

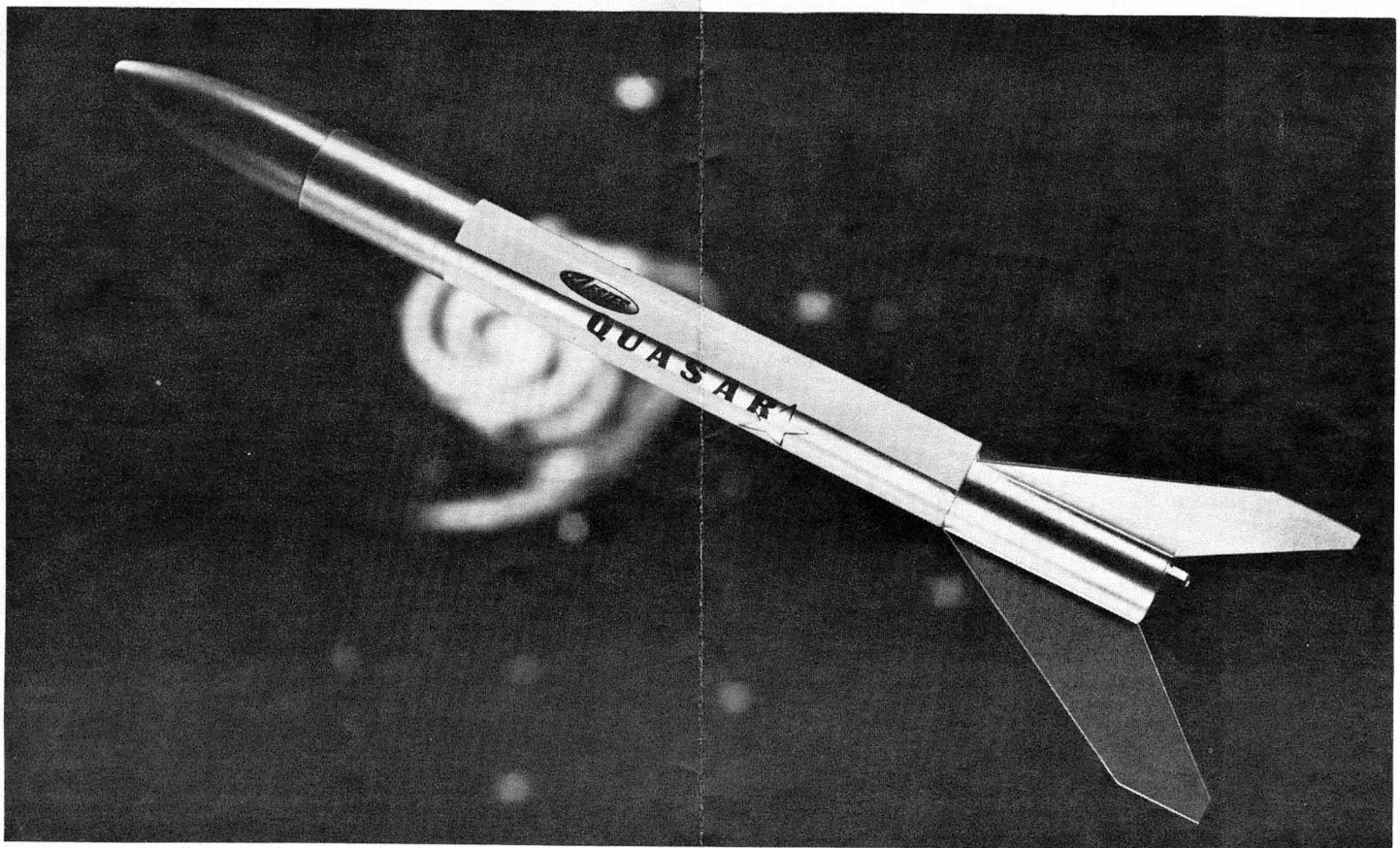




CITATION

KC 1

QUASAR



Welcome to the world of model rocketry!! Your Citation "QUASAR" was especially designed with the beginner and sport flyer in mind. Its simplicity and ease of construction gets you out into the field and

flying in a minimum of time. Pre-printed metallized mylar wrap-on for body tube requires no painting at all while hi-strength plastic fins and nose cone add up to many flights and many enjoyable hours.

READ THE INSTRUCTIONS CAREFULLY BEFORE YOU BEGIN CONSTRUCTION.

In addition to the materials supplied with this kit you will also need a modeling knife, scissors and white glue.

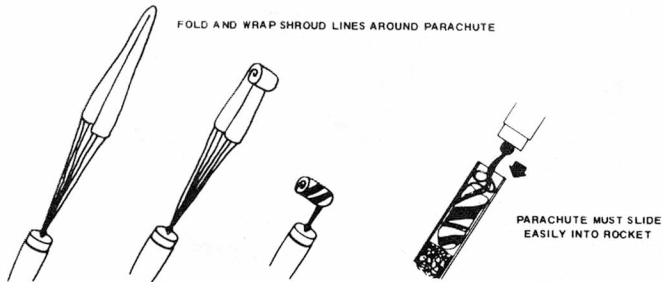
RECOMMENDED ENGINES: A-3, B-4, or C-5 (Use A-3 for first flights.)

PRE-FLIGHT PREPARATION

T-15 Pack four (4) squares of crumpled recovery wadding loosely into rocket body tube.



T-14 Fold the parachute into a triangular shape. Roll chute tightly as shown and wrap shroud lines around it. If chute is too large, unroll and repack until it slides easily into the rocket. A very tight fit may prevent parachute from ejecting properly.



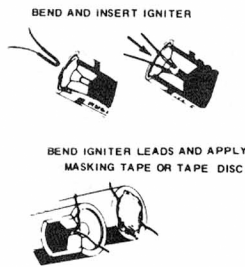
Pack shock cord neatly into rocket. **NOTE: DO NOT** pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the chute with ordinary talcum powder before each flight, especially in colder weather. **NOTE: Flying your rocket when temperatures are 35° or less is not recommended. The plastic parachute becomes stiff and will not always open properly at ejection.**

T-13 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 to the shoulder of the nose cone.

T-12 Select an engine and install an igniter. Estes standard NWI-1 igniters are supplied in strips and should be cut apart (scissors will work) midway between the coated sections. Bend the igniter at the middle as shown and push it into the engine nozzle as far as it will go.

