

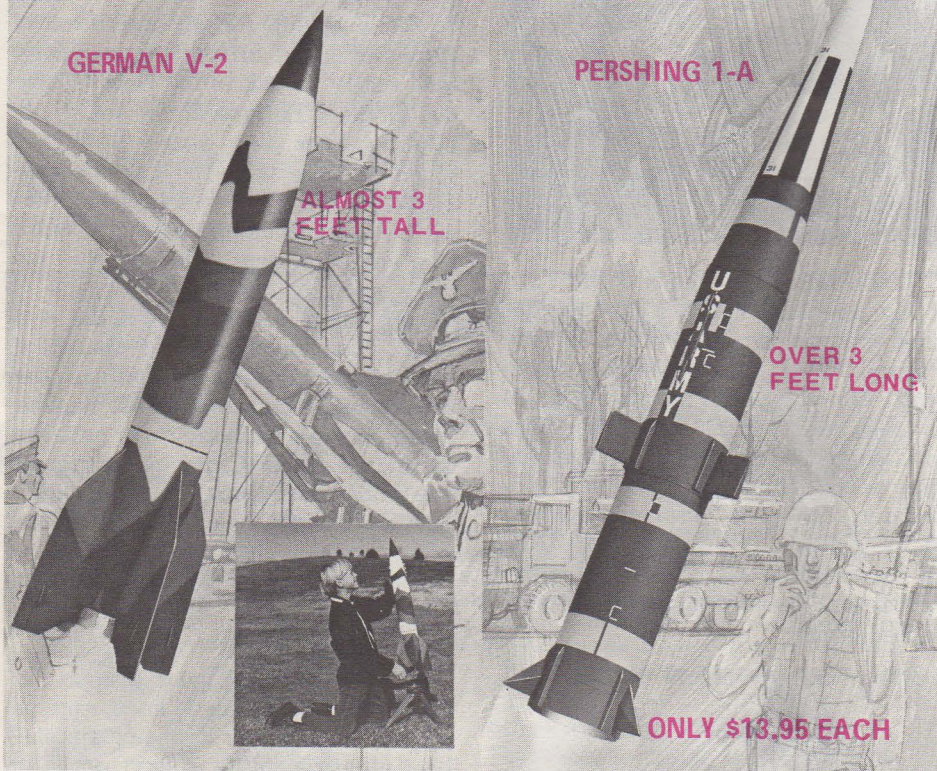
# MODEL ROCKET NEWS

Vol. 14, No. 1  
April/May 1974

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## NEW MAXI-BRUTES



Estes Industries is proud to announce the first of its exciting line of Maxi-Brute models. These giant scale birds are the dynamic result of several years of research and development by the Estes R&D staff. As a matter of fact, the maxi idea began as a popular request by Estes rocketeers. The new German V-2 and Pershing 1-A should open up a whole new world of exciting maxi-model rocketry for the serious modeler.

Our new German V-2 is a replica of the famous ground-to-ground ballistic missile developed by Dr. Wernher von Braun and his colleagues at Peenemunde on the Baltic Coast of Germany before and during World War II. The first successful V-2 firing took place on October 3, 1942 at Peenemunde.

Aggregat-4 (A-4) meaning "assembly number four" was the Peenemunde designation for the rocket. The ministry of propaganda, however, tagged the operational rocket with the name "Vergeltungswaffe Zwei" or "V-2". The rocket has been known by both names.

The V-2 was designed to deliver a one-ton warhead to a range of 220 miles. Approximately 100 V-2 rockets were captured and brought to the United States following World War II. About 60 of these were fired at the White Sands Proving Grounds in New Mexico. The explosive warheads were replaced with scientific instrumentation for the White Sands flights. On August 17, 1951 a maximum altitude of

(Continued on page 11)

Got any good ideas for MODEL ROCKET NEWS articles, technical information, cartoons, anecdotes, club news of unusual interest, etc.? Then why not submit them to us for possible publication? Our constant aim is to make MRN a better, more interesting magazine, and you might just be the type of contributor we need.

If you send us photos, please make sure that you pack them between cardboard sheets so that they won't get creased in the mail. All contributions become the property of Estes Industries and cannot be returned. Address all material to: MRN Editor, Estes Industries, Penrose, Colorado 81240.

Should your article or photos be used in MRN, we'll reward your efforts and talent with an Estes merchandise certificate, the amount of which will be determined by the MRN editorial staff. Hope to hear from you soon!

## Rocket Club Assists with Estes Exhibit



All rockets featured in the Estes Industries exhibit at this year's Chicago Hobby Show were built by the members of the Skywatchers Rocket Club of Colorado Springs, Colorado. More than a dozen rocketeers assisted in constructing and finishing over 72 different models. During recent years virtually all rockets flown in major Estes demonstrations such as the 1972 Pro Bowl half-time, opening of the London Bridge, Transpo '72, and 1973 Super Bowl were built by Estes rocketeers.



## "Design Of The Month Winners"

Congratulations to another fine group of Estes Rocketeers for their outstanding DOM entries. First place winners will receive \$50.00 merchandise certificates and honorable mentions will be awarded \$5.00 certificates. Keep those entries coming, maybe you'll be our next winner!

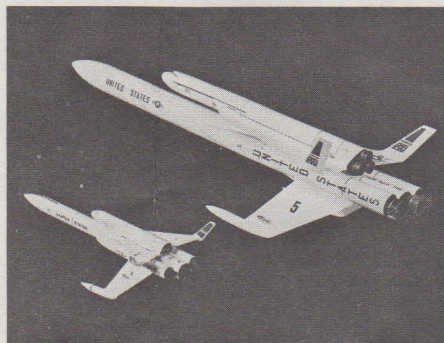
OCTOBER 1973 - First Place: John Chin, Bronx, New York ("Free Flight II"). Honorable Mention: Andy Tomasch, Mishawaka, Indiana ("Intruder"). Richard Carver, Philmont, New York ("Octopinna"). Herman Chien, Bellevue, Washington ("Javelin"). Rich Rebelez, Tacoma, Washington ("Gemini B1-Mate"). Bobby Andrews, Layton, Utah ("Thrust Bar"). Brad Kueven, Meridian, Mississippi ("The Fatman"). Kevin Kascak, Beachwood, Ohio ("Jupiter IV"). J. B. Neal, Houston, Texas ("Arcturus 45"). Greg Karnes, Oklahoma City, Oklahoma ("Missing Middle"). Jeff Ducklow, Spring Valley, Wisconsin ("Quartermaster IV").

NOVEMBER 1973 - First Place: Dan Lubbers, Zeeland, Michigan ("Satellite Seven"). Honorable Mention: Willis Chung, Bethesda, Maryland ("Luger"). Jan D. Wolter, Ann Arbor, Mississippi ("Revolution '76"). Gordon Lee and Joe Leung, Chowchilla, California ("Manned Orbiting Lab"). Keith Jacobson, Seattle, Washington ("Nike Hercules"). C. Fallo, Ridgefield, New Jersey ("Nike Hercules"). Jim Renne, Atherton, California ("Eclipse"). P. Schreiber, Cincinnati, Ohio ("SACAR"). Eddie Gervasoni, Los Angeles, California ("Mad Pecker 6"). Tim Siewert, San Francisco, California ("Astron Nite Flight"). Anthony Barrios, Mendota, California ("Falcon"). Gary Lee Smith, Roanoke, Virginia ("Falcon 5"). David L. Littmann, Detroit, Mississippi ("Cloudburst"). Robert Orr, Lordstown, Ohio ("Jovice 68"). David C. Brown, Fort Myers, Florida ("Alpha Centura II"). Robert Martinez, Norfolk, Virginia ("Sparrow III"). Steve Okum, Killaloe, Ontario, Canada ("Computer Roc").

