

Photon Scanner Sailwing and Rocket Shuttle

20"
Wingspan
18.5"
Length

SOARS
for
MINUTES

FEATURES:

FEATURES:

**Sailwing unfolds
to 20" Wingspan
after ejection from
Large Rocket Shuttle**

**Unique Lifting Surface
on Sailwing assures
Long Duration Soaring
or Aerobatics**

**Printed Sailwing,
Parachute and Decals
included**

**Durable Sailwing and
Rocket components for
many reliable flights**

**28"
Length**

**1.5"
Dia.**



Star Scan System

Pat. Pend.

SKILL LEVEL - AVERAGE to CHALLENGING

**ADULT SUPERVISION IS SUGGESTED FOR
THOSE UNDER 12 YEARS OF AGE WHEN
FLYING MODEL ROCKETS.**

**THIS KIT REQUIRES ASSEMBLY. LAUNCH
SYSTEM, ENGINES, GLUE AND FINISHING
MATERIALS ARE NOT INCLUDED.**

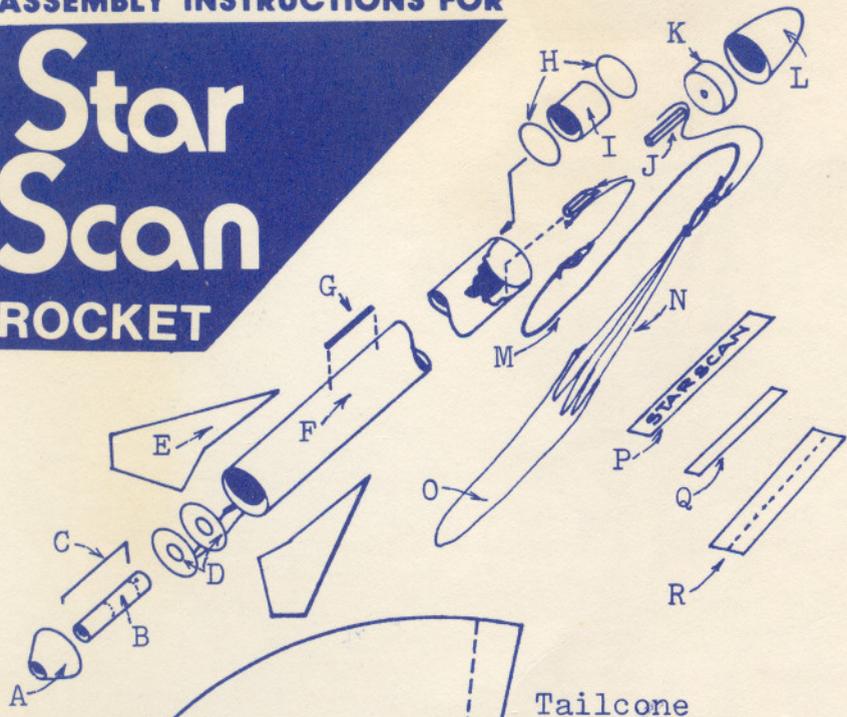


