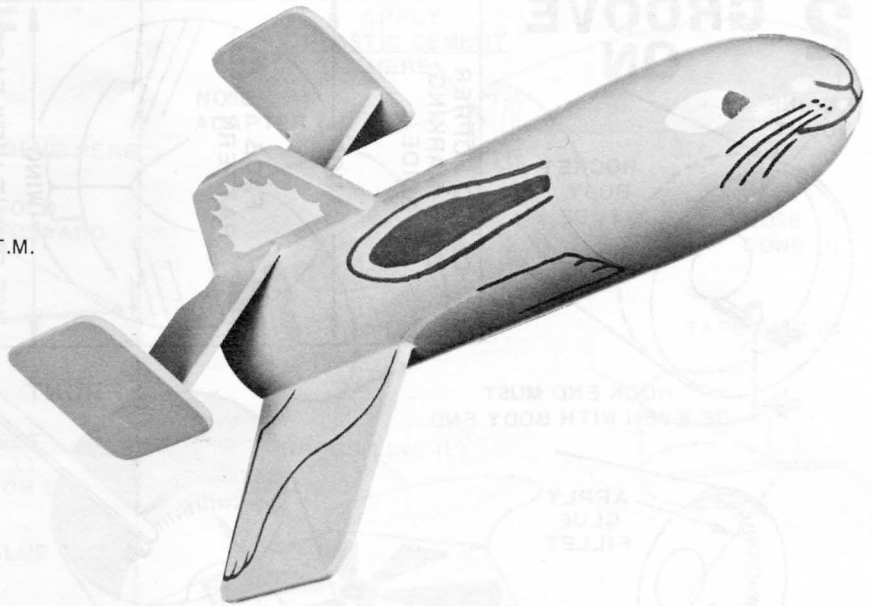






A SUBSIDIARY OF DAMON

# Goonybird T.M.



## PARTS LIST

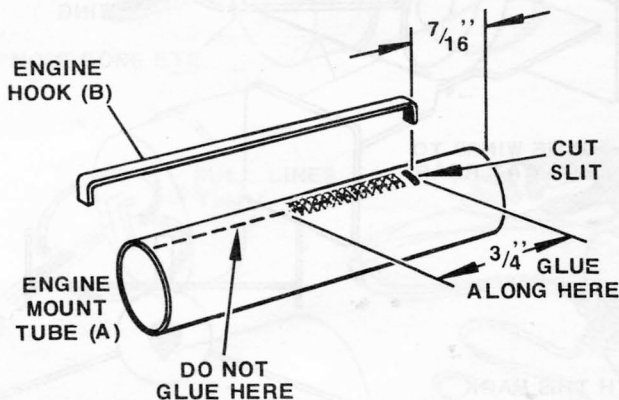
KIT NO. 0851

- (A) 1 Body Tube .....BT-5BJ
- (B) 1 Engine Hook .....EH-3
- (C) 1 Centering Rings.....RA-560
- (D) 1 Body Tube .....BT-60R
- (E) 1 Die-Cut Fin Sheet .....BF-00851
- (F) 1 Launch Lug .....LL-2A
- (G) 1 Shock Cord Mount.....SCM-50
- (H) 1 Shock Cord.....SC-1B
- (I) 1 Nose Cone .....PNC-60L
- (J) 1 Nose Cone Adapter .....PNCA-60L
- (K) 1 Parachute .....
- (L) 1 Shroud Lines..... | ...PK-12
- (M) 1 Tape Discs (Strip of 6)..... |
- (N) 1 Display Stand.....09014
- (O) 1 Engine Casing.....EC-8
- (P) 1 Decal Sheet .....37351

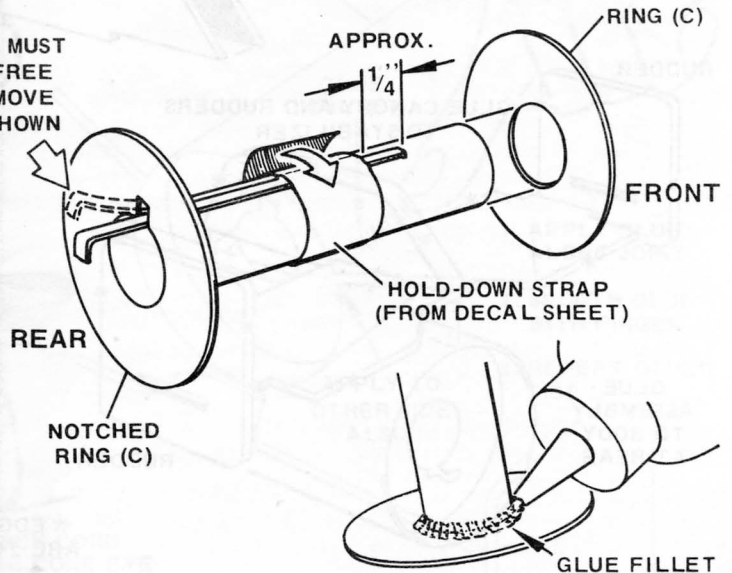
**WARRANTY:** Goonybird model rockets are guaranteed by Estes Industries against manufacturing defects. Any part found defective will be repaired or replaced without charge providing the defective part is returned post-paid to Estes Industries, Customer Service Department, Penrose, Colorado 81240. For fastest service, please send only the defective part.

