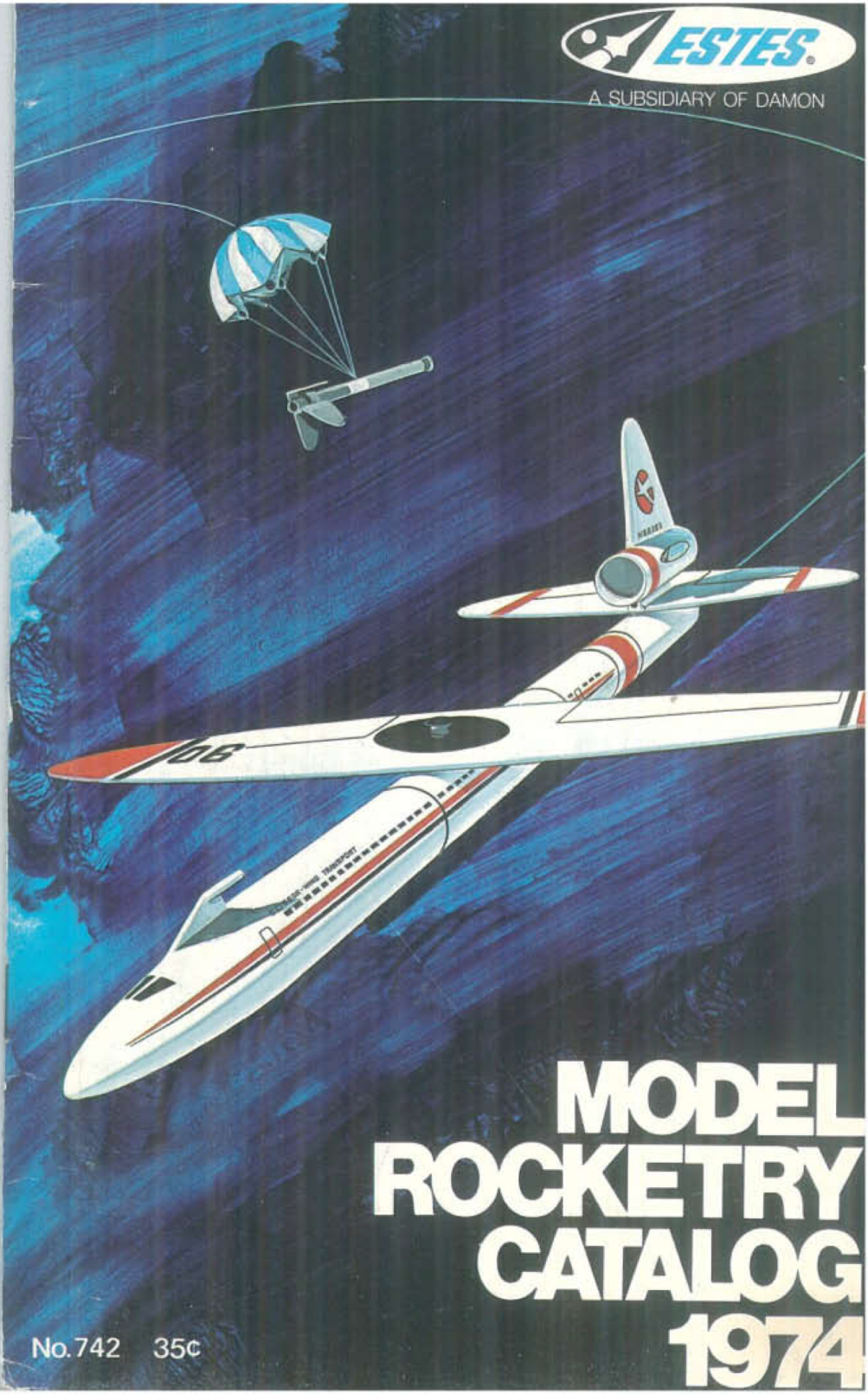
ESTES
A SUBSIDIARY OF DAMON
MODEL
ROCKETRY
CATALOG
1974
No. 742 35¢

## WELCOME TO THE WIDE WORLD OF MODEL ROCKETRY . . . . .

Unless you are already an experienced model rocketeer, you are about to discover the fun and excitement of a brand new hobby. As you near the completion of your first rocket and begin to plan when and where your initial launch will take place, you will begin to feel the same thrill and excitement experienced by those at Cape Kennedy. Finally, launch day arrives. You've completed your rocket, and carried out a pre-launch checkout. Your rocket is ready for lift-off, all systems are GO, and the countdown begins . . . 5, 4, 3, 2, 1, . . . BLAST OFF! As your rocket streaks skyward from its pad, you whisper to yourself, "GO, baby . . . . Go"!

Like the scientists at the Cape, you are experiencing a tremendous feeling of excitement as you watch your rocket reach the apogee of its flight and then begin its descent towards Earth. As you observe the activation of your rocket's recovery system and the full, colorful deployment of the parachute, you know your first mission has been a success.

Regardless of how you get started, you will soon realize that the Estes program of model rocketry involves much more than just a place to buy rockets.

Our staff at Estes has prepared a number of informative books and technical reports on many important model rocketry subjects. Additionally, as an Estes rocketeer you will receive free copies of our interesting and exciting MODEL ROCKET NEWS. To make your participation in model rocketry even more meaningful, we formed the Estes Aerospace Club in November of 1972. In just a little over a year, more than 30,000 rocketeers have joined the Estes Aerospace Club, making it an important part of their model rocket activities. EAC membership includes a special Viper rocket kit and many more unique advantages. A complete description of the EAC is featured on pages 76 & 77.

As you progress in your new hobby you will probably have many ideas for original designs of your own. Enter these designs in our Design of the Month Contest (see page 78).

Our 1974 Estes Model Rocketry Catalog also introduces several new products which I think you're really going to enjoy. First is the new Scissors-Wing Transport, utilizing a revolutionary new concept in boost glider technology (see page 29). Next, we have our new high performance Camroc Carrier, which is taking the place of our Delta launch vehicle (see page 51). Finally, we are proud to announce the first of our exciting line of Maxi-Brute models. these giant scale birds are the result of several years of research and development. See our new German V-2 and Pershing 1-A models on pages 40 & 41.

If you are just getting started in model rocketry the best value for you is one of our Estes Starter Outfits. These kits contain everything you need to make your first rocketry project a success. For those of you who are experienced model rocketeers, we have recently published a new Estes Custom Parts Catalog which features hundred of different parts and accessories for every imaginable design (see inside back cover).

You are joining the more than one million people each year who share the fun and excitement of model rocketry. As this hobby is extremely educational, you will surely learn many things from it, and, hopefully, enjoy putting your knowledge to work as you broaden the scope and involvement of your model rocketry activities. It is our sincere conviction that from you — today's model rocketeers — will come tomorrow's scientists, astronauts, and deep space explorers, opening new frontiers in the universe for America and the planet Earth.

Sincerely,

*Vern*

Vern Estes

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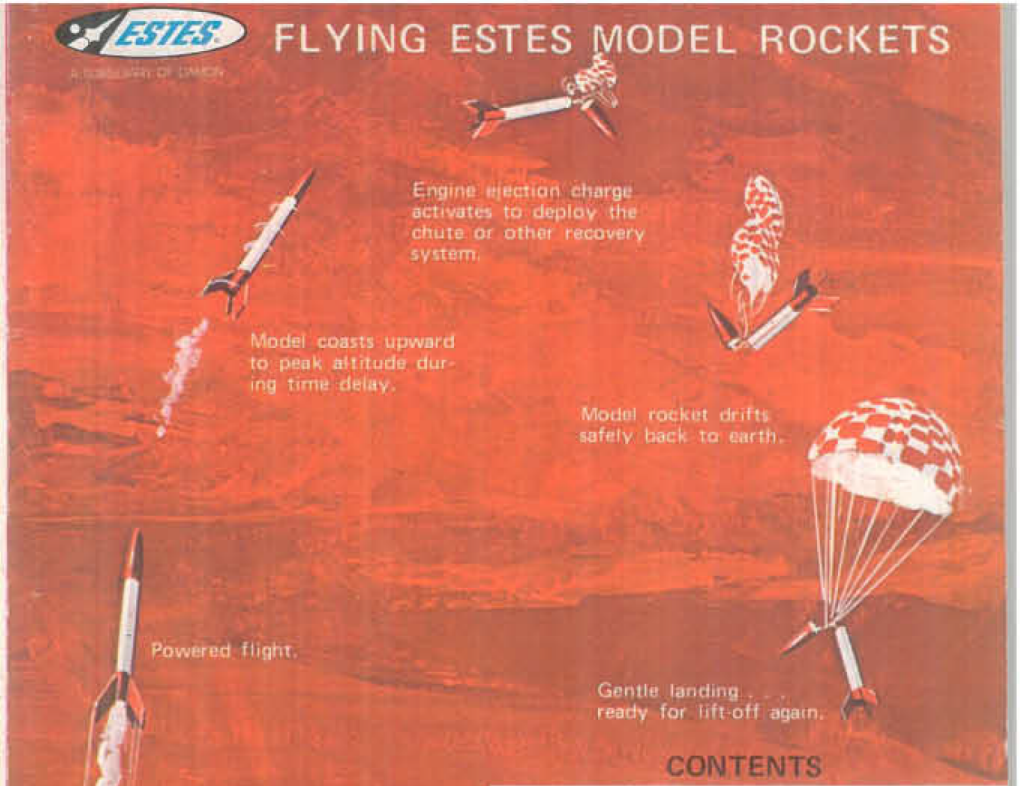
by Estes Industries
Penrose, Colorado.
LITHO IN U.S.A.

ESTES
A SUBSIDIARY OF DAMON

# FLYING ESTES MODEL ROCKETS

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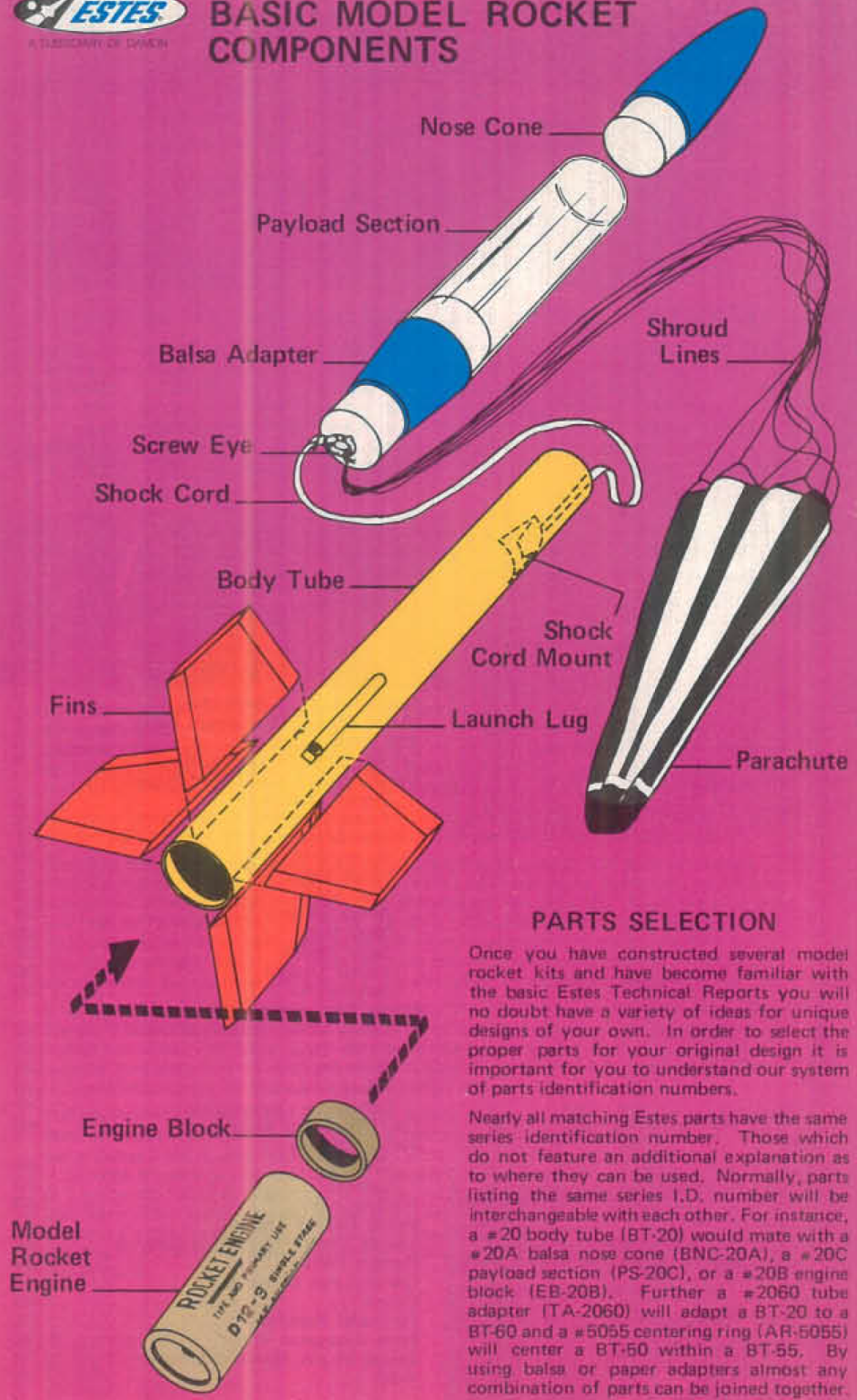
# BASIC MODEL ROCKET COMPONENTS




## PARTS SELECTION

Once you have constructed several model rocket kits and have become familiar with the basic Estes Technical Reports you will no doubt have a variety of ideas for unique designs of your own. In order to select the proper parts for your original design it is important for you to understand our system of parts identification numbers.

Nearly all matching Estes parts have the same series identification number. Those which do not feature an additional explanation as to where they can be used. Normally, parts listing the same series I.D. number will be interchangeable with each other. For instance, a #20 body tube (BT-20) would mate with a #20A balsa nose cone (BNC-20A), a #20C payload section (PS-20C), or a #20B engine block (EB-20B). Further a #2060 tube adapter (TA-2060) will adapt a BT-20 to a BT-60 and a #5055 centering ring (AR-5055) will center a BT-50 within a BT-55. By using balsa or paper adapters almost any combination of parts can be joined together.



# SKILL LEVEL CHART

### ROCKET TYPE CODING:

| | | |
|---|---|---|
| RTF | = | Ready-To-Fly |
| G | = | Goonybird |
| GS | = | Giant Scale |
| MB | = | Mini-Brute |
| SS | = | Single-Stage |
| MS | = | Multi-Stage |
| C | = | Cluster |
| BG | = | Boost Glider |
| S | = | Scale |

### SKILL LEVEL* EXPLANATION

| DESCRIPTION | TO BE BUILT BY:** |
|---|---|
| 1 Very Simple | Beginning Rocketeer |
| 2 Fairly Easy | Intermediate Rocketeer |
| 3 Average | Craftsman Rocketeer |
| 4 Challenging | Advanced Rocketeer |
| 5 Extremely Challenging | Expert Rocketeer |

| ENGINE | MODEL NAME | ROCKET TYPE | PAGE | SKILL LEVEL |
|---|---|---|---|---|
| SOLID PROPELLANT | Aero-Hi | MB | 14 | 1 |
| | Alpha | SS | 18 | |
| | Alpha III | SS | 19 | |
| | Banshee | RTF | 8 | |
| | Big Bertha | SS | 21 | |
| | EAC Viper | SS | 76 | |
| | Galaxy Guppy | G | 16 | |
| | Javelin | MB | 15 | |
| | Little John | MB | 14 | |
| | Mark II | SS | 19 | |
| | Mini-Bertha | MB | 12 | |
| | Mosquito | MB | 11 | |
| | Phantom | SS | 32 | |
| | Quasar | SS | 25 | |
| | Rogue | MB | 14 | |
| | Scout | SS | 20 | |
| | Screamer | MB | 11 | |
| | Sky Hook | SS | 19 | |
| | Star Snoop | G | 16 | |
| | Streak | SS | 20 | |
| | Super Flea | MB | 15 | |
| | Vampire | RTF | 9 | |
| | X-15 | RTF | 8 | |
| | X-Ray | SS | 21 | |
| SOLID PROPELLANT | Avenger | MS | 23 | 2 |
| | Bandit | SS | 39 | |
| | Beta | MS | 13 | |
| | Cherokee D | SS | 27 | |
| | Cloud Hopper | G | 17 | |
| | Demon | SS | 26 | |
| | Missile Toe | G | 16 | |
| | Patriot | SS | 24 | |
| | Red Max | SS | 25 | |
| | Sandhawk | S | 31 | |
| | Saros | SS | 38 | |
| | Sky Shriek | G | 17 | |
| | Wac Corporal | S | 31 | |
| | Zoom Broom | G | 17 | |
| SOLID PROPELLANT | Aerobee 300 | S | 32 | 3 |
| | Apogee II | MS | 30 | |
| | Arcas | S | 33 | |
| | Camroc Carrier | SS | 51 | |
| | Constellation | SS | 22 | |
| | Drifter | SS | 22 | |
| | Farside | MS | 30 | |
| | Goblin | SS | 27 | |

| ENGINE | MODEL NAME | ROCKET TYPE | PAGE | SKILL LEVEL |
|---|---|---|---|---|
| SOLID PROPELLANT | Gyrac | SS | 29 | 3 |
| | Interceptor | SS | 38 | |
| | Mini-Bomarc | S | 12 | |
| | Omega | MS | 30 | |
| | Pershing (Maxi-Brute) | GS | 41 | |
| | Saturn V (Semi-Scale) | SS | 33 | |
| | Scrambler | C | 26 | |
| | Shrike | MS | 23 | |
| | Sprint | SS | 22 | |
| | Star Blazer | MB | 13 | |
| | Starship Vega | SS | 24 | |
| | Scissors Wing Transport | BG | 29 | |
| | V-2 | S | 31 | |
| | V-2 (Maxi-Brute) | GS | 40 | |
| | Wolverine | MB | 15 | |
| SOLID PROPELLANT | Bomarc | S | 25 | 4 |
| | Honest John | S | 34 | |
| | Mars Snooper | SS | 37 | |
| | Orbital Transport | SS | 36 | |
| | SkyDart | BG | 28 | |
| | Trident | SS | 36 | |
| SOLID PROPELLANT | Mars Lander | SS | 37 | 5 |
| | Mercury Redstone | S | 35 | |
| | Saturn 1B | S | 34 | |
| | Saturn V | S | 35 | |
| COLD PROPELLANT | XS-1 | RTF | 44 | 1 |
| COLD PROPELLANT | Valkyrie I | SS | 44 | 2 |
| | Valkyrie II | SS | 44 | |
| COLD PROPELLANT | Sandpiper | S | 45 | 3 |
| | Sergeant | S | 45 | |
| COLD PROPELLANT | Astro Gnat | BG | 46 | 4 |
| | X-13 | BG | 46 | |
| COLD POWER | Marauder | SS | 47 | 2 |
| | Shark | SS | 47 | |
| | Yankee V | SS | 47 | |

Notes:
*In older Estes catalogs Skill Levels are referred to as Degrees of Challenge.
** See pages 76 and 77 for more information on Skill Levels.

SOLID PROPELLANT

# MODEL ROCKETRY SAFETY CODE

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 preloaded factory made 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 oz.) at liftoff, and the engines will contain no more than 113 grams (4 oz.) 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 rocket.

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.

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

*As a member of the Estes Model Rocketry Program, I promise to faithfully follow all rules of safe conduct as established in the above code.*

_____

Signed



ESTES
A SUBSIDIARY OF DAMON

# CITATION STARTER KIT

The Estes Citation Starter Kit includes everything the young rocketeer will need for his first mission. This deluxe kit, packed in a reusable Field Operations Box, includes the Quasar rocket with metallized plastic nose cone and fin assembly. This dramatic, easy-to-build model requires no painting. Shipping weight 4 lbs.

Citation Starter Kit included:

- ☐ Quasar Rocket
- ☐ Star-Port Launch Pad
- ☐ Launch Control System
- ☐ Rocket Support Spring
- ☐ 3 Safety Certified Estes Rocket Engines
- ☐ Recovery Wadding
- ☐ Hobby Knife
- ☐ Glue Packet
- ☐ Tape Discs
- ☐ Igniters

Cat. No. MKS-8 . . . . . $13.95

# STARTER KITS

## ALPHA III STARTER KIT

- ☐ High-flying, easy-to-assemble Alpha III kit, 3 engines, instructions.
- ☐ Porta-Pad — sturdy tripod launcher and Launch Control System.
- ☐ Fact-filled Estes' "Alpha Book of Model Rocketry"

Start with this complete outfit. The Astron Alpha III is easy to build and fly with plastic nose cone and fins. Demonstrating most rocketry principles, it can attain altitudes of 1000 feet or more. Parachute recovery brings your "bird" back for flight after flight. Both the Porta-Pad launcher and the complete launch control ignition system will serve you well throughout your rocketry career. To get you off to the right start, the comprehensive Estes' "Alpha Book of Model Rocketry" is included.