**Roto
Rocket**

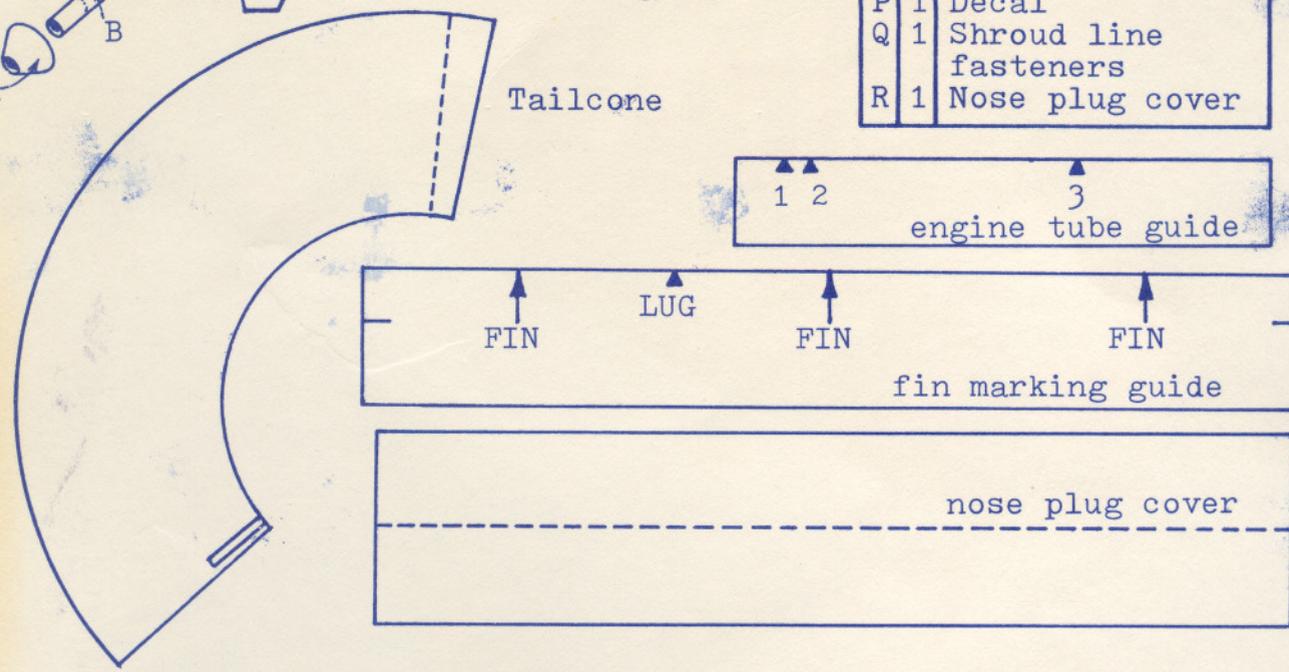
**ROTO-ROCKET CO. P.O. Box 2878, Springfield, Va. 22152
a division of Frontier Industries Inc.**

Star Scan

ROCKET



PARTS LIST		
A	1	Tailcone
B	1	Engine tube
C	1	Engine retainer
D	2	Centering rings
E	1	Fin material
F	1	Body tube
G	1	Launch lug
H	2	Sabot discs
I	1	Sabot tube
J	1	Sabot stop/ nose stick material
K	1	Nose plug
L	1	Nose cone
M	1	Shock cord
N	1	Shroud line
O	1	Parachute
P	1	Decal
Q	1	Shroud line fasteners
R	1	Nose plug cover



1

*Cut out and glue tailcone
glue here

cut slot after glue dries

2

*Cut out guide and mark engine tube
*Punch holes on opposite sides of tube at 1 for wire
*Install wire, slip rings onto tube at 2 and 3, apply glue fillets
*Glue on tailcone

