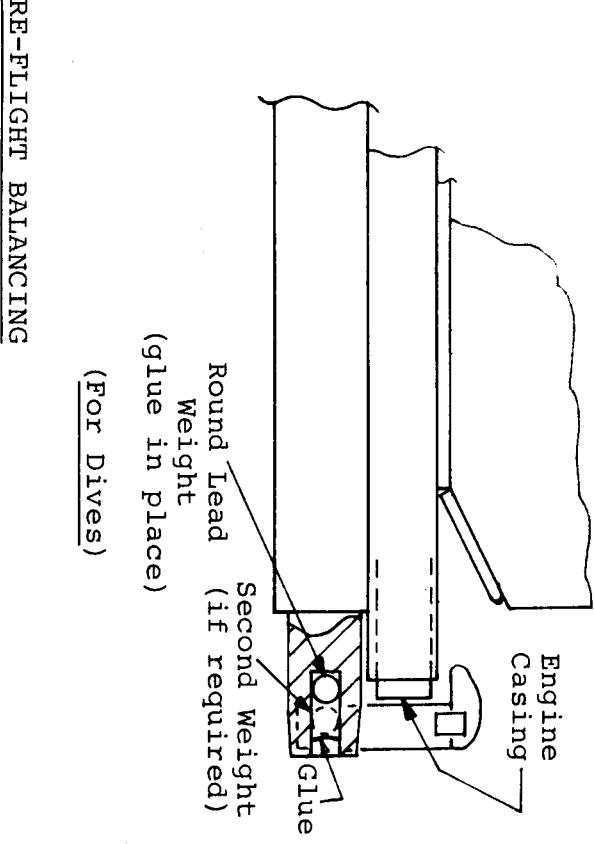
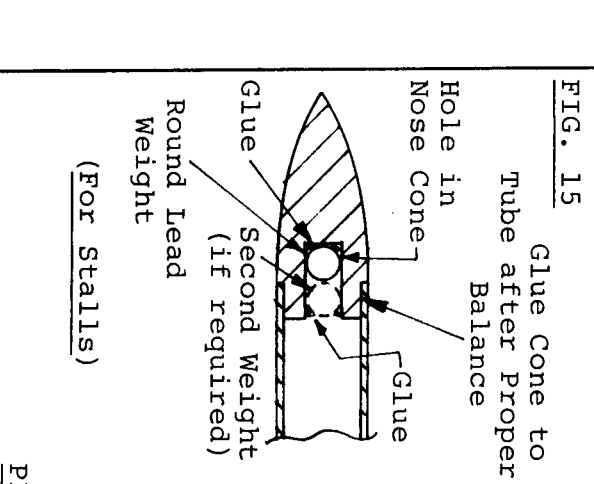
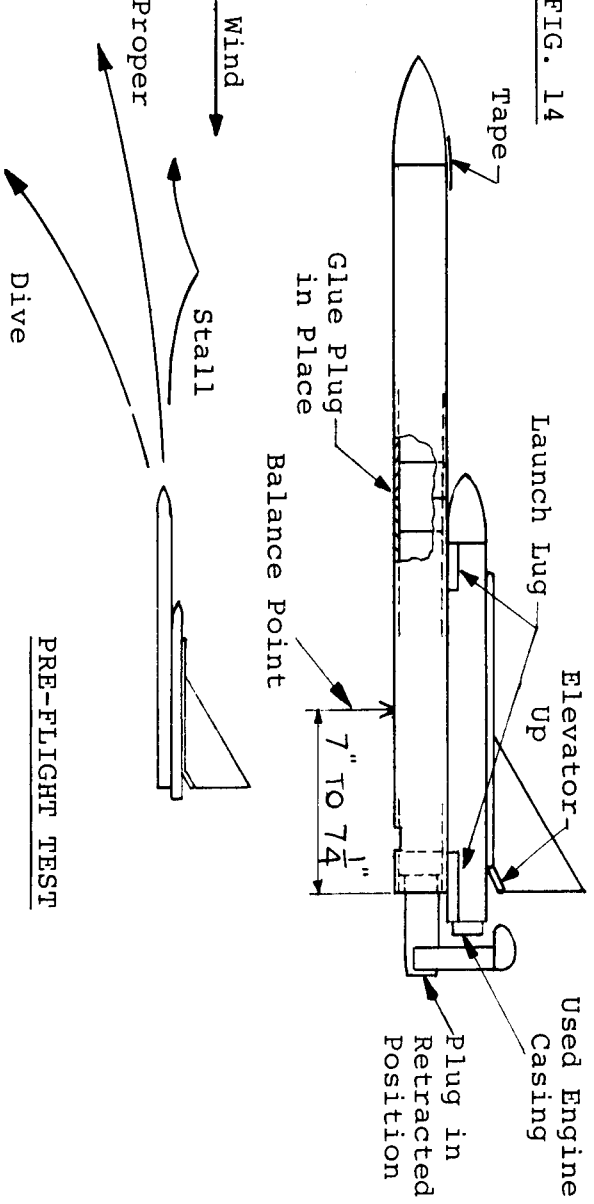