In addition to the materials included in this kit, you will also need: white glue, plastic cement, modeling knife, scissors, sanding sealer, medium and fine grit sandpaper, paint or dope. **IMPORTANT:** Use white glue for all balsa-body tube construction. Use only plastic cement for nose cone assembly.

## 1 THE ENGINE THING



HOOK MUST BE FREE TO MOVE AS SHOWN



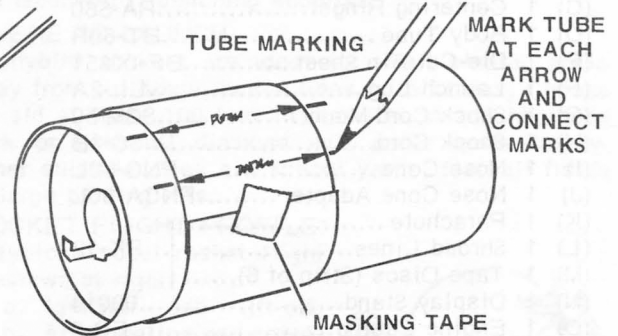
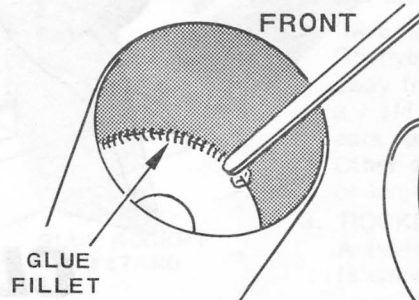
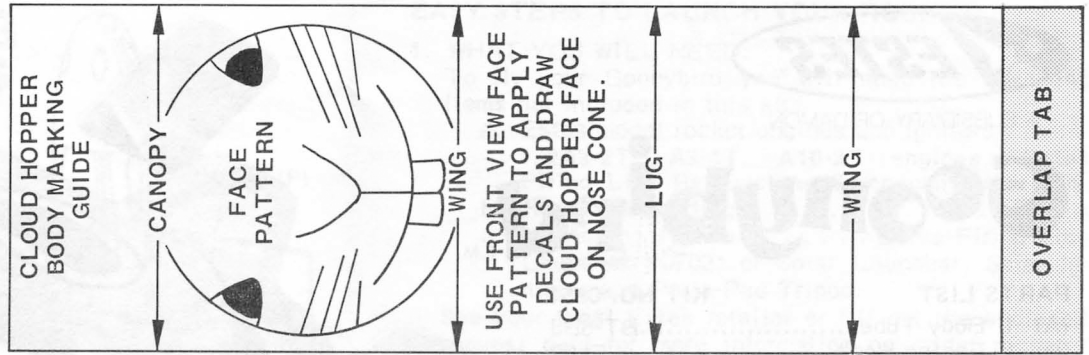
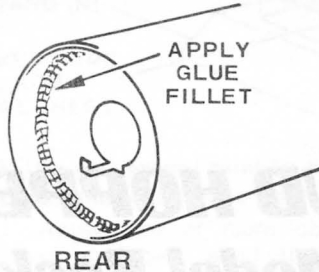
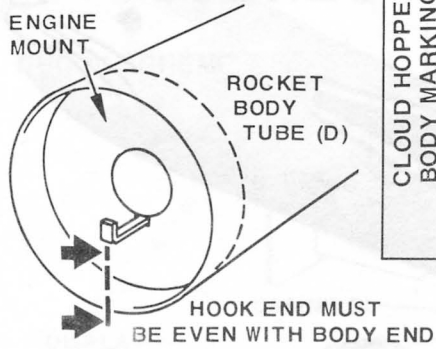
Cut a 1/8" slit in the engine mount tube, 7/16" from one end. Apply a drop of white glue to the slit and also straight along the tube for approximately 3/4". Push one end of the metal engine hook into the slit. Press the hook into the glue and align straight along the tube. Wipe away any excess glue.

Tightly wrap the hold-down strap (from decal sheet) around the hook and tube as shown. Center the notched paper ring over the hook and glue to the tube REAR. Hook must be free to move as shown. Glue the other ring to the front of the tube. Run lines of glue (known as "glue fillets") around the front and rear ring/tube joints. Allow mount assembly to dry completely.

## CLOUD HOPPER Flying Model Rocket

**CONSTRUCTION TIP:** Why not have one of your parents or big brother or sister join in the fun of constructing your Goonybird? They are sure to have a great time, and their assistance will be helpful. Remember good construction is essential if you want your Goonybird to fly correctly. When launch day arrives have the whole family take part in the excitement and fun of launch preparation, countdown, tracking, and recovery. It's a real thrill for everyone to watch your Goonybird lift off and return gently to earth ready for another freaky flight. A "well-constructed" Goonybird will bring you many hours of family fun and enjoyment.