STARTER KIT INCLUDES: Alpha III kit, 3 engines — Two A8-3's and one B6-4; Launch Control System, FS-5; Porta-Pad Launcher; "Alpha Book of Model Rocketry"; Instructions. Batteries not included. Recommended batteries: Ray-O-Vac No. 918, Eveready No. 731, Burgess TW-1, or any 6 or 12 volt car battery.
Shipped in a sturdy field box with handle, perfect for engines, supplies, tools, etc. Shipping weight 3 lbs.

Cat. No. KS-7 ..... **$9.95**

## BEGINNER'S SPECIAL

For those who have a launcher available or wish to build their own (instructions included) all the above items except the field box, Porta-Pad and launch control system are included.
Shipping wt. 12 oz.

Cat. No. KS-2 ..... **$3.25**



# DELUXE STARTER KIT

It's all here! This is the most complete outfit offered to build, finish and fly a model rocket. At one low price you get everything needed to get ready for launch: rocket, instructions, engines, launcher, electrical ignition system, tools and paints. All you need is the battery power for ignition. Use with car or heavy duty lantern battery.

Packaged in a reusable field box with handle perfect for engines, supplies, tools, etc., this outfit is ideal — especially if you've done no model building before.

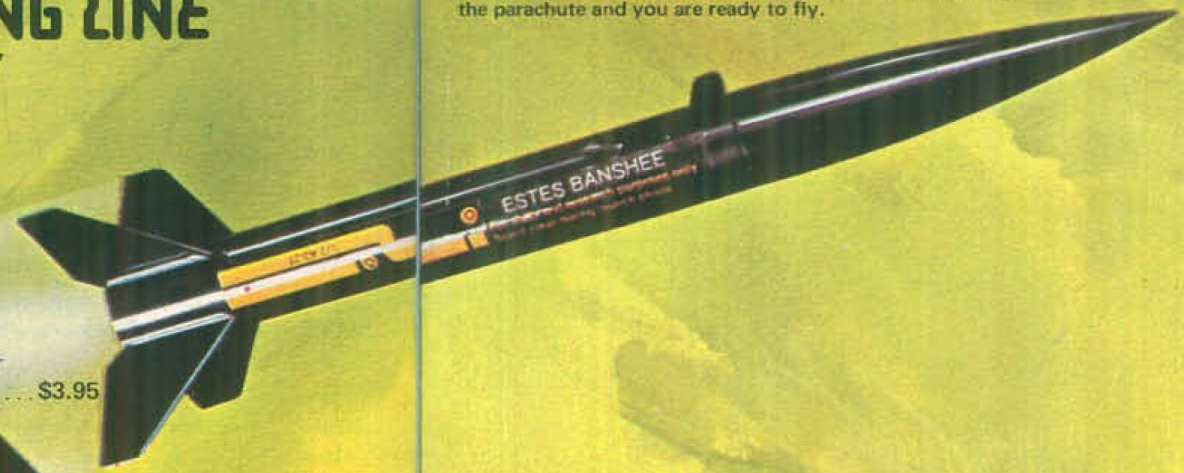
Kit includes all construction and finishing materials — a knife, glue, sandpaper, paints, brush, brush cleaner — supplies which can be used in building several more rockets. Shipping weight 3 lbs., 8 oz.

- ☐ Alpha Rocket (Balsa Nose Cone and Fins)
- ☐ Launch Control System
- ☐ Porta-Pad Launcher
- ☐ Estes' "Alpha Book of Model Rocketry"
- ☐ Three Safety Certified Engines
- ☐ Construction and Finishing Supplies

Cat. No. KS-8 ..... **$10.95**

# ESTES FIRING LINE
## READY TO FLY

Firing Line rockets require no construction. Assemble the parachute and you are ready to fly.




### BANSHEE
Skill Level 1
Sleek design
Great performance
Ogive nose cone
Bright decor
Quick engine installation
Mini-engine powered

**Specifications**
Length: 9.6"
Body Dia.: 1.0"
Weight: 1.25 oz.
Shipping wt.: 14 oz.

**Recommended Engines**
A3-4T (First flight) A10-3T

Cat. No. 0703 . . . . . $3.95

### VAMPIRE
Skill Level 1
Completely decored
High performance design
Made of durable plastic
Sharp decals
Mini-engine powered

**Specifications**
Length: 9.14"
Body Dia.: .94"
Weight: 1.5 oz.
Ship. wt.: 14 oz.

**Recommended Engines**
A3-4T (First flight)
A10-3T

Cat. No. 0704 . . $3.95

### X-15
Scale model
Skill Level 1
Detailed styling
Authentic U.S.A.F. decor
Impressive desk model
Parachute recovery

**Specifications**
Length: 9.5"
Wing Span: 3.6"
Weight: 1.33 oz.
Shipping wt.: 14 oz.

**Recommended Engines**
A3-4T (First flight) A10-3T

Cat. No. 0705 . . . . . $3.95

Engines not included

# ESTES FIRING LINE STARTER KIT Ready-to-Launch in Minutes

The Firing Line Starter Kit is a rugged, portable system designed to provide countless launches for your enjoyment.

It requires only 4 alkaline penlight batteries (size AA) to become completely operational.

Shipping weight 2 lbs., 8 oz.

The Firing Line Starter Kit includes:

- ☐ Ready-To-Fly Vampire Model Rocket
- ☐ Firing Line Launch Pad
- ☐ Safety Interlock Key
- ☐ Pre-soldered Micro-Clips
- ☐ Metal Blast Deflector
- ☐ Pre-assembled Launch Controller
- ☐ 24" Launch Rod
- ☐ Three A3-4T Safety Certified Mini-Engines
- ☐ Recovery Wadding
- ☐ Igniters
- ☐ Tape Discs

Cat. No. 0701 . . . . . **ONLY $14.95**

## Features Everything you need to lift-off TODAY!

# mini-BRUTES

## MORE MINI-BRUTES . . . Mini-Priced, Too.

### MOSQUITO

Skill Level 1

Fantastic performance. Featherweight recovery. Balsa and paper construction. Simple spray paint decor.

**Specifications**

| | |
|---|---|
| Body Dia. | 0.541" (13.73mm) |
| Length | 3.9" (9.9cm) |
| Weight | 0.1 oz. (2.83 gr) |

Shipping wt. 4 oz.

**Recommended Engines**

1/4A3-2T (First flight) 1/4A3-4T
1/2A3-4T A3-6T A10-3T

Cat. No. TK-1 . . . . . **$ .69**

### SCREAMER

Skill Level 1

Spectacular streamer recovery. Balsa and paper construction with simple paint pattern and decals.

**Specifications**

| | |
|---|---|
| Body Dia. | 0.541" (13.73mm) |
| Length | 7.8" (19.81cm) |
| Weight | 0.255 oz. (6.37 gr) |

Shipping wt. 6 oz.

**Recommended Engines**

1/4A3-2T (First flight) 1/4A3-4T
1/2A3-4T A3-6T A10-3T

Cat. No. TK-2 . . . . . **$1.50**

Super soaring, cloud busting Estes Mini-Brutes are the favorites of rocketeers. Blast off to mini-model rocketry fun with single stage, scale, multistage and exotic designed Estes Mini-Brutes.

## MINI BERTHA

Skill Level 1

The really tough Mini-Brute. Parachute recovery with colorful 8" plastic 'chute. Two color decal sheets. Balsa and paper construction.

### Specifications

Length 11.25" (25.58cm)
Body Dia. 0.736" (18.68mm)
Weight 0.484 oz. (13.71 gr)
Shipping wt. 6 oz.

### Recommended Engines

(First flight)
1/2A3-2T
A3-4T
A10-3T

Cat. No. TK-3
**$1.75**

## MINI-BOMARC

Skill Level 3

Famous flying scale model. Authentic full color decals for Canadian Air Force decor. Die cut and pre-printed fins.

### Specifications

| | |
|---|---|
| Length | 11.75" (30.2cm) |
| Body Dia. | 0.736" (18.7mm) |
| Weight | 1.0 oz. (28 gr) |
| Wing Span | 4.5" (11.5cm) |
| Shipping wt. | 5 oz. |

### Recommended Engines

1/2A3-2T (First flight) A10-3T
A3-4T

Cat. No. TK-5 . . . . . **$3.25**



## BETA

Skill Level 2

Can be flown single stage or with a booster for high flights. Low weight, streamlined design with parachute recovery.
Pat. No. 3,392,302

### Specifications

| | |
|---|---|
| Length | 13.76" (35.0cm) |
| Body Dia. | 0.736" (18.7mm) |
| Weight | 0.75 oz. (21.2 gr) |
| Shipping wt. | 6 oz. |

### Recommended Engines

UPPER STAGE
1/4A3-2T (First flight) A10-3T
1/2A3-4T
A3-6T

BOOSTER STAGE
1/2A3-0T (First flight) A10-0T
A3-0T

Cat. No. TK-45 . . . . . **$1.75**

## STAR BLAZER

Skill Level 3

Real space ship look with its forward crew cockpit canopy, structural fairing strips and streamlined fins. Quick change engine mount. Payload section.

### Specifications

| | |
|---|---|
| Length | 11.5" (29.2cm) |
| Body Dia. | 0.736" (18.7mm) |
| Weight | 0.73 oz. (20.7 gr) |
| Shipping wt. | 5 oz. |

### Recommended Engines

1/4A3-2T (First flight)
1/2A3-2T
A3-4T
A10-3T

Cat. No. TK-31 . . . . **$2.50**

Engines not included

ESTES
A DIVISION OF DAMON

# NEW! mini-BRUTES

New from Estes, world-leader in Model Rocketry! 6 new MINI-BRUTES have super-powered mini-engines to send them soaring high, wide and happy into space — to open up a whole new world of mini-rocketry fun and excitement!

## AERO-HI

Skill Level 1

A sounding rocket vehicle of scale-like appearance. High performance design with realistic decor. Features fin strap-on and payload coupler decals, ogive nose cone.

### Specifications

| | |
|---|---|
| Length | 11.6" (29.5cm) |
| Diameter | 0.736" (18.7mm) |
| Weight | 0.75 oz. (21.2 gr) |
| Shipping wt. | 6 oz. |
| Recovery | 8" Parachute |

### Recommended Engines

1/4A3-2T (First Flight)
1/2A3-2T
A3-4T

Cat. No. 0817. . . . . $1.75

## LITTLE JOHN

Skill Level 1

Authentic appearance of a semi-scale model. Surface to surface military vehicle with U.S. Army decor.

### Specifications

| | |
|---|---|
| Length | 14.0" (35.6cm) |
| Diameter | 0.976" (24.8mm) |
| Weight | 0.875 oz. (21.2 gr) |
| Shipping wt. | 6 oz. |
| Recovery | 12" Parachute |

### Recommended Engines

1/2A3-2T (First flight)
A3-4T A10-3T

Cat. No. 0819 . . . . . $1.95

## ROGUE

Skill Level 1

Sounding research vehicle. A scale-like appearance with authentic decor. Excellent for sport flying has super performance.

### Specifications

| | |
|---|---|
| Length | 11.7" (29.7cm) |
| Diameter | 0.736" (18.7mm) |
| Weight | 0.75 oz. (21.2 gr) |
| Shipping wt. | 6 oz. |
| Recovery | 8" Parachute |

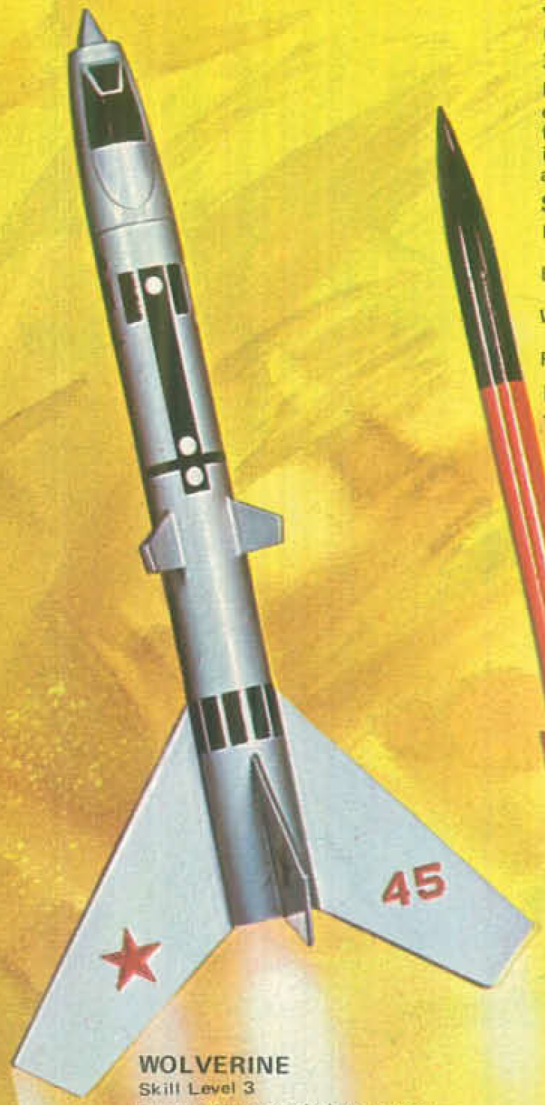
### Recommended Engines

1/4A3-2T (First flight)
1/2A3-2T
A3-4T
A10-3T

Cat. No. 0818. . . . . $1.75

Engines not included






## WOLVERINE

Skill Level 3

Russian Hypersonic Interceptor Futuristic near-space design with two color Russian decals. Scram-jet appearance with ram jet nose cone and cockpit canopy.

### Specifications

| | |
|---|---|
| Length | 11.25" (28.6cm) |
| Diameter | 0.976" (24.8mm) |
| Weight | 0.875 oz. (24.8 gr) |
| Recovery | 12" Parachute |

### Recommended Engines

1/2A3-2T (First flight) A3-4T
A10-3T

Cat. No. 0816 . . . . . $2.25

## JAVELIN

(Combo Kit) Skill Level 1

2 for 1

Easy to build competition design. Scale-like appearance, fantastic performance. Sounding rocket vehicle, reaches altitudes over 1,000 feet.

### Specifications

| | |
|---|---|
| Length | 12.4" (31.5cm) |
| Diameter | 0.541" (13.7mm) |
| Weight | 0.34 oz. (9.6 gr.) |
| Recovery | Streamer |

### Recommended Engines

1/4A3-2T 1/2A3-2T
A3-4T A10-3T

Use 1/4A3-2T for first flights.

2 FOR THE PRICE OF 1

## SUPER FLEA

(Combo Kit)

This kit has competition design with ultra-high performance. Will reach incredible altitudes with ogive nose cone and swept fins. Easy to Build.

### Specifications

| | |
|---|---|
| Length | 7.34" (18.6cm) |
| Diameter | 0.541" (13.7mm) |
| Weight | 0.158 oz. (4.5 gr) |
| Recovery | "Break-apart" |

### Recommended Engines

1/4A3-2T (First flight) 1/2A3-2T
1/2A3-4T A3-4T A10-3T

(Combo Kit)

Cat. No. 0815 . . . . . $1.95

# ESTES' Goonybirds T.M.

## STAR SNOOP

Skill Level 1
Eyeball Design
Die-cut Scalloped Fins
Plastic Nose Cone
Freaky Stick-on Decals
12" Parachute Recovery
Cat. No. 0850 only $2.50

## GALAXY GUPPY

Skill Level 1
Whale of a Rocket
Fishy Flights
Die-cut/ Printed Fins
Easy-to-Assemble
Quick Release Engine Mount
Cat. No. 0852 only $2.50

## MISSILE TOE

Skill Level 2
Fleet-footed Express
Toenail Design
Sore Toe Appearance
Die-Cut Printed Fins
12" Parachute Recovery
Cat. No. 0854 only $2.50

SPECIAL ADDED BONUS

Receive a free GOONYBIRD display stand with each new, zany, flying freak.

In addition to the recommended engines, try the New Mini-Brute A10-3T engine with all new Gooneybirds.



## The Zaniest Flying Freaks in the Universe

## SKY SHRIEK

Skill Level 2
Big Mouth Design
Screaming Good Flights
Double-Scalloped Die-cut Fins
Plastic Nose Cone
Full Color Stick-on Decals
Cat. No. 0855 only $2.50

## ZOOM BROOM

Skill Level 2
Spell Bound Performance
Flies Best with a Full Moon
Clean Sweep Design
Plastic Nose Cone
Zany Stick-on Decals
Cat. No. 0853 only $2.50

Goonybirds are perfect for small field launchings and great for crazy demonstrations.

## CLOUD HOPPER

Skill Level 2
Cottontail Design
Rabbit's Foot Appearance
Sleek Ears
Full Color Stick-on Decals
Quick Release Engine Mount
Cat. No. 0851 only $2.50

Gooney Birds are approximately 8" in length, and 1.637" in diameter.
Shipping wt. 12 oz.

Recommended Engines for all Goonybirds:
1/2A3-2T, A3-4T
Use A3-4T for first flights

Engines not included

# SINGLE STAGE

First choice for beginning rocketeers. Easy-to-build. Easy-to-fly. Parachute recovery (except the Mark, which has streamer recovery). All kits come complete, ready-to-build, with instructions. Engines not included.

## ALPHA

Skill Level 1

Estes' most popular rocket. It will still be a favorite as your fleet grows.

**Specifications**

| | |
|---|---|
| Length | 12.25" (31.1cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 0.8 oz. (23 gr) |
| Shipping wt. | 5 oz. |

**Recommended Engines**

1/2A6-2 A8-3
B4-4 B6-4
C6-5
Use A8-3 for first flights.

Cat. No. K-25 . . . **$1.95**

## ALPHA III

Skill Level 1

Just like the Alpha except it's easier to assemble and fly. Plastic nose cone and fins.

**Specifications**

| | |
|---|---|
| Length | 12.25" (31.1 cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 1.2 oz. (33.9 gr) |
| Shipping wt. | 10 oz. |

**Recommended Engines**

1/2A6-2 A8-3
B4-4 B6-4
C6-5
Use A8-3 for first flights.

Cat. No. K-56 . . . . **$2.25**

## MARK II

Skill Level 1

Ideal for sport or demonstration flying. Top-notch performance every time.

**Specifications**

| | |
|---|---|
| Length | 9.1" (23.1cm) |
| Body Dia. | 0.765" (19.4mm) |
| Weight | 0.7 oz. (20 gr) |
| Shipping wt. | 5 oz. |

**Recommended Engines**

1/2A6-2 A8-3
B6-4 C6-5
Use 1/2A6-2 for first flights.

Cat. No. K-2 . . . . . **$1.50**

## SKY HOOK

Skill Level 1

An exciting but easy-to-build rocket. Terrific performance flight after flight.

**Specifications**

| | |
|---|---|
| Length | 12" (30.5cm) |
| Body Dia. | 0.765" (19.4mm) |
| Weight | 0.7 oz. (20 gr) |
| Shipping wt. | 5 oz. |

**Recommended Engines**

1/2A6-2 A8-3
B4-4 B6-6
C6-7
Use 1/2A6-2 for first flights.

Cat. No. K-8 . . . . . **$1.75**

**Plastic Replacement Parts FOR ALPHA III**

| | | |
|---|---|---|
| Nose Cone | PNC-50K | $ .60 |
| Fins | PFS-50A | $ .60 |

Engines not included

These kits are your next step on the way to becoming a real expert. They are still easy to build and fly, single-stage rockets but with some special purpose features. All kits come complete, ready-to-build, with instructions. Engines not included.



## STREAK

Skill Level 1

Lightweight (1/8 oz. without engine) and wind-cheating design . . . terrific for contests and records. Feather-weight recovery.

### Specifications

| | |
|---|---|
| Length | 5.6" (14.2cm) |
| Body Dia. | 0.720" (18.3mm) |
| Weight | 0.1 oz. (3 gr) |
| Shipping wt. | 4 oz. |

### Recommended Engines

| | |
|---|---|
| 1/2A6-4 | A8-5 |
| B6-6 | C6-7 |

Use 1/2A6-4 for first flights.