DECEMBER 1973 - First Place; Tie Winners: Dan Bilich, Kaukauna, Wisconsin ("Quest"). Joe Palattella, Long Island City, New York ("Sky I"). Honorable Mention: David R. Bush, Cobourg, Ontario, Canada ("Dunc"). Tim Cochran, Greenwich, Ohio ("The Match Rocket"). Michael J. Staley, Dallas, Texas ("2001"). Robert Orr, Lordstown, Ohio ("Pioneer 71"). Gary Rittenbach, Watsonville, California ("Skydart II"). Wally Kuhn, North Syracuse, New York ("Angstrom"). Mark W. Adams, Swartz Creek, Mississippi ("Mach I"). Mark Rinkerman, Clifton, New Jersey ("Fly-Er"). Steve Ingalls, Columbia, Montana ("Asteroid V"). Verne Carlson, Sedalia, Colorado ("Comet 1").

# Rocketeer Activities

Throughout the country model rocketry enthusiasts are involved in a variety of exciting activities, some of which are exceptionally outstanding. We would like to take this opportunity to share several of these more unusual projects with you.

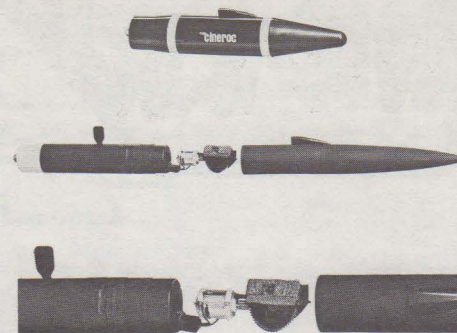


Bob Bruce of Granada Hills, California designed PEGASUS, the winning entry in our 1972 Space Shuttle Design Contest. Completely scratch-built, this baby took dozens of hours to complete. PEGASUS features a twin engine booster stage, single engine mother ship, and gliding shuttle. A later, scaled-up version displayed at the Estes Exhibit during NARAM-15 featured both a "D" powered booster and main booster, plus a radio controlled orbiter.



Gary Rosenfield of Fullerton, California has completely miniaturized the Cineroc aerial movie camera. Again through scratch building, Gary has developed a "Mini-Cineroc" the same diameter as a standard BT-55. This decrease in camera diameter greatly improves its aerodynamic characteristics, thus allowing it to reach much greater altitudes. A hollow nose cone is utilized as a random storage area allowing up to 50 feet of film for

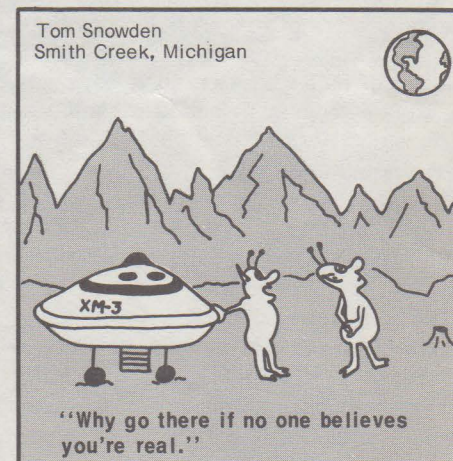
one flight. The camera alone weighs 3/4 of an ounce and is activated at lift-off by a special quick release switch.



The model rocket activities of Herb Desind of Silver Springs, Maryland really belong in the Estes Museum of the "Believe It or Not." In slightly over two years Herb has launched more than 100 Cineroc missions. As a matter of fact, Herb is the nation's single largest user of Cineroc film and equipment. He says he just can't seem to get the excitement of taking aerial movies out of his system. His movies include studies of early morning horizons, frost patterns, ground fog, cloud formations, thunderheads, and atmospheric wave patterns. Herb has flown Cinerocs throughout the State of Maryland including flights at the Goddard Space Flight Center and recently had the pleasure of launching with a friend in London, England.

### Now Its Your Turn

Why not share your special activities with us? If you have a unique project underway or have just finished one, please send us a short report on it. If it is interesting enough and has some good pictures and/or drawings, we will consider publishing it in a future issue of the MRN.



# Win \$20 in merchandise ENTER THE ESTES "PHOTO CONTEST"

\$500 in merchandise certificates will be awarded to this year's winners. Rocketeers, here is your chance to test your skills in model rocket photography. To enter, just follow the rules below.

## CONTEST RULES

1. Photographs, slides, or Camroc photos are acceptable. All entries must deal with some aspect of model rocketry. Please do not send movie films or negatives.
2. You may enter as many times as you like.
3. Employees of Estes Industries or members of their immediate families are not eligible.

4. All entries become the property of Estes Industries. We will return entries if requested and a self-addressed, stamped return envelope of the proper size is included.

5. Pack entries carefully - use cardboard for added protection. Note: Estes cannot accept responsibility for lost or damaged entries.

6. List camera setting if using adjustable equipment. (Not required.)

7. Entries will be judged for visual impact, composition, and originality of model rocketry subject matter.

8. Deadline for receipt of entries is midnight June 15, 1974.

9. A \$20.00 merchandise certificate will be awarded to each of 25 most outstanding entries. Decisions of the judges are final.

10. Winners will be announced in a future issue of Model Rocket News.

11. Be sure to include your name, age, address, city, state, and zip code with each entry. Include your Skill Level if you are an EAC member.

12. Mail entries to:  
Estes Industries  
"Photo Contest"  
Penrose, Colorado 81240

**GOOD LUCK!**



## THE IDEA BOX

**WINDY DAY CHUTE**



Have you ever lost a rocket on a windy day because the parachute was too big? Here's a way to bring your rocket down quickly, but safely. Cut slits around the center of your chute, be careful not to cut them too big. This will decrease your recovery time and make your chute look more like the real thing.

Stewart Neubarth Atascadero, California

**HANDY ROCKET CLEANER**



Use a standard ink/typing eraser to remove smudges and dirt from your rocket.

Marc Murphy  
Ft. Lauderdale, Florida

**SPRING LOADED NOSE CONE FOR PAYLOAD SECTION**



Have trouble keeping the nose cone of your payload section on during flight? Insert screw eyes in rear of nose cone and in front end of nose block. Connect screw eyes with a short length of shock cord. This will insure that your payload will not eject and that you will have a nose cone when your rocket lands.

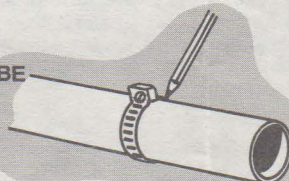
Matt Stringfellow Elgin AFB, Florida

**QUICK-CHANGE STREAMER**

Staple streamer to 1/4" wide by 6" long shock cord. Attach snap swivel to end of shock cord. This allows you to change from parachute to streamer in seconds.

Charles E. Crist  
Stanton, California

**BODY TUBE MARKER**



A handy way to mark or cut body tubes is to use a garden hose clamp (or similar clamp) which can be purchased inexpensively at most hardware stores. One size usually will fit most body tubes.

Brad Klatt Cambridge, Minnesota



Mike Johnson  
Campbellsburg, Indiana



Although the Skylab astronauts had a really great view, the rest of us on Earth had a real problem in viewing the "Comet of the Century." Although the comet never did reach its predicted brightness, a number of people have reported good sightings. Therefore, Estes Industries will offer a \$25.00 merchandise certificate for the best Kohoutek photo taken by one of its rocketeers. Please send only color or black and white prints. (No slides, negatives, or movies, please.) Photo must have been taken by you and be of a quality suitable for publication in the MRN. Send your photo to Estes Industries, "Kohoutek Photo", Penrose, Colo. 81240.