guide

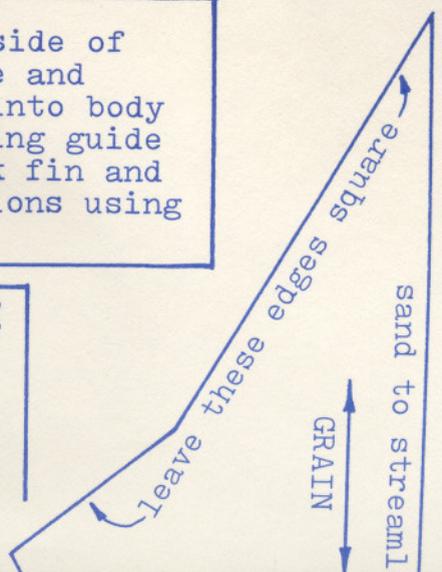
3

line up seam with fin mark

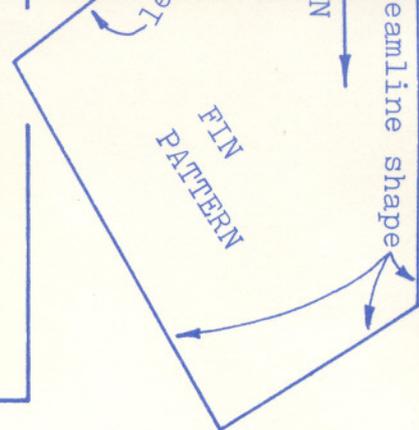
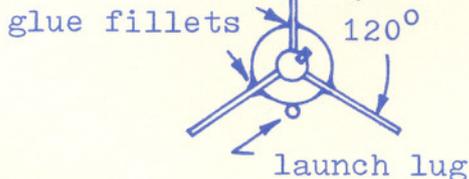
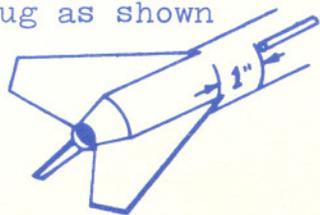
*Apply glue to inside of body and tailcone and insert assembly into body
*Line up fin marking guide as shown and mark fin and launch lug locations using pencil

4

*Trace fin pattern on fin material and cut out 3 fins
*Streamline edges shown on pattern
*Draw pencil lines through fin marks and launch lug location as shown
*Glue fins to body-align carefully
*Apply glue fillets and

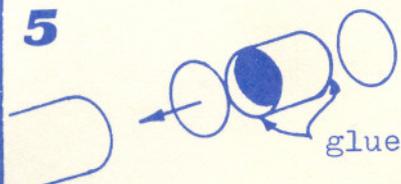


- location as shown
- *Glue fins to body-align carefully
- *Apply glue fillets and allow to dry
- *Glue on launch lug as shown



- *Glue discs to ends of sabot and let dry
- *Slip sabot into body

5



- *Cut sabot stop from $\frac{1}{4}$ " square

6

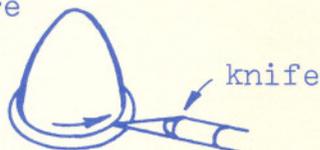


- *Glue line to bottom of stop
- *Glue stop and line in body as shown



- *Score nose cone and gently bend plastic back and forth to break off excess
- *Sand edge smooth and square

7



- *Assemble parachute

36" length of line

knot

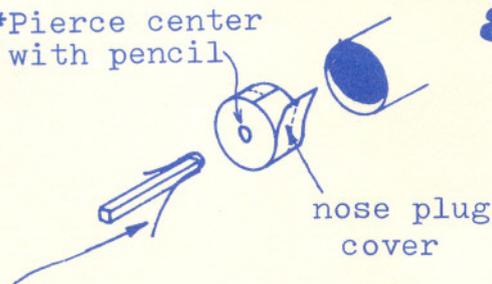


- *Gather lines and tie into a loop

9

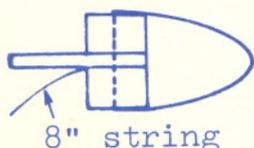
- *Pierce center with pencil

8



nose plug cover

- *Place 8" of shroud line over end of $\frac{1}{4}$ " sq. stick apply glue and push into nose plug 1"
- *Glue cover on nose plug and slip into body to hold until dry
- *Remove plug from body-use plastic cement around plug and slip into nose cone



use cement sparingly!

8" string

- *Attach shock cord as shown

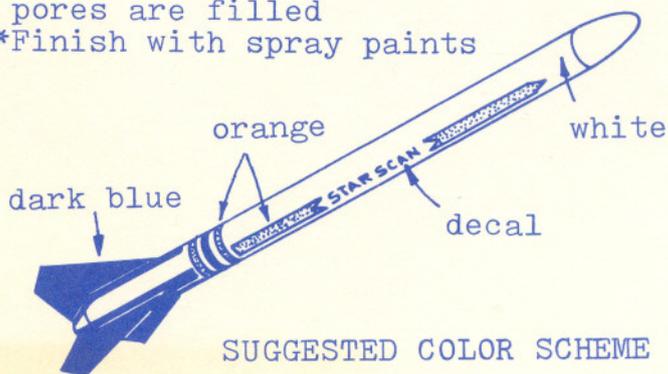


shock cord

10

- *Apply sanding sealer to fins and allow to dry
- *Sand and repeat till wood pores are filled
- *Finish with spray paints

11



SUGGESTED COLOR SCHEME

- *To apply decal soak in water and slide off

ROTO-ROCKET CO.