## 2 GROOVE ON



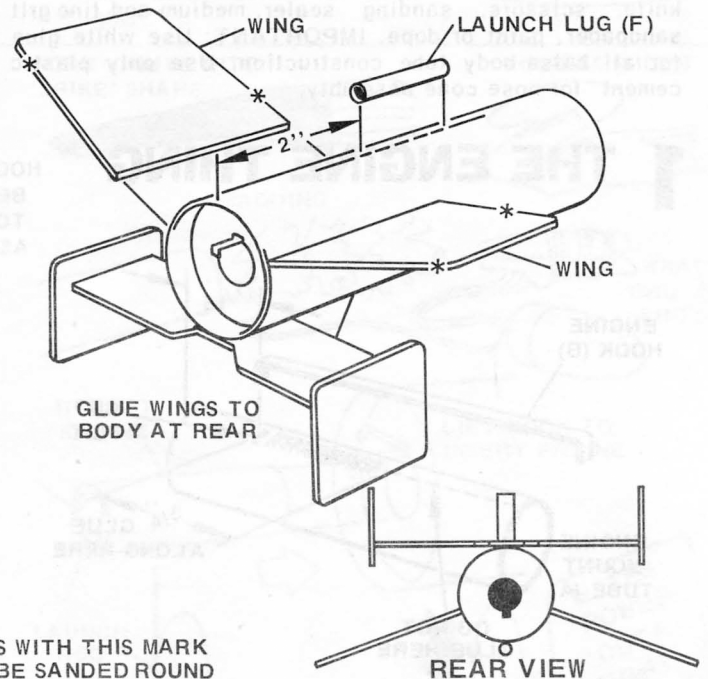
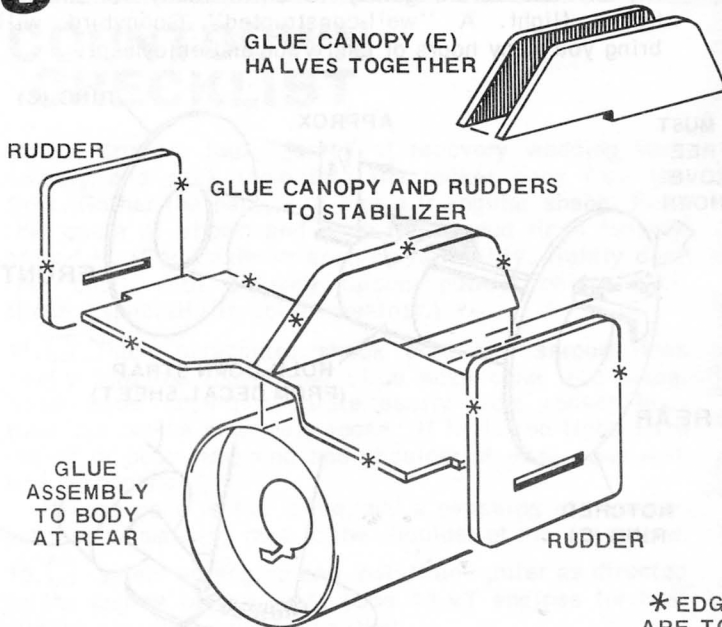
Insert engine mount into the rocket body tube. End of metal engine hook **MUST** be even with body tube end. (For quickest alignment, simply press body tube end against table top and engine mount will automatically move forward to align with tube end.)

Apply a line of glue, or "fillet", around the REAR ring/tube joint. Apply a glue fillet also to the FRONT ring/tube joint. A stir stick, soda straw, or paint brush

will be helpful to apply glue inside body tube.

Cut out the body tube marking guide from the instruction sheet. Wrap it around the rear of the tube so its ends match. Temporarily tape the guide in place. Mark the tube at each arrow point. Remove the guide and draw straight lines connecting matching front and rear marks. Draw the launch lug line forward the length of the tube.

## 3 WINGS AND THINGS



Glue the two canopy pieces together. Sand round all balsa edges as noted by this mark (\*) in drawing. (You may wish to sand part sides smooth before removing them from balsa sheets.) Glue the canopy to the stabilizer on its centering lines.