Good luck, and remember that many rocketeers wonder about the Comet. Maybe your photo can convince them that it really existed.

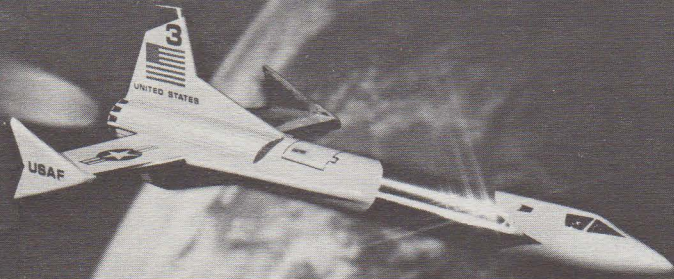
# INTRUDER

SKILL LEVEL 3

HONORABLE MENTION  
DESIGN OF THE MONTH

By ANDY TOMASCH  
Mishawaka, Indiana

ESTES INDUSTRIES ROCKET PLAN NO. 82



★ BUILD THE INTRUDER WITH ESTES HIGH PERFORMANCE PARTS AND ACCESSORIES

### PARTS LIST

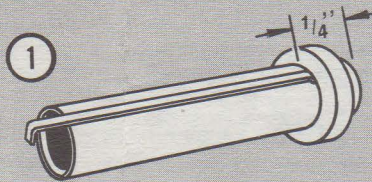
- 1 7½" length of BT-20. . . . BT-20B
- 1 Nose Cone. . . . . BNC-20N
- 2 Nose Cone Weights. . . . . NCW-4
- 1 Mini-Engine Adapter Kit. . . EM-520
- 1 Shock Cord. . . . . SC-1
- 1 Parachute Kit. . . . . PK-12
- 1 Screw Eye. . . . . SE-3
- 1 Launch Lug. . . . . LL-2A
- 1 Fin Stock. . . . . BFS-30L

### ADDITIONAL MATERIALS

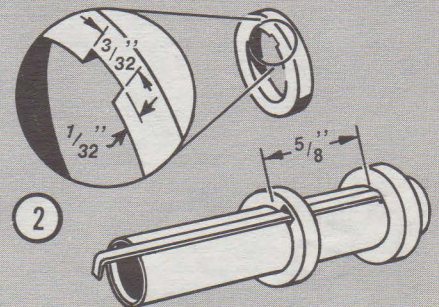
- Hobby Knife
- White Glue
- Ruler
- Sanding Material
- Sanding Sealer
- Enamel Paint (Spray)
- Sharp Pencil

### RECOMMENDED ENGINES

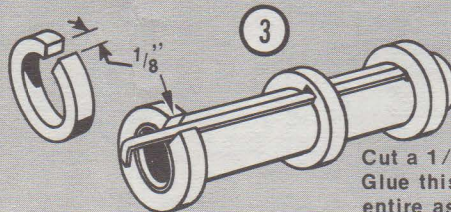
- A3-2T
- A3-4T
- A10-3T



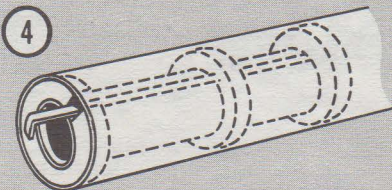
1 Mark the BT-5 engine tube 1/4" from one end. Glue one AR-520 ring to tube with edge of ring on mark. Punch an 1/8" wide slot just behind ring and insert the EH-3 engine hook.



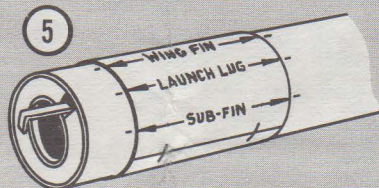
2 Cut a 1/32" deep by 3/32" wide slot on the inside surface of another AR-520 ring. Glue slotted ring to tube 5/8" from first ring with the slot over the engine hook.



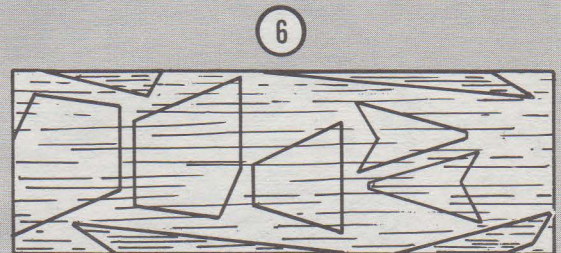
3 Cut a 1/8" wide gap in the remaining AR-520 ring. Glue this last ring to the end of the tube. Allow entire assembly to dry.



4 Smear glue around the inside of the body tube about 3/4" from one end. Immediately slide the engine mount unit into place so the end of the engine mount tube is even with the rear of the body and the engine hook projects from the tube. Do not pause during this operation or the glue may stick with the mount in the wrong place.



5 Cut out the body tube marking guide. Wrap it around the rear of the body so the end of the launch lug line is in line with the engine hook. Mark the tube at each arrow point. Remove the guide and draw a straight line connecting each matching front and rear mark. Draw the launch lug line so it extends about four inches from the end of the tube.



6 Using fin patterns, trace and cut out fins from balsa sheet. Note fin layout on balsa sheet for proper grain direction. Sand all root edges flat and all others round except where noted on fin patterns.



RUB GLUE INTO ROOT EDGE

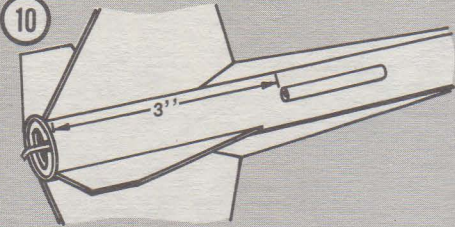
7 Rub a priming coat of glue into the flat edge of each fin and allow to set. Glue the two rudder fin and the two wing fin parts together and lay flat to dry. Pin together while drying if necessary.



8 Glue the tip-plates to the wing-fins and set aside to dry. Glue the rudder-fin and sub-fin to their appropriate lines on the body tube. Align fins straight away from the tube and allow to dry.



9 Apply a glue fillet to both sides of each fin joint after the glue is completely dry.



Glue the launch lug to the body tube 3" from the engine end, between the wing and the sub-fin.



11

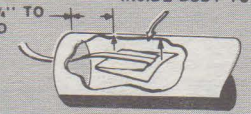


FINISHED

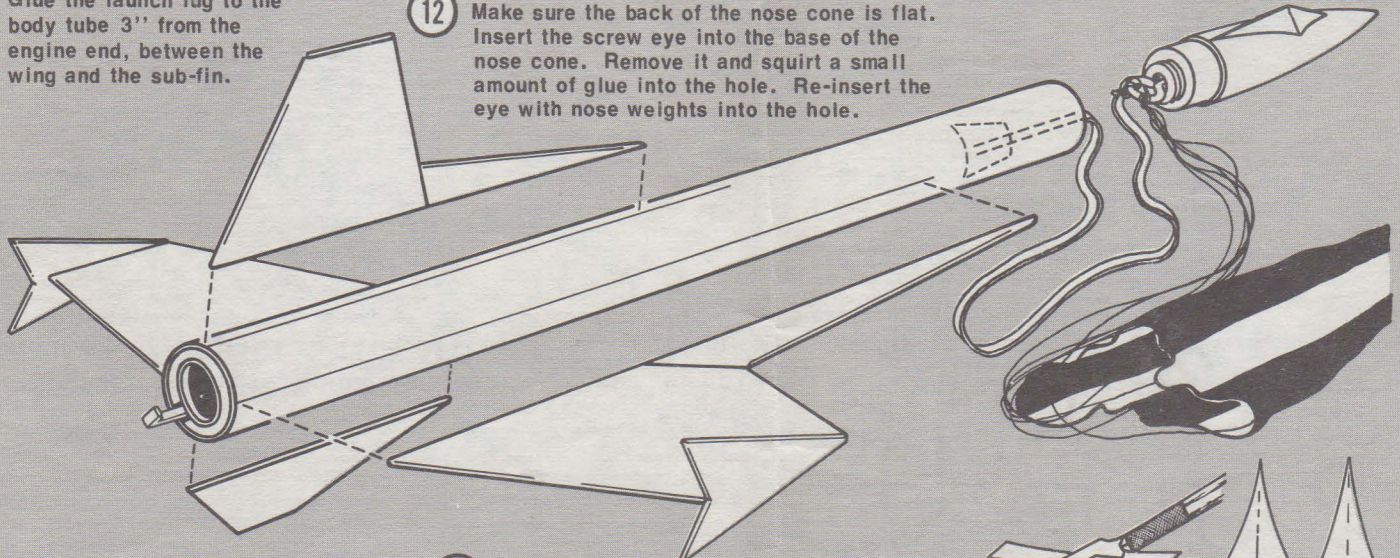
Cut out the shock cord mount. Assemble as shown. When gluing mount into body tube press it down until glue sets.