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Star Scan System

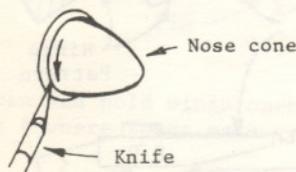
INSTRUCTIONS

CONSTRUCTION ITEMS REQUIRED

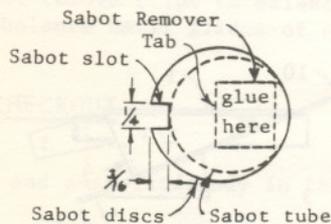
Hobby knife
 Scissors
 White glue
 Plastic glue - styrene
 Pencil
 3/4" wide x 5 ft. transparent tape
 Paper clips (4)
 Medium and fine sand paper
 Balsa filler
 Spray paints

CONGRATULATIONS ON SELECTING "THE STARSCAN SYSTEM".....This innovative rocket was developed for rocketeers who are looking for flights that are timely, exciting and different and construction techniques that develop new and challenging skills. STARSCAN satisfies these requirements in that you may find new ways to fly it and possibly to construct it. If you do, we will be interested to hear about them. Our latest improvements are in STEPS 4,5,6 & 8 of the ROCKET ASSEMBLY INSTRUCTIONS(insert). Please make notations on insert to include the following:

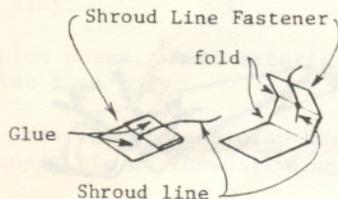
STEP 4 - To trim off Nose flange, temporarily insert Nose Plug and Nose Plug Cover for support. If knife tip is not sharp enough to score, mark with pencil first and then lay on side and cut as shown at right.



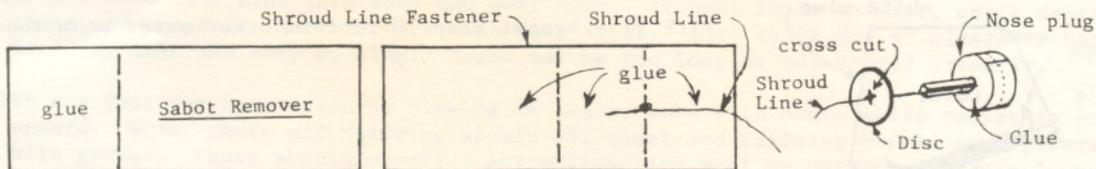
STEP 5 - Wadding improves Sailwing separation. To install and replace wadding, cut slots as shown here, in both Discs that need to be punched out. Glue Discs to ends of Sabot tube so that slots align and tube ends are covered. Cut and glue Sabot Remover to one end as shown.



STEP 6 - Make and glue Sabot Stop as instructed, but without Shroud Line attached. Cut out Shroud Line Fastener on margin below. Glue Shroud Line with knot at fold (as shown). Continue to glue and fold on dotted lines. Glue Fastener into Body tube 1" below top and opposite Sabot Stop. This prevents entanglement of Sailwing with Shroud Line.

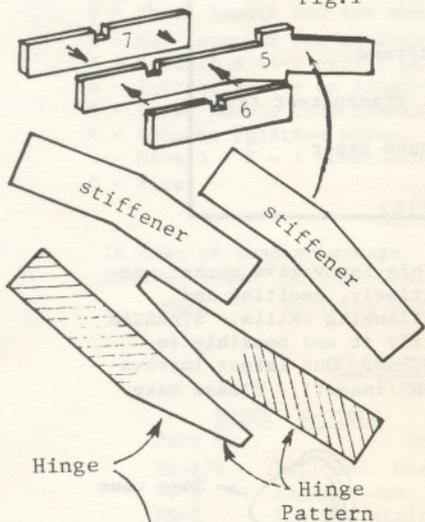


STEP 8 - Reinforce the Nose Plug assembly with the 1 1/2" dia. disc that is punched out. Cut a cross in the center to accept a tight fit with the Nose Stick. Drop Shroud Line through the hole and glue disc onto Stick and Plug. Let dry. Place this assembly in Nose Cone without gluing. Now push Plug into Body and trim edge of disc if necessary. Check for flatness of Nose Cone base. Pencil high spots. Remove and sand as necessary. Cement Nose Cone on Plug as instructed and let dry in Body.