Cat. No. K-4 . . . . . $ .79

## SCOUT

Skill Level 1

This kit teaches balance principles. A must for the rocketeer learning to design his own models. Tumble recovery.

Pat. No. 3,114,317

## SCOUT

### Specifications

| | |
|---|---|
| Length | 7" (17.8cm) |
| Body Dia. | 0.765" (19.4mm) |
| Weight | 0.3 oz. (9 gr) |
| Shipping wt. | 2 oz. |

### Recommended Engines

| | |
|---|---|
| 1/2A6-2 | A8-3 |
| B6-4 | C6-5 |

Use 1/2A6-2 for first flights.

Cat. No. K-1 . . . . . $1.00

## Astron BIG BERTHA

Skill Level 1

Ideal for demonstration flights. Slow realistic take-off that fascinates all spectators. Parachute recovery.

### Specifications

| | |
|---|---|
| Length | 24" (61cm) |
| Body Dia. | 1.637" (41.6mm) |
| Weight | 2.2 oz. (64 gr) |
| Shipping wt. | 11 oz. |

### Recommended Engines

| | |
|---|---|
| A8-3 | B4-2 |
| B6-2 | B6-4 |
| C6-5 | |

Use B6-2 for first flights.

Cat. No. K-23 . . . . . $3.95

## X-RAY

Skill Level 1

Features a large see-through payload section. Perfect for research work of all kinds. Parachute recovery.

### Specifications

| | |
|---|---|
| Length | 16.75" (42.5cm) |
| Body Dia. | 0.736" (18.7mm) |
| Payload Sec. Dia. | 0.976" (24.8mm) |
| Weight | 0.7 oz. (20 gr) |
| Shipping wt. | 5 oz. |

### Recommended Engines

| | |
|---|---|
| 1/2A6-2 | A8-3 |
| B6-4 | B14-5 |
| C6-5 | |

Use A8-3 for first flights.

Cat. No. K-18 . . . . . $2.50

Engines not included.

ESTES
A SUBSIDIARY OF DAMON

# SINGLE STAGE

## SPRINT
Skill Level 3
Highest performance in its class . . . up to 1,600 ft. with C6-7 engine. Pre-cut fins and tail cone. Decals included. Streamer recovery.

**Specifications**

| | |
|---|---|
| Length | 13.8" (35cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 1.0 oz. (28 gr) |
| Shipping wt. | 7 oz. |

**Recommended Engines**

| | | |
|---|---|---|
| 1/2A6-2 | A8-3 | B4-6 |
| B6-6 | C6-7 | B14-5 |

Use A8-3 for first flights.
Cat. No. K-49 . . . . . $2.95

## CONSTELLATION
Skill Level 3
The perfect single-stage high performance rocket for payload work or just fun flying. Long slender lines, "landing shocks" on each fin tip give a futuristic look. See-through payload section.

**Specifications**

| | |
|---|---|
| Length | 16.2" (41.4cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 1.0 oz. (28gr) |
| Shipping wt. | 5 oz. |

**Recommended Engines**

| | |
|---|---|
| 1/2A6-2 | A8-3 (First flights) |
| B6-4 | B14-5 |
| C6-5 | |

Cat. No. K-35 . . . . . $2.95

## DRIFTER
Skill Level 3
Low weight and large chute capacity make this tough bird great for competition, test or sport flying. Interchangeable chutes: 24" for competition and 12" for test and sport.

**Specifications**

| | |
|---|---|
| Length | 14.3" (36.3cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 1 oz. (28gr) |
| Shipping wt. | 5 oz. |

**Recommended Engines**

| | |
|---|---|
| 1/2A6-2 (First flights) | A8-3 |
| B6-4 | C6-5 |

Cat. No. K-14 . . . . . $2.75

ESTES
A SUBSIDIARY OF DAMON

# TWO STAGE ROCKETS

Multi-staging represents the next level of rocketry skills. Demonstrates how real space ships operate. The first stage is always ignited electrically. Second stage ignition occurs automatically upon the burnout of the first stage. All kits come complete, ready-to-build with instructions. Engines not included.

## Astron SHRIKE
Skill Level 3
New easy staging method . . . just insert engines, plug the stages together and you're ready to go! Pre-cut fins. Transparent payload section with foam end pads.

**Specifications**

| | |
|---|---|
| Length | 29.5" (74.9cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 2.25 oz. (64 gr) |
| Shipping wt. | 11 oz. |

**Recommended Engines**

UPPER STAGE
1/2A6-4
A8-5
B6-4
B6-6 (First flights)
B14-7
C6-7

BOOSTER
A8-0
B6-0 (First flights)
B14-0
C6-0

Cat. No. K-46 . . $5.75

## AVENGER
Skill Level 2
Long slender lines give this bird the sounding rocket look. Large 18" chute brings payload section back gently, booster employs tumble recovery. Pat. No. 3,292,302

**Specifications**

| | |
|---|---|
| Length | 32" (81.3cm) |
| Body Dia. | 1.325" (33.7mm) |
| Weight | 2.7 oz. (77 gr) |
| Shipping wt. | 16 oz. |

**Recommended Engines**

UPPER STAGE
A8-5
B6-6 (First flights)
C6-7

BOOSTER
A8-0
B6-0 (First flights)
B14-0
C6-0

Cat. No. K-38 . . . $4.50

Engines not included

ESTES
A SUBSIDIARY OF DAMON

## PATRIOT

Skill Level 2

Big, burly and impressive sport model — over 25" tall. Spectacular "All-American" red, white and blue decor. Two big decal sheets, 5 colors in all. Fast, easy construction with molded plastic nose cone and die cut balsa fins. Recovery by 18" parachute.

### SPECIFICATIONS

Length 26" (66cm)
Body Dia. 1.637" (41.6mm)
Weight 3.3 oz. (94 gr)
Shipping wt. 12 oz.

### RECOMMENDED ENGINES

B4-2 (First flights) B6-4 C6-5
Cat. No. KC-3 . . . . . $4.50

## STARSHIP VEGA

Skill Level 3

A look into tomorow . . . deep space, interplanetary exploration vehicle. Great sport flying performance. Futuristic landing legs on rear fins. Complete with 3-color decal sheet, die cut fins and bright foil body wrap-on. Parachute (12") recovery system.

### SPECIFICATIONS

Length 19.5" (49.5cm)
Body Dia. 0.976" (24.8mm)
Weight 1.88 oz. (53 gr)
Shipping wt. 12 oz.

### RECOMMENDED ENGINES

B4-2 (First flights) B6-4 C6-5
Cat. No. KC-4 . . . . . $5.50

Engines not included



## RED MAX

Skill Level 2

Contemporary, super-fun model. Large stable design gives great sport performance. Big fun "Red Max" decal sheet. Molded plastic nose cone and die cut fins. Parachute recovery (18" chute) for perfect flight after flight.

### Specifications

Length 16.25" (41.3cm)
Body Dia. 1.637" (41.6mm)
Weight 2.375 oz. (67 gr)
Shipping wt. 12 oz.

### Recommended Engines

B4-2(First flights) B6-2
B6-4 C6-5
Cat. No. KC-2 . . . . . $3.50

## QUASAR

Skill Level 1

Dramatic but easy-to-build model for beginners. Bright metallized plastic nose cone and fin assembly. Metallized and pre-printed mylar wrap-on decal for the body tube. No painting required! Recovery by 12" plastic parachute for many, many flights.

### Specifications

Length 14" (35.6cm)
Body Dia. 0.976" (24.8mm)
Weight 1.5 oz. (42 gr)
Shipping wt. 10 oz.

### Recommended Engines

A8-3(First flights)
B4-2
C6-5
Cat. No. KC-1
$2.25

## BOMARC

Skill Level 4

A beautifully detailed, superb scale rendering of the U.S.A.F. surface-to-air interceptor missile. Features molded plastic components and die cut balsa parts. Big, authentic decals, vinyl stripping and metallized mylar panels. At apogee, the engine pod is ejected and comes down by parachute while the model returns as a boost glider . . . with a gentle, flat glide pattern.

### Specifications

Length 23" (58.4cm)
Body Dia. 1.325" (33.6mm)
Weight 3.8 oz. (108 gr)
Shipping wt. 12 oz.

### Recommended Engines

B4-2 B6-2(First flights) C6-3
Cat. No. KC-5 . . . . . $6.50

## DEMON

Skill Level 2

NASA research-type vehicle. Comes with easy-to-see bright silver press-on foil trim. When applied to the payload section, the trim actually acts as a flashing beacon to help you with in-flight tracking and recovery.

### Specifications

| | |
|---|---|
| Length | 26.5" (67.3cm) |
| Body Dia. | 1.325" (33.6mm) |
| Weight | 2.75 oz. (78 gr) |
| Shipping wt. | 12.5 oz. |

### Recommended Engines

D12-7
Also:
B6-4 B14-5 C6-5
(Using EM-2050 Adapter)

Cat. No. K-58
**$4.95**

## SCRAMBLER

Skill Level 3

Huge see-through payload section holds an egg or any other large payload . . . engine cluster design gives the power to boost it. Can carry an egg to over 1,000 ft. and gently set it down. Two chutes. Decals. Includes Tech Report on clustering.

### Specifications

| | |
|---|---|
| Length | 23.5" (59.7cm) |
| Body Dia. | 1.637" (41.6mm) |
| Payload Dia. | 1.796" (45.6mm) |
| Weight | 2.8 oz. (79 gr) |
| Shipping wt. | 13 oz. |

### Recommended Engines

Requires 3 identical engines at launch.
A8-3 B6-4
B14-5 C6-5
Use B6-4 for first flights.

Cat. No. K-37 . . . . . **$5.95**



## CHEROKEE-D

Skill Level 2

Big strong "D" engine rocket that will practically sail out of sight. 18" chute brings it down safely flight after flight. Pre-cut fins, quick-change engine mount, decal sheets. Beautiful kit.

### Specifications

| | |
|---|---|
| Length | 21.6" (54.9cm) |
| Body Dia. | 1.325" (33.7mm) |
| Weight | 2.75 oz. (78 gr) |
| Shipping wt. | 11 oz. |

### Recommended Engines

D12-5 D12-7
Use D12-5 for first flights.

Cat. No. K-47 . . . . . **$3.95**

## GOBLIN

Skill Level 3

Powerful. Fast. This spooky kit gets up and moves. It's the rocket you'll need a good recovery team for. Adapters permit a wide range of engine possibilities.

### Specifications

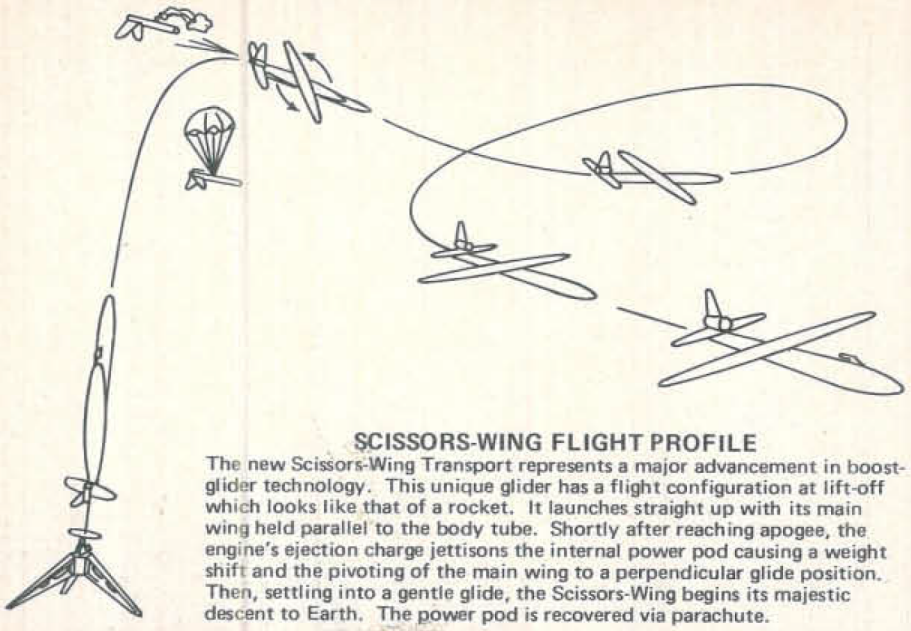
| | |
|---|---|
| Length | 14.32" (36.3cm) |
| Body Dia. | 1.325" (33.6mm) |
| Weight | 2.0 oz. (56.6 gr) |
| Shipping wt. | 7 oz. |

### Recommended Engines

D-12-7 (or others like A8-3, B6-4, and C6-5 with adapter EM-2050).

Cat. No. K-55 . . . . . **$3.50**

Engines not included.



## SCISSORS-WING FLIGHT PROFILE

The new Scissors-Wing Transport represents a major advancement in boost-glider technology. This unique glider has a flight configuration at lift-off which looks like that of a rocket. It launches straight up with its main wing held parallel to the body tube. Shortly after reaching apogee, the engine's ejection charge jettisons the internal power pod causing a weight shift and the pivoting of the main wing to a perpendicular glide position. Then, settling into a gentle glide, the Scissors-Wing begins its majestic descent to Earth. The power pod is recovered via parachute.

## GYROC

Skill Level 3

An amazing and unique "helicopter" recovery system makes the Gyroc a must for your fleet. Unusual appearance.

**Specifications**

| | |
|---|---|
| Length | 9.8" (24.9cm) |
| Body Dia. | 0.736" (18.7mm) |
| Weight | 0.6 oz. (17 gr) |
| Shipping wt. | 5 oz. |

**Recommended Engines**

1/2A6-2 A8-3
B6-4 C6-5

Use 1/2A6-2 for first flights.

Cat. No. K-24 . . . **$1.75**

## SKYDART

Skill Level 4

This totally new rocket-boosted glider design features an internal rear ejection power pod. Streamlined "Business SST" body styling results in a high performance glide along with good reliability. Parachute recovery brings power pod back safely. Pat. No. 3,157, 960

**Specifications**

| | |
|---|---|
| Wing Span | 12.6" (31.8cm) |
| Length | 15.8" (40cm) |
| Body Dia. | .976" (24.8mm) |
| Weight | 1.25 oz. (35.4 gr) |
| Weight of Glider with Pod | 2.5 oz. (70.8 gr) |
| Shipping wt. | 12 oz. |



# ESTES BOOST GLIDERS

## NEW SCISSORS-WING TRANSPORT

Skill Level 3

This exciting bird introduces the revolutionary new Scissors-Wing concept. Features super SST styling and high flight reliability. Capable of glide times of more than 60 seconds. Internal ejection power pod features vertical stabilizer fins. Comes ready-to-assemble with die-cut parts and two-color decals.

**Specifications**

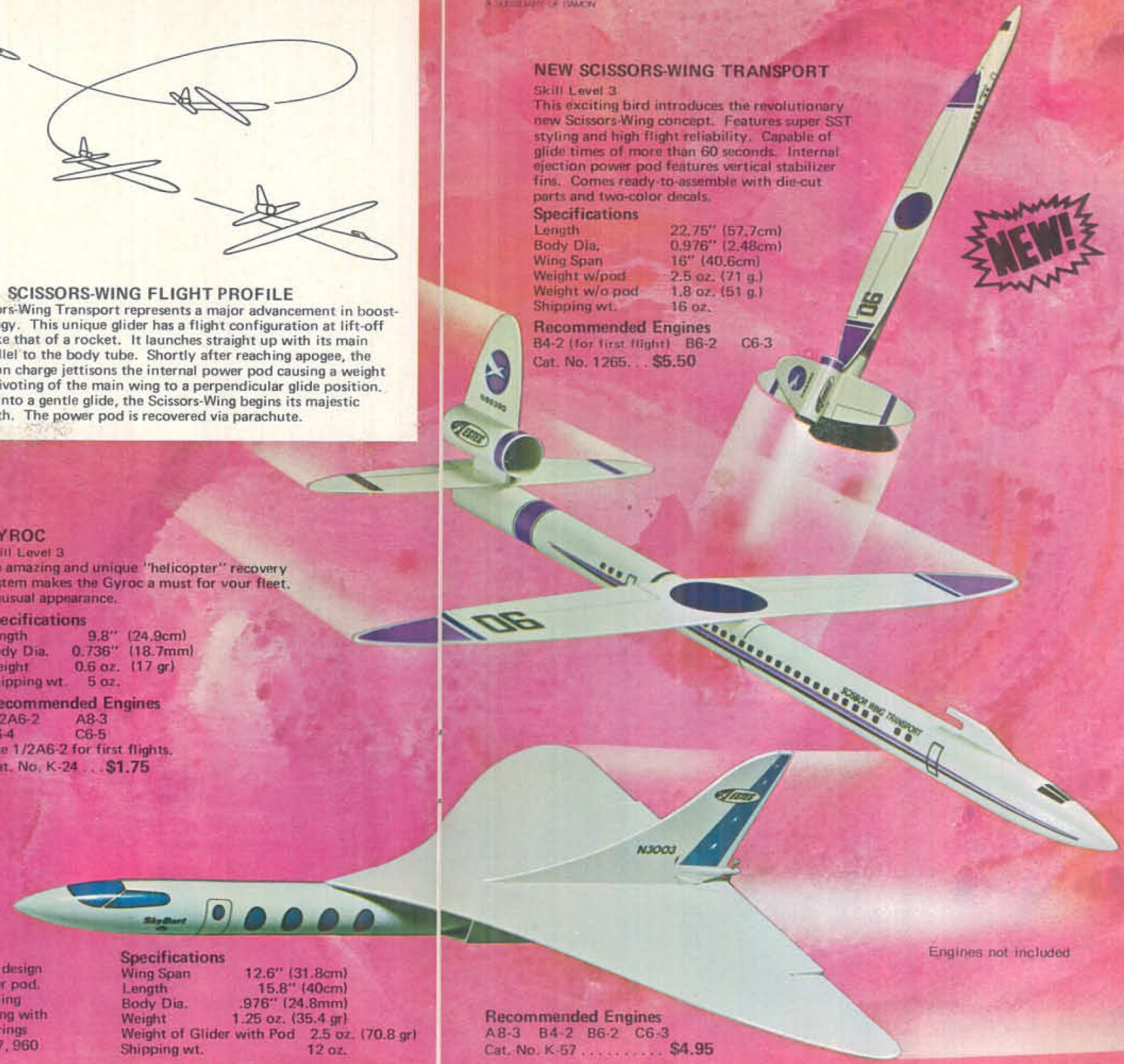
| | |
|---|---|
| Length | 22.75" (57.7cm) |
| Body Dia. | 0.976" (2.48cm) |
| Wing Span | 16" (40.6cm) |
| Weight w/pod | 2.5 oz. (71 g.) |
| Weight w/o pod | 1.8 oz. (51 g.) |
| Shipping wt. | 16 oz. |

**Recommended Engines**

B4-2 (for first flight) B6-2 C6-3

Cat. No. 1265. . . **$5.50**

NEW!




Engines not included

**Recommended Engines**

A8-3 B4-2 B6-2 C6-3

Cat. No. K-57 . . . . . **$4.95**

# MULTI-STAGE

## OMEGA
Skill Level 3
The ultimate in big engine performance blasts off heavy payloads such as the Cineroc movie camera (camera not included). Simplified pop-and-go staging.

### Specifications
With Payload Section and nose cone (for use without Cineroc)

| | |
|---|---|
| Length | 30.5" (77.5cm) |
| Body Dia. | 1.637" (41.6mm) |
| Weight | 4.0 oz. (113 gr) |
| Shipping wt. | 15 oz. |

### Recommended Engines
Booster: D12-0
Upper Stage: D12-7
Single Stage Flights: D12-5
Use D12-5 for first flights.

Cat. No. K-52P **$6.50**

## Astron APOGEE II
Skill Level 3
Ultimate in 2-stage performance and reliability. See-through payload section lets you observe specimens without removing them from the rockets. Includes Tech Report on Multi-Staging.
Pat. No. 3,292,302.

### Specifications

| | |
|---|---|
| Length | 14.7" (37.5cm) |
| Body Dia. | 0.736" (18.7mm) |
| Weight | 0.6 oz. (17 gr) |
| Shipping wt. | 6 oz. |

### Recommended Engines
UPPER STAGE
1/4A3-4 1/2A6-4
B4-6 A8-5
B14-7 B6-6
C6-7
Use 1/2A6-4 for first flights.

BOOSTER
1/2A6-0 A8-0
B6-0 B-140
C6-0
Use 1/2A6-0 for first flights.

Cat. No. K-5 **$2.75**

## FARSIDE
Skill Level 3
Sophisticated 3-stage ultra-high altitude probe. Top stage flies to well over 2,500 feet. Includes Tech Report on staging.
Pat. No. 3,292,302.