To operate properly igniter must touch the propellant grain. Spread the leads and apply a square of masking tape or tape disc to the nozzle and leads as shown. The eraser on the end of a pencil is good for pressing the tape securely into place.

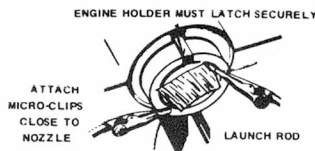


T-11 The recommended Citation engines for use with this rocket are A-3, B-4 and C-5. Use A-3 engine for first flight. You may also use Estes standard A8-3, B4-4, B6-4 and C6-5 model rocket engines.

T-10 Insert engine into rocket. Engine hook must latch securely over the end of the engine.

T-9 Disarm the launch panel — remove safety key.

T-8 Place rocket on launch pad making sure rocket slides freely on launch rod. Clean the micro-clips, then clip one to each lead of the igniter. The clips must not touch each other and the igniter leads must not cross. The rocket may be supported with a scrap of wood or an empty engine casing to make it easier to attach the clips and to keep the clips from touching the blast deflector plate and short-circuiting.



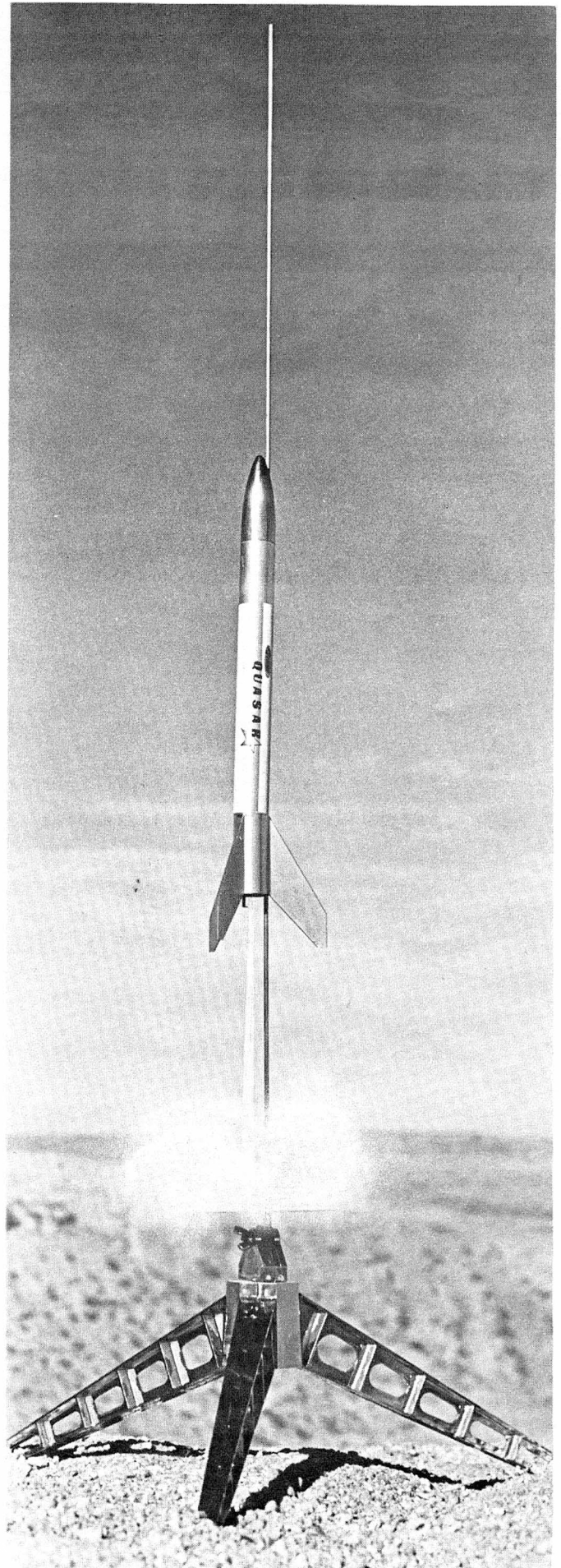
T-7 Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

T-6 Arm the launch panel — insert safety key.

5 4 3 2 1 LAUNCH!!

Important: Misfire Procedure

Occasionally the igniter will heat and burn in two without igniting the engine. This is almost always caused by a failure to install it correctly. Disarm the launch panel, remove the model, clean the igniter residue from the nozzle and install a new igniter. Follow the launching procedure again.

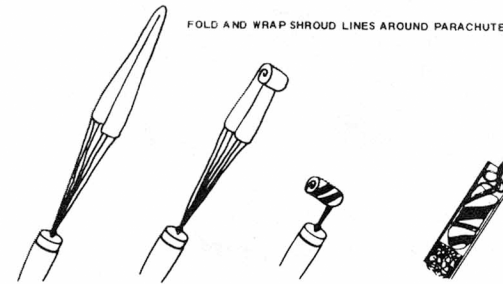


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PARACHUTE MUST SLIDE EASILY INTO ROCKET

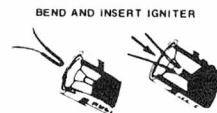
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To operate properly igniter must touch the propellant grain. Spread the leads and apply a square of masking tape or tape disc to the nozzle and leads as shown. The eraser on the end of a pencil is good for pressing the tape securely into place.



BEND IGNITER LEADS AND APPLY MASKING TAPE OR TAPE DISC

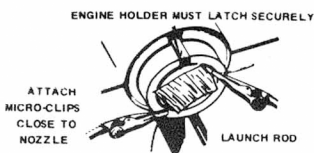


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ATTACH MICRO-CLIPS CLOSE TO NOZZLE