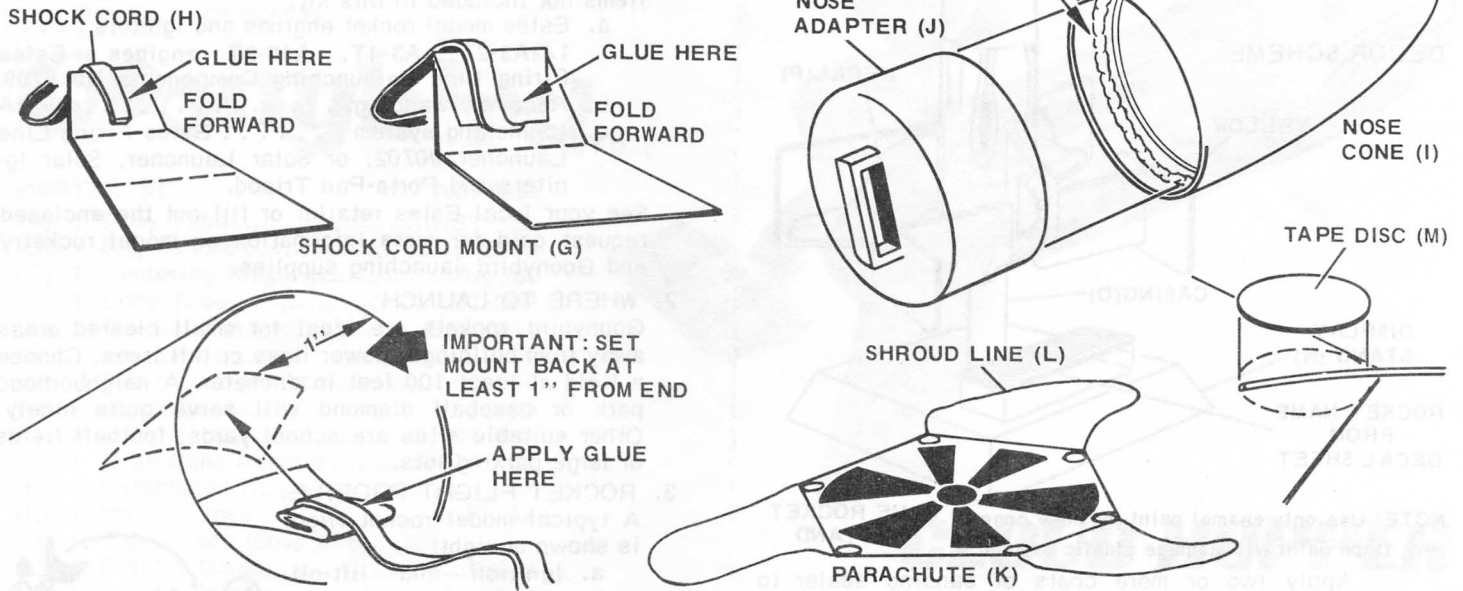
Next, glue the rudders to the stabilizer. After the glue has set several minutes, glue this assembly to the body tube rear on its alignment line. The canopy rear

must be even with the end of the body tube.

Apply glue to the "body tube edge" of one wing and glue it to the body on its alignment line. The wing rear must be even with the tube rear. Glue the other wing to the opposite side of the body.

Glue the launch lug to the body on its line 2" from the tube rear as illustrated.