### Specifications

| | |
|---|---|
| Length | 21.5" (54.6cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 2.0 oz. (57 gr) |
| Shipping wt. | 6 oz. |

### Recommended Engines
FIRST STAGE
1/2A6-0 A8-0 B14-0
Use B14-0 for first flights.

SECOND STAGE
1/2A6-0 A8-0 B6-0
B14-0 C6-0
Use 1/2A6-0 for first flights.

TOP STAGE
1/2A6-4 A8-5 B4-6
B6-6 B14-6 C6-7
Use 1/2A6-4 for first flights.

Cat. No. K-12 ..... **$3.95**



# Scale Models

## V-2
Skill Level 3
This is a scale model of the rocket that opened the door to the space age. It was the first to solve the problems of propulsion and guidance.

### Specifications

| | |
|---|---|
| Length | 11.2" (28.4cm) |
| Body Dia. | 1.325" (33.7mm) |
| Weight | 1.4 oz. (40 gr) |
| Shipping wt. | 7 oz. |

### Recommended Engines
1/2A6-2 A8-3
B6-4 B14-5
C6-5
Use B6-4 for first flights.

Cat. No. K-22 **$3.75**

## WAC CORPORAL
Skill Level 2
A high flying scale model . . . easy for the novice to build yet interesting for the experienced rocketeer.

### Specifications

| | |
|---|---|
| Length | 11.8" (30cm) |
| Body Dia. | 0.736" (18.7mm) |
| Weight | .7 oz. (20 gr) |
| Shipping wt. | 5 oz. |

### Recommended Engines
1/2A6-2 A8-3
B6-4 C6-5
Use 1/2A6-2 for first flights.

Cat. No. K-11 ..... **$1.95**

## SANDHAWK
Skill Level 2
An ultra-detailed 2½" tall scale model. Features all plastic fins, tail assembly, nose cone and payload section. Recovery is dual parachute type.

### Specifications

| | |
|---|---|
| Length | 30.1" (76.5cm) |
| Body Dia. | 1.325" (33.7mm) |
| Weight | 5 oz. (14.2 gr) |
| Shipping wt. | 11 oz. |

### Recommended Engines
B4-2 C6-3 D12-5
Use D12-5 for first flights. Use EM-2050 adapter for other than "D" engines (adapter not included.)

Cat. No. K-51 ..... **$3.95**

**Replacement Plastic Parts Kit:**
(SANDHAWK ONLY)
Includes tail section, fins, payload section, nose cone and antennae.
Cat. No. PRP-51 . . . **$1.50**

Engines not included

## AEROBEE 300

Skill Level 3

Here is a reproduction of the Aerobee 300, a famous sounding rocket. It was used in a great many space experiments during the 1950s and 1960s.

**Specifications**

| | |
|---|---|
| Length | 20" (50.8cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 0.9 oz. (26 gr) |
| Shipping wt. | 14 oz. |

**Recommended Engines**

1/2A6-2 A8-3
B6-4 C6-5
Use A8-3 for first flights.

Cat. No. K-17 . . . . $2.75

Engines not included

## PHANTOM

This bird will never fly, but it makes a great demonstration model. Shows all of the insides of a model rocket . . . even a special version of a C6-5 engine. Ideal for displays and demonstrations.

**Specifications**

| | |
|---|---|
| Length | 12.6" |
| Body Dia. | 0.976" |
| Weight | 1.35 oz. |

Cat No. K-7B . . . . $2.50

## SATURN V (Semi-Scale)

Skill Level 3

Though not fully detailed this model of the Saturn V is an amazingly good representation of our nation's largest launch vehicle that put the first man on the moon. Scaled 1 to 242 it is a practical size to build.

**Specifications**

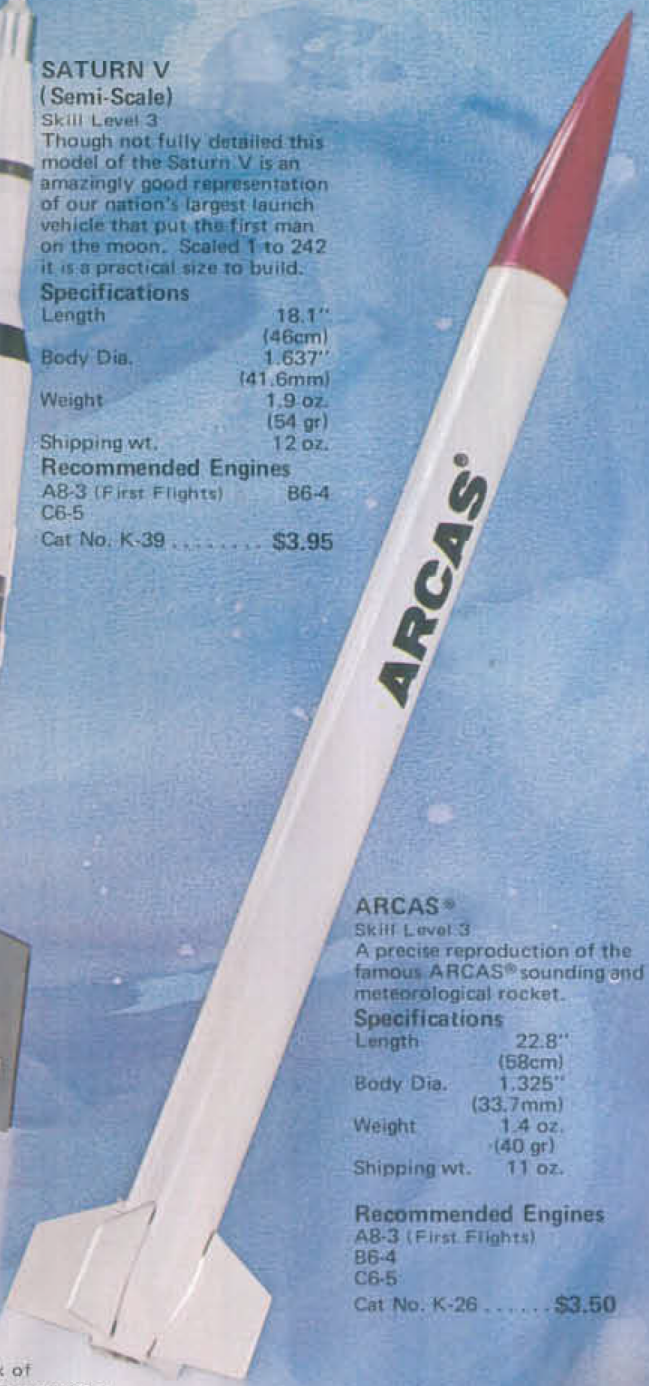
| | |
|---|---|
| Length | 18.1" (46cm) |
| Body Dia. | 1.637" (41.6mm) |
| Weight | 1.9 oz. (54 gr) |
| Shipping wt. | 12 oz. |

**Recommended Engines**

A8-3 (First Flights) B6-4
C6-5

Cat No. K-39 . . . . . $3.95

Engines not included




## ARCAS®

Skill Level 3

A precise reproduction of the famous ARCAS® sounding and meteorological rocket.

**Specifications**

| | |
|---|---|
| Length | 22.8" (58cm) |
| Body Dia. | 1.325" (33.7mm) |
| Weight | 1.4 oz. (40 gr) |
| Shipping wt. | 11 oz. |

**Recommended Engines**

A8-3 (First Flights)
B6-4
C6-5

Cat No. K-26 . . . . . $3.50

Engines not included

® Registered Trademark of The Atlantic Research Corporation, Alexandria, Virginia.

# Scale Models

## SATURN 1B

Skill Level 5

This is a completely detailed model of the rocket that first lofted the lunar module on its first flights in earth orbit. Great performance from the clustering of four engines. A real beauty, both in the air and on the ground. Includes Tech Report on engine clustering.

### Specifications

| | |
|---|---|
| Length | 37" (94cm) |
| Body Dia. | 3.938" (100mm) |
| Weight | 9.9 oz. (280 gr) |
| Shipping wt. | 3 lbs., 5 oz. |

### Recommended Engines

| | |
|---|---|
| A8-3 | B6-2 (First flights) |
| B6-4 | C6-5 |

(4 engines required. All must be the same.)

Cat. No. K-29 ..... $12.95

## HONEST JOHN

Skill Level 4

A beautiful scale model of the U. S. Army's surface-to-surface ballistic missile. An historic rocket for your display shelf.

### Specifications

| | |
|---|---|
| Length | 13.75" (35cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 1.2 oz. (34 gr) |
| Shipping wt. | 7 oz. |

### Recommended Engines

| | |
|---|---|
| 1/2A6-2 | A8-3 (First flights) |
| B4-4 | B6-4 |
| C6-5 | |

Cat. No. K-27 ..... $3.00

## SATURN V

Skill Level 5

A truly magnificent scale reproduction of our most famous rocket . . . the mighty Saturn V. Scaled 1/100th of its actual size, the model stands 43½" tall. Precision molded plastic tower and engine nozzles give detailed authenticity. Includes Tech Report on engine clustering.

### Specifications

| | |
|---|---|
| Length | 43.5" (110cm) |
| Body Dia. | 3.938" (100mm) |
| Weight | 9.9 oz. (280 gr) |
| Shipping wt. | 3 lbs., 5 oz. |

### Recommended Engines

May be flown as 3 engine cluster or single engine.

Cluster Power:
C6-3 (3 required)
"D" Power:
D12-3 (1 required)

Cat. No. K-36 ..... $16.95

## MERCURY REDSTONE

Skill Level 5

The Mercury Redstone is the vehicle that boosted Commander Alan Shepard on America's first manned space flight. Beautiful kit is scaled 1 to 42.

### Specifications

| | |
|---|---|
| Length | 23.5" (59.7cm) |
| Body Dia. | 1.637" (41.6mm) |
| Weight | 2.1 oz. (60 gr) |
| Shipping wt. | 12 oz. |

### Recommended Engines

A8-3 B6-4 C6-5
Use B6-4 for first flights.

Cat. No. K-41 .... $4.95

ESTES
A SUBSIDIARY OF DAMON

# EXOTIC DESIGNS OF THE FUTURE

Here are the models designed to give Estes rocketeers a look into the future. Parachute recovery. Kits complete with instructions. Engines not included.

## ORBITAL TRANSPORT

Skill Level 4

Spectacular flight. Showpiece on the ground. Transport lifts off under rocket power. At ejection the re-entry vehicle separates and glides back to earth.

### Specifications

BOOSTER

| | |
|---|---|
| Length | 23" (58.4cm) |
| Body Dia. | 0.976" (24.8mm) |
| Wing Span | 7.9" (20cm) |
| Weight | 2 oz. (57 gr) |

RE-ENTRY VEHICLE

| | |
|---|---|
| Length | 8.6" (21.8cm) |
| Body Dia. | 0.736" (18.7mm) |
| Wing Span | 5" (12.7cm) |
| Weight | 0.5 oz. (14 gr) |
| Shipping wt. | 16 oz. |

### Recommended Engines

B6-2 B6-4 C6-5

Use B6-4 for first flights.

Cat. No. K-42 . . . . . **$4.95**

## Astron TRIDENT

Skill Level 4

Futuristic rocket design introduces ejection ducting which uses ejection gases to pressurize the parachute compartment for deployment of the chute.

### Specifications

| | |
|---|---|
| Length | 31.6" (80.3cm) |
| Main Body Dia. | 0.976" (24.8mm) |
| Weight | 2.7 oz. (77 gr) |
| Shipping wt. | 11 oz. |

### Recommended Engines

A8-3 B6-2
B6-4 B14-5
C6-5

Use B6-2 for first flights.

Cat. No. K-33 . . . . . **$5.50**



## MARS LANDER

Skill Level 5

Authentic, futuristic concept in a planetary exploration vehicle. Lands upright on spring-loaded gear after parachute recovery. Highly detailed body panels with colorful decal sheets.

### Specifications

| | |
|---|---|
| Height | 12" (30.5cm) |
| Body Dia. | 3.8" (96.5mm) |
| Landing Gear Span | 13.2" (33.5cm) |
| Weight | 3.0 oz. (85 gr) |
| Shipping wt. | 16 oz. |

### Recommended Engines

B4-2 B6-2 C6-3

Use B4-2 for first flights.

Cat. No. K-43 . . . . . **$9.95**

## MARS SNOOPER

Skill Level 4

A truly different model combines unique appearance with reliable performance. Great for show or demonstration flying. Payload section, 18" chute and pre-cut fins.

### Specifications

| | |
|---|---|
| Length | 21.7" (55.1cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 2.2 oz. (62 gr) |
| Shipping wt. | 8 oz. |

### Recommended Engines

A8-3 B4-2 B6-4 C6-5

Use B6-4 for first flights.

Cat. No. K-20 . . . . . **$3.95**

Engines not included

## SAROS

Skill Level 2

An excellent scale-like model for any rocketeer. A new feature is the integral fin unit-engine mount providing immediate and positive location of the thrust rings. The embossed metallic press-on material and decal arrangement add the final professional touch of realism not found in other models in its class.

### Specifications

| | |
|---|---|
| Length | 22.5" (57.2cm) |
| Body Dia. | 0.976" (24.8mm) |
| Weight | 1.5 oz. (43 gr) |
| Shipping wt. | 8 oz. |

### Recommended Engines

A8-3 B6-4
A8-5 C6-5
B4-4
Use A8-3 for first flights.

Cat. No. K-54 . . . . . $3.95

### Replacement Plastic Parts Kit (Saros)

Includes nose cone, adapter and fin unit.

Cat. No. PRP-54
$1.75

## INTERCEPTOR

Skill Level 3

A spectacular model for display or flight. The most colorful and exciting Estes rocket ever! Carefully detailed plastic wing pods, nose cone, and tail cone. Two huge decal sheets.

### Specifications

| | |
|---|---|
| Length | 26" (66cm) |
| Wing Span | 7.4" (18.8cm) |
| Body Dia. | 1.325" (33.6mm) |
| Weight | 3.85 oz. (109 gr) |
| Shipping wt. | 12 oz. |

### Recommended Engines

B4-2 B6-4 C6-5
Use B6-4 for first flights.
Cat. No. K-50 . . . . . $6.50

### Replacement Plastic Parts Kit

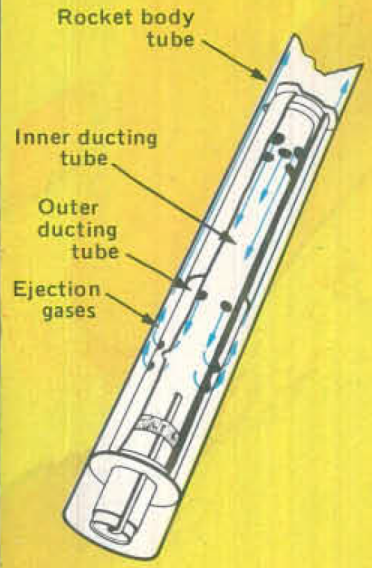
Includes nose cone, 2 wing pods and tail cone.
Cat. No. PRP-50 . . . $1.50

Engines not included



# Advanced ejection ducting system

## Cools ejection gases completely by the time they reach your parachute



## BANDIT

Skill Level 2

Features a new Ejection Ducting System so there's no need for recovery wadding. The Bandit has military rocket styling. The advanced recovery system will further your knowledge of model rocketry techniques.

## Features Advanced Ejection Ducting System

### Specifications

| | |
|---|---|
| Length | 25.75" (65.4cm) |
| Body Dia. | 1.325" (33.6mm) |
| Weight | 2.6 oz. (37.9 gr) |
| Shipping wt. | 12.5 oz. |

### Recommended Engines

A8-3 B4-4
B6-4 B14-5
C6-5
Use B6-4 for first flights.

Cat. No. K-48 . . . . . $4.95

Engines not included

# NEW MAXI-BRUTES from

ESTES®

A SUBSIDIARY OF DAMON

## GERMAN V-2

Skill Level 3

This new giant scale model is a replica of the ground-to-ground ballistic missile developed at Peenemunde before and during World War II. The United States captured many of these rockets during World War II and used them as test vehicles at White Sands during the late 1940s and early 1950s. The last V-2 firing was made at the White Sands Proving Ground in December, 1952.

This new 1/19th scale Maxi-Brute features D engine power, detailed plastic nose cone, dual 24" parachute recovery and pre-shaped fins. Nose cone fits BT-101 tube. Model requires a 3/16" launch rod for best lift-off performance. This historic reproduction will be the attention getter at your launch site and a handsome display model for your desk or bookshelf. Historical background is also included with instructions.

### Specifications

| | |
|---|---|
| Length | 33.5" (85 cm) |
| Dia. | 3.938" (100mm) |
| Weight | 12.5 oz. (354.38 gr) |
| Shipping wt. | 2 lbs. |

### Recommended Engine

D12-3

Cat No. 1267 . . . . . $13.95

## PERSHING 1-A

Skill Level 3

This new Maxi-Brute is a true scale 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. Pershing Missile Battalions continued to conduct annual firings at the White Sands Missile Range. The Pershing is completely mobile and is deployed with the United States, Federal Republic of Germany, and NATO Units in Europe.

Our 1/10 scale Pershing 1-A features three color decals, pre-shaped fins, detailed molded plastic nose cone, and dual 24" parachute recovery. A 3/16" launch rod should be used for best lift-off results. The unusual fin configuration of this model should make it one of the most unique scale models ever to be offered. Additional historical background data is also included.

### Specifications

| | |
|---|---|
| Length | 41" (104.14cm) |
| Body Dia. | 3.938" (100mm) |
| Weight | 11.5 oz. (326.03 gr) |
| Shipping wt. | 2 lbs. |

### Recommended Engine

D12-3

Cat. No. 1268 $13.95

OVER 3 FEET TALL

Engines not included

ESTES
A SUBSIDIARY OF DAMON

# COLDPOWER™ MODEL ROCKETS and ACCESSORIES.

**3 EASY TO BUILD**
All parts included. Build in less than a day! Rocket body made of durable aluminum.

**2 FASCINATING TO TEST**
Only rockets made that allow pre-launch checkout! Test parachute release, timer, separator, thrust . . . indoors or out!

**1 FUN TO FUEL**
When all systems GO, fuel rocket on launch stand, then vent off excess fuel . . . just like real thing! Unique, non-flammable cold fuel.

**Blast-off**
**EXCITING TO LAUNCH**
SWOOSH! Bird lifts skyward in a cloud of exhaust! Powered flight, burn-out, separation, parachute pops, floats rocket back to earth. Launch again and again!

## ESTES COLD PROPELLANT ROCKETS

At last — you can enjoy the full potential of fun and excitement in model rocketry with Estes' unique line of cold propellant rockets! Complete kits retail for as low as $7.95

**What's more . . . no permit or license is required for their non-flammable cold propellant!**

Every model is powered by RP-100 — the non-flammable aerosol propellant. Easy to build and fun to fly, both rockets and rocket planes feature a special timer system for release of a parachute at the top of the flight — the entire rocket then floats to earth.

The new COLDPOWER CONVERTIBLES switch easily from RP-100 Cold Propellant to solid propellant power. The Shark, Marauder and Yankee 5 are the newest and most advanced kits of our cold propellant series. ColdPower Convertible feature everything you need including uprated ColdPower engine, die-cut fins, stick-on decals, launch pad, release mechanism and RP-100 Cold Propellant.

So don't miss the fun of the future — Estes rockets are here today!

## N.A.R.-H.I.A.A. COLD PROPELLANT MODEL ROCKET SAFETY CODE

1. **ENGINES** — I will use only factory made model rocket engines in the manner recommended by the manufacturer. I will re-load cold propellant rocket engines only with the propellant recommended by the manufacturer.

2. **RECOVERY** — I will always use a recovery system in my model rockets that will safely return them so that they may be used again. I will conduct pre-flight tests to assure the recovery system functions properly before launching the rocket.

3. **WEIGHT LIMITS** — My model rocket will weigh no more than 16 oz. at lift-off.

4. **STABILITY** — I will check the stability of my model rockets before their first flight, except when launching models of proven design.

5. **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. I will never attempt to recover a model rocket from a power line or other dangerous place.