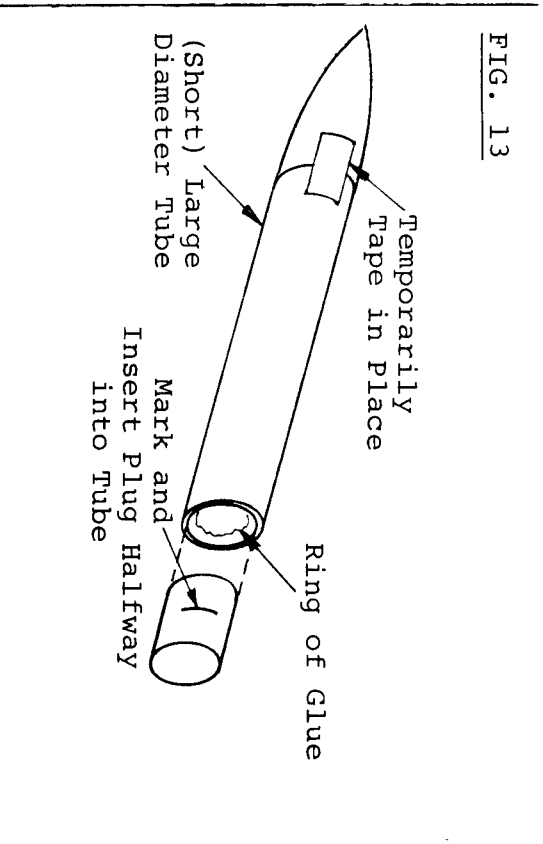
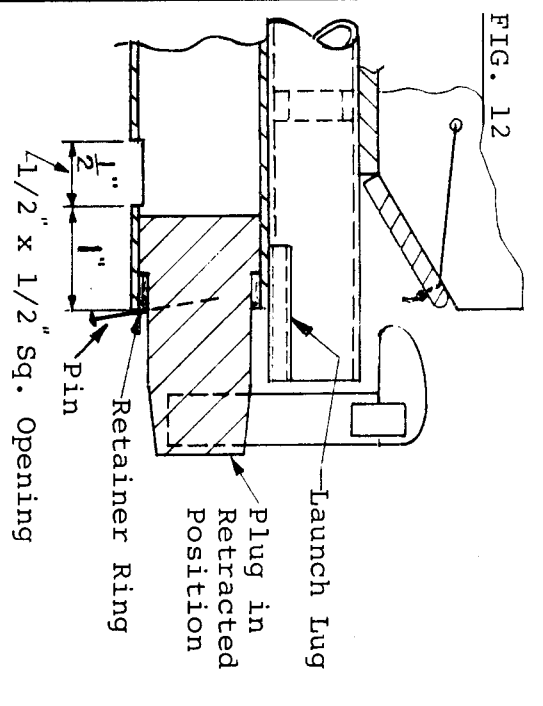
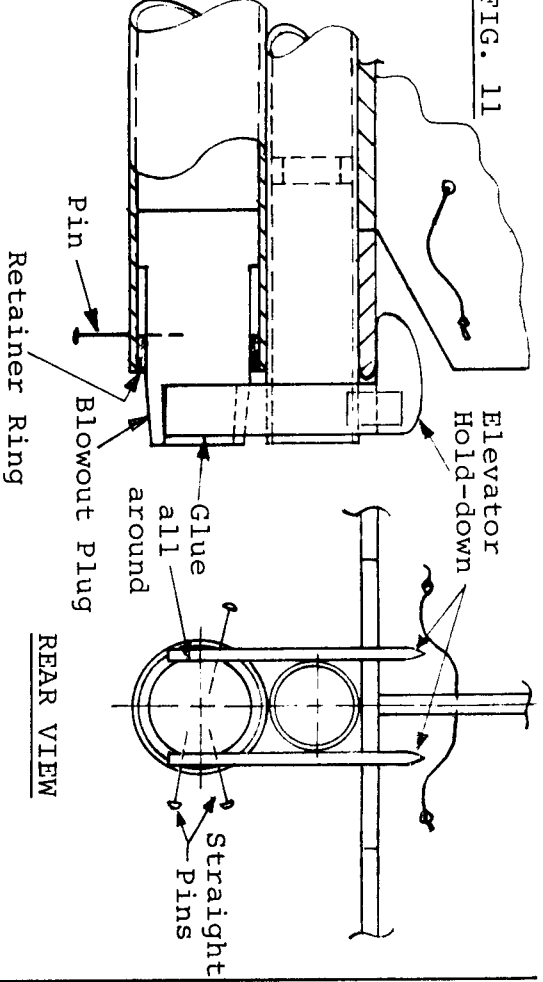
MATERIALS REQUIRED FOR CONSTRUCTION