ENGINE HOLDER MUST LATCH SECURELY

LAUNCH ROD

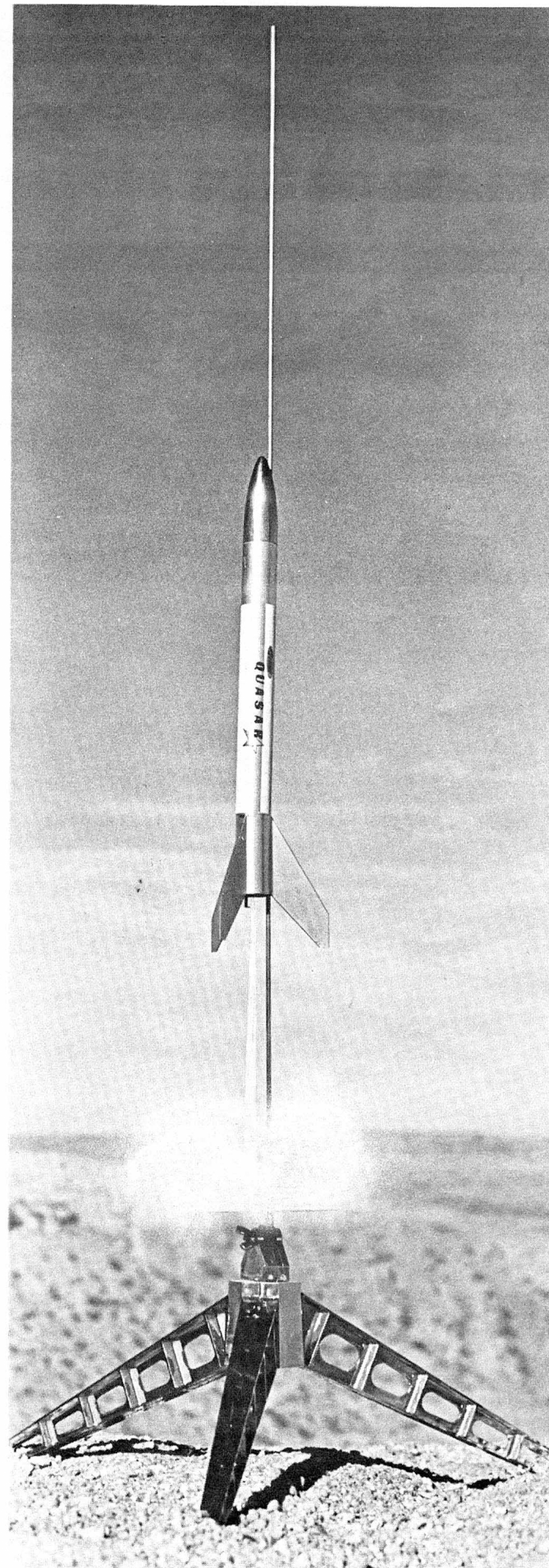
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5 4 3 2 1 LAUNCH!!

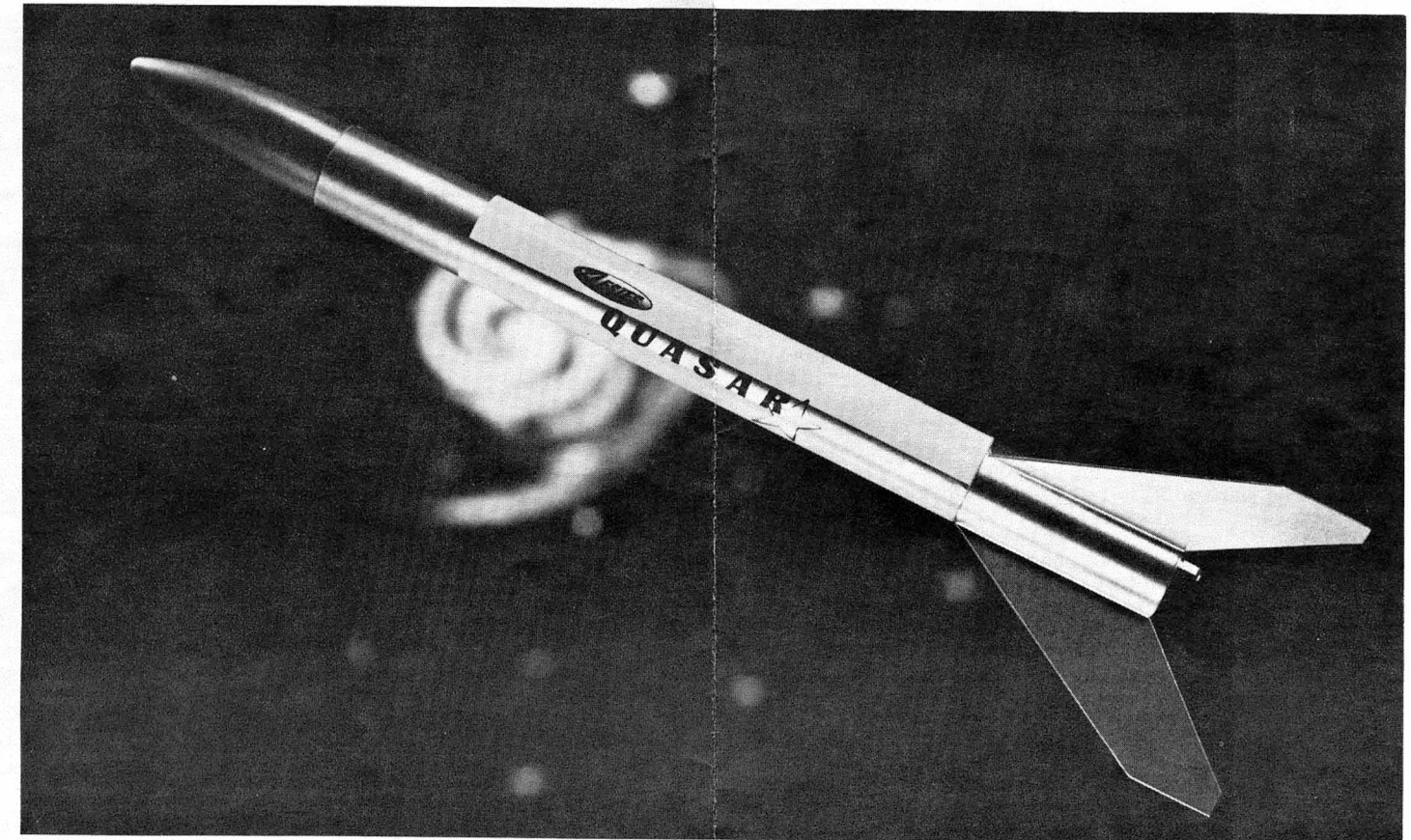
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READ THE INSTRUCTIONS CAREFULLY BEFORE YOU BEGIN CONSTRUCTION.

In addition to the materials supplied with this kit you will also need a modeling knife, scissors and white glue.