SAILWING
ASSEMBLY
INSTRUCTIONS

Fig. 1



Hinge

Hinge
Pattern

Fig. 2

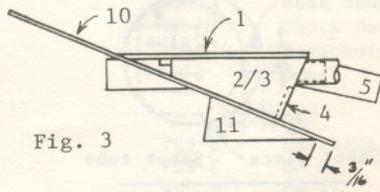
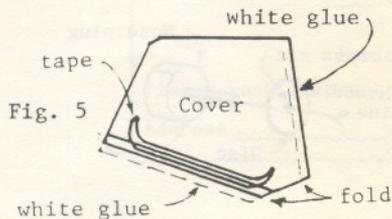
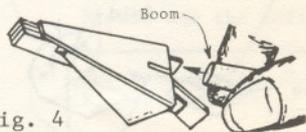


Fig. 3

Fig. 4



STEP 1 - Cut Nose Pattern along bottom edge (pieces 4, 7 & 2). Remove paper backing and stick on 3" x 4" balsa with bottom edge even with a 4" balsa edge.

STEP 2 - Carefully cut out all pieces with a sharp knife.

STEP 3 - Remove patterns on pieces 5, 6 & 7 and glue them together with white glue or balsa cement as shown. Fig. 1

STEP 4 - Cut out center structure stiffeners (at left) and glue to each side of piece 5.

STEP 5 - Cut out hinge patterns and glue to upper left corner of "Assembly Instructions for Star Scan Rocket." Cut out cardboard hinges and glue pieces 8 & 9 to shaded areas. When dry, glue pointed section of hinges onto pieces 6 & 7 as shown. Be sure pieces 8 & 9 are tightly butted to 6 & 7 and hinges are centered and top edges are parallel. Eye 8 & 9 from rear to check for evenness. Fig. 2

STEP 6 - Glue piece 1 to pieces 5, 6 & 7. When dry, glue pieces 2 and 3 to piece 1. Fig. 3

STEP 7 - Install outer Booms by squeezing the end of plastic tubes and sliding them on pieces 8 and 9 as shown. Fig. 4

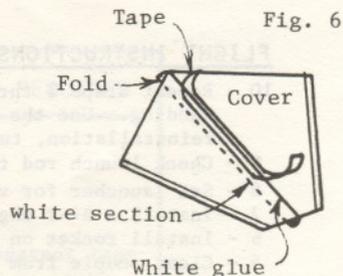
STEP 8 - Slightly chamfer the ends of piece 4 to make for a square and smooth fit between 2 and 3. Glue 4 to 2 and 3 while it is firmly seated against the Booms. Use pins through 2 and 3 to hold 4 till glue dries. If 4 protrudes below 2 and 3, trim till even.

STEP 9 - Apply glue to bottom edges of 2, 3 and 4 and top of 5, 6, & 7. Slide piece 10 onto glue surfaces and let dry. Glue piece 11 to piece 10 as shown. Sand, seal and paint.

STEP 10 - Cut out Sailwing Cover in one piece and lay it on flat surface with printed side down. Form an outer boom tube by putting very small dots of white glue (about 1/2" apart) along the extreme outer edge as shown. Lightly smear into a thin line. Fold this edge over and crease along the blue/white line, allowing the glue to hold the fold. When the crease is straight and there are no wrinkles, wipe off surface glue with damp tissue and carefully lay transparent tape on the seam. If static electricity causes plastic to jump to tape, use short pieces of tape. Fig. 5

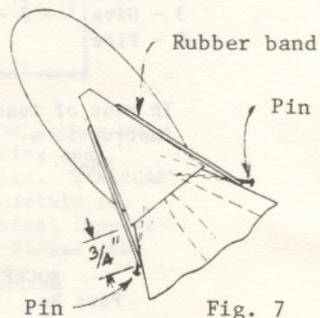
STEP 11 - Repeat Step 10 to form other outer boom tube.