# 4 RECOVERY STUFF

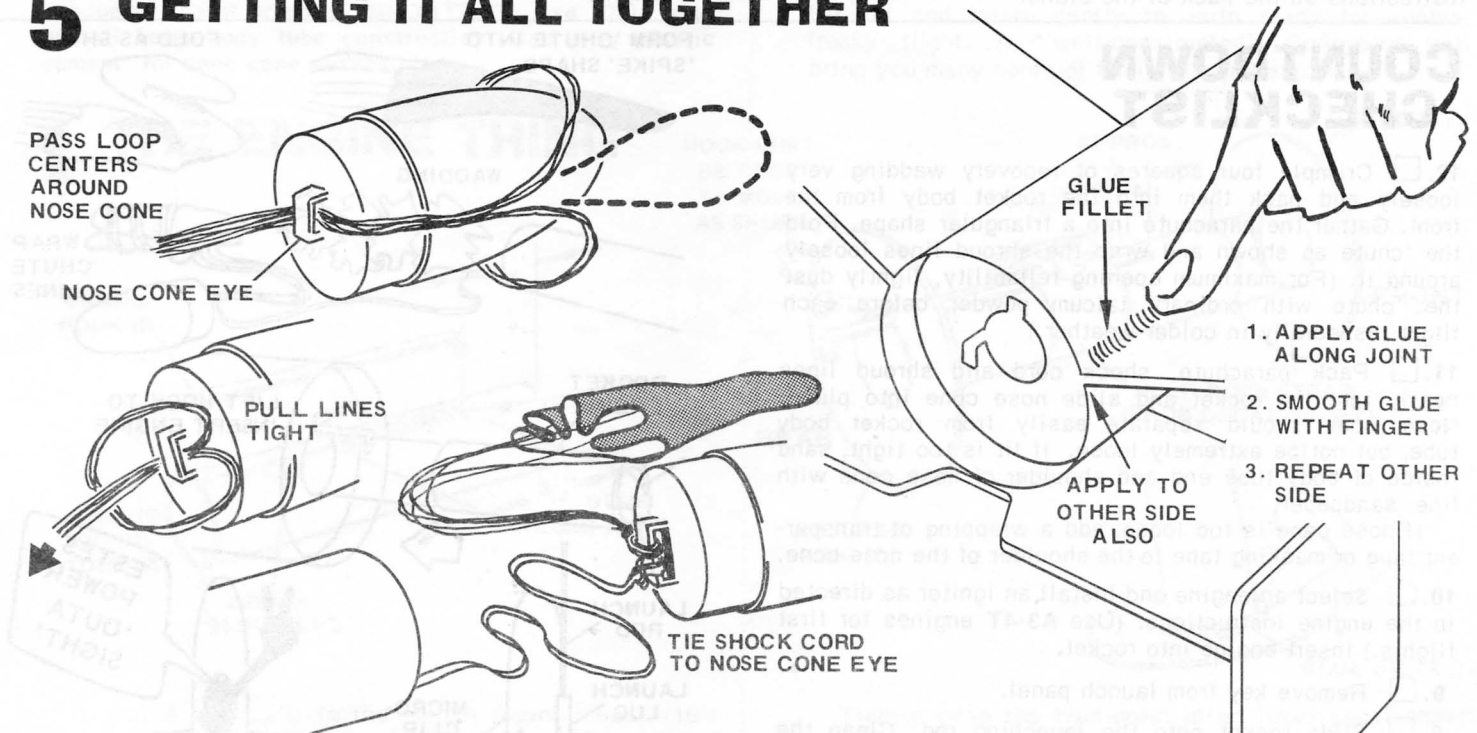


Cut out the shock cord mount and prefold along dotted lines. Apply glue to section 1 and lay shock cord end into glue. Fold this first section over. Spread glue over back of first section and exposed part of section 2. Lay shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets. Apply glue to the mount as illustrated. Press the mount into position against the tube wall and hold it until the glue sets.

Trim away any excess plastic from the two nose cone pieces. Run a line of PLASTIC CEMENT around the nose cone just inside from the end. Push the adapter piece firmly into the nose cone until it stops.

Cut out the parachute on the edge lines marked on the plastic. Cut the shroud line into three equal lengths. Attach the line ends to the 'chute corners with tape discs as shown.

# 5 GETTING IT ALL TOGETHER

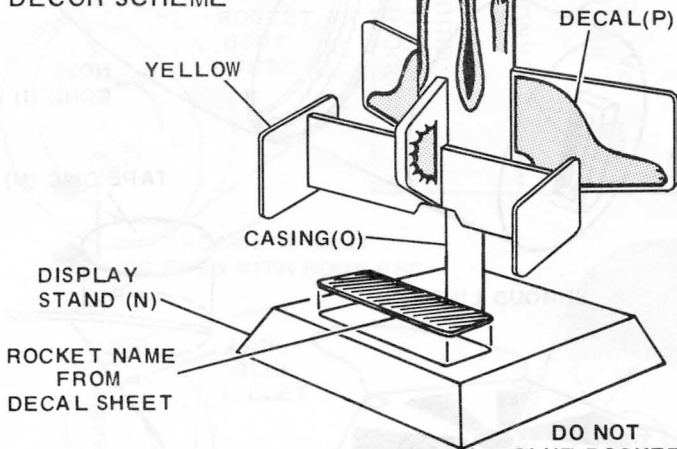


Pass the shroud line loop "centers" through the nose cone "eye". Now pass the loop centers around the nose cone as shown and pull lines tight to secure parachute. Tie the shock cord to the nose cone "eye".

Apply a "glue fillet" to both sides of each fin/body joint. After applying glue, smooth fillet with finger. Fillet should then be smooth and bubble-free. Allow glue fillets to dry several minutes before proceeding to next fin joint. Support model horizontally while the glue dries.

# 6 FINISHING TOUCHES

## DECOR SCHEME



**NOTE:** Use only enamel paint for nose cone. Dope paint will damage plastic surface.

Apply two or more coats of sanding sealer to all balsa surfaces. Sand lightly with extra-fine sandpaper between coats. Repeat until all wood pores are filled and the surfaces are smooth.

Spray the entire rocket with a light base coat of white enamel paint. Follow with one or two light finish coats of yellow.

After the paint has dried overnight, apply the stick-on decals as shown in the decor scheme illustration and on the box cover. Use paint, marking pen or thin model striping tape to create your Cloud Hopper face as shown on the body marking guide.

Assemble the model display stand as directed in the instructions on the back of the stand.

## EASY STEPS TO LAUNCH YOUR ROCKET

### 1. WHAT YOU WILL NEED:

To fly your Goonybird you will need the following items not included in this kit:

- a. Estes model rocket engines and igniters . . . . . 1/2A3-2T, A3-4T, A10-3T engines or Estes Firing Line Relaunching Components No. 0709.
- b. Recovery wadding. . . . . RP-1A
- c. Launching system . . . . . Estes Firing Line Launcher #0702; or Solar Launcher, Solar Igniters and Porta-Pad Tripod.

See your local Estes retailer or fill out the enclosed request card for more information on model rocketry and Goonybird launching supplies.

### 2. WHERE TO LAUNCH:

Goonybird rockets are ideal for small cleared areas away from buildings, power lines or tall trees. Choose a field at least 100 feet in diameter. A neighborhood park or baseball diamond will serve quite nicely. Other suitable sites are school yards, football fields or large parking lots.