RECOMMENDED ENGINES: A-3, B-4, or C-5 (Use A-3 for first flights.)

ASSEMBLY INSTRUCTIONS

PART NO.	PARTS LIST
1	(1) ENGINE MOUNT TUBE
2	(1) ENGINE HOLDER
3	(1) MYLAR RETAINER RING
4	(1) SPLIT ADAPTER RING
5	(1) BODY TUBE
6	(1) DECAL WRAP-ON
7	(1) LAUNCH LUG
8	(1) PLASTIC FIN UNIT
9	(1) ADAPTER RING
10	(1) SHOCK CORD MOUNT
11	(1) SHOCK CORD
12	(1) SCREW EYE
13	(1) PLASTIC NOSE CONE
14	(1) 12" PLASTIC PARACHUTE
15	(1) PARACHUTE SHROUD LINE (72")
16	(6) PARACHUTE TAPE DISCS

KIT ALSO INCLUDES:

COUNTDOWN CHECKLIST CARD

1 Slit the engine mount tube (1) as shown in Fig. 1. Insert the metal engine holder (2) and slide the mylar retainer ring (3) into position. Glue the engine holder and retainer ring securely. Glue the split adapter ring (4) onto the engine mount tube rear. Allow the engine mount assembly to dry completely.

2 Draw a line, parallel to the body tube (5) along its entire length (a drawer sill or doorframe provides an excellent guide). This becomes the decal wrap-on (6) alignment line.

Carefully peel the backing paper part way from the decal and cut away approximately 1/2" from the backing edge as shown. Allow the remaining backing to return to the decal. Place the decal edge CAREFULLY along the alignment line and smooth into place. Slowly peel away the backing and wrap the decal around the body tube, smoothing away any bubbles, or wrinkles as you go.

3 Glue the launch lug (7) onto the body tube in the bare slot left by the decal wrap-on. Align it straight along the body tube.

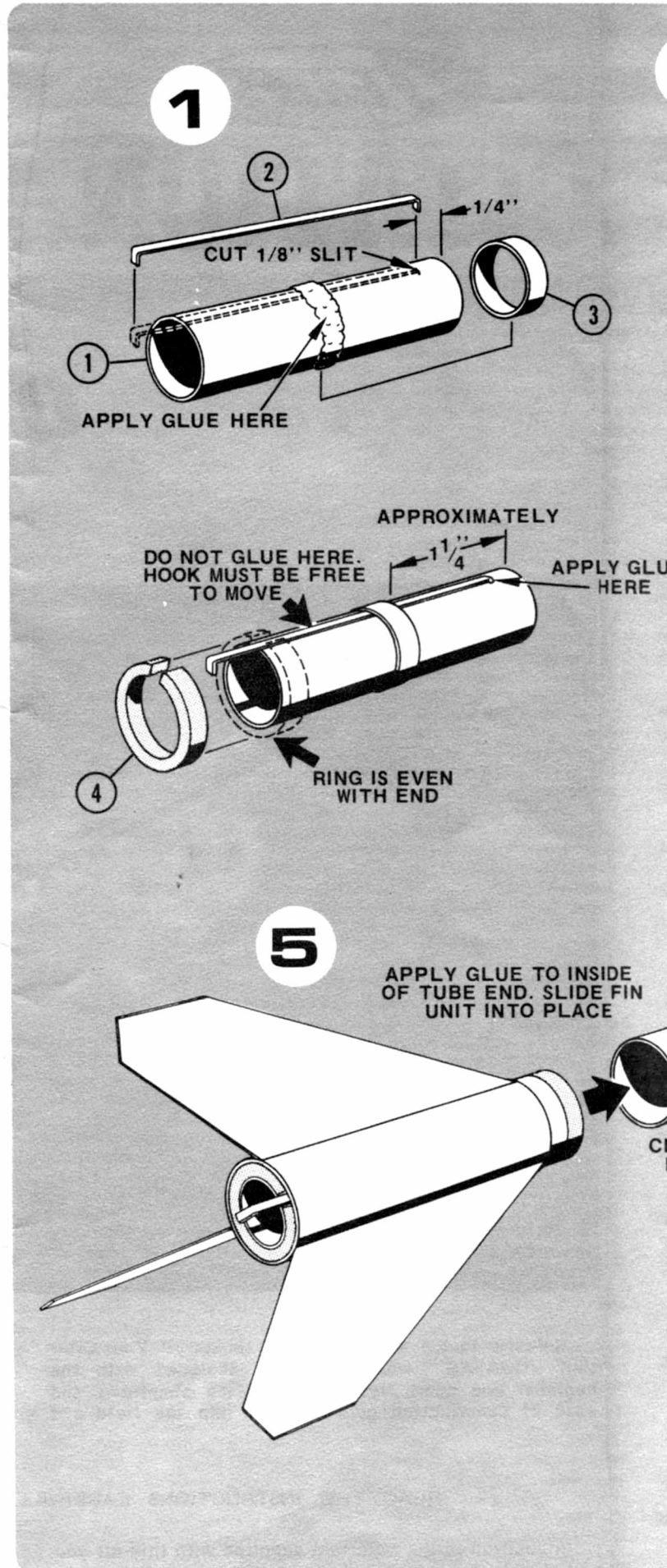
4 Slide the engine mount assembly into the plastic fin unit rear (8) until the split adapter ring end is even with the fin unit end as shown. (Center the metal engine holder between two fins.) Glue the remaining adapter ring (9) onto the exposed forward end of the engine mount tube. (1) BE SURE that the adapter ring (9) is snug against the plastic fin unit!

5 Spread glue just inside the rocket body tube rear (launch lug end). Slide the fin assembly into the tube until the body tube end stops firmly against the fin unit. (BE SURE to center the launch lug between two fins.)