STEP 12 - Lay cover with printed side up and form center tube by putting white glue dots along one edge of the white center section. Fold cover on center line, press to bond the outer edges of the center section. Now fold one-half back so that full printed cover is showing and gently move the material until there is a straight seam with no wrinkles and all of the white center is covered, but only barely covered. Wipe off glue with damp tissue. Cover seam with transparent tape. Fig. 6



STEP 13 - When glue in cover tube is dry, slip cover onto Booms. Insert center Boom and squeeze tip to slide it onto Nose piece 5. Be sure all Booms are well seated.

STEP 14 - Stick Pins through cover and side of Booms as shown. Tie string to Rubber Band, drop string through hole in nose. Pull Band half through and hook ends over Pins. Remove string. Fold and hold all Booms together at trailing edge and cut all off even with cover. Use scissors. Fig. 7



SAILWING FLIGHT CHECKOUT

STEP 1 - Fold outer booms and release. Booms must snap open and hold wings open when nose is pointed upward. If they do not, carefully sand piece 4 where Booms make contact.

STEP 2 - Slide two paper clips onto center Boom tail. Test glide by level and gentle throw over rug or grass in case it is nose heavy. Add or remove clips to balance. Use small pieces of rolled up paper for fine balancing. Rebalance until glides of up to 20 ft. from 5 ft. high are achieved.

ROCKET ASSEMBLY PREPARATION AND CHECKOUT

STEP 1 - Fold two sections of wadding into a 2"x2" square and push into Body in the form of a cup. Push till Sabot stop is visible.

STEP 2 - Align Sabot slot with Stop and insert Sabot past Stop.

STEP 3 - Fold Sailwing with excess material between and below booms. Roll material below Booms, align forward tip of Nose with Sabot Stop and slide into Body.

STEP 4 - Fold and roll parachute, wrap shock cord around chute, but do not wrap Nose Line, and place chute over Shroud Line Fastener so that the square tip of the Sailwing nose is visible.

STEP 5 - Drop Nose Line into Body and seat Nose. If Nose fails to seat, check depth of chute and check for interference with Nose stick. Also check for $\frac{1}{2}$ " clearance between Sailwing nose and Body opening. Booms may be too long or not seated properly.

STEP 6 - Test for separation by blowing in engine tube with mouth while rocket is pointed upward. Nose, chute and Sailwing should all eject and Sailwing should open before it hits ground. Chute should unroll. Any malfunction must be corrected before launch.

Note: An out-of-round Body could cause Sabot to hang-up...squeeze Body to reform.

FLIGHT INSTRUCTIONS - Select a large open area, a calm day and start COUNTDOWN:

- 10 - Repeat Steps 1 through 5 of "ROCKET ASSEMBLY CHECKOUT", including repackaging the wadding. Use the Sabot Remover to rotate the Sabot to align slots and stop. After reinstallation, twist Remover to misalign slot and stop.
- 9 - Check launch rod for smoothness.
- 8 - Set launcher for vertical flight.
- 7 - Install a B4-2 engine and igniter. (first flight)
- 6 - Install rocket on launcher.
- 5 - Clear people from immediate launch area and advise others of firing.
- 4 - Connect ignition wires.
- 3 - Give 3 - 2 - 1 countdown.
- 0 - Fire

SAILWING REPLACEMENT KITS

In case of loss or damage, Sailwing Kits are available...complete with patterns and instructions. If your Dealer is out of stock, use the Order Form below.