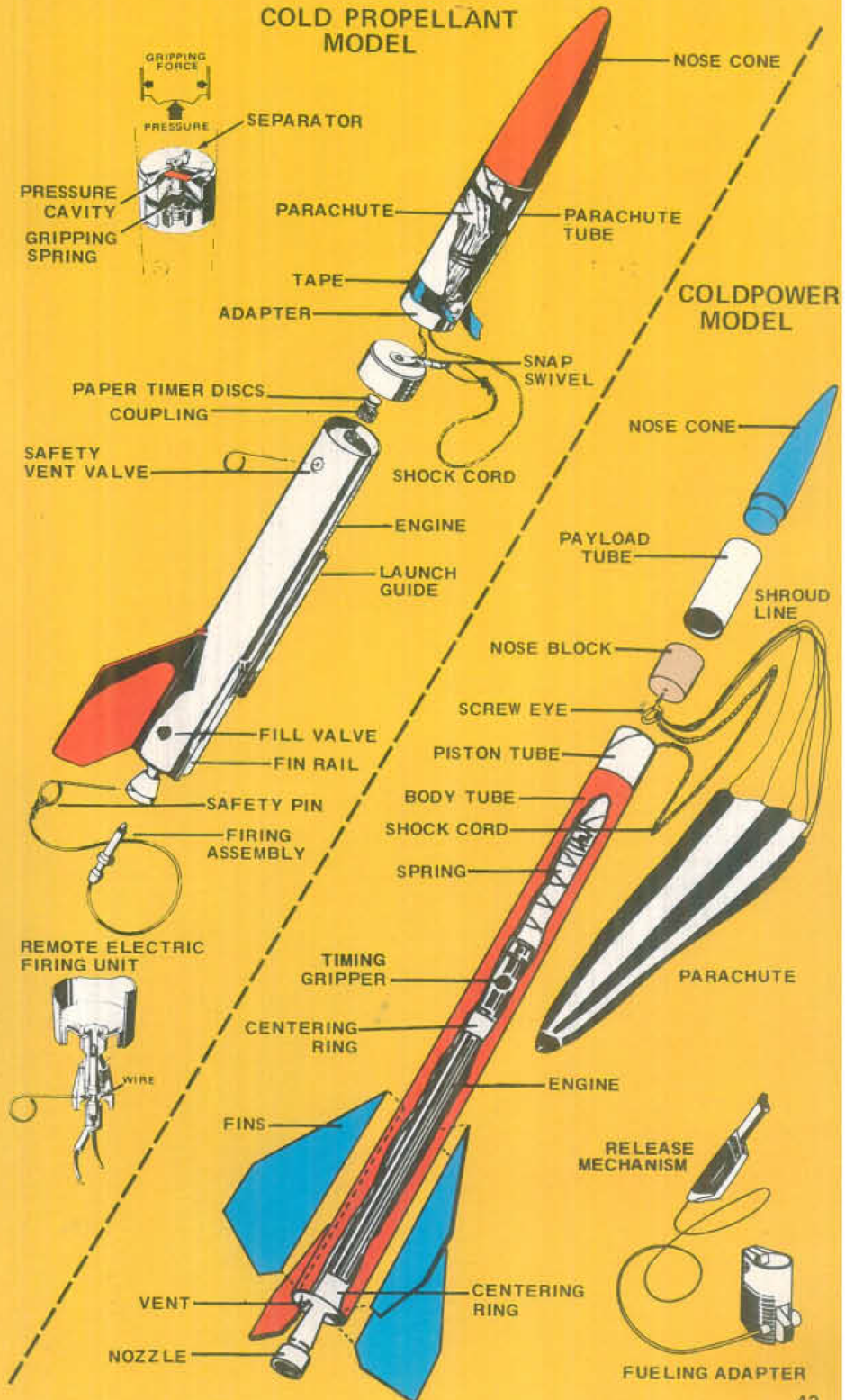
6. **LAUNCH ROD** — To prevent accidental eye injury, I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use, I will always store it so that the launch rod is not in an upright position.

7. **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 or a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.

8. **LOADED ROCKETS** — I will never store or leave a loaded cold propellant rocket untended. I will always keep a loaded rocket on a launcher or firmly restrained. will never point a loaded rocket or its rocket nozzle at anyone or allow anyone to be in the flight path of a rocket during launch preparations.

9. **CONSTRUCTION** — I will never use metal nose cones or metal fins.





# COLD PROPELLANT MODELS

## VALKYRIE 2

Skill Level 2

Altitudues to 1000 feet. Apply battery voltage to the electrical firing unit, and a cloud of exhaust indicates lift-off. Slowly at first, then faster the Valkyrie climbs, nearly 300 feet per second! Then a coast to apogee, and suddenly the parachute pops for a safe recovery. Everything is here . . . for the most spectacular flights . . . in this complete Valkyrie-2 Rocket System.

KIT INCLUDES
- Tripod launcher
- RP-100 Cold Propellant
- Electrical Firing System

SPECIFICATIONS
Length: 18"
Body Diameter: 1.0"
Shipping Weight: 40 oz.
Cat. No. 3425 .... $15.95

## XS-1
### SPACE SHUTTLE

Skill Level 1

Rocket Powered Space Shuttle! Powered by a miniature rocket engine, the XS-1 soars through the air on a realistic jet trail, then glides hundreds of feet.

READY TO FLY – Just fill engine with propellant.

The Space Shuttle plane is accurately molded of foamed styrene. The engine is sturdy aluminum, slips into plane for powered flights.

Everything is there for fun with the XS-1.

Shipping weight 32 oz.

Cat. No. 3428 ..... $5.95

## VALKYRIE 1

Skill Leve 2

Everything you'll need for your first cold propellant lift off.

KIT INCLUDES
- Complete Valkyrie-1 rocket
- Manual firing system
- Launcher
- Cold propellant for 3 launches
- Combine with another Valkyrie to form a two-stage rocket, with the Multistage Adapter Kit, Cat. No. 5060.

SPECIFICATIONS
Length 14"
Body Diameter 1"
Shipping Weight 36 oz.
Cat. No. 3422 ..... $11.95



# COLD PROPELLANT SCALE MODELS

## SERGEANT

Skill Level 3

The Sergeant is a U. S. Army battlefield support missile that is reliable, mobile, and simple to operate. It is inertially guided by means of dragbrakes to control range and fin flaps to control altitude and direction. The actual missile is 35 feet long and weighs 10,000 pounds.

KIT INCLUDES
- Decals
- Pre-formed nose cone
- Parachute system
- Manual firing system
- Launcher
- Cold Propellant for 3 flights

Specifications
Length 15.5"
Body Dia. 1.0"
Altitude 500'
Shipping wt. 38 oz.
Cat. No. 3441 ..... $12.95

## Sandpiper

Skill Level 3

You're right on target with this flying semi-scale model being developed for the Air Force. The actual Sandpiper is 15 feet long and attains a speed of Mach 4. It is used as a practice target for other missiles. This model can fly to 500 feet with only 2-1/2 ounces of propellant.

KIT INCLUDES
- Manual Firing System
- All Parts and Accessories
- Parachute System
- Propellant for 3 flights
- Launcher

SPECIFICATIONS
Length: 13.5"
Body Dia. 1.0"
Shipping weight: 38 oz.
Cat. No. 3443
$12.95

# COLD PROPELLANT BOOST-GLIDERS




## Astro-Gnat Skill Level 4

The high flying Astro-Gnat leaps off the pad and zooms to a spectacular altitude on a cloud of rocket exhaust . . . then plane and rocket split and one glides while the other parachutes . . . from hundreds of feet up!

### SPECIFICATIONS

Length 18"
Wing Span 10"
Body Diameter 1"
Shipping Weight 39 oz.

Cat. No. 3439 . . . **$12.95**

## X-13 Rocket Plane with Booster Rocket

Skill Level 4

This sleek delta wing design makes the X-13 Rocket Plane one of our highest flying cold propellant rocket planes. Everything is included in this high flying rocket plane kit.

### SPECIFICATIONS

Length 18"
Wing Span 7.5"
Body Diameter 1"
Shipping Weight 39 oz.

Cat. No. 3437 . . . . . **$12.95**



ESTES
A SUBSIDIARY OF DAMON

# COLDPOWER™ CONVERTIBLES

Pre-assembled cold propellant engine, die-cut fins, press-on decals and plastic launch controller are included in all Cold-Power rockets. Converts from RP-100 cold propellant to use standard Estes model rocket engines.

## YANKEE 5

Skill Level 2

All-American stars and stripes decor
Payload section
Sleek lines
Parachute recovery

### SPECIFICATIONS

Length: 17"
Diameter: 0.976"
Weight (with engine): 2.06 oz.
Shipping wt.: 32 oz.
Cat. No. 1112 . . . . . **$8.95**

All rockets on this page include:

* RP-100 — Propellant
* Launcher
* ColdPower Converter

## SHARK

Skill Level 2

Surface-to-air missile styling
Deluxe sports model
Payload section
Parachute recovery

### SPECIFICATIONS

Length: 19.5"
Diameter: 0.976"
Weight (with engine) 2.06 oz.
Shipping weight: 32 oz.
Cat. No. 1111 . . . . . **$8.95**

## MARAUDER

Skill Level 2

Sounding rocket decor
Great sports model
Easy-to-build
Payload section
Parachute recovery

### SPECIFICATIONS

Length: 18"
Diameter: 0.976"
Weight (with engine):
Shipping wt.: 32 oz.

Cat. No. 1110 . . . . . **$8.95**

# COLD PROPELLANT ACCESSORIES

## SMALL PARTS KIT

All those items easily lost at the launch pad. Kit includes safety pins, plastic nozzle extension, timer discs and coupling.

No. 5058 – Ship. Wt. 3 oz. . . . . $ .50

## PAYLOAD COMPARTMENT KIT

For parachute stowage, or also for small payloads if desired. Includes balsa nose cone, decorated fibre tube, aluminum adapter, and assembly tape.

No. 5118 – Ship. Wt. 9 oz. . . . . $ .50

## FIN RAIL AND LAUNCH GUIDE

Rail is used for attaching fins or as catapult rails for rocket planes, and may be used in a sophisticated rail launcher. It interlocks with itself, yet slides freely. Launch guide is for 1/8" diameter rod launcher.

**Rail (2 ft.), Guide (8"), and Contact Adhesive**

No. 5120 – Ship. Wt. 4 oz. . . . . $ .50

## REMOTE ELECTRICAL FIRING UNIT

Remote control system adds realism and excitement to your launches. This unit can be used with cold propellant rockets, on pages 44,45, and 46. See page 42 for more details.

**Remote Unit** plus 6 inches of igniter wire. (Battery not included.)

No. 5113 – Ship. Wt. 7 oz. . . . . $1.95

**Extra Igniter Wire** (6 inch piece)

No. 5057 – Ship Wt. 3 oz . . . . . $ .25

## ROCKET ENGINES

These replacement engines are identical to the engines included in each kit. For strap-on applications, a separator and a firing unit are required for use. Engines are high quality polished aluminum construction with built-in fueling port, safety vent and 100% tested.

**V-2 Engine** (For Valkyrie-2)

8½ inch body, 4 oz. propellant capacity, with nozzle extension.

No. 5001 – Ship. Wt. 8 oz. . . . . $4.95

**V-1 Engine** (for Valkyrie-1)

4½ inch body, 2 oz. propellant capacity, with nozzle extension.

No. 5075 – Ship. Wt. 7 oz. . . . . $3.95

## MULTI-STAGE ADAPTER KIT

Parts and instructions for in-flight separation and staging of a two-stage rocket. Everything is there to combine two rockets into an advanced two-stage rocket.

**Multi-Stage Adapter Kit**

Parts, instructions, booklet.

No. 5060 – Ship. Wt. 6 oz. . . . . $1.00

## FUELING VALVE and HOSE

For fueling rockets or jet planes. Valve fits either size can of RP-100 Propellant.

No. 5027 – Ship. Wt. 3 oz. . . . . $ .60

## RP–100 PROPELLANT

Unique non-flammable fuel, yet real performance! 15 oz. can provides 3-10 flights for all Estes cold propellant rockets and jet planes.

No. 5039 – Ship. Wt. 16 oz. . . . . $2.25

## MANUAL FIRING UNIT

For launching cold propellant rockets manually by pulling a pin. Unit includes nozzle plug with assembled tether wire and safety pin.

No. 3405 – Ship. Wt. 4 oz. . . . . $ .95

## SEPARATOR

The separator couples to the engine and releases the parachute at the proper time in flight. Release time is adjusted by timer discs which cause a delay from the time fuel is exhausted (burnout) till the moment the separator releases the parachute tube.

Separator with coupling and timer discs.

No. 5002 – Ship. Wt. 4 oz. . . . . $2.95

## COLDPOWER CONVERSION KIT

Converts Estes ColdPower Model Rocket from RP-100 Cold Propellant to standard Estes Solid Propellant Model Rocket engines (Series I). Easy to assemble. Lightweight for maximum performance.

No. 1449 – Ship. Wt. 4 oz. . . . . $ .49



# CINEROC

# Model Rocket Movie Camera.....

## CAMERA SPECIFICATIONS

Fully loaded the Cineroc Super-8mm aerial movie camera weighs only 3 ounces.

10mm focal length lens f/11 – 1/500 sec. shutter, 31 frames per second, 6" to infinity depth of field. Takes color film.

Diameter 1.75"
Length 9.9"
Fits BT-60 Body Tube

Completely assembled with Flight-Pak loaded with color film, 2 batteries, and 18" parachute.

Ship. wt. 1.5 lbs.

Cat. No. CM-8 (less launch vehicle) . . . . . $23.95

## COMBINATION OFFER

The recommended launch vehicle for the CINEROC is the Astron Omega, a "D" engine bird specially designed to loft the CINEROC. Now order the CINEROC and Omega together.

Shipping weight 2 lbs., 4 oz.

Cat. No. RC-8 . . . . . $25.50

# CINEROC MODEL ROCKET MOVIE CAMERA

The most important model rocket development in years, the Estes CINEROC enables the advanced rocketeer to make moving photographic studies from a vantage point never before possible: the rocket itself!

Fully loaded, the CINEROC weighs only 3 ounces, easily lofted by the Estes "D" engines. The Super-8mm camera is an engineering marvel. The single element 10mm acrylic lens gives the best possible image with the greatest depth of field. You'll see the launch lugs and fins of the launch vehicle as clearly as the terrain far below. A semi-slow motion effect is obtained with the CINEROC's exposure rate of 31 frames per second, ideal for studying ignition, booster separation, stability, and parachute opening actions.

An essential part of the CINEROC is the Flight-Pak film cartridge. No threading; just slip it into the camera and you're ready to go.

The photos on page 49 were taken from CINEROC films and show the clarity and detail possible You see everything . . . from lift-off to deployment of the recovery system.

### FLIGHT-PAK MOVIE CARTRIDGE

Cartridges contain 10 feet of Super-8mm color film for approximately 40 seconds of projection time. Two PF8-2 batteries (good for one flight) included with each cartridge.

Shipping weight 4 oz.

Cat. No. CFH-8 . . . . . $4.95

### FLIGHT-PAK PROCESSING

You'll want top quality processing of your Flight-Pak film! After exposure, place the Flight-Pak back in its black plastic bag, package it for safe mailing, enclose $2.00, and send to:

Estes Film Lab
Box 227
Penrose, Colorado 81240

Cat. No. FDP-2 . . . . . $2.00

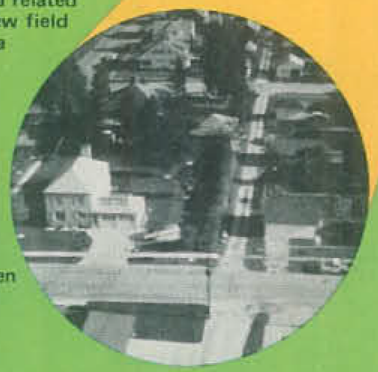
# CAMROC

Aerial photography has long been acknowledged for its value in map making, geographical studies, reconnaissance, and related research fields. The Camroc aerial camera opens a new field of science studies to the rocketeer who wants to get a better understanding of the scientific uses of aerial photography. Recommended booster vehicle is the new Camroc Carrier. Other models can be adapted.

In addition to learning principles of camera construction and operation, many challenging aerial photographic projects can be developed.

Study space science reconnaissance techniques the practical way — over familiar terrain with known objects. Map your flight area with Camroc photos. Use photo pairs, which produce a steroptic image when properly viewed, to emphasize heights of different objects quite accurately.

Pat. No. 3,537,369



### CAMROC SPECIFICATIONS

Lens opening — f/16
Shutter speed — 1/1600 sec.
Focal Length 3" (76mm)
Single exposure film negative 1-1/2" dia. Print 3" dia. Fits body tube BT-50. In kit form with all parts and assembly instructions. Comes with 1 loaded film holder plus unexposed film disk for practice loading and experimenting.
Shipping wt. 7.5 oz.

Cat. No. C-1 . . . . . $8.95

**Negative: 1-1/2" dia.**
**Print size: 3" dia.**



# CAMROC

## MODEL ROCKETRY'S FIRST AERIAL CAMERA.

### FILM ONLY

Precision cut Astropan 400 film discs to fit Camroc film holder. Packaged in light-proof double envelope. Envelope should be opened ONLY IN TOTAL DARKNESS. Handling and loading instructions included.
Shipping weight 1.5 oz.

Cat. No. NF-6 . . . 6 for $1.25

### DEVELOPING-PRINTING

Film is developed and one glossy print made at 2 times enlargement (3" dia. image). A refund of $ .20 will be made on any negative which will not make a satisfactory print. In this case negative will be returned unprinted. We recommend sending your film for processing in its original container or other totally light-tight container.

Cat. No. FDP-1 . . . . . $ .50

### EXTRA PRINTS

You can order additional prints of negatives which have been previously developed. The negative(s) must be enclosed in a suitable protective package with the order. (Please do not order extra prints without first checking the negative and original print to determine if it is suitable for extra prints).

Cat. No. NP-1 . . . . . $ .30 ea.

### LOADED FILM HOLDERS

Extra film holders for in-the-field changing are available for the Camroc. They come 4 to an order, each pre-loaded. Film holders may be returned with the film for processing. They are reusable and subject to refund when returned. Shipping weight 2 oz.

Cat. No. FFH-4 . . . . . 4 for $3.95

### REFUND PLAN ON FILM HOLDERS

A refund of $ .15 will be allowed for all film holders returned to us in good reusable condition. Deduct $ .15 for each holder returned. Unless you specifically request their return, all holders sent us will be automatically retained and credit allowed.

### CAMROC CARRIER

NEW!

Skill Level 3

This high performance model is especially designed for lofting the Camroc. Reaches altitudes over 1,000 feet with "C" engines. Special reducer section and elliptical fins create an excellent low drag design. Features optional payload section for those interesting cargo experiments. Kit includes die-cut fins, stick-on decals, molded plastic nose cone, and 12" parachute recovery.

#### Specifications

Length 17.75" (45.09cm)
Body Dia. 1.634" (4.15cm)
Weight w/payload 1.96 oz. (56 gr)
Weight w/o payload 0.81 oz. (23 gr)
Shipping wt. 6 oz.

#### Recommended Engines

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

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

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

### CAMROC CARRIER

(does not include camera)

Cat. No. 1266 . . $2.95

### CAMROC COMBINATION OFFER

SAVE $ .50

Recommended Camroc Carrier and Camroc Aerial Camera. Ship Wt. 14 oz.

Cat. No. 1466 . . . Only $7.95

Engines not included.

ESTES
A SUBSIDIARY OF DAMON

# ROCKETRONICS

Remote sensing and reporting by telemetry are now practical. The TRANSROC (TX-1) is your basic unit. This tiny (1.3 oz. with battery) transmitter requires no FCC license, yet sends back a clear signal with a range of 5 miles while in flight and of hundreds of yards while on the ground. The closer you are to the TRANSROC, the stronger is the signal.

In its basic mode it transmits an intermittent "beep". Any standard walkie-talkie may be used as the receiver to listen to the "beep" or the various sensory information which may be transmitted. Channel 14 is standard but other channels of the 27 MHz. Citizen's Band are available by using the proper transmitter crystal. The basic mode is used for demonstrating the principle of telemetry and for locating your rocket.

Adding the accessory kits to the basic mode requires only a little time and a few small circuit changes for each. In the microphone mode (Microphone Kit TXA-1) the TRANSROC lets you listen to everything from the unique position of the rocket. You can hear the countdown, the lift-off, and stage separation. Such unique sounds as parachute ejection and the weird noises made by the wind and the parachute and the sounds of the recovery crew are heard from on-board the rocket.

The Spin-Rate Telemetering Kit (TXA-2) lets you study the effects of different aerodynamic shapes and unusual fin alignments.

The Temperature Telemetering Kits (TXA-3 and TXA-4) permit you to make temperature versus altitude studies. Spotting temperature inversions for predicting air pollution buildups is fun and a great project for study of the environment.

The TRANSROC opens up a whole new world of scientific research to you. The transmitter can be built in an evening. If you don't have experience in building electronic kits, order the completely assembled and testes TRANSROC TX-1A.