SET BACK AT LEAST 1/4" TO ALLOW FOR PAYLOAD

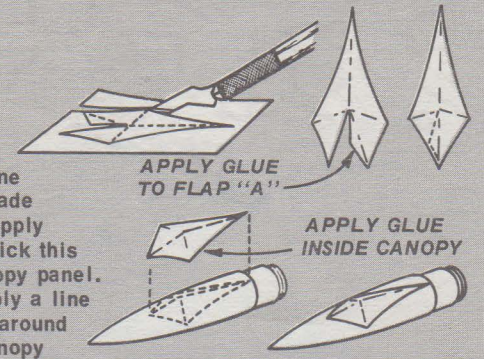
SPREAD GLUE INSIDE BODY TUBE



12 Make sure the back of the nose cone is flat. Insert the screw eye into the base of the nose cone. Remove it and squirt a small amount of glue into the hole. Re-insert the eye with nose weights into the hole.

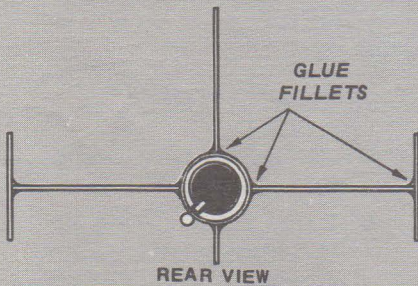


13 Cut out the canopy on its edge lines. Carefully crease it exactly on the dotted fold lines. This can best be done by scoring with a very dull, rounded blade and then folding on the scored line. Apply glue to the outside of flap "A" and stick this to the inside of the matching front canopy panel. Hold this joint until the glue sets. Apply a line of glue to the inside of the canopy all around the edges. Matching the rear of the canopy to the shoulder of the nose cone, set the canopy in place so it is straight on the cone. Press down all edges securely. Hold the canopy in place until the glue sets.



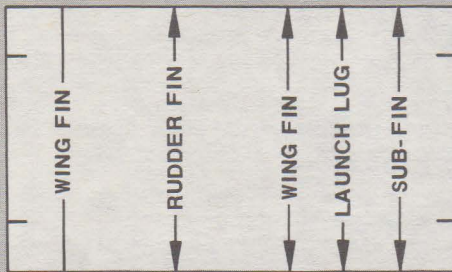
APPLY GLUE TO FLAP "A"

APPLY GLUE INSIDE CANOPY



REAR VIEW

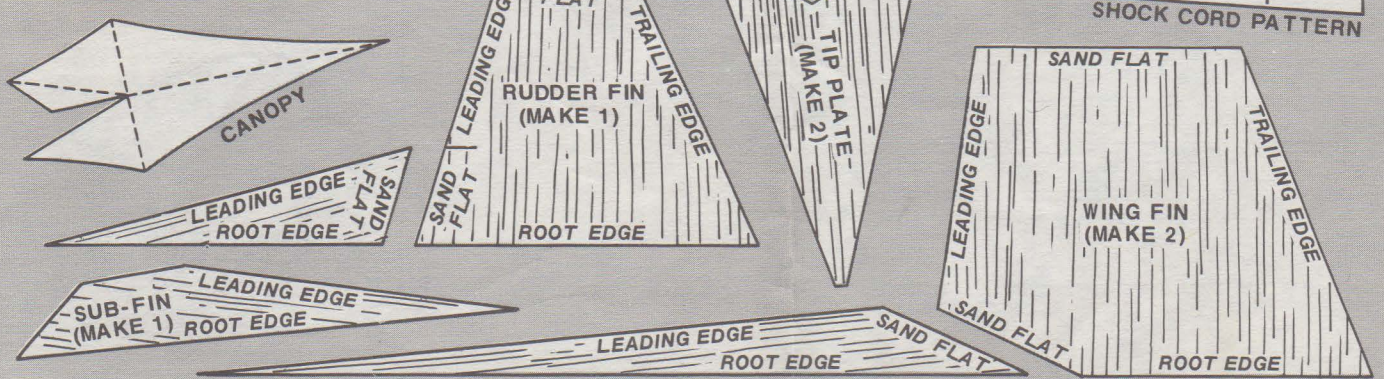
GLUE FILLETS



BODY TUBE MARKING GUIDE

14 Assemble the parachute according to its instructions. Apply a spot of glue to the lines where they loop around the screw eye. Tie the free end of the shock cord to the screw eye and insert the nose cone into the body tube.

15 FINISHING PROCEDURE: Sand all balsa surfaces smooth, then apply sanding sealer. Repeat this procedure until balsa is smooth. Refer to photo for decor ideas.



CANOPY

SAND FLAT

LEADING EDGE

TRAILING EDGE

ROOT EDGE

RUDDER FIN (MAKE 1)

SAND FLAT

LEADING EDGE

TRAILING EDGE

ROOT EDGE

TIP PLATE (MAKE 2)

SHOCK CORD PATTERN

SAND FLAT

LEADING EDGE

TRAILING EDGE

ROOT EDGE

WING FIN (MAKE 2)

SAND FLAT

LEADING EDGE

ROOT EDGE

SUB-FIN (MAKE 1)