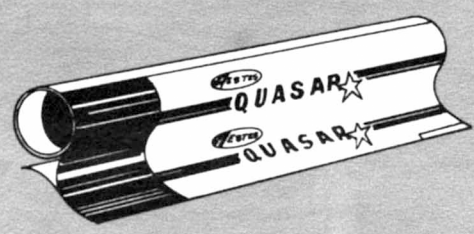
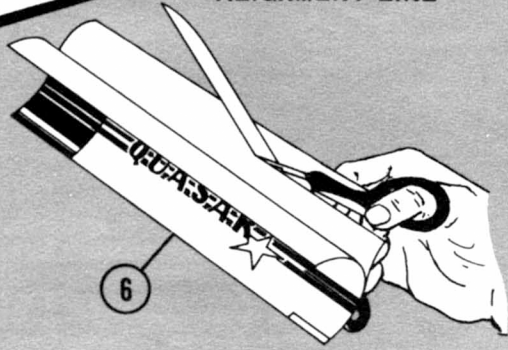
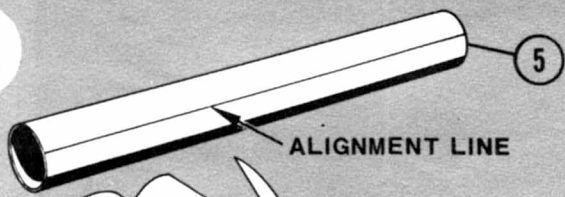
6 Cut out the shock cord mount (10) and pre-fold along the dotted lines. Glue the shock cord end (11) into place and assemble as shown in Fig. 6. Glue the completed mount into the forward end of the body tube. (Hold the mount in place until the glue sets.)

7 Turn the screw eye (12) into the plastic nose cone (13). BE SURE that the screw eye is parallel to the nose cone side.

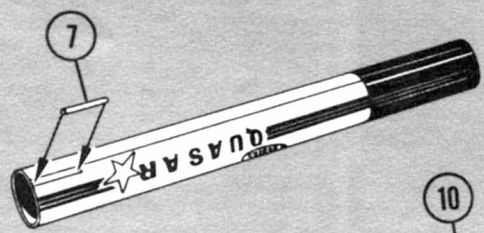
8 Assemble the parachute (14) as directed in the parachute instructions. Tie the parachute shroud lines (15) and shock cord to the nose cone screw eye.



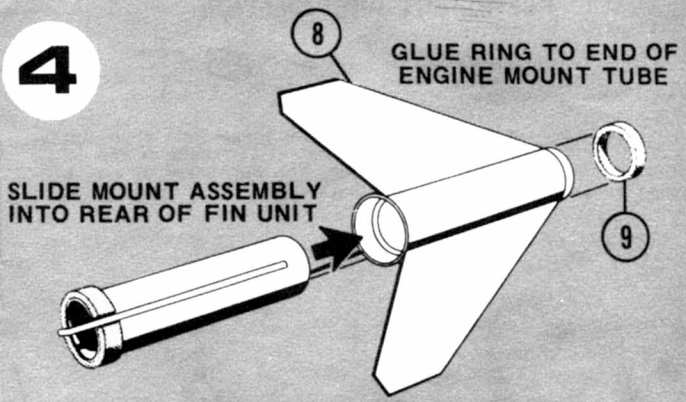
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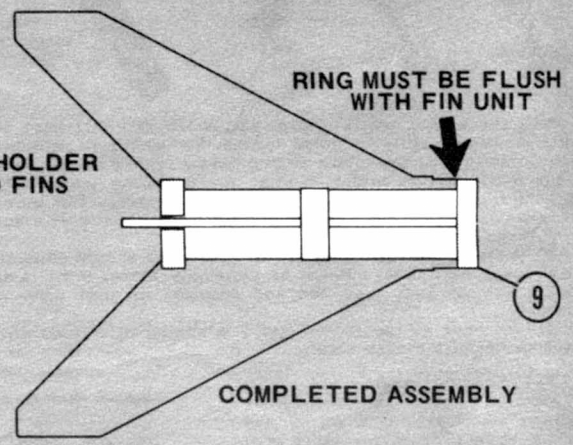
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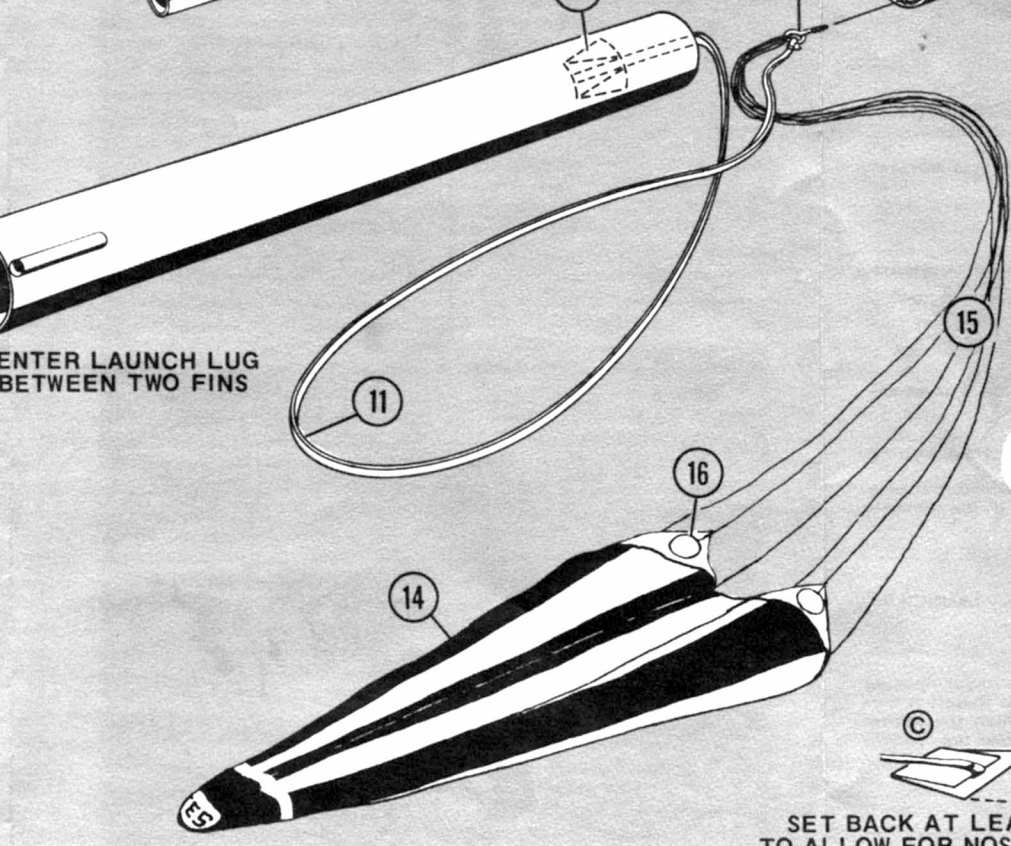
4