THE COMPLETE ROCKETRONICS CATALOG IS AVAILABLE ON REQUEST.

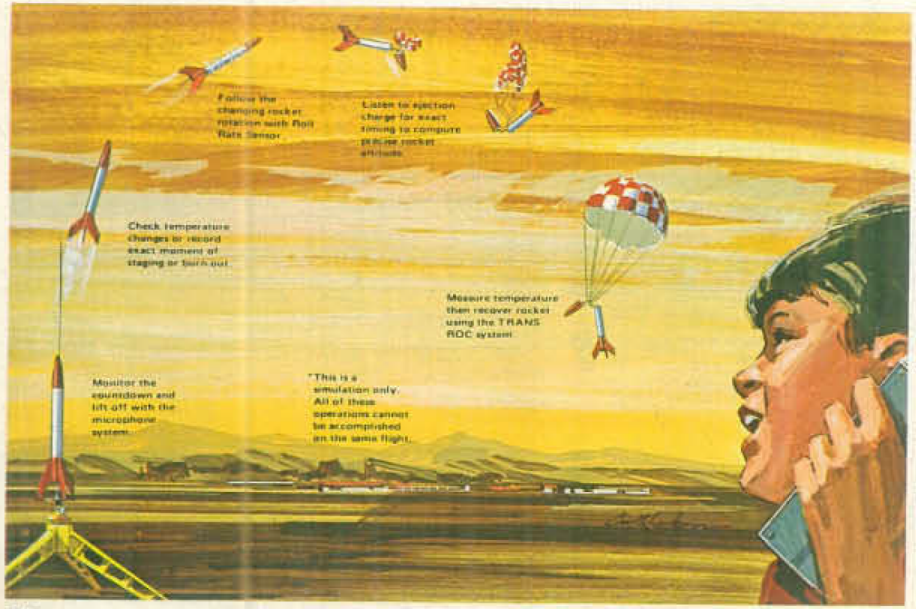
**SPECIFICATIONS**

Fits BT-50
Length 4.2"
Dia. .940"
Weight w/battery 1.3 oz.

**TRANSROC TRANSMITTER**

| | |
|---|---|
| TX-1A (assembled and tested) | $22.95 |
| TX-1 (kit form) | $15.95 |
| Accessory Kit TXA-1 | $ 3.95 |
| Accessory Kit TXA-2 | $ 4.95 |
| Accessory Kit TXA-3 | $ 6.95 |
| Accessory Kit TXA-4 | $ 6.95 |

Shipping wt. is 6 oz. for each kit.






ESTES
A SUBSIDIARY OF DAMON

# ROCKET ENGINES

Quality-tested engines for high-performance flights

**The finest engine made . . . you can depend on it . . . for every flight application**

The design and development of the Estes model rocket engine was the real beginning of the safe, educational and exciting hobby that model rocketry has become.

Today's modern rocket engine is the result of over 14 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines to carry on his rocket activities.

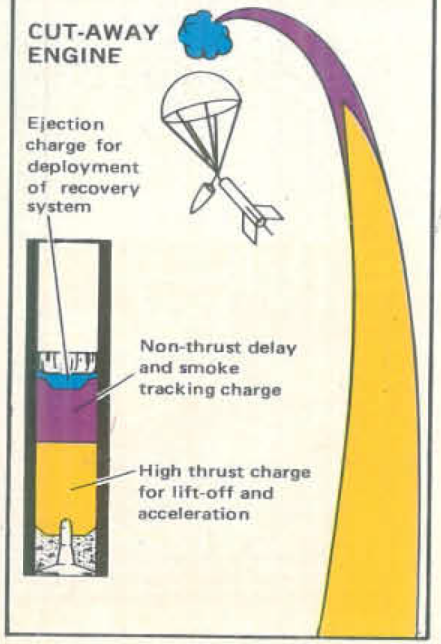
The energy-packed, solid propellant Estes model rocket engine is a complete power system for your rocket. It is designed and pre-manufactured to perform all power functions for dependable launch and activation of a recovery system. In one compact package it provides thrust for quick lift-off and acceleration to high altitudes, allows for a timed delay period to reach peak altitude while delivering a smoke trail for easy tracking and supplies ejection power for the parachute or other system for your rocket's safe return to earth.

Reliability-proven in over 50 million launchings, Estes engines are manufactured under controlled conditions within exacting tolerance limits. You can count on them for consistent performance from one launch to the next. You'll launch with confidence in contest and exhibition flying.

Six power levels are available in Estes engines. Total impulse is tailored to fit the various NAR-FAI classes. Average thrust, peak thrust and delay times are set up to give the best performance within these classes and to provide the most useful selection of engines for all rocketeers.

**Designed for specific launch and flight functions, rocket engines are expendable — not reusable.**

Graphic explanation of a rocket engine's fundamental construction and functions.




## ENGINE CODING FOR QUICK-N-EASY IDENTIFICATION

1. **Label color indicates recommended use of the engine.**
   a. GREEN ..... Single stage rockets
   b. PURPLE ... Top stage and multi-stage rockets
   c. RED ..... Booster and intermediate stages of multi-stage models

2. **Code designation stamped on the engine gives useful and important information on its performance capabilities.**
   a. This portion indicates total impulse or total power produced by the engine.
   b. This portion shows the engine's average thrust in newtons and helps you choose the right engine for your rocket's flight.
   c. This number gives you the delay in seconds between burnout and ejection charge. Lets you choose the engine with the delay time you want for any flight.

Igniters and complete instructions are included with Estes engines.

# MINI-ENGINE SELECTION CHART

| Cat. No. and Engine Type | Prices | Total Impulse lb-sec [1] | Total Impulse n-sec [2] | Time Delay (±15%) | Max. Lift Wt. | Max. Thrust | Thrust Duration | Initial Weight Oz. | Initial Weight G. | Propellant Weight Oz. | Propellant Weight G. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SINGLE STAGE ENGINES** | | | | | | | | | | | |
| 1/4 A3-2T | 4 for $1.35 | 0.14 | 0.625 | 2 sec | 1 oz. | 23 oz. | 0.18 sec | 0.173 | 4.9 | 0.031 | 0.88 |
| 1/2 A3-2T | 4 for $1.45 | 0.28 | 1.25 | 2 sec | 2 oz. | 28 oz. | 0.36 sec | 0.198 | 5.6 | 0.062 | 1.75 |
| A3-2T | 4 for $1.55 | 0.56 | 2.50 | 2 sec | 3 oz. | 28 oz. | 0.86 sec | 0.254 | 7.2 | 0.124 | 3.50 |
| A3-4T | 4 for $1.55 | 0.56 | 2.50 | 4 sec | 2 oz. | 28 oz. | 0.86 sec | 0.268 | 7.6 | 0.124 | 3.50 |
| A10-3T | 4 for $1.55 | 0.56 | 2.50 | 3 sec | 5 oz. | 48 oz. | 0.26 sec | 0.277 | 7.9 | 0.133 | 3.78 |
| **UPPER STAGE ENGINES [3]** | | | | | | | | | | | |
| 1/4 A3-4T | 4 for $1.35 | 0.14 | 0.625 | 4 sec | 1 oz. | 23 oz. | 0.18 sec | 0.187 | 5.3 | 0.031 | 0.88 |
| 1/2 A3-4T | 4 for $1.45 | 0.28 | 1.25 | 4 sec | 1 oz. | 28 oz. | 0.36 sec | 0.212 | 6.0 | 0.062 | 1.75 |
| A3-6T | 4 for $1.55 | 0.56 | 2.50 | 6 sec | 1 oz. | 28 oz. | 0.86 sec | 0.282 | 8.0 | 0.124 | 3.50 |
| **BOOSTER ENGINES** | | | | | | | | | | | |
| 1/2 A3-0T | 4 for $1.45 | 0.28 | 1.25 | none | 3 oz. | 28 oz. | 0.36 sec | 0.166 | 4.7 | 0.062 | 1.75 |
| A3-0T | 4 for $1.55 | 0.56 | 2.50 | none | 3 oz. | 28 oz. | 0.86 sec | 0.226 | 6.4 | 0.124 | 3.50 |
| A10-0T | 4 for $1.55 | 0.56 | 2.50 | none | 5 oz. | 48 oz. | 0.26 sec | 0.235 | 6.7 | 0.133 | 3.70 |

**NOTES:** *Mini-engine Size 1.75 in. long, and .500 in. dia.*

Each pack of 4 engines includes 5 igniters (NWI-1). Designed for specific launch and flight functions, rocket engines are expendable — not reusable.

1. Pounds-seconds
2. Newton-seconds (Figures shown are maximum)
3. Or Single Stage Engines if used in very light rocket.

## MINI-ENGINE ADAPTER

Fly your short engine (Series III bird with a mini-engine — reduce weight and get higher performance. Heavy duty construction, yet weighs only 0.09 oz.

Cat. No. EM-520

35c

Here are all the parts you'll need to design and build your own Mini-Brute Kit.

**Fin Stock:**
BFS-20 . . . . . 3/$ .50
BFS-20L . . . . . 3/$ .65

**Nose Cones:**
BNC-5V . . . . . $ .35
BNC-5E . . . . . $ .35
BNC-5S . . . . . $ .35
BNC-5W . . . . . $ .50
BNC-5AW . . . . . $ .45

**Body Tubes:**
BT-5—18" long . $ .40
BT-5P—5.1" long $ .20

**Engine Block:**
EB-5B . . . . . 3/$ .30

**Engine Holder:**
EH-3 . . . . . 3/$ .70

**Adapter Ring:**
AR-520 . . . . . 3/$ .30

**Balsa Tube Adapter:**
TA-520 . . . . . $ .40
TA-550 . . . . . $ .45

**Stage Coupler:**
J T-5C . . . . . $ .15

**Parachute:**
PK-8 . . . . . $ .45

**Small Parts:**
Screw-Eye
SE-3 . . . . . 6/$ .40

**Nose Cone Weights:**
NCW-4 . . . . . 20/$ .50

**IGNITERS:** Easy to use, the same type as supplied with all Estes Engines. Suitable for ignition systems using 6 volts or more. See engine instructions for installation procedure. (Patent No. 3,363,559). Shipping weight 1 oz. (Not for Solar launcher.)

Cat. No. NWI-1 . . . . 6 for $ .39

**RECOVERY WADDING:** Gives protection from hot ejection gases for parachutes and streamers. Each package contains approximately 75 4½" squares — enough wadding for up to 25 flights. Instructions included in package. Shipping weight 6 oz.

Cat. No. RP-1A. . . . . $ .50



# ROCKET ENGINE SELECTION CHART

| Cat. No. Engine Type | Prices 3 for | Total Impulse lb-sec [1] | Total Impulse n-sec [2] | Time Delay (±15%) | Max. Lift Wts | Max. Thrust | Thrust Duration | Initial Weight Oz. | Initial Weight G. | Propellant Weight Oz. | Propellant Weight G. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SINGLE STAGE ENGINES** | | | | | **GREEN LABEL** | | | | | | |
| 1/2A6-2 | $1.25 | 0.28 | 1.25 | 2 sec | 2.5 oz. | 46 oz. | 0.20 sec | 0.53 | 15.0 | 0.055 | 1.56 |
| A8-3 | $1.35 | 0.56 | 2.50 | 3 sec | 4.0 oz. | 48 oz. | 0.32 sec | 0.57 | 16.2 | 0.110 | 3.12 |
| B4-2 | $1.45 | 1.12 | 5.00 | 2 sec | 4.0 oz. | 48 oz. | 1.20 sec | 0.70 | 19.8 | 0.294 | 8.33 |
| B4-4 | $1.45 | 1.12 | 5.00 | 4 sec | 3.5 oz. | 48 oz. | 1.20 sec | 0.74 | 21.0 | 0.294 | 8.33 |
| B6-2 | $1.45 | 1.12 | 5.00 | 2 sec | 4.5 oz. | 48 oz. | 0.83 sec | 0.68 | 19.3 | 0.220 | 6.24 |
| B6-4 | $1.45 | 1.12 | 5.00 | 4 sec | 4.0 oz. | 48 oz. | 0.83 sec | 0.78 | 22.1 | 0.220 | 6.24 |
| B14-5* | $1.65 | 1.12 | 5.00 | 5 sec | 5.0 oz. | 7 lb. | 0.35 sec | 0.69 | 19.6 | 0.220 | 6.24 |
| C6-3 | $1.65 | 2.25 | 10.00 | 3 sec | 4.0 oz. | 48 oz. | 1.70 sec | 0.88 | 24.9 | 0.440 | 12.48 |
| C6-5 | $1.65 | 2.25 | 10.00 | 5 sec | 4.0 oz. | 48 oz. | 1.70 sec | 0.91 | 25.8 | 0.440 | 12.48 |
| **UPPER STAGE ENGINES [3]** | | | | | **PURPLE OR BLUE LABEL** | | | | | | |
| 1/2A6-4 | $1.25 | 0.28 | 1.25 | 4 sec | 1.0 oz. | 46 oz. | 0.20 sec | 0.54 | 15.3 | 0.055 | 1.56 |
| A8-5 | $1.35 | 0.56 | 2.50 | 5 sec | 2.0 oz. | 48 oz. | 0.32 sec | 0.62 | 17.6 | 0.110 | 3.12 |
| B4-6 | $1.45 | 1.12 | 5.00 | 6 sec | 1.5 oz. | 48 oz. | 1.20 sec | 0.78 | 22.1 | 0.294 | 8.33 |
| B6-6 | $1.45 | 1.12 | 5.00 | 6 sec | 2.0 oz. | 48 oz. | 0.83 sec | 0.71 | 20.1 | 0.220 | 6.24 |
| B14-7* | $1.65 | 1.12 | 5.00 | 7 sec | 2.5 oz. | 7 lb. | 0.35 sec | 0.73 | 20.7 | 0.220 | 6.24 |
| C6-7 | $1.65 | 2.25 | 10.00 | 7 sec | 2.5 oz. | 48 oz. | 1.70 sec | 0.95 | 26.9 | 0.440 | 12.48 |
| **BOOSTER ENGINES** | | | | | **RED LABEL** | | | | | | |
| 1/2A6-0 | $1.25 | 0.28 | 1.25 | none | 4.0 oz. | 46 oz. | 0.18 sec | 0.48 | 13.6 | 0.055 | 1.56 |
| A8-0 | $1.35 | 0.56 | 2.50 | none | 4.0 oz. | 48 oz. | 0.30 sec | 0.51 | 14.2 | 0.110 | 3.12 |
| B6-0 | $1.45 | 1.12 | 5.00 | none | 4.0 oz. | 48 oz. | 0.80 sec | 0.58 | 16.4 | 0.220 | 6.24 |
| B14-0* | $1.65 | 1.12 | 5.00 | none | 6.0 oz. | 7 lb. | 0.35 sec | 0.61 | 17.3 | 0.220 | 6.24 |
| C6-0 | $1.65 | 2.25 | 10.00 | none | 4.0 oz. | 48 oz. | 1.68 sec | 0.80 | 22.7 | 0.440 | 12.48 |

*Series II Engines

**NOTES:**

Complete instructions and igniters (NWI-1) are included with each rocket engine order from Estes. All engines listed on this page are 2.75 in. long and 0.690 in. dia. Shipping weight of each engine is approximately 1 1/3 oz.

1. Pounds-seconds
2. Newton-seconds (Figures shown are maximum.)
3. Or single stage engines if used in a very light rocket.

**SOLAR IGNITERS:** Add increased reliability at lift-off with Estes "NEW" high performance Solar Igniter. This uprated igniter is designed especially for the new ESTES SOLAR LAUNCH CONTROL SYSTEM, FS-10. Features easy engine installation and is suitable for all ESTES rocket engines. Requires only a 6 volt power source.

Shipping weight 1 oz.
Cat. No. NWI-2 . . . . 6 for $ .39

# MIGHTY 'D' ENGINES

## ESTES 'D' POWER FOR HIGH ALTITUDE PERFORMANCE

## BIG PAYLOAD LAUNCHES

## RECOMMENDED ONLY FOR EXPERIENCED ROCKETEERS!

"D" engines are 2.75 in. long and 0.945 in. diameter.

With the advancement of model rocketry to bigger birds, larger payloads and higher altitude demands, Estes Industries has developed the 'D' engine (Series IV).

The Estes big 'D' provides twice the power of the largest Series I engine. It's the first dependable 'D' engine to provide the consistent high-thrust and total impulse levels necessary for peak performance in its class.

Precision manufacturing capability, experience and quality control at Estes Industries assure superior and consistent performance for Estes 'D' power – the same quality and reliability which have been proven in over 50 million Estes-powered launches.

When flying your rockets with the more powerful 'D' engines give even greater consideration to normal safety precautions. Refer to items 5, 6, 7, 13 and 14 in the safety code on page 4.

| Cat. No. Engine Type | Prices 3 for | Total Impulse lb-sec[1] | Total Impulse n-sec[2] | Time Delay (±15%) | Max. Lift Wt. | Max. Thrust | Thrust Duration | Initial Weight Oz. | Initial Weight G. | Propellant Weight Oz. | Propellant Weight G. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SINGLE STAGE ENGINES** | | | | | | | | | | | |
| D12-3 | $2.75 | 4.48 | 20.0 | 3 sec | 14 oz. | 9 lb. | 1.50 sec | 1.49 | 42.2 | 0.879 | 24.93 |
| D12-5 | $2.75 | 4.48 | 20.0 | 5 sec | 10 oz. | 9 lb. | 1.50 sec | 1.52 | 43.1 | 0.879 | 24.93 |
| **UPPER STAGE ENGINES** | | | | | | | | | | | |
| D12-7 | $2.75 | 4.48 | 20.0 | 7 sec | 8 oz. | 9 lb. | 1.50 sec | 1.56 | 44.0 | 0.879 | 24.93 |
| **BOOSTER ENGINE** | | | | | | | | | | | |
| D12-0 | $2.75 | 4.48 | 20.0 | none | 13 oz. | 9 lb. | 1.48 sec | 1.44 | 40.9 | 0.879 | 24.93 |

**ESTES 'D' ENGINE ROCKETS:**

SATURN V ..... Cat. No. K-36
CHEROKEE D ..... Cat. No. K-47
SANDHAWK ..... Cat. No. K-51
OMEGA ..... Cat. No. K-52
GOBLIN ..... Cat. No. K-55
DEMON ..... Cat. No. K-58
GERMAN V-2 ..... Cat. No. 1267
PERSHING 1-A ..... Cat. No. 1268

**NOTES:**

Complete instructions and igniters (NWI-1) are included with each rocket engine ordered from Estes. Shipping weight of each engine is approximately 2 1/3 oz.

1. Pounds-seconds
2. Newton-seconds (Figures shown are maximum.)
3. Or Single Stage Engines if used in very light rocket.



ESTES
A SUBSIDIARY OF DAMON

# LAUNCH CONTROL SYSTEMS

## ESTES "NEW" SOLAR LAUNCH CONTROL SYSTEM

This futuristically designed launch control unit requires only 4 alkaline pen light batteries for power. Advanced shape allows for perfect hand held control. Unit is easily assembled in minutes and features safety key, continuity check lamp, and 15 feet of lightweight launch cable. System is constructed of durable "non-breakable" plastic. "Micro-clips" are presoldered. Use with Estes new Solar igniters (NWI-2). (Batteries not included.) Shipping weight 8 oz.

Cat. No. FS-10 ..... $3.95

## COMBINATION OFFER

Includes Solar launch control system (FS-10) and Porta Pad launcher (RL-4). Shipping weight 12 oz.

Cat. No. 1450 ..... $6.95

**LAUNCH CONTROL SYSTEM:** Use with a 12 volt car battery (no need to remove battery from car; just connect the Launch Control System's battery clips to the battery terminals) for any model, including the large birds. If you don't have access to a car battery, use a Ray-O-Vac No. 918, Eveready No. 731, or a Burgess TW-1, available at most hardware stores. Shipping weight 12 oz.