1. White glue
2. Sharp knife
3. Waxed paper
4. Straight pins
5. Sandpaper
6. Masking tape
7. Spray paint

READ ALL INSTRUCTIONS FIRST!

PARTS LIST

1 - Large Nose Cone	1 - Engine Block
1 - Small Nose Cone	1 - Baffle Plug
1 - (Long) Large Dia. Tube	1 - Blowout Plug
1 - (Short) Large Dia. Tube	1 - Retainer Ring
1 - Small Dia. Tube	2 - Pieces (Wing Part "A")
2 - Launch Lugs	1 - Rubber Band
2 - Pcs. Hardwood (long)	2 - Pcs. Hardwood (short)
2 - Pcs. Hardwood (short)	1 - Pc. 1/8 x 3 x 20-1/4 (Wing Parts "B" and "C")
1 - Pc. 1/8 x 3 x 15-3/4 (Parts "D", "E", "F")	



FLIGHT INSTRUCTIONS

1. Load engine into center tube. USE MASKING TAPE TO SECURE THE ENGINE FIRMLY so blowout pressure travels from one tube to the other to activate blowout plug.

2. Place blowout plug in forward position locking elevator in down position. (Be sure elevator is flat against tubes.)

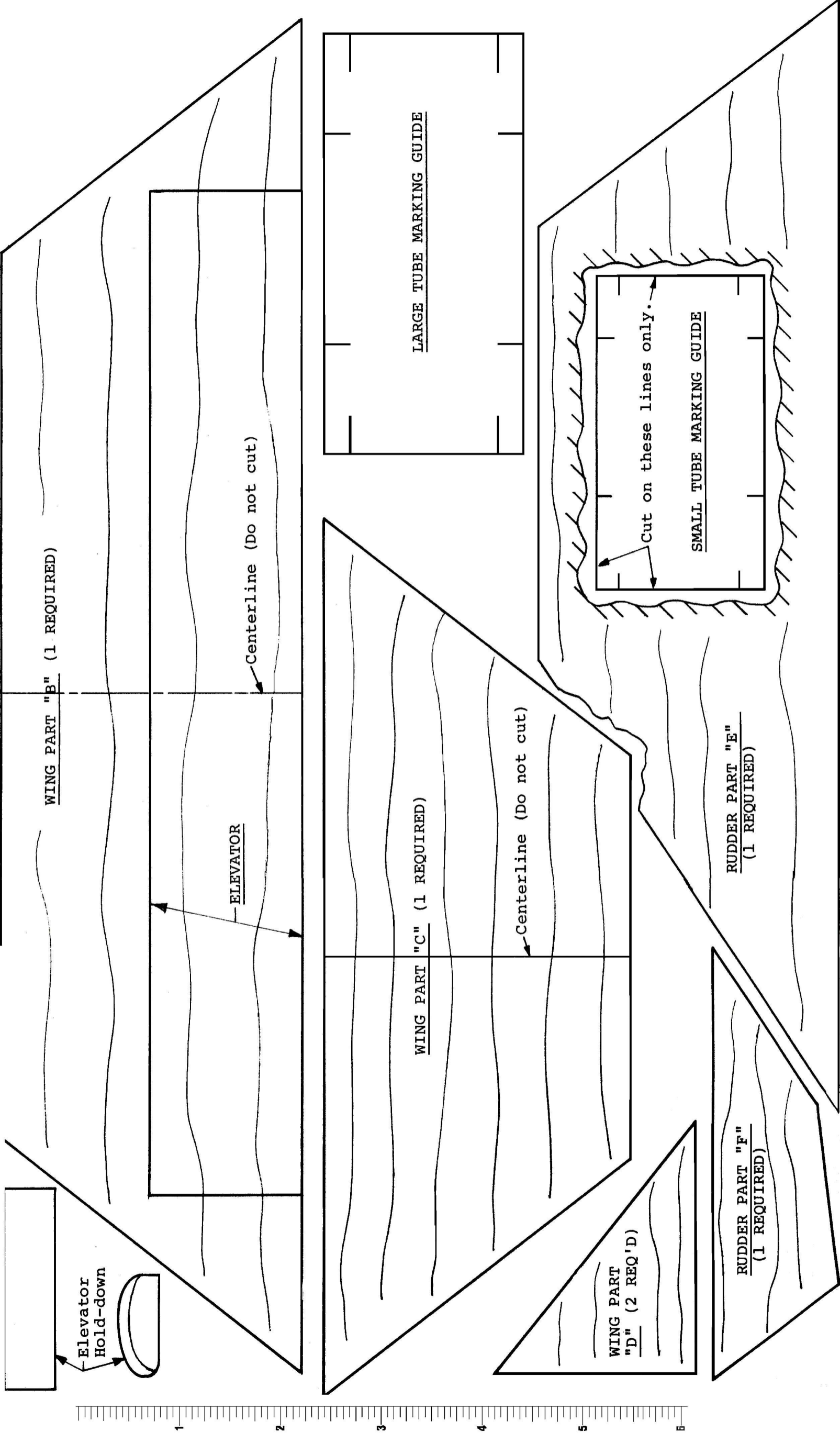
3. Hook rubber band through hole in rudder and slots at rear of elevator.

4. Place glider in vertical position on launch rod.

5. Insert ignition wire into rear of engine as shown in engine firing instructions. (Use electric ignition systems only.)

NOTE: USE D-12-3 OR D-12-5 ENGINES ONLY.

PRE-FLIGHT BALANCING



WING PART "B" (1 REQUIRED)

Centerline (Do not cut)

ELEVATOR

WING PART "C" (1 REQUIRED)

Centerline (Do not cut)

WING PART "D" (2 REQ'D)

RUDDER PART "E" (1 REQUIRED)

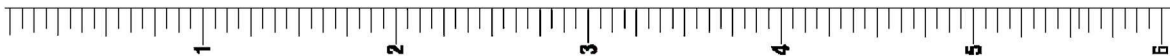
RUDDER PART "F" (1 REQUIRED)