CENTER ENGINE HOLDER BETWEEN TWO FINS

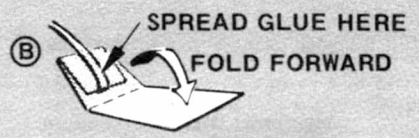
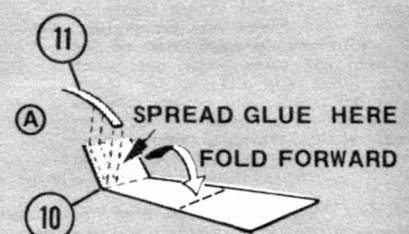


ENTER LAUNCH LUG BETWEEN TWO FINS

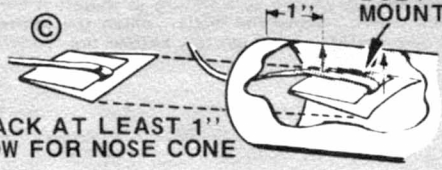


SCREW EYE MUST BE PARALLEL TO NOSE CONE

6



SPREAD GLUE INSIDE BODY TUBE. PRESS MOUNT ONTO GLUE



ASSEMBLY INSTRUCTIONS

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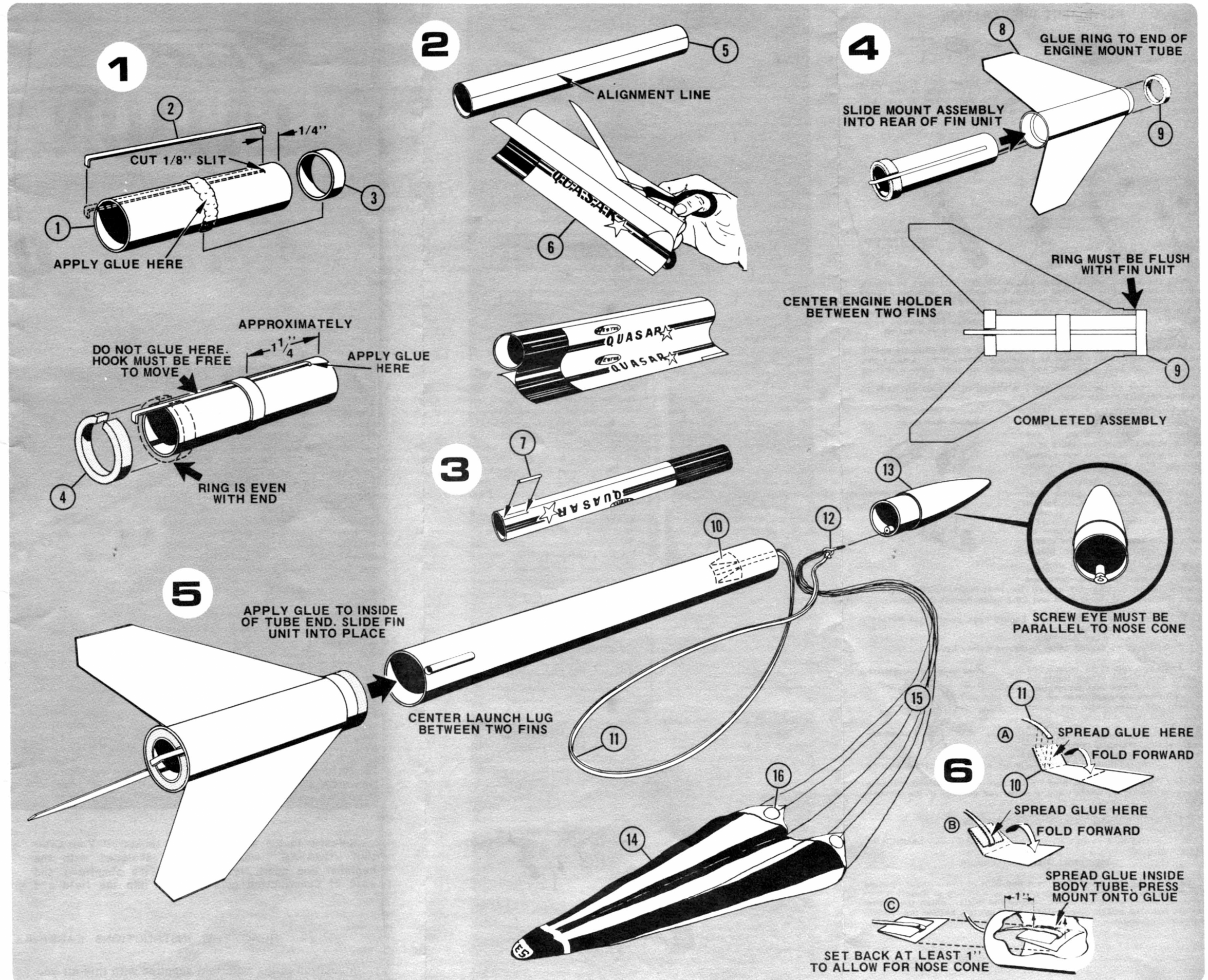
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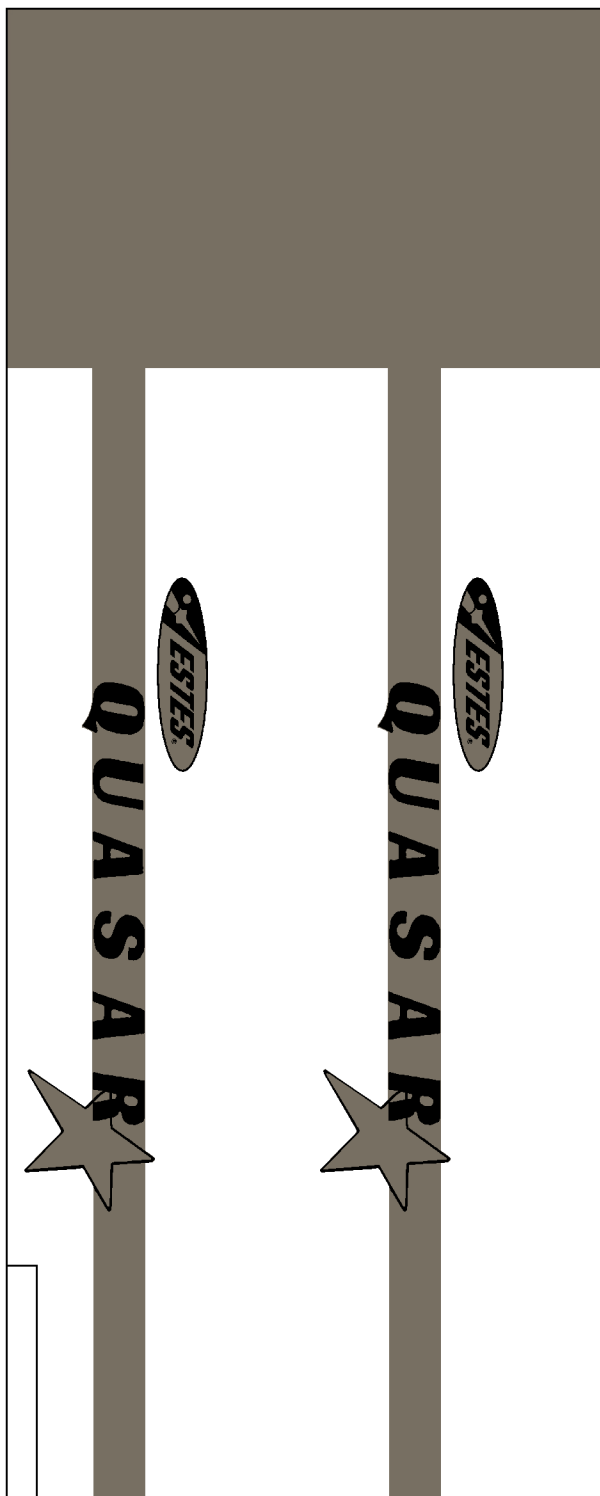
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7 Turn the screw eye (12) into the plastic nose cone (13). BE SURE that the screw eye is parallel to the nose cone side.