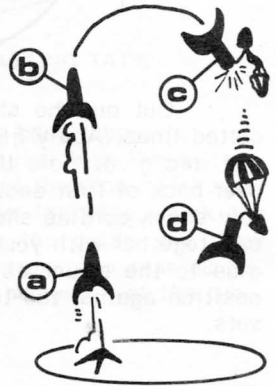
### 3. ROCKET FLIGHT PROFILE:

A typical model rocket flight is shown at right:

- a. Ignition and lift-off.
- b. Acceleration and coasting.
- c. Parachute deployment.
- d. Recovery and touch-down.

Your rocket may be flown many times. Simply discard used engine and replace with new engine, igniter and recovery wadding as instructed.

### 4. Follow the COUNTDOWN CHECKLIST below for each flight.



# COUNTDOWN CHECKLIST

12.  Crumple four squares of recovery wadding very loosely and pack them into the rocket body from the front. Gather the parachute into a triangular shape. Fold the 'chute as shown and wrap the shroud lines loosely around it. (For maximum opening reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in colder weather.)

11.  Pack parachute, shock cord and shroud lines neatly into the rocket and 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 fine sandpaper.

If nose cone is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.

10.  Select an engine and install an igniter as directed in the engine instructions. (Use A3-4T engines for first flights.) Insert engine into rocket.

9.  Remove key from launch panel.

8.  Slide rocket onto the launching rod. Clean the micro-clips and attach them to the igniter.

7.  Alert all personnel that rocket is ready for launch.

6.  Arm the launch panel.

Begin Final Countdown: 5-4-3-2-1 **BLAST-OFF!**

FORM 'CHUTE INTO 'SPIKE' SHAPE



FOLD AS SHOWN

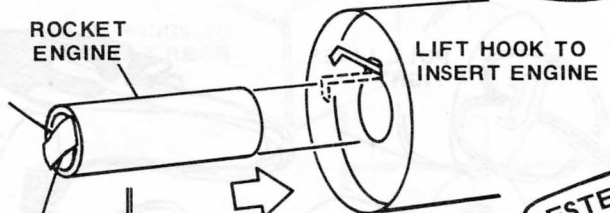


WADDING



WRAP 'CHUTE LINES

ROCKET ENGINE

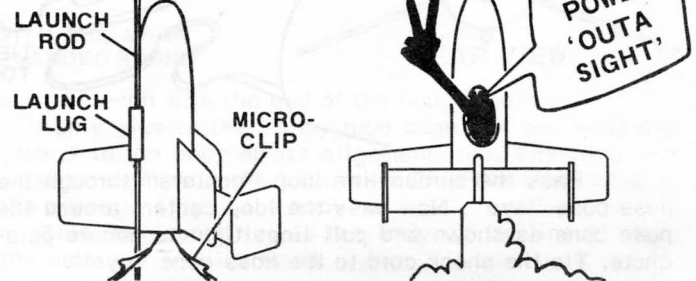


LIFT HOOK TO INSERT ENGINE

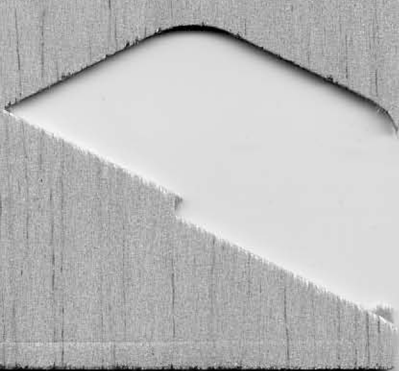
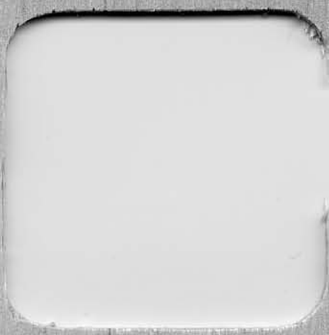
LAUNCH ROD

LAUNCH LUG

MICRO-CLIP

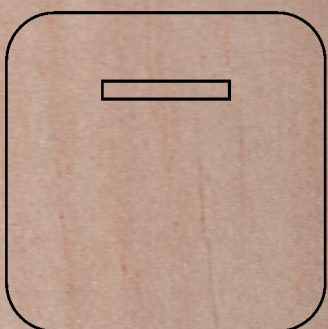
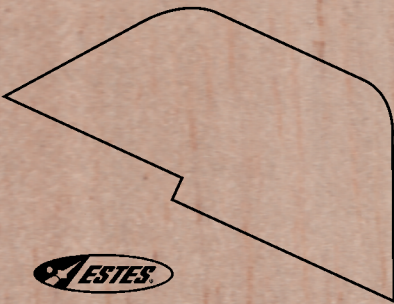
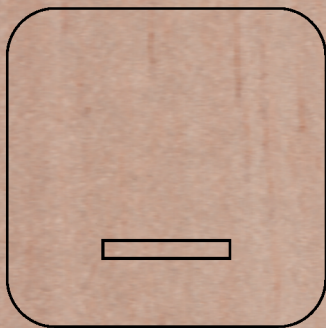


ESTES POWER 'OUTA SIGHT'