SS-2 Sailwing Replacement kit \$3.00

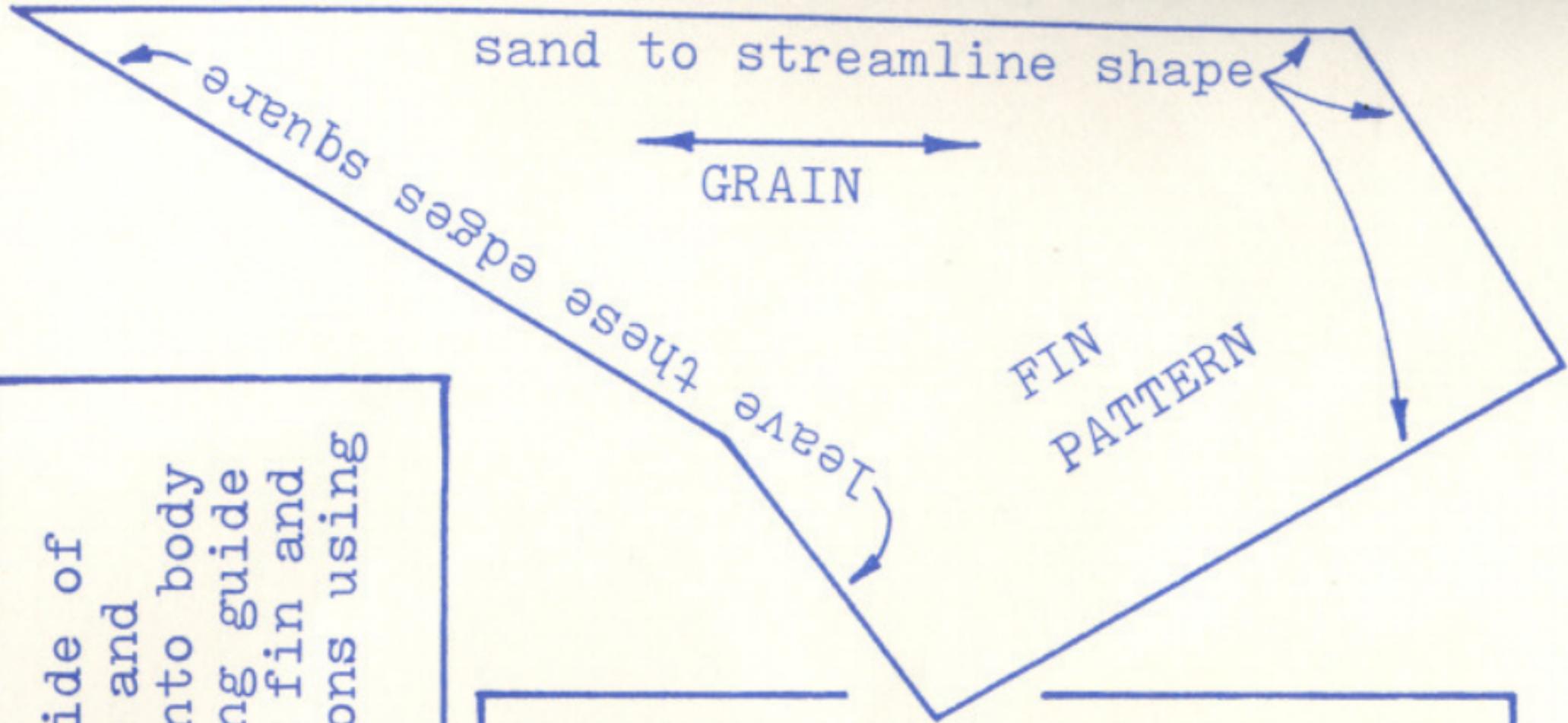
STARSCAN SYSTEM PARTS PRICE LIST

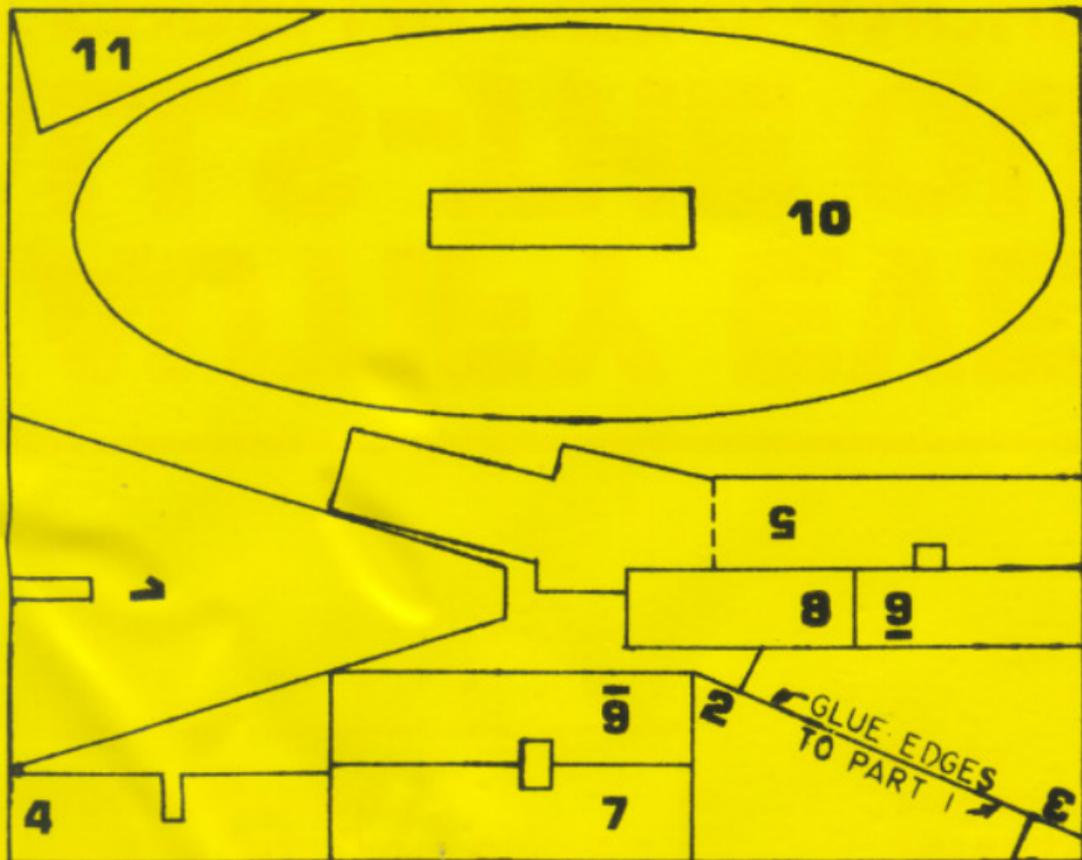
<u>ROCKET SHUTTLE</u>		
Part No.	Description	Price
RS-A/R	Tailcone, Nose plugcover, Fin pattern and Instructions	\$1.25
RS-B	Engine tube	.45
RS-C	Engine retainer	.25
RS-D/H	Centering rings and Sabot discs - 2 ea.	.80
RS-E	Fin material - 3	.40
RS-F	Body tube	1.85
RS-G	Launch lug	.55
RS-I	Sabot tube	.35
RS-J	Sabot stop and nose stick	.10
RS-K	Nose Plug	.20
RS-L	Nose Cone	1.20
RS-M	Shock Cord	.35
RS-N/O/Q	Parachute, shroud lines and fasteners	1.25
RS-P	Decal	.20
<u>SAILWING</u>		
PSS-A/B	Sailwing nose material and pattern	.85
PSS-C	Booms - 3	.85
PSS-D	Cover	1.15
PSS-E	Rubber band	.05

Please use the following order form if your Dealer is out of stock.

To: Roto-Rocket, P O Box 2878, Springfield, VA 22152	
Please send me: _____ (qty.) of _____	Part No. _____ for \$ _____ ea.
_____ (qty.) of _____	Part. No. _____ for \$ _____ ea.
_____ (qty.) of _____	Part. No. _____ for \$ _____ ea.
	Shipping and handling \$1.50
Enclosed is my _____ check or _____ money order for total \$ _____.	
Please rush shipment to: Name _____	
Address _____	Zip _____

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