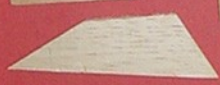
LARGE TUBE MARKING GUIDE

SMALL TUBE MARKING GUIDE

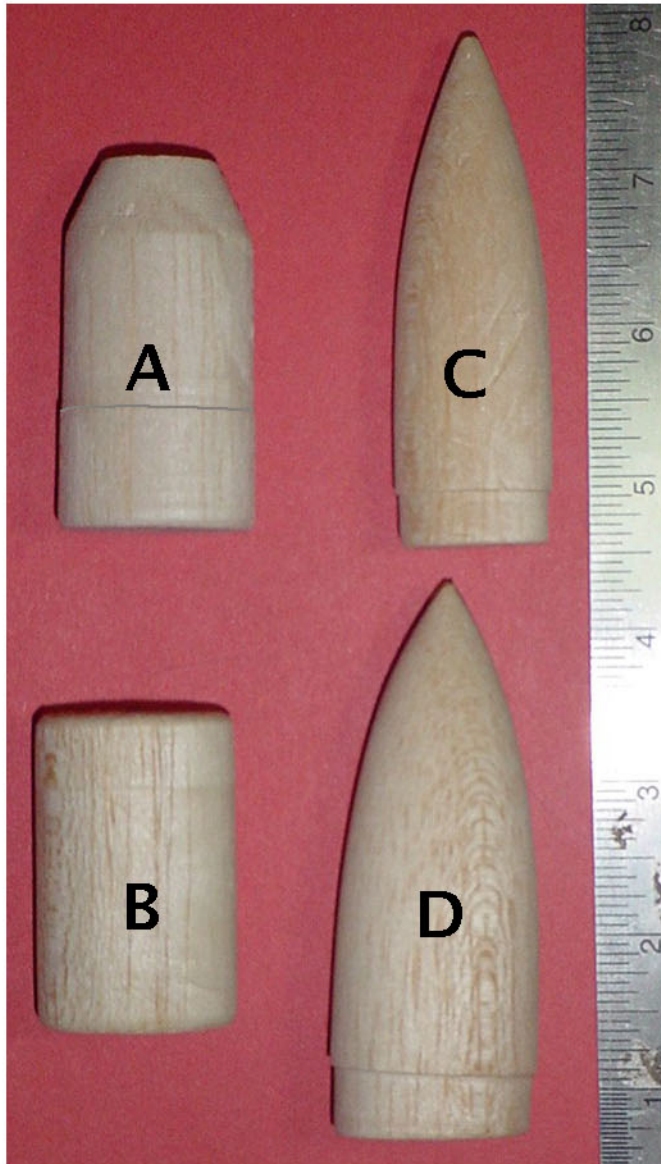
Cut on these lines only.