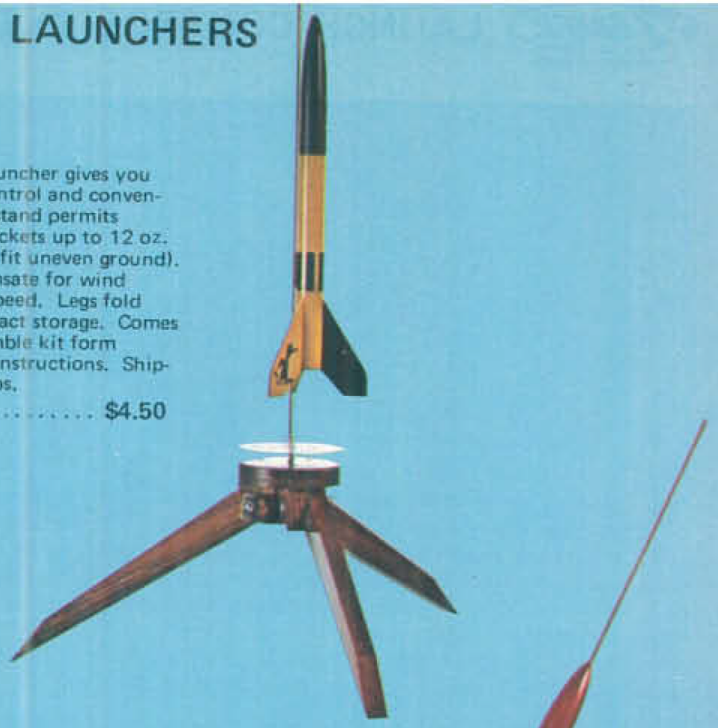
Cat. No. FS-5 ..... $3.95

# LAUNCHERS

## TILT-A-PAD
### Wooden Tripod

This flexible launcher gives you ideal launch control and convenience. Tripod stand permits launching of rockets up to 12 oz. (and adjusts to fit uneven ground). Tilts to compensate for wind direction and speed. Legs fold down for compact storage. Comes in easy to assemble kit form with complete instructions. Shipping weight 2 lbs.

Cat. No. RL-3 . . . . . $4.50



## PORTA-PAD
### Plastic Tripod

Space-age designed, the Porta-Pad is rugged enough to take the stress of countless launchings, even with the big Estes "D" engines, yet is lightweight and compact enough for easy carrying and storage. Strong, girder construction, orange plastic legs snap off for storage in field box. Friction grip secures rod firmly (accommodates standard 1/8" rod or heavy-duty 3/16" rod). Tilt adjustment allows you to compensate for wind. For extra versatility, adapt your Porta-Pad for rail launchings (see page 60) by using a separate blast deflector No. BD-1 (see Page 59). Shipping weight 1 lb., 8 oz.

Cat. No. RL-4 . . . . . $3.95

The recommended electrical system for use with the Tilt-A-Pad and Porta-Pad is the FS-5 Launch Control System (see page 57) and a 6- or 12-volt car battery or other power source.

Rockets not included



# LAUNCH SUPPLIES
## and ACCESSORIES

### TWO-PIECE ROD

Handy collapsible two-piece rod for portable launchers. Pieces slip together to make a 36" long rod. Base rod has a diameter of 1/8". Shipping weight 6 oz.

Cat. No. RLR-1 . . $ .45

**MICRO-CLIPS:** Equip your launcher with the best. Spring-loaded solid steel clips connect lead wires to igniters. Easy to clean and highly conductive with flat contact surfaces. Only 1.1 inches long, attach to leads with or without solder. Shipping weight 1 oz.

Cat. No. MC-1 . . . . . 2 for $ .45

**ADD-ON ROD:** Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod to 53" length, gives extra control of flight path. Shipping weight 6 oz.

Cat. No. RLR-3 . . . . $ .25 per section

**DELUXE BLAST DEFLECTOR:** Durable pressed steel plate deflects engine blast out and away from launcher. Two inches wide, five inches long. Shipping weight 5 oz.

Cat. No. BD-1 . . . . . $ .70

**BLAST DEFLECTOR PLATE:** Slip-on metal deflector plate fits any launcher using 1/8" rod, protects launcher base from rocket blast. Four-inch diameter. Shipping weight 5 oz.

Cat. No. BD-2 . . . . . $ .75

**MASKING TAPE:** Use to secure engines in models, mask for painting, etc. Strong flexible, ½" wide, comes in 30' rolls. Shipping weight 5 oz.

Cat. No. MT-1 . . . . . $ .55

**SWIVEL ASSEMBLY:** Provides 360° rotation and full tilt adjustments, yet locks in selected position. Handles 1/8" rod, 3/16" rod, and C-rail. Shipping weight ¾ oz.

Cat. No. LP-2 . . . . . $1.50

**NICHROME WIRE:** Electrical heating wire for model rocket ignition. No. 30 recommended for use with car batteries, No. 32 for use with other power supplies. Shipping weight 1 oz.

No. 30, 15-FOOT ROLL:
Cat. No. NW-30A . . $ .60

No. 32, 15-FOOT ROLL:
Cat. No. NW-32A . . $ .50

### ROCKET SUPPORT SPRING

* The perfect rocket stand-off
* A must for all launch pads
* Holds rockets above blast deflector
* Completely adjustable
* Compact
* Keeps micro-clips from touching

Cat. No. RS-125 . . 3/$ .25

**BATTERY CLIPS:** Ideal for hookup to car batteries, heavy duty clips connect to terminals up to 1" in dia. Clips are 3" long, available with black and red insulators. Specify color(s) when ordering. Shipping weight 5 oz.

Cat.No. BC-1 2 for $1.00

**LEAD WIRE:** Flexible size 18 two-conductor insulated wire. Ideal as lead from firing panel to launcher. In 12-foot lengths. Shipping weight 5 oz.

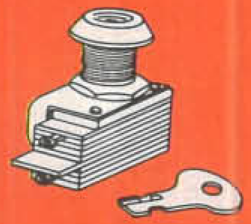
Cat. No. LW-12 . . . . $ .85

# ELECTRICAL EQUIPMENT and LAUNCH SUPPLIES

**PILOT LIGHT HOLDER:** Adds visual control to launch panel. Holder is steel with ½" red plastic jewel, mounts in 7/16" hole. Takes either 6 or 12 volt bulbs, bulb not included. Shipping weight 4 oz.
Cat. No. LH-1 . . . . . **$1.00**

**6 VOLT BULB:** Fits holder No. LH-1. Shipping weight 1 oz. (Type 51.)
Cat. No. AL-6 . . . . **$ .25**

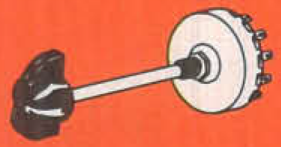
**12 VOLT BULB:** Fits holder No. LH-1. Shipping weight 1 oz. (Type 53.)
Cat. No. AL-12 . . **$ .25**



**KEY SAFETY SWITCH:** Prevents accidental launching of rockets. SPST, turns on with key, must be turned off to remove key. Mounts in ½" hole. One key included. Shipping weight 4 oz.
Cat. No. KSW-1A . . . . . **$3.25**
**EXTRA KEY:**
Cat. No. KSW-1K . . . . . **$ .60**

**PUSH BUTTON SWITCH:** Heavy duty construction momentary type, SPST, normally open. Excellent for use as a firing switch. Mounts in ½" hole. Shipping weight 4 oz.
Cat. No. SWM-1 . . . **$1.50**

**ROTARY SWITCH:** Twelve position single pole rotary switch — use as a selector with firing systems using more than one launcher. Non-shorting, mounts in 3/8" hole. Shipping weight 5 oz.
Cat. No. SWR-1 . . . . . **$2.50**



**DIAL PLATE:** Numbered 12 position plate for use with rotary switch No. SWR-1. Mounts on panel with same nut used to hold switch. Etched aluminum on black background. Shipping weight 1 oz.
Cat. No. DP-1 . . . . . **$ .55**

**SOLDERING IRON:** 25 watt. Develops up to 720°F. Handle remains cool. Replaceable, pretinned nickel-plated tip. Use with rosin core solder. Shipping weight 1 lb.
**Discontinued**

**LAUNCH RAILS:** Rigid aluminum 'C' rails offer countless new possibilities for your launcher designs.
'C' RAIL: 3/8" square (outside). Comes in 18" long sections. Durable aluminum for long life and rust-free service. Use at least 2 sections connected with a joiner (see below) for launch rail. Shipping weight 6 oz.
Cat. No. LR–18A . . . . . **2 for $1.75**

**RAIL JOINER:** Spring clip 2" long by ¼" wide, fits inside rail ends, holds two rail sections securely together for assembling launch rails 36" long and longer. Shipping weight 2 oz.
Cat. No. RJ-18A. . . . . **$ .50 each**



# RANGE SPECIALS

NEW!

## PREDICTED ALTITUDE COMPUTER

The new Estes Pocket Size Altitude Computer enables any rocketeer to predict model rocket performance in a matter of seconds. Just move the center slide in a simple procedure for fast accurate results. Three color calculator comes complete with instructions.
Cat. No. 9015 . . . . . **$ .70**

**ALTISCOPE:** Find out how high it went with Altiscope! Can also be used to find heights of trees, buildings, mountains, poles, etc. Comes in kit form complete with instructions, trig tables, technical report TR-3 on altitude tracking and 2-D altitude computer. Patent No. 3,208,147. Shipping weight 20 oz.
Cat. No. A-1 . . . . . **$4.50**

## ASSEMBLY SPECIAL A Complete Construction and Finishing Set

One convenient package containing all the tools and supplies recommended for assembling, painting, and decorating most model rockets. Ideal for the beginner who doesn't already have modeling equipment. This set helps you build the best models right from the start.

Contents:

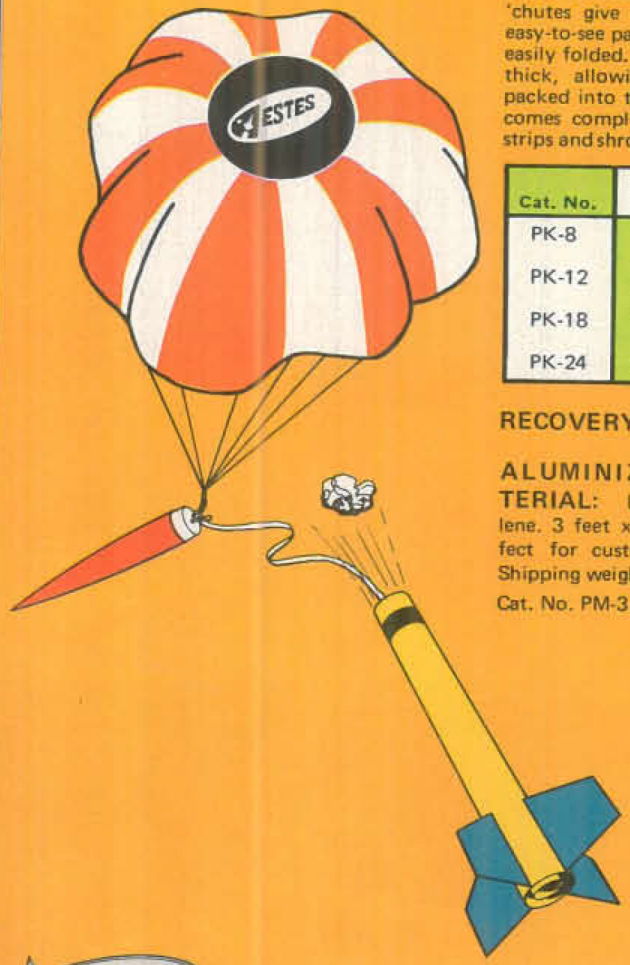
1 Bottle White Glue
3 Emery Boards
1 Bottle Sanding Sealer
4 Bottles Paint (assorted colors)
1 Bottle Thinner
1 Gold Mine Special Decal
1 United States Decal
3 Sheets Sanding Material
1 Roll Masking Tape
1 X-Acto Knife
18 Sheets Sandpaper
3 Paint Brushes
Shipping Wt. 1.5 lb.
Cat. No. CK-3A

**$6.00 Value Only $4.95**

## RANGE BOX

Good-looking, roomy, tough, all-metal box. A big 11½" x 5¼" x 4", complete with a three compartment tray for small parts. Has full-drawn seamless body, snap catch with eye for padlock. Shipping weight 2 pounds.
Cat. No. RB-1 . . . . . **$4.25**

# RECOVERY EQUIPMENT AND SUPPLIES

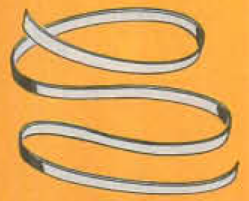



**PARACHUTE KITS:** Get the best in parachute recovery! Two color printed plastic 'chutes give maximum visibility – feature easy-to-see pattern. Lightweight, durable and easily folded. these 'chutes are only 0.0075" thick, allowing the most material to be packed into the least body space. Each kit comes complete with 'chute material, tape strips and shroud lines. Shipping weight 2 oz.

| Cat. No. | Parachute Diameter | Net Weight | Price Each |
|---|---|---|---|
| PK-8 | 8 inches | .035 oz. | $ .45 |
| PK-12 | 12 inches | .078 oz. | $ .50 |
| PK-18 | 18 inches | .144 oz. | $ .55 |
| PK-24 | 24 inches | .298 oz. | $ .80 |

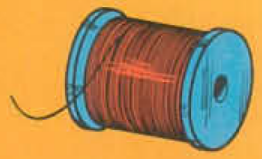
**RECOVERY WADDING:** See Page 54.

**ALUMINIZED PARACHUTE MATERIAL:** Extra strong coated polyethylene. 3 feet x 3 feet. 1.25 mil. thick. Perfect for custom chutes, Para wings, ect. Shipping weight 2 oz.
Cat. No. PM-3 ..... 2 for $1.75



**SHOCK CORD:** Specify width when ordering. Shipping weight 1 oz.
1/8" wide: Net wt. 0.039 oz.,
Cat. No. SC-1 ..... $ .15
1/4" wide: Net wt. 0.078 oz.,
Cat. No. SC-2 ..... $ .20
Also 36" long for greater stretch on those larger birds.
1/8" wide: Net wt. 0.078 oz.,
Cat. No. SC-3 ..... $ .30

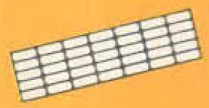
Cat. No. SM-1 6 for $ .90
2" wide – Net wt. .184 oz.
Cat. No. SM-2 6 for $1.00



**SHROUD LINES:** Build reliable, durable custom parachutes with this strong, hard surface shroud line cord.
Comes in 70 yard spools.
Shipping wt. 5 oz.
Cat. No. SLT-1 ..... $ .60

**SCREW EYES:** Specify size when ordering. Shipping weight for 6 eyes 1 oz.
LARGE EYE: 1" long; .04 oz.
Cat. No. SE-1 ..... 6 for $ .40
SMALL EYE: 3/4" long; .03 oz.
Cat. No. SE-2 ..... 6 for $ .40
EXTRA SMALL EYE: 5/8" long; .01 oz.
Cat. No. SE-3 ..... 6 for $ .40

**TAPE DISCS:** Fasten shroud lines to plastic 'chutes or streamers with these ⅜" pressure sensitive tape discs. Shipping weight for 24 discs, 1 oz.
Cat. No. TD-1 ..... 4 sheets of 6 for $ .50



**TAPE STRIPS:** For top strength, low bulk and low weight, fasten shroud lines with these ¼" x ¾" tape strips, in sheets of 35 strips. Shipping weight 1 oz.
Cat. No. TD-2 ..... 2 sheets of 35 for $ .70

**SNAP SWIVELS:** For quick changes and reduced tangling in your recovery systems, use these tiny 1" long snap swivels. Net weight .01 oz. Shipping weight for 12 swivels 1 oz.
Cat. No. SV-12 ..... 12 for $ .90

# BODY TUBES

## SPIRAL

| Cat. No. | Price Each | Length | Inside Diameter | Outside Diameter | Wall Thickness | Wt. in Ounces Net | Ship. |
|---|---|---|---|---|---|---|---|
| **Spiral-Wound Paper Tube, for nose sections and strap-on payloads** | | | | | | | |
| BT-5 | $ .40 | 18" | 0.515" | 0.541" | 0.013" | .219 | 11 |
| **Spiral-Wound Paper Tube, for competition and sport models** | | | | | | | |
| BT-20 | $ .40 | 18" | 0.710" | 0.736" | 0.013" | .288 | 11 |
| BT-20B | $ .20 | 8.65" | 0.710" | 0.736" | 0.013" | .138 | 4 |
| BT-20J | $ .15 | 2.75" | 0.710" | 0.736" | 0.013" | .044 | 4 |
| **Spiral-Wound Paper Tube, for sport and high performance payload models** | | | | | | | |
| BT-50 | $ .50 | 18" | 0.950" | 0.976" | 0.013" | .378 | 11 |
| BT-50W | $ .40 | 9.5" | 0.950" | 0.976" | 0.013" | .200 | 5 |
| **Spiral-Wound Paper Tube, for sport and demonstration models** | | | | | | | |
| BT-55 | $ .75 | 18" | 1.283" | 1.325" | 0.021" | .672 | 11 |
| **Spiral-Wound Paper Tube, for sport and demonstration models** | | | | | | | |
| BT-60 | $ .80 | 18" | 1.595" | 1.637" | 0.021" | .960 | 11 |
| BT-60D | $ .60 | 11" | 1.595" | 1.637" | 0.021" | .583 | 11 |
| **Spiral-Wound Paper Tube, for monster models and tail rings** | | | | | | | |
| BT-70 | $1.00 | 17.5" | 2.175" | 2.217" | 0.021" | 1.300 | 14 |
| **Spiral-Wound Paper Tube, for giant-scale models** | | | | | | | |
| BT-101 | $1.95 | 16.5" | 3.896" | 3.938" | 0.021" | 1.974 | 16 |

## PARALLEL

| Cat. No. | Price Each | Length | Inside Diameter | Outside Diameter | Wall Thickness | Wt. in Ounces Net | Ship. |
|---|---|---|---|---|---|---|---|
| **Parallel-Wound Paper Tube, for sport models** | | | | | | | |
| BT-30 | $ .40 | 9" | 0.725" | 0.765" | 0.021" | .270 | 4 |

## CLEAR

| Cat. No. | Price Each | Length | Inside Diameter | Outside Diameter | Wall Thickness | Wt. in Ounces Net | Ship. |
|---|---|---|---|---|---|---|---|
| **Clear Plastic Tubes, for payload sections** | | | | | | | |
| PST-20 | $ .45 | 8" | 0.710" | 0.736" | 0.013" | .168 | 4 |
| PST-20J | $ .20 | 2.75" | 0.710" | 0.736" | 0.013" | .058 | 4 |
| PST-50S | $ .35 | 4" | 0.950" | 0.976" | 0.013" | .110 | 4 |
| PST-60R | $ .60 | 5" | 1.595" | 1.637" | 0.021" | .350 | 6 |
| PST-65R | $ .65 | 5" | 1.750" | 1.796" | 0.023" | .450 | 6 |
| **Mylar Plastic Tube, for feather weight models** | | | | | | | |
| BT-10 | $ .40 | 9" | 0.710" | 0.720" | 0.005" | .088 | 4 |

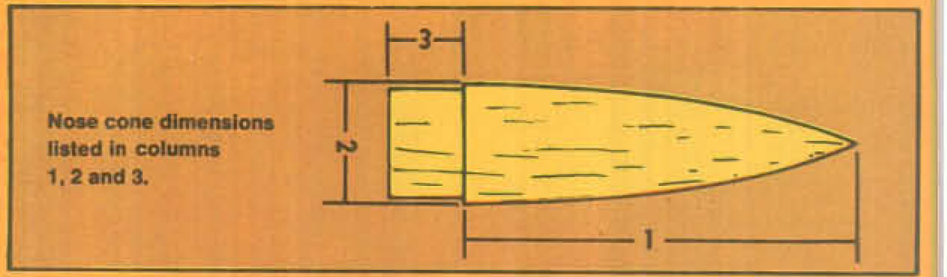
## PAYLOAD SECTIONS

| Cat. No. | Price Each | Body Mat'l. | Fits | Inside Dia. | Inside Length | Overall Length | Wt. in Ounces Net | Ship. |
|---|---|---|---|---|---|---|---|---|
| PS-20A | $1.00 | Clear Plastic | BT-20 | .710" | 2" | 4.00" | .16 | 1 |
| PS-20C | $1.00 | Clear Plastic | BT-20 | .950" | 3" | 7.00" | .40 | 4 |
| PS-30B | $ .85 | Regular Tube | BT-30 | .725" | 2" | 3.75" | .24 | 1 |
| PS-50A | $1.00 | Clear Plastic | BT-50 | .950" | 3" | 6.50" | .39 | 4 |
| PS-50C | $2.25 | Clear Plastic | BT-50 | 1.59" | 4" | 10.50" | 1.00 | 11 |
| PS-50E | $1.95 | Clear Plastic | BT-50 | 1.75" | 4" | 10.50" | 1.10 | 11 |
| PS-55B | $1.75 | Regular Tube | BT-55 | 1.28" | 3" | 7.63" | .53 | 11 |
| PS-60A | $2.25 | Clear Plastic | BT-60 | 1.59" | 4" | 9.50" | .98 | 11 |
| PS-60C | $2.25 | Clear Plastic | BT-60 | 1.75" | 4" | 9.50" | 1.00 | 11 |