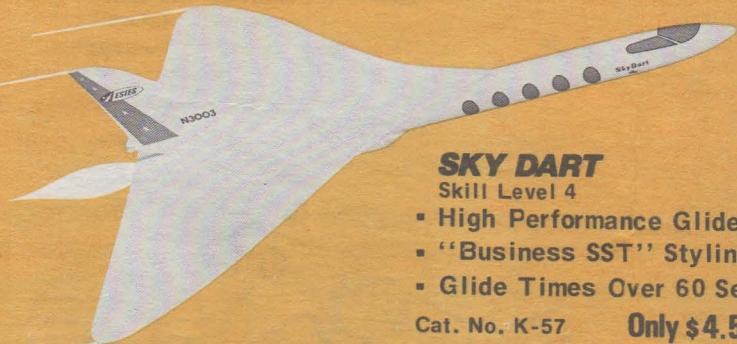
SAND FLAT

LEADING EDGE

ROOT EDGE

SAND FLAT

# JOURNEY INTO THE FUTURE



## SKY DART

Skill Level 4

- High Performance Glider
- "Business SST" Styling
- Glide Times Over 60 Seconds

Cat. No. K-57      Only \$4.50

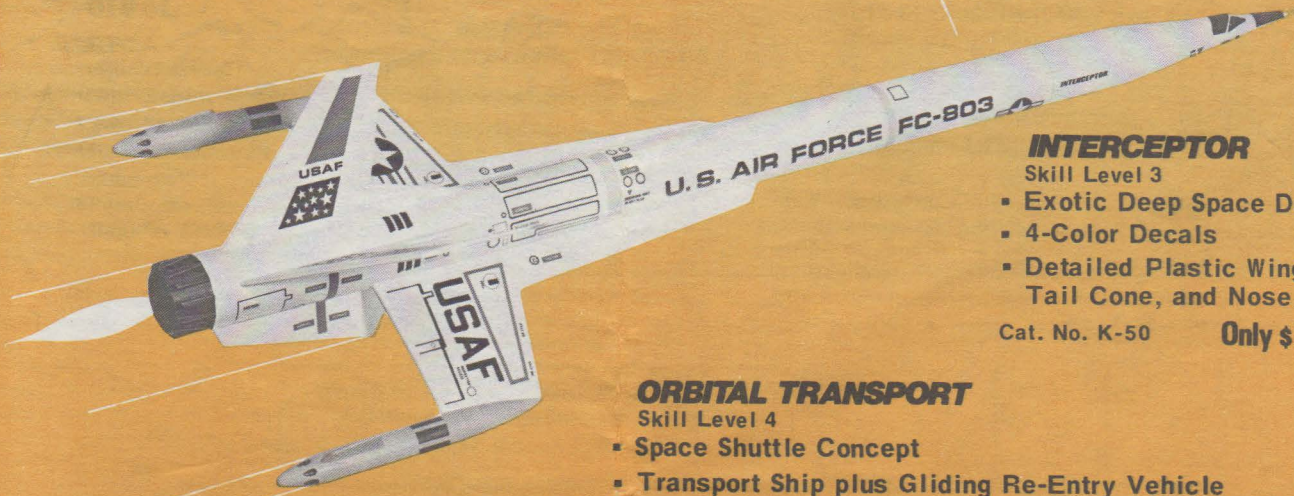


## MARS LANDER

Skill Level 5

- Mars Exploration Vehicle
- Highly Detailed Body Panels
- Spring-Loaded Landing Shocks

Cat. No. K-43      Only \$8.95



## INTERCEPTOR

Skill Level 3

- Exotic Deep Space Design
- 4-Color Decals
- Detailed Plastic Wing Pods, Tail Cone, and Nose Cone

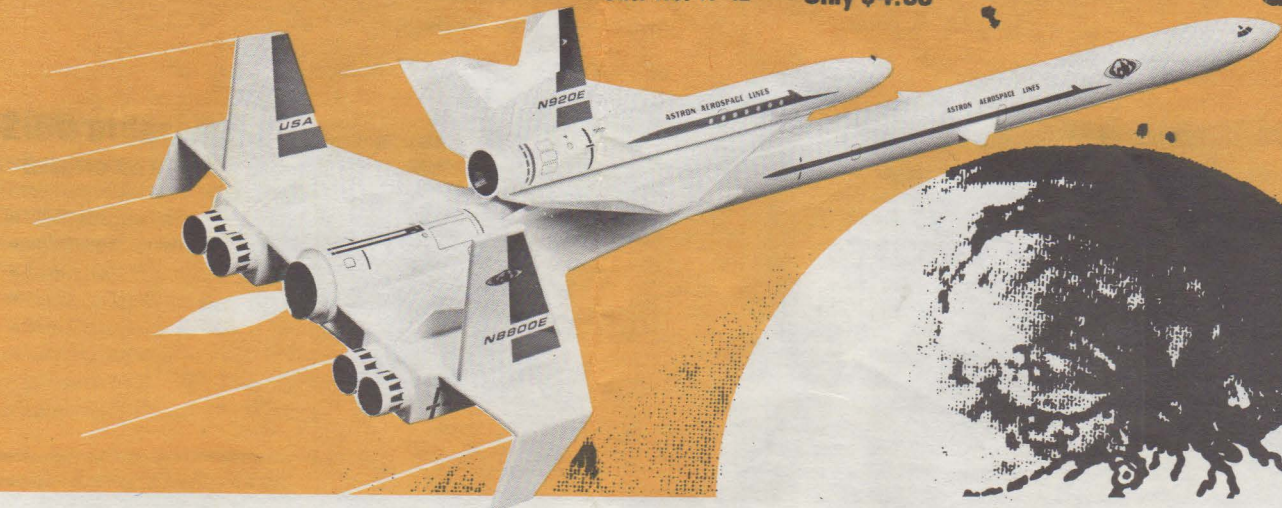
Cat. No. K-50      Only \$5.95

## ORBITAL TRANSPORT

Skill Level 4

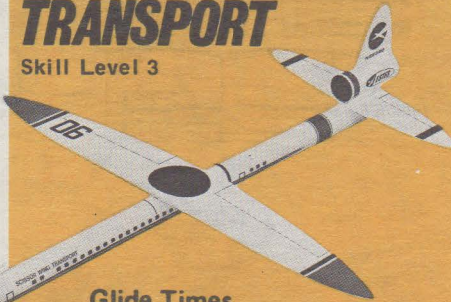
- Space Shuttle Concept
- Transport Ship plus Gliding Re-Entry Vehicle
- Designed for Near-Space Exploration

Cat. No. K-42      Only \$4.50

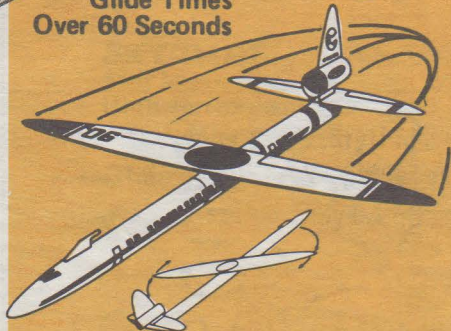


# NEW SCISSOR WING TRANSPORT

Skill Level 3



Glide Times Over 60 Seconds



## INTRODUCES NEW SCISSOR WING CONCEPT

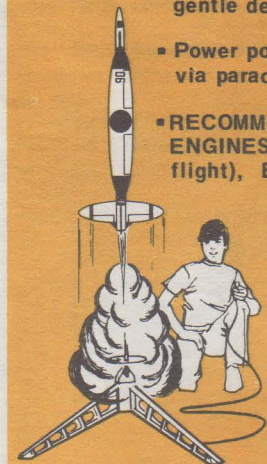
- Super SST Styling
- Two-Color Decals
- Die-Cut Parts

### Flight Sequence

- Lift-off: Main wing is parallel to body tube.
- Apogee: Engine's ejection charge jettisons internal power pod and main wing pivots to glide position.
- Glide: With main wing now in perpendicular glide position the Transport begins its gentle descent to Earth.
- Power pod is recovered via parachute.
- RECOMMENDED ENGINES: B4-2 (for first flight), B6-2, C6-3.

Cat. No. 1265

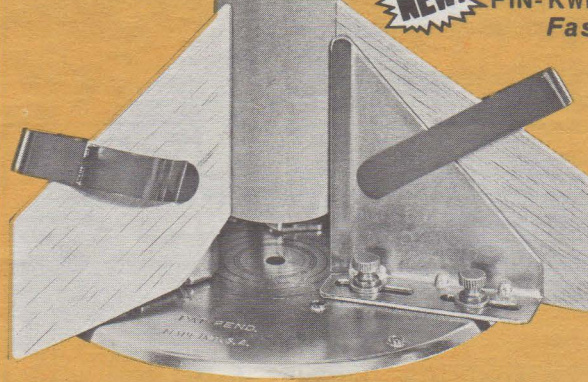
Only **\$4.95**



# Fin-Kwik

**NEW!**

FIN-KWIK ASSEMBLING FIXTURE  
Fast! Simple! Accurate!