Elevator Hold-down

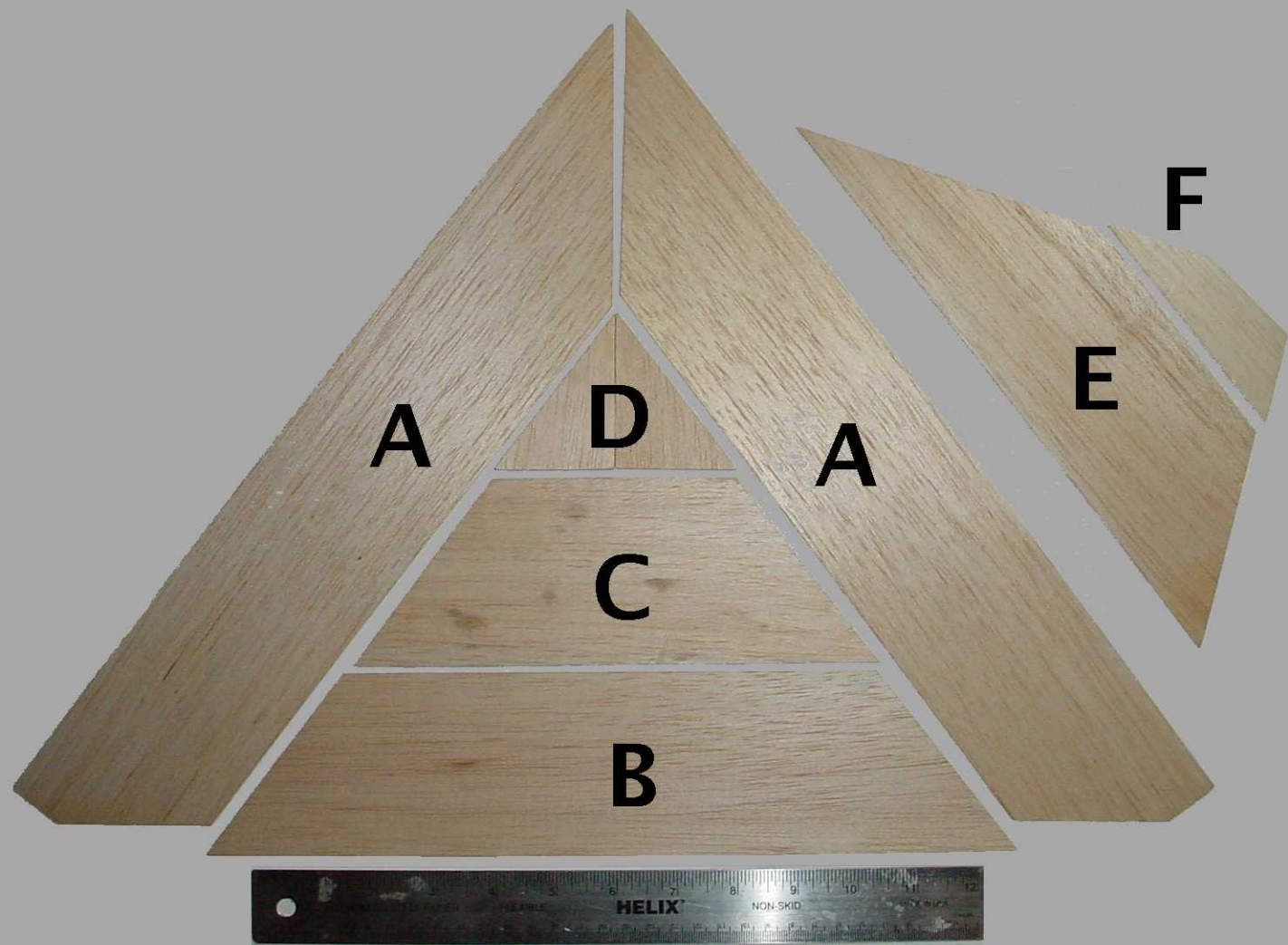




Kopter Rockets Pterosaur Boosted Glider Nose Cone and Balsa Plug Details



- | | | |
|----|-------------|--|
| A: | Baffle Plug | Can be made from NB-55 x 2.375" nose block. Be sure and leave .75" cylinder of nose block at base of plug. |
| B: | Nose Block | NB-55 x 2.0" balsa cylinder. Used to connect upper and lower main body tubes together. |
| C: | Nose Cone | BNC-50 series nose cone similar to Estes BNC-50K. Approx. 3.0" plus shoulder. |
| D: | Nose Cone | Main body tube nose cone for BT-55 body tube. Similar to Estes BNC-55AA. Approx. 3.0" plus shoulder. |



Kopter Rockets Pterosaur Wing / Rudder Components

Letters correspond to those on template sheet.

All parts are 1/8" thick balsa.

Kopter Rockets Pterosaur Boosted Glider Parts List

1. Large Nose Cone for BT-55 body tube; approx. 3.125" long plus shoulder.
Note: dimension on photo page is incorrect. This is the correct nose cone length.
2. Small nose cone for BT-50 body tube; approx 3" long plus shoulder.
3. Long main body tube, BT-55 18" long.