**Notes:**
Payload Sections include nose cone, body tube, adapter or bulk head.



# NOSE CONES

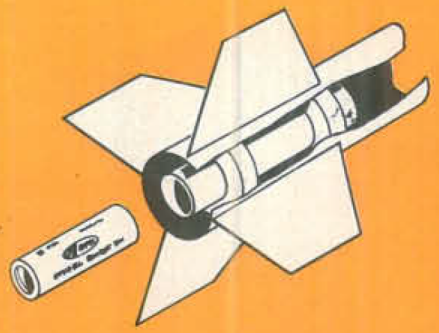



| DESCRIPTION | No. | Catalog No. | Price Each | Dimensions 1 | 2 | 3 | Average Weight | Ship. Weight |
|---|---|---|---|---|---|---|---|---|
| BT-5 | 1 | BNC-5V | $ .35 | 3/4" | 0.541" | 1/4" | 0.013 oz. | 1 oz. |
| | 2 | BNC-5E | $ .35 | 1-3/8" | 0.541" | 1/4" | 0.020 oz. | 1 oz. |
| | 3 | BNC-5S | $ .35 | 1-1/2" | 0.541" | 1/4" | 0.016 oz. | 1 oz. |
| | 4 | BNC-5W | $ .50 | 2-7/8" | 0.541" | 1/4" | 0.039 oz. | 2 oz. |
| BT-10 | 5 | BNC-10A | $ .35 | 13/16" | 0.728" | 1/4" | 0.03 oz. | 1 oz. |
| | 6 | BNC-10B | $ .40 | 1-11/16" | 0.728" | 5/16" | 0.05 oz. | 1 oz. |
| BT-20 | 7 | BNC-20A | $ .35 | 13/16" | 0.736" | 1/4" | 0.03 oz. | 1 oz. |
| | 8 | BNC-20P | $ .50 | 1-5/16" | 0.900" | 7/16" | 0.07 oz. | 4 oz. |
| | 9 | BNC-20B | $ .40 | 1-11/16" | 0.736" | 5/16" | 0.05 oz. | 1 oz. |
| | 10 | BNC-20R | $ .50 | 2-3/4" | 0.736" | 3/8" | 0.07 oz. | 2 oz. |
| | 11 | BNC-20N | $ .55 | 2-3/4" | 0.736" | 1/2" | 0.08 oz. | 2 oz. |
| BT-30 | 12 | BNC-30C | $ .40 | 3/4" | 0.767" | 3/8" | 0.04 oz. | 1 oz. |
| | 13 | BNC-30D | $ .45 | 1-1/2" | 0.767" | 3/8" | 0.06 oz. | 1 oz. |
| | 14 | BNC-30M | $ .50 | 1-1/2" | 0.767" | 1/2" | 0.06 oz. | 1 oz. |
| | 15 | BNC-30E | $ .55 | 2-3/16" | 0.767" | 7/16" | 0.07 oz. | 1 oz. |
| | 16 | BNC-30N | $ .60 | 2-3/4" | 0.767" | 1/2" | 0.08 oz. | 2 oz. |
| BT-50 | 17 | BNC-50J | $ .50 | 1-3/8" | 0.976" | 1/2" | 0.08 oz. | 4 oz. |
| | 18 | BNC-50K | $ .60 | 2-3/4" | 0.976" | 1/2" | 0.13 oz. | 4 oz. |
| | 19 | BNC-50X | $ .75 | 3-1/4" | 0.976" | 1/2" | 0.15 oz. | 4 oz. |
| | 20 | BNC-50AD | $ .85 | 4-1/16" | 1.300" | 1/2" | 0.25 oz. | 6 oz. |
| | 21 | BNC-50Y | $ .90 | 4-3/8" | 0.976" | 3/8" | 0.16 oz. | 6 oz. |
| BT-55 | 22 | BNC-55AA | $ .90 | 3-1/8" | 1.325" | 1/2" | 0.15 oz. | 4 oz. |
| | 23 | BNC-55F | $ .95 | 3-7/8" | 1.325" | 1/2" | 0.19 oz. | 4 oz. |
| | 24 | BNC-55AC | $1.00 | 5-3/8" | 1.325" | 3/8" | 0.32 oz. | 6 oz. |
| | 25 | BNC-55AO | $1.00 | 5" | 1.325" | 3/4" | 0.43 oz. | 4 oz. |
| BT-60 | 26 | BNC-60AB | $ .80 | 2-5/8" | 1.637" | 3/8" | 0.23 oz. | 4 oz. |
| | 27 | BNC-60T | $ .90 | 2-7/8" | 1.637" | 1/2" | 0.17 oz. | 4 oz. |
| | 28 | BNC-60L | $ .90 | 3-1/8" | 1.637" | 5/8" | 0.34 oz. | 4 oz. |
| | 29 | BNC-60AH | $1.75 | 6-5/8" | 1.637" | 7/8" | 1.0 oz. | 6 oz. |
| PST-65 | 30 | BNC-65L | $ .95 | 3-1/4" | 1.796" | 1/2" | 0.41 oz. | 4 oz. |
| BT-70 | 31 | BNC-70AJ | $1.75 | 4-1/4" | 2.217" | 1" | 0.85 oz. | 6 oz. |
| TAIL CONE FOR BT-55[1] | 32 | BTC-55Z | $1.10 | 3" | 1.325" | 1/2" | 0.25 oz. | 4 oz. |

1 (With pre-drilled hole)

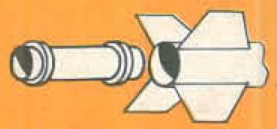
# ENGINE MOUNTS

| Engine Type | Name | Fits | Net Weight Oz. | Shipping Weight Oz. | Cat. No. | Price |
|---|---|---|---|---|---|---|
| For Series I & II Engines—A, B, & C type 0.69"x2.75" | EH-2050<br>EH-2055<br>EH-2060 | BT-50<br>BT-55<br>BT-60 | 0.1<br>0.14<br>0.17 | 5<br>5<br>5 | EH-2050<br>EH-2055<br>EH-2060 | $ .50<br>$ .50<br>$ .50 |
| For Series IV Engines D type 0.945"x2.75" | EM-5063 | Saturn V | 0.4 | 5 | EM-5063 | $ .70 |
| For T Series Mini-Engines .5"x1.75" | EM-520 | BT-20 | 0.09 | 5 | EM-520 | $ .45 |
| Special Purpose Quick-Change Conversion Mount From Series IV Engine to Series I & II Engines | EM-2050 | BT-50 | 0.19 | 5 | EM-2050 | $ .50 |



High performance Estes engine mounts for your original design. All engine mounts feature easy-to-assemble instructions and light weight components.

## ENGINE BLOCKS



Used for positioning the engine in the rocket. Provides a hollow bulkhead for the engine to develop thrust against, as well as an opening for gases to pass for normal ejection.

| Catalog No. | Price 3 for | Outside Dia. | Inside Dia. | Length | Fits | Weight oz. Net | Ship. |
|---|---|---|---|---|---|---|---|
| EB-20A | $ .30 | .708" | .65" | 1/4" | BT-20 | .009 | 1 |
| EB-20B | $ .30 | .708" | .65" | 1/8" | BT-20 | .005 | 1 |
| EB-30A | $ .30 | .724" | .65" | 1/4" | BT-30 | .010 | 1 |



## NOSE BLOCKS

Use these top quality featherweight balsa nose blocks in payload sections and anywhere else a solid bulkhead is required. Precision turned for exact fit in body tubes.

| Catalog No. | Price Each | Outside Diameter | Length | Fits | Weight oz. Net | Ship. |
|---|---|---|---|---|---|---|
| NB-20 | $ .40 | .710" | ¾" | BT-20 | .014 | 1 |
| NB-30 | $ .45 | .725" | ¾" | BT-30 | .014 | 1 |
| NB-50 | $ .50 | .950" | 1" | BT-50 | .040 | 4 |
| NB-55 | $ .55 | 1.283 | 1¼" | BT-55 | .115 | 4 |
| NB-60 | $ .60 | 1.595" | 1½" | BT-60 | .190 | 4 |

## BALSA ADAPTERS

Adapters give flexibility for rocket design. Switch from one size body tube to another for payload capsules, parachute compartments, propulsion sections, etc. Adapters fitting BT-20 can be built up with masking tape to fit BT-30. Any adapter can be hollowed to make a passage for ejection gases. All adapters have at least ½" mating surface on each end.

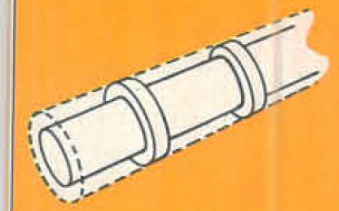
| Catalog No. | Price Each | Mates Tubes | Length | Taper Length | Weight oz. Net | Ship. |
|---|---|---|---|---|---|---|
| TA-520 | $ .40 | BT-5 to BT-20 | 1.75" | 0.75" | 0.04 | 1 |
| TA-550 | $ .45 | BT-5 to BT-50 | 2.2" | 1.0" | 0.06 | 4 |
| TA-2050A | $ .45 | BT-20 to BT-50 | 2.0" | 1.0" | 0.11 | 4 |
| TA-2055 | $ .55 | BT-20 to BT-55 | 2.5" | 1.5" | 0.22 | 4 |
| TA-2060 | $1.10 | BT-20 to BT-60 | 3.0" | 2.0" | 0.20 | 4 |
| TA-5055 | $ .70 | BT-50 to BT-55 | 2.0" | 1.0" | 0.60 | 4 |
| TA-5060 | $1.35 | BT-50 to BT-60 | 3.0" | 2.0" | 0.23 | 4 |
| TA-5065 | $ .80 | BT-50 to PST-65 | 3.0" | 2.0" | 0.26 | 4 |
| TA-5560 | $ .75 | BT-55 to BT-60 | 2.2" | 1.0" | 0.25 | 4 |
| TA-5565 | $ .75 | BT-55 to PST-65 | 2.7" | 1.5" | 0.38 | 4 |
| TA-6065 | $ .70 | BT-60 to PST-65 | 2.0" | 0.5" | 0.23 | 4 |
| TA-6070 | $1.25 | BT-60 to BT-70 | 2.7" | 1.5" | 0.65 | 4 |

## STAGE COUPLERS

For multi-staging, joining body tubes, positioning adapter rings, etc. Make perfect guides for cutting body tubes and sanding cut edges of body tubes, too. Shipping weight for all is 3 oz. each.

| Catalog No. | Price Each | Outside Diameter | Inside Diameter | Length Fits | Average Weight |
|---|---|---|---|---|---|
| JT-5C | $ .15 | .513" | .455" | ⅜" BT-5 | .020 oz. |
| JT-20C | $ .15 | .708" | .650" | ½" BT-20 | .027 oz. |
| JT-30C | $ .15 | .724" | .650" | ½" BT-30 | .030 oz. |
| JT-50C | $ .20 | .949" | .920" | 1" BT-50 | .051 oz. |
| JT-55C | $ .20 | 1.28" | 1.25" | 1.3" BT-55 | .088 oz. |
| JT-60C | $ .20 | 1.59" | 1.55" | 1½" BT-60 | .124 oz. |
| JT-70A | $ .35 | 2.175" | 2.115" | 1¾" BT-70 | .140 oz. |

## CENTERING RINGS



For centering a BT-20 body tube with a BT-50. Greater strength makes for use with high thrust engines. Weight per pair .285 oz. Shipping weight 3 oz.
Cat. No. AR-2050 ..... 10 for $ .65

To center a BT-50 tube in a BT-55 body tube. Extra strong for "D" engine mounts. Weight 0.062 oz. each. Shipping weight 2 oz.
Cat. No. AR-5055 ..... 4 for $ .45

## PAPER ADAPTERS

Add still another dimension to rocket design. Easy to use paper adapters, are perfect for making transitions between tube sizes for countless designs.

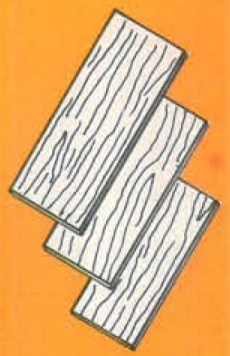
**MULTI-PURPOSE SET** — Includes a total of 20 rings for positioning BT-5 in BT-20; BT-5, BT-20, BT-30 in BT-50; and BT-5, BT-20, and BT-50 in BT-60. Also three universal tapered shrouds and instructions. Shipping weight 2 oz.
Cat. No. TA-1 ..... $ .50

**20-50 RINGS** — 20 rings for centering and mounting BT-20 in BT-50. Shipping weight 2 oz.
Cat. No. RA-2050 ..... $ .40 per set

**20-55 RINGS** — 10 rings for centering and mounting BT-20 in BT-55. Shipping weight 2 oz.
Cat. No. RA-2055 ..... $ .55 per set

**20-60 RINGS** — 10 rings for centering and mounting BT-20 in BT-60. Shipping weight 2 oz.
Cat. No. RA-2060 ..... $ .40 per set

## FIN STOCK



Top quality balsa sheeting for making fins for model rockets. For maximum strength, grain of wood should follow the leading edge of fin. Read FINS in Vol. 3, No. 3 of the MODEL ROCKET NEWS for more information.

| Catalog No. | Price | Dimensions (In Inches) | Weight oz. Net | Weight oz. Ship. | Major Use |
|---|---|---|---|---|---|
| BFS-10 | 3 for $ .60 | 1/32x3x9 | .065 | 4 | High Performance |
| BFS-20 | 3 for $ .50 | 1/16x3x9 | .130 | 4 | High Performance |
| BFS-20L | 3 for $ .65 | 1/16x3x12 | .173 | 6 | High Performance |
| BFS-20B | 2 for $ .15 | 1/16x1/2x6 | .015 | 2 | Glider Elevon |
| BFS-30 | 3 for $ .55 | 3/32x3x9 | .150 | 4 | Sport Models |
| BFS-30L | 3 for $ .70 | 3/32x3x12 | .200 | 6 | Sport Models |
| BFS-40 | 3 for $ .65 | 1/8x3x9 | .200 | 4 | Cluster Rockets |
| BFS-40L | 3 for $ .80 | 1/8x3x12 | .265 | 6 | Glider Wings |
| BFS-30W | $ .85 each | 4x18 | .50 | 16 | Boost Glider |

## FIN PATTERNS

Popular fin designs, all tried and proven, printed full size on heavy index stock. Simply cut out and trace around pattern to transfer design to balsa. A must for the model rocket designer. Shipping weight 1 oz.
SHEET No. 2 (14 patterns) Catalog No. – PP-2 ..... $ .35
SHEET No. 3 (15 patterns) Catalog No. – PP-3 ..... $ .35



ESTES
A SUBSIDIARY OF DAMON

# CUSTOMIZING MATERIALS AND SUPPLIES

### Launchers Special

Perfect starter assortment for starting your own "R & D" program. Over 74 pieces – at an excellent savings! Packed in reusable Range Box.

**Contents:**

**Nose Cones**
1 PNC–60L
1 BNC–30D
1 BNC–30M
1 BNC–20A
1 BNC–20B
1 BNC–20N
1 BNC–10A
1 BNC–10B

**Body Tubes**
2 BT–10H
2 BT–20
2 BT–30
1 BT–60

**Fin Material**
1 BFS–10
2 BFS–20
3 BFS–30
2 BFS–40

**Recovery Equipment**
1 PK–8A
2 PK–12A
1 PK–18A
1 PK–24A
1 SM–1
2 TD–2
1 SLT–1
6 SC–1
1 SC–2
9 SE–2

**Miscellaneous**
1 JT–60C
1 NB–30
1 NB–20
1 EH–2060
1 TA–2060
1 TA–1
3 NCD–2
3 LL–2C
3 EB–20A
3 EB–30A
3 NCW–1
1 NCS–1
1 NCS–2
1 D–5
1 BK-22
1 PP–2
1 PP–3

**$15.00 Value**
Shipping wt. 2 lbs. **ONLY**
Cat. No. ES-300 ..... **$9.95**

### Lift-Off Assortment

For building an all-purpose rocket fleet. Lift-off to more rocket building enjoyment with this special-value assortment.

**Contents:**

**Nose Cones**
1 BNC–30C
1 BNC–30D
1 BNC–30E
1 BNC–30M
1 BNC–30N

**Body Tubes**
5 BT–30

**Fin Stock**
3 BFS–20
2 BFS–30

**Recovery Equipment**
1 PK–8A
2 PK–12A
1 SM–1
1 TD–2
5 SC–1
1 SLT–1
5 SE–2

**Miscellaneous**
1 BK–22
1 PP–2
1 PP–3
5 LL–2A
5 EB–30A

**$7.00 Value**
Shipping wt. 1 lb., 10 oz. **ONLY**
Cat. No. ES-200 ..... **$4.95**

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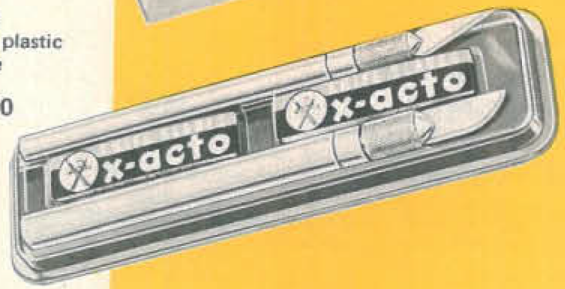
# MODELING TOOLS

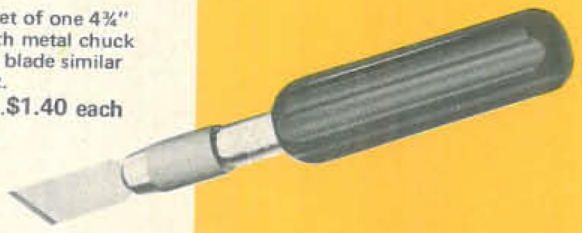
**KNIFE AND TOOL SET:** Contains small, medium and heavy-duty knives and an entire assortment of blades, gouges, routers, and punches. Has planer, 1" sander, spokeshave and balsa stripper. In wooden box, complete with see-through cover and fitted plastic tray insert that holds and shows every tool. Shipping weight 2 lbs.
Cat. No. 2693 . . . . . **$14.95 each**

**KNIFE CHEST:** Small, medium and heavy-duty knives plus 9 assorted extra blades — one for practically every cutting job. In a handy, natural finish wood chest. Shipping weight 1 lb., 8 oz.
Cat. No. 2692 . . . . . **$5.50**

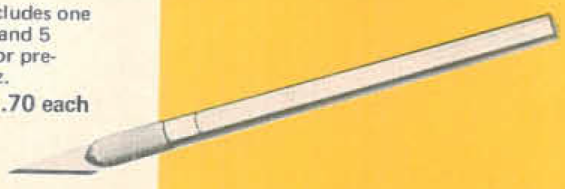
**DOUBLE KNIFE SET:** Nos. 1 & 2 knives with 10 extra asstd. blades. On plastic base with removable plastic Visi-Dome cover. Shipping weight 8 oz.
Cat. No. 2674 . . . . . **$3.00**




**HEAVY DUTY KNIFE:** Set of one 4¾" long and #4 plastic handle with metal chuck and one general purpose knife blade similar to #4G. Shipping weight 6 oz.
Cat. No. 2689 . . . . . **$1.40 each**



**PRECISION KNIFE SET:** Includes one 4¼" long no. 1 aluminum handle and 5 assorted blades. Recommended for precision work. Shipping weight 2 oz.
Cat. No. 2673 . . . . . **$ .70 each**





**RETRACTABLE BLADE KNIFE:** Heavy duty #2 aluminum handle, 4-3/4" long, with one double ended #2D blade. Blade retracts into handle for safe carrying. For general cutting. Shipping weight 4 oz.
Cat. No. 2687 . . . . . **$1.60**

**UTILITY KNIFE** — The 3 Position blade is Reversible, Retractable and Replaceable! For Hobby, Crafts and Home. Shipping weight 3 oz.
Cat. No. 2688 . . . . . **$ .30 each**

**RAZOR SAW:** Fits #4 handle. 1" wide x 5" long. Use razor saw blade for cutting balsa and body tube. Shipping weight 6 oz.
Cat. No. 2681 . . . . . **$ .55 each**

**TWEEZERS:** For 1,001 uses in handling small parts, attaching shock cords, etc. Steel, 3" long, 1/8" jaw. Shipping weight 2 oz.
Cat. No. 2708 . . . . . **