- Position and Glue Fins Quickly and Easily
- Fits Body Tubes up to BT-70
- Designed for either 3 or 4 finned rockets
- Aligns fins exactly at 90° or 120° to each other
- Reduces assembling time
- Heavy duty metal construction
- Completely adjustable

Cat. No. 2713 **Just \$6.95**

## Bonus Kits

(Limit one per order. Offers expire 8-1-74.)

### LITTLE JOHN (Skill Level 1)

- Mini-Engine Powered
  - Semi-Scale Model
  - Surface-to-Surface Military Vehicle
- Regular \$1.75

My order is over \$6.00

I have enclosed an additional 35¢.

Please send me: (check one)

Little John (#0819) OR  Beta (TK-45)

Your choice only **35¢ with \$6.00 order.**

### BETA

(Skill Level 2)

- Mini-Engine Powered
  - Two-Stage Vehicle
  - High Performance Design
  - Parachute Recovery
- Regular \$1.50

Your choice only **50¢ with**

### ARCAS® (Skill Level 3)

- Scale Model
  - Sounding Rocket Vehicle
  - Authentic ARCAS® Decal
  - Sleek Design
- Regular \$2.75

My order is over \$9.00

I have enclosed an additional 50¢.

Please send me: (check one)

ARCAS (K-26) OR  Goblin (K-55)

**\$9.00 order.**

### GOBLIN

(Skill Level 3)

- "D" Engine Powered
  - Ultra-High Performance
  - Streamer Recovery
  - Reaches Altitudes Over 1,600 Feet
- Regular \$2.75

Your choice only **75¢ with**

### AVENGER (Skill Level 2)

- Two-Stage Payload Vehicle
  - Sounding Rocket Appearance
  - Large Payload Section
  - Spectacular Flights
- Regular \$3.50

My order is over \$12.00.

I have enclosed an additional 75¢.

Please send me: (check one)

Avenger (K-38) OR  Cherokee "D" (K-47)

**\$12.00 order.**

### CHEROKEE "D"

(Skill Level 2)

- "D" Engine Powered
  - High Performance Flights
  - Low Drag Design
  - Two-Color Decals
  - Die-Cut Balsa Fins
  - 18" Parachute Recovery
- Regular \$3.50

NOTE: "Bonus Kit" offers good only with this order form. Limit, one "Kit" per order. Substitutions will be made when necessary. Offers Expire 8-1-74.



# ORDER FORM

Dept. MRN-V

A SUBSIDIARY OF DAMON  
TYPE OR PRINT PLAINLY IN INK

DATE: \_\_\_\_\_ Age \_\_\_\_\_

UPS is available in my area.

For Office Use Only

Amt. Recd. \_\_\_\_\_  
Checked By \_\_\_\_\_  
No. Labels \_\_\_\_\_  
No. Pkgs. \_\_\_\_\_  
P \_\_\_\_\_  
N/F \_\_\_\_\_

Your Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

ZIP CODE \_\_\_\_\_

(If additional space is needed use a separate sheet of paper.)

Is this your first order?  Yes  No  I am an EAC member.

Was your last order more than one year ago?  Yes  No

Quan.	Cat. No.	Products Description	Unit Price	Total
1	<input type="checkbox"/> #1447	EAC Membership Kit \$2.00		
2				
3				
4				
5				
6				
7				
8				
9				
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Save 45¢ for Handling,  
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On Orders Over \$6.00

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	1 lb.	2 lbs.	3 lbs.	4 lbs.	5 lbs.
	\$ .70	\$ .88	\$ 1.33	\$ 1.93	\$ 2.48
6 lbs.	7 lbs.	8 lbs.	9 lbs.	10 lbs.	
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See all the "new", exciting Hi-Flier kites and the exclusive "Spinwinder" Kite Reel at your local Hi-Flier Dealer.



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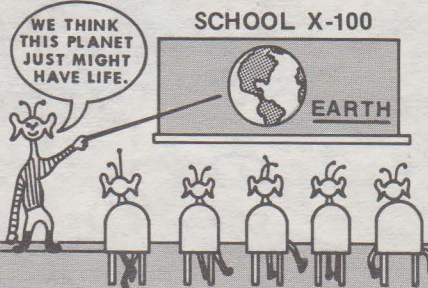
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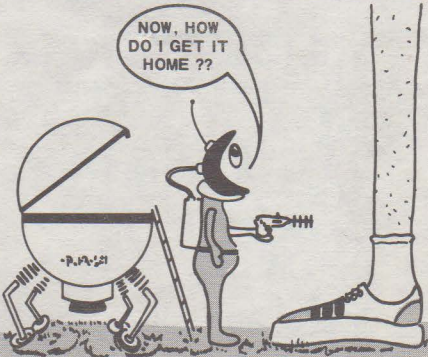


Danny Levin Yonkers, N.Y.



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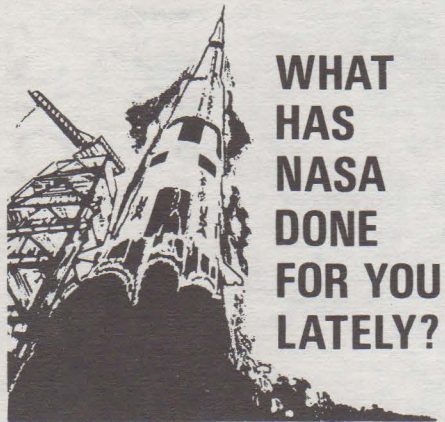


**NEW!**  $\frac{3}{16}$ " DIA.  
**MAXI-ROD**



- Recommended For New Maxi-Brutes (German V-2 and Pershing 1-A)
- Fits Porta-Pad Tripod (RL-4)
- 36" Long
- Two-Piece Construction
- Collapsible For Easy Storage
- Screw-Together Fitting

Ship. wt. 12 oz.  
Cat. No. #2239 **ONLY \$1.25**



**WHAT HAS NASA DONE FOR YOU LATELY?**

A burglar enters your home. A tiny device senses a change in the environment in the form of an approaching physical mass, and sets off an alarm. This device is an adaptation of an instrument developed at the NASA Ames Research Center to sense changes in blood pressure.

A battery powered pill about the size of a vitamin capsule measures temperature. When swallowed, it broadcasts to a receiving set nearby the patient's internal temperature. The pill can also be constructed to measure intestinal pressure, stomach acid, the presence of other chemicals or drugs, and the like, enabling doctors to make diagnoses not now possible.

If you want to build a new long bridge or other complex structure, the NASA developed computer program known as NASTRAN can design it for you.

When you get tired of chuck holes in the streets over which you drive,

**NEW!**

**Camroc Carrier**

**HIGH PERFORMANCE PAYLOAD VEHICLE**  
Skill Level 3

- Recommended Camroc Vehicle
- Low Drag Elliptical Fins and Reducer Shroud
- Large Payload Section
- Die-Cut Fins
- Stick-on Decals
- Reaches Altitudes Over 1,000 Feet

**RECOMMENDED ENGINES:**  
With Camera:  
B6-6 (for first flights)  
B14-7  
C6-7

With Payload:  
A8-3 (for first flights)  
B6-4  
B14-5  
C6-5

Camera Not Included.



Use This Kit for Either Flight Configuration

Cat. No. 1266 **ONLY \$2.50**

Note: Kit can also be modified to handle single "D" engine.

you will be interested to know that NASA technology has developed a better chuck-hole filler that will not sink or crack.

Have foods in your refrigerator ever spoiled because the electricity went off? This could happen while you were away on a trip, and the foods, frozen when you return, could have been damaged by an electrical failure during your absence. A tiny indicator which changes color can tell you whether foods have been warmed and then refrozen.