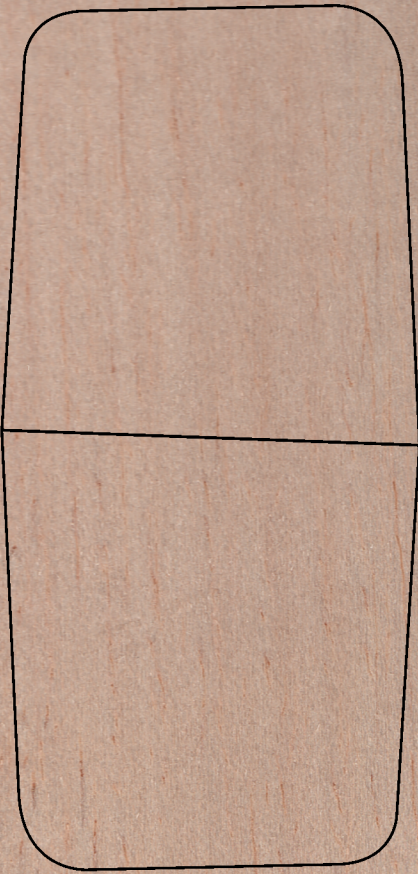
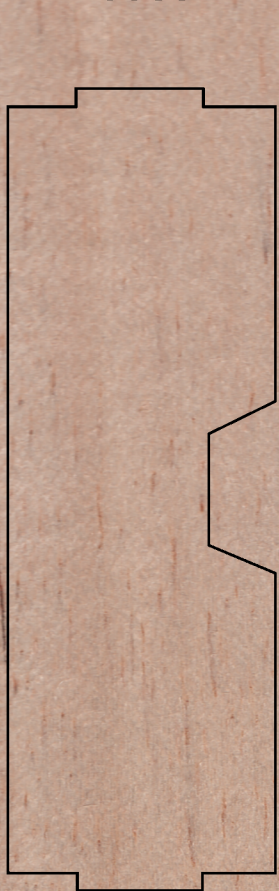


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3/32"  
BF-00851

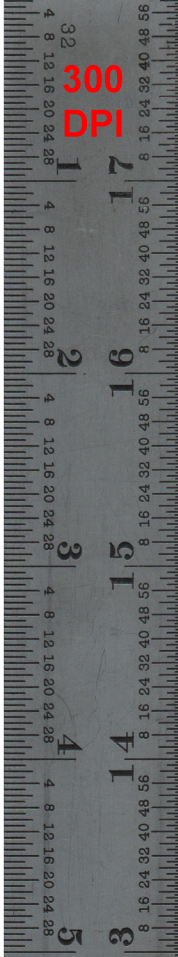




**Cloud Hopper**

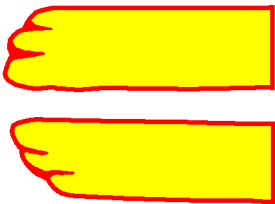
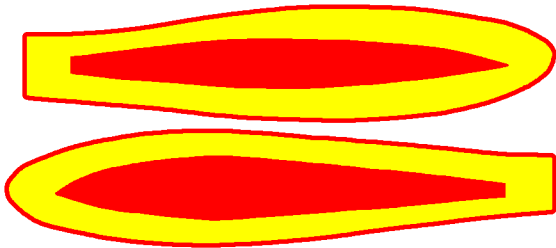
37351

**HOLD-DOWN STRAP**

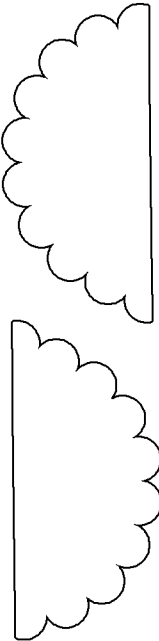
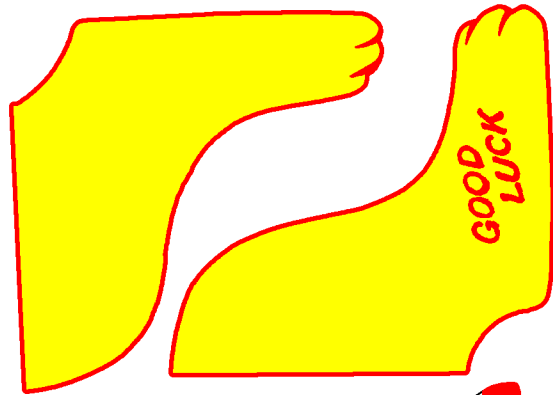