8 Assemble the parachute (14) as directed in the parachute instructions. Tie the parachute shroud lines (15) and shock cord to the nose cone screw eye.



KD-M1
037201



PARTS LIST KIT NO. KC-1 - Citation Quasar								
Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
1	PAPER BODY TUBE	BT-20J	30326	2.75" long	0.710" ID	0.736" OD	0.013" wall	Glassine
1	ENGINE HOLDER	EH-2	35025	2.8" long	.100" wide	.025" thick		Reg. & D
1	MYLAR RETAINER RING	HR-20	30168	0.3" long	0.74" ID	0.76" OD	0.01" wall	BT-20
1	SPLIT ADAPTER RING	AR-2050S	80425	1/4" long	.737" ID	.949" OD	0.106" wall	Green
1	PAPER BODY TUBE	BT-50H	30360	7.75" long	0.950" ID	0.976" OD	0.013" wall	Glassine
1	Decal Wrap-On	KD-M1	37201	9" long	4" wide	Chrome, Wht,Blk	Self Stick	Scan
1	LAUNCH LUG	LL-2A	38175	5/32" ID	1/8" rod	1.25" long		Mylar
1	PLASTIC FIN UNIT	PFM-1	32408	3 5/8" long	BT-50	3 fins	Chrome	Clipped fin tips
1	CENTERING RING	AR-2050	30164	1" long	.737" ID	.949" OD	0.106" wall	Green
1	Shock Cord Mount	SCM-50	84444	1.5" wide	3" long	67 lb. Cardstock	BT-50 & larger	Scan
1	Shock Cord	SC-1	85730	18" long	1/8" wide			Rubber
1	Screw Eye (Extra Small)	SE-3A	38253	1/2" long				
1	PLASTIC NOSE CONE	PNC-M1	71004	2 5/8" long	0.974" dia.	0.5" shoulder	Chrome	Injection Molded
1	Parachute	PK-12A	85564	12" hexagon	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	
6	Tape Disc	TD-3F	38406	1/2" dia.	Paper	Self-Stick	WO/Center Hole	Set of 6

The Quasar was issued in multiple versions. Of these, there is a Citation box version and a hang bag version. The contents differ and may even be different for the same version. The main differences are noted here. Both versions are based off the Alpha III. The major differences are the nose cone, fin unit, and main body tube.

The main body tube for the Alpha III is a BT-50EE which is 5.5" long. The main tube for the Quasar it a BT-50H which is 7.75" long. All the images I have found show the finish as glassine.

The nose cone on all versions came from the same mold. Most notably, the box version was chrome plated. The underlying plastic color was either white or black. The bag version was white but reports have confirmed that there are some bag versions that were chrome plated as well. I have never actually seen one though. The bag version face card shows white.

Just like the nose cone, all versions of the fin unit came from the same mold. The box version was always chrome plated and the fin tips were clipped. The underlying plastic color was either white or black. The bag version was white and just like the nose cone, some have reported a chrome plated unit in the bag version. My assumption is the bag version received part elimination of the box parts and subsequent production produced only white parts without the chrome plating to save money. All the catalog and box/face card images show clipped fins. The instructions for the bag version and images of the actual bagged parts show them unclipped. I'm assuming the Alpha III plans were leveraged for the bag version and the clipped fins were overlooked.

The 1974 parts catalog shows the chrome fin unit as 3 5/8" overall length. The standard Alpha III fin unit is 3 15/16". Simple math shows that 5/16" needs to be clipped off each fin to make the Alpha III fin unit into the Quasar fin unit.

The body tube wrap for the box version shows the "Q" facing forward towards the nose. This is consistent with the 1974 parts catalog, images on the instructions, and actual images of the wrap. The bag version face card shows the "Q" facing down towards the fins but the chrome forward wrap is still up front so it's not just that it was applied backwards. The bag version plans clearly show the "Q" pointing forward. The face card image must have been of a non-production prototype.

CITATION



A SUBSIDIARY OF DAMON

Recommended for ages 10 to adult.