4. Short main body tube, BT-55, 8" long.
5. Upper Body tube, BT-50, 18" long.
6. Two (2) 1/8" launch lugs, 2" long .
7. Motor block for 24mm motor.
8. Baffle plug, NB-55 nose block, 2.0" long.
9. Blow out plug, made from 2.5" length of NB-55 nose block. Forward .5" of plug tapers to .75" diameter. Rear .75" of plug is straight NB-55. Middle 1.25" should be cylindrical and sanded to slightly smaller dimension than stock NB-55.
10. Retainer ring, .125" slice of TC-55 tube coupler.
11. Medium rubber band. Will cut to fit during construction of rocket.
12. Two (2) pieces hardwood (not plywood or basswood), 1/8 x 1/2 x 1 1/16 inches.
13. Two (2) pieces hardwood (not plywood or basswood), 1/8 x 1/2 x 2 1/16 inches.
14. Two (2) balsa sheets, 1/8 x 3 x 16.5 inches, for wing parts 'A'. No template in kit (pre-cut parts). See drawing below for measurements.
15. Balsa sheet, 1/8 x 3 x 20 1/4 inches, for wing parts 'B' and 'C'.
16. Balsa sheet, 1/8 x 3 x 15 3/4 inches, for wing parts 'D', 'E' and 'F'.

Wing part A: Make two from 1/8" balsa sheet.