32  
4 8 12 16 20 24 28  
**300  
DPI**





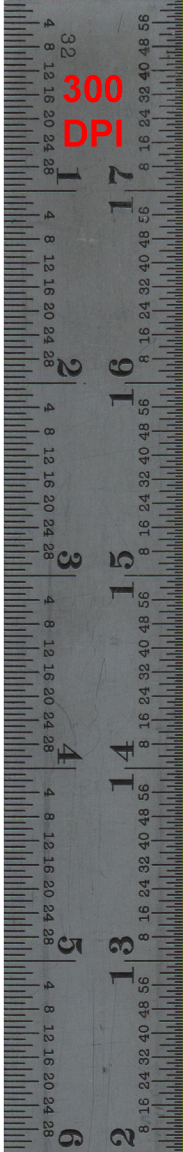
Redrawn by JimZ



Cloud Hopper

37351

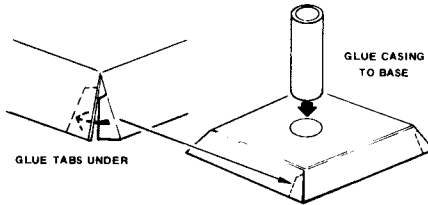
HOLD - DOWN STRAP



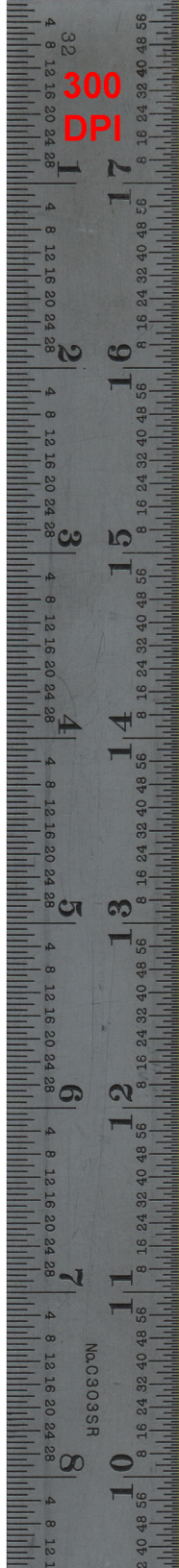


### DISPLAY STAND ASSEMBLY

1. Prefold sides and tabs on creases.
2. Glue tabs UNDER sides using white glue.
3. Glue paper casing to assembled base.
4. Use black marking pen to darken casing and to touch up white base edges.
5. Add model and builder's name.



PART NO. 09014





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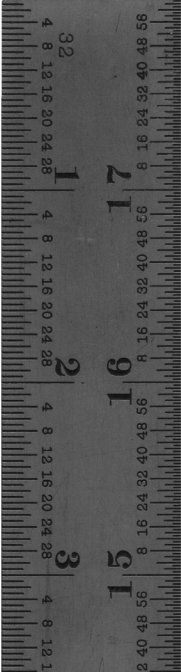
**SEC. 3**

*PN 84444*

**SEC. 2**

**SEC. 1**

**SHOCK CORD  
MOUNT  
SCM-50**



PARTS LIST KIT NO. 0851 - Cloud Hopper								
Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
1	PAPER BODY TUBE	BT-5BJ	30304	2" long	0.515" ID	0.541" OD	0.013" wall	Glassine
1	ENGINE HOLDER	EH-3	3143	1.8" long	.125" wide	.025" thick		Mini
1	PAPER ADAPTER	RA-560	30120	.542" ID	1.594" OD	.05" thick	One ring notched.	Set of 2
1	PAPER BODY TUBE	BT-60R	30418	5" long	1.595" ID	1.637" OD	0.021" wall	Glassine
1	BALSA FIN STOCK	*BFS-30(4x9)	N/A	4" wide	9" long	3/32" thick	0.09375	Scan
1	LAUNCH LUG	LL-2A	38175	5/32" ID	1/8" rod	1.25" long		Mylar
1	Shock Cord Mount	SCM-50	84444	1.5" wide	3" long	67 lb. Cardstock	BT-50 & larger	Scan
1	Shock Cord	SC-1B	85734	1/8" wide	12" long			Rubber
1	PLASTIC NOSE CONE	*PNC-60L	71019	2.5" long	1.637" OD	1.58" ID	0.25" ridge	Injection Molded 1 of 2
1	NOSE CONE ADAPTER	*PNCA-60L	30103	1" long	1.57" OD insert	.75" shoulder	.25" insert	Injection Molded 2 of 2
1	Parachute	PK-12	82054	12" dia.	1.25 mil thick	LDPE plastic	Org/Wht	Damon Logo
1	Shroud Line	SLT-72	38237	72"	.020" diameter	Twisted cotton	3 x 24" shrouds	
1	Tape Disc	TD-3F	38406	1/2" dia.	Paper	Self-Stick	WO/Center Hole	Set of 6
1	Display Stand	SP-MBDS	9014	8.5" long	5" wide	Blk, Blu	110 lb. Cardstock	Scan
1	Dummy Engine Casing -	EC-8	35014	0.5" OD	1.75" long	Empty Casing		
1	Decal Sheet	KDS-0851	37351	4" wide	5" long	Red, Yel	Selfstick	Scan & Redraw
*Die-Cut Fin Sheet is BF-00851.								
*PNC-60MS is the blow molded replacment and can be used to substute the PNC-60L and PNCA-60L combination.								



**ESTES**

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# Goonybird<sup>™</sup>

SERIES



**CLOUD HOPPER**

**FLYING MODEL ROCKET KIT**

0651-250

**CLOUD  
HOPPER**