Persons who need heart pacers can obtain a permanently implanted battery powered unit to do the job. Of course the battery runs down. But the wearer recharges it simply by holding a device over his chest while he is reading or watching television.

A method of computer enhancement developed to improve pictures taken by spacecraft of the Moon and Mars can be used to enhance X-ray pictures, enabling physicians to make better medical diagnoses.

Miniature batteries developed from NASA technology are being used to improve hearing aids.

For hiking or camping in the open, you might like to have a very

light weight but warm blanket to carry along. One has been developed from NASA technology.

An unmanned remotely controlled rescue vehicle, using systems developed for the Lunar Rover, is being built to enter mines and rescue persons trapped in mine disasters.

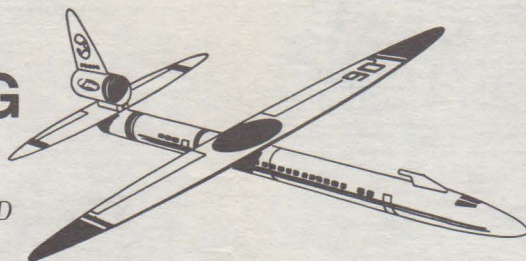
A sensing system, adapted from a NASA developed welding inspection system, is being adapted for rapid X-ray diagnosis of tumors and blood flow. The system will be especially useful in studies of children suffering from congenital heart disorders.

A low voltage switching system has been developed for residential and commercial use. A safe two-volt current flowing through a very thin flat conductor cable operates relays to turn the regular 120 volt current on and off. The flat conductor can be cemented to walls and concealed with paint or wall paper, providing an easy way for the homeowner to extend his lighting system.

This list could go on and on. One penny of each of your tax dollars is spent on the space program. Are you getting your penny's worth?

# THE SCISSOR WING CONCEPT

by William Simon, Mgr., Estes R & D

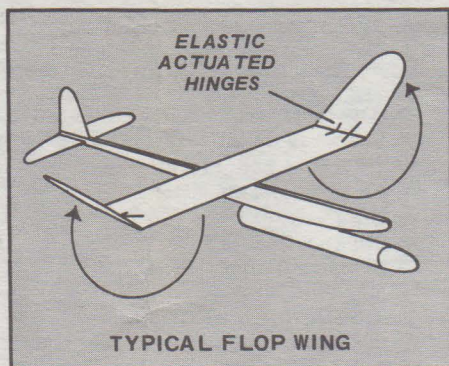
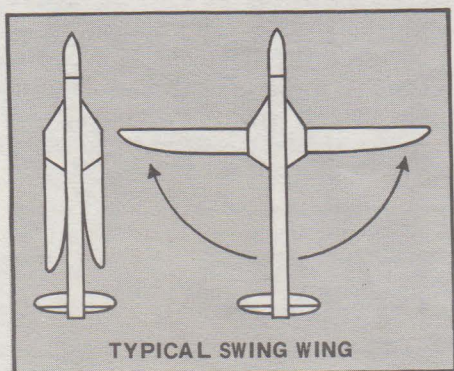


As a fledgling model rocket designer in the year of Mercury-Atlas MA-6, I built the Ultimate Solution to boost glider duration problems, the Swing Wing glider. Elegant in concept, I told myself. Beautifully simple in execution, I smirked. Proudly I launched it time and again in secret test flights, adjusting the trim for a perfect glide. Up...up...up it would go with both the wings folded sleekly back along its sides. Then poof! Majestically the wings spread at ejection and it would soar through the sky. A contest was coming, and I was going to devastate the opposition.

The great day dawns. I proudly mount my magnificent model upon the launch rack. I chuckle to myself as the count proceeds, "3...2...1... Launch!" Up...up...up, the wings sleek along its sides. Down...down...down, the wings sleek along its sides. I could have carried the remains home in my hip pocket if I hadn't elected to bury it on the spot.

Lesson learned: Swing wing gliders don't like to spread their wings if the model is going too fast at ejection. Normal aerodynamic forces generally oppose proper operation of swing wing systems. Let's face it, the swing wing has a lot of problems.

Practically everyone who has attempted to design a swing wing glider has had an experience similar to mine. With care, advanced modeling skills, and a lot of luck, a reliable swing wing system can be built. But swing wings are not for the average sport flyer.



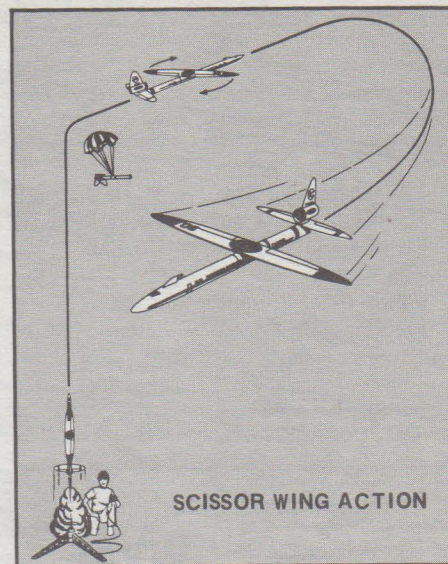
## COMES THE DAWN

In 1972 articles on an "antisymmetrical slewed wing" SST began appearing in various aerospace journals. The concept, developed by Dr. Robert T. Jones of NASA, offered significant reductions in drag and sonic boom intensity for supersonic transports. Key to Jones' system is the pivoting of the wing and horizontal stabilizer to "trick" these surfaces into "thinking" they are going slower than they actually are, with a resulting drop in drag. The wing would be positioned at 90° to the fuselage for take-off and landing, and slewed to within 25° of the body at Mach 1.5.

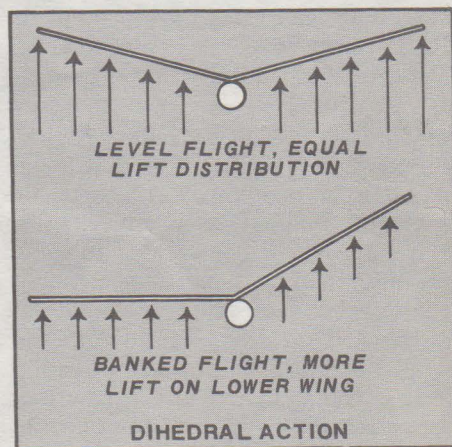
While model rockets don't travel at Mach 1.5 or create sonic booms, the concept turned all of us in the Estes R & D Department on instantly. Why not build a boost glider with a one-piece wing which would pivot all the way in to the body for minimum drag during boost and then out at 90° for maximum lift during glide? The system would overcome most of the problems with conventional swing wing boost gliders. Aerodynamic forces would be balanced; any force tending to keep the wing in its boost position would be countered by an equal force tending to open the wing. Besides, with only one piece pivoting, the pivot could be stronger, simpler, and more reliable.

A prototype glider was quickly built and test flown. Success! Flight was perfect. Then, other jobs (the Goonybirds, more Mini-Brutes, etc.) took priority, and the Scissor went up

on the shelf. For almost a year it gathered dust. But as it sat people kept seeing it and saying, "I sure like that glider." So when new products for 1974 time came, it was inevitable that the Scissor Wing Transport would be the featured new item.