QUASAR

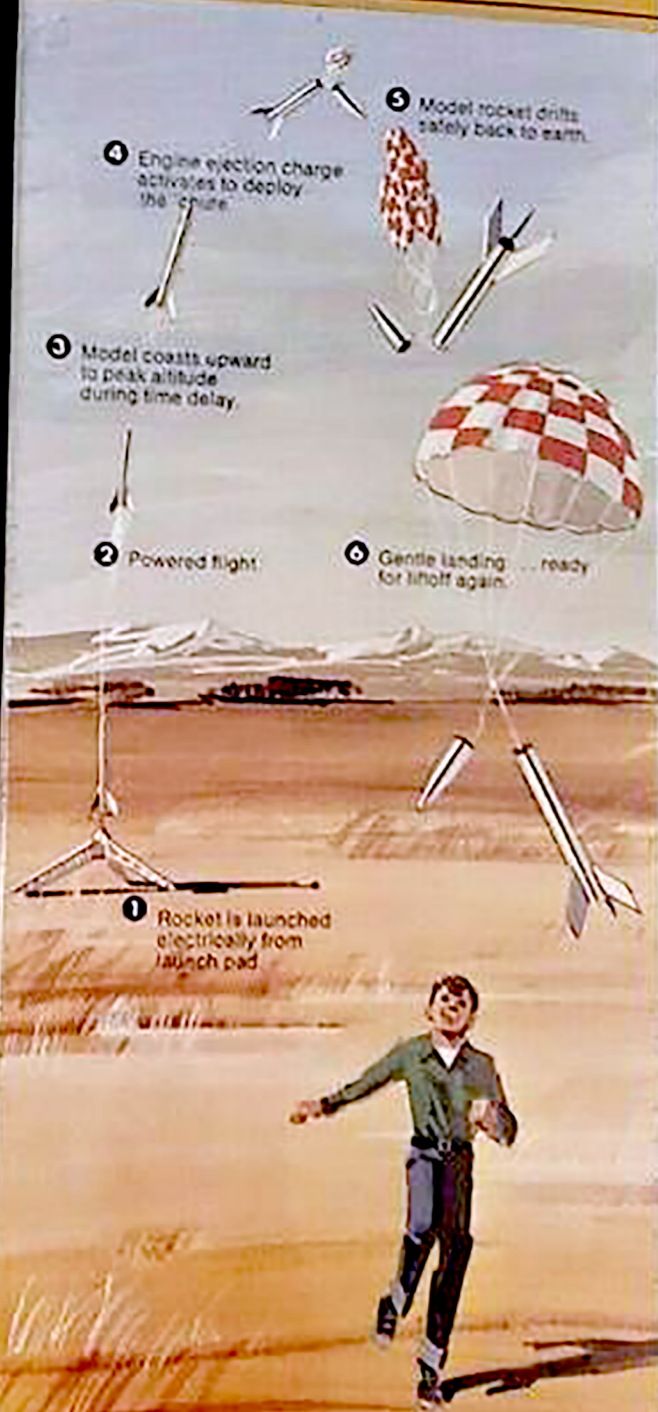


\$2.25

**FLYING
MODEL ROCKET**

DEGREE OF CHALLENGE: 1

(See side of box for explanation)



4 Engine ejection charge activates to deploy the chute.

5 Model rocket drifts safely back to earth.

3 Model coasts upward to peak altitude during time delay.

4 Gentle landing... ready for liftoff again.

2 Powered flight.

1 Rocket is launched electrically from launch pad.

Metallized and Pre-painted Mylar wrap-on Decal for the Body Tube - requires no painting.



Bright Metallized Nose Cone and Fin Assembly



12" Parachute Recovery System



Two A-3 Safety-Tested Engines Included with Ignitors, tape discs and recovery wadding.

SPECIFICATIONS

Len 14 in. (35.6 cm)
Body Dia. 0.976 in. (24.8 mm)
Weight 1.5 oz. (42 gr)



DESCRIPTION

Quick, easy-to-build rocket for beginners. Striking appearance... excellent performance flight after flight.

Explanation of Degree of Challenge in assembling the kit.

- 1 = Easy
- 2 = Fairly Easy
- 3 = Average
- 4 = Difficult
- 5 = Very Difficult

WHY ROCKETRY?

From the first countdown to our most recent landing on the moon, young people everywhere have been stirred by man's incredible journeys into space. Along with the excitement there has been a challenge—to learn more about rockets, and to share, somehow, in those great adventures in space.

Enter Estes—pioneer in model rocketry and today the world's largest manufacturer of model rockets, safety engines and accessories. Whatever your age, from 10 to adult, there are Estes rockets you can build, launch, follow through parachute recovery, then fly and fly again.

MODEL ROCKET SAFETY

A recognized safety code—plus safe rocketry materials—equals 24 million safe rocket launches.

This Solid Propellant Model Rocketry Safety Code is Approved by The National Association of Rocketry and the Hobby Industry Association of America.

ROCKETEER'S CODE OF SAFETY

1. **CONSTRUCTION**—My model rockets will be made of lightweight materials such as paper, wood, plastic and rubber, without any metal as structural parts.
2. **ENGINES**—I will use only pre-loaded, factory-made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.
3. **RECOVERY**—I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.
4. **WEIGHT LIMITS**—My model rocket will weigh no more than 453 grams (16 ozs.) at liftoff, and the engines will contain no more than 113 grams (4 ozs.) of propellant.
5. **STABILITY**—I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
6. **LAUNCHING SYSTEM**—The system I use to launch my model rockets must be remotely controlled and electrically operated and will contain a switch that will return to "off" when released. I will remain at least 10 feet away from any rocket that is being launched.
7. **LAUNCH SAFETY**—I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.
8. **FLYING CONDITIONS**—I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low-flying aircraft, or under any conditions which might be dangerous to people or property.
9. **LAUNCH AREA**—My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use non-flammable recovery wadding in my rockets.
10. **JET DEFLECTOR**—My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.
11. **LAUNCH ROD**—To prevent accidental eye injury, I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use, I will always store it so that the launch rod is NOT in an upright position.
12. **POWER LINES**—I will never attempt to recover my rocket from a power line or other dangerous places.
13. **LAUNCH TARGETS & ANGLE**—I will not launch rockets so their flight path will carry them against targets on the ground and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.
14. **PRE-LAUNCH TEST**—When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

Revised 2/4/70

ROCKETEER'S PLEDGE

I am proud to be a model rocketeer. I feel it is important to do my part in upholding the outstanding safety record that model rocketry has gained. In all my rocketry activities I will act in a mature manner and will always be considerate of other people and property rights. I pledge to follow the Rocketeer's Code of Safety.