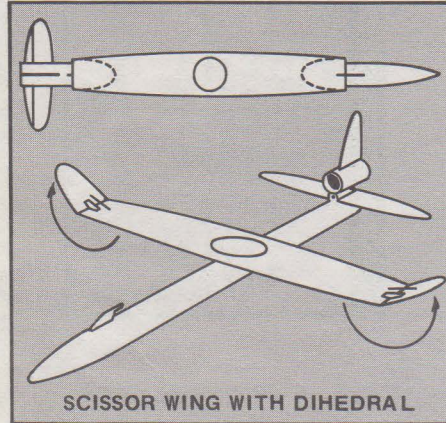


Is that the end of it? Just another new rocket? We think not. The scissor wing concept offers many interesting possibilities to the rocket designer. Beyond its value as a reliable sport model, the Scissor Wing Transport (SWT) demonstrates a technique which can be adapted to high performance competition models. Boost glider design using the scissor concept is a totally fresh field. What adaptations can be made for better performance, higher reliability, simpler construction, or unique appearance? The possibilities are practically endless.

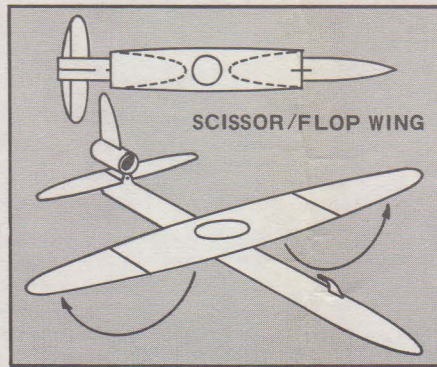


Consider, for example, dihedral. The high wing location on the SWT gives the same result as a slight dihedral. However, more effective dihe-

dral would be desirable in a competition model. How can this best be achieved? Should the wing be hinged near the pivot to give automatic dihedral? Would a flop-wing system be a better choice? For a scissor wing, the body length limits the maximum wing span, the flop wing system would have the added advantage of allowing more wing area. What other methods would provide more dihedral?



Another area to consider is actuation systems. Is there a better method than the internal pod? Could the engine be retained in the model? Can an aerodynamically cleaner pivot be designed?



What about airfoils, wing shapes, elevators, fins, flaps...? By now, you've got the picture. There are more questions to ask than the space the Editor has provided will allow. So, instead, he's agreed to sponsor a special design contest for models using the scissor wing system. Models can be of any type, as long as they glide and feature a scissor wing. The rocketeers who come up with models making the best use of the concept will receive Estes merchandise certificates. See the box for a complete list of prizes and rules.

All of us here in the Estes R & D Department hope you'll find as much fun and excitement in working with the scissor concept as we have. We just wish we could enter the contest too!

### Win a \$100.00 Merchandise Certificate

## ENTER THE SCISSOR WING DESIGN CONTEST

### Just Follow the Rules Below

1. Only boost glider designs using the scissor wing concept can be entered.
2. You may send as many entries as you like.
3. Entries will be judged on practicality, originality, neatness, completeness, and clarity. Special attention will be given to pivot mechanisms, hinge devices, actuation methods, and other mechanical systems. Anticipated flight performance and reliability will also be considered. All designs must be successfully flight tested.
4. Please do not send actual model as it cannot be returned.
5. Your design entry should include a parts list and full instructions or any diagrams you feel would be helpful.
6. Photos of entries are greatly appreciated, but are not required.
7. All entries become the property of Estes Industries and cannot be returned.

8. Employees of Estes Industries and members of their immediate families are not eligible.

9. Deadline for receipt of entries is midnight August 31, 1974.

10. First place will receive a \$100.00 merchandise certificate. Second place will receive a \$75.00 merchandise certificate. Third place will receive a \$50.00 merchandise certificate. Six Honorable Mentions will receive a \$25.00 merchandise certificate.

11. Decision of the judges is final.

12. Winners will be announced in a future issue of Model Rocket News.

13. Be sure to include your name, age, address, city, state, and zip code with each entry. Please include your skill level if you are an EAC member.

14. Mail entries to:

Estes Industries  
"Scissor Wing Contest"  
Penrose, Colorado 81240

**GOOD LUCK!**

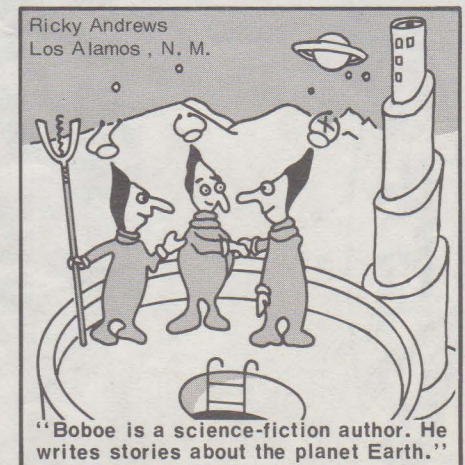
### (NEW MAXI-BRUTES continued)

135 miles was achieved by a single stage V-2. Earlier, in February 1949, a "Bumper" two-stage version reached a maximum altitude of 250 miles. The final V-2 firing was made at White Sands in September 1952.

Our scale Pershing 1-A is a model of the United States Army surface-to-surface ballistic missile produced by the Martin-Marietta Corporation, Orlando Division. Development of the Pershing missile began in 1958 with the first test firing taking place two years later at Cape Kennedy. The Pershing had the most successful testing record of any tactical missile. To continue this tradition Pershing battalions conducted annual missile practice firings at White Sands. The advanced Pershing 1-A went into development in January 1966 and is now operational.

The Pershing battalion is composed of four firing batteries, a headquarters battery, and a service battery and is capable of attacking any target within a 400 mile range in any direction. The two-stage, solid propellant Pershing features inertial guidance, has nuclear capability, and travels in the supersonic range. Currently the completely mobile Pershing is deployed with the U.S. and Federal Republic of Germany units in Europe.

Our Maxi-Brute versions of these two famous rockets feature dual parachute recovery, pre-shaped fins, and detailed molded plastic nose cones. Both are "D" Engine powered and a 3/16" launch rod is recommended for best lift-off performance. Additional historical background is enclosed with each kit. The German V-2 (Cat. #1267) and Pershing 1-A (Cat. #1268) are \$13.95 each and will be available May 1, 1974.





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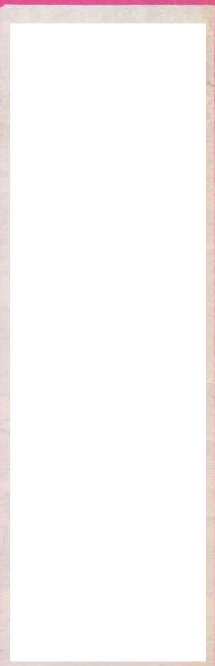
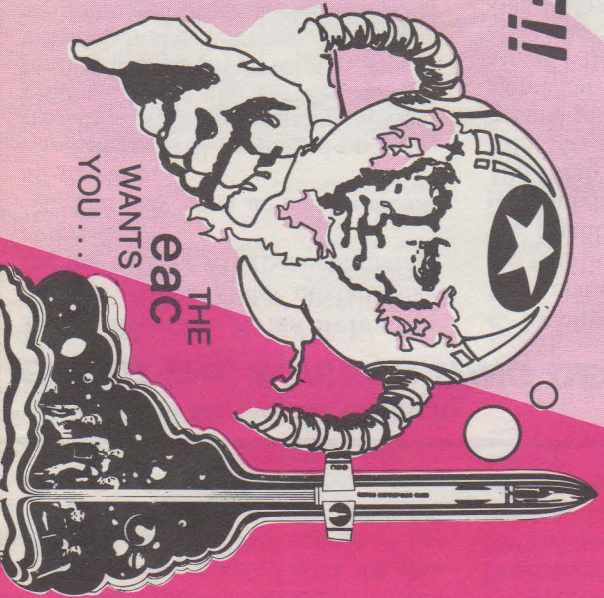
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• ESTES INDUSTRIES 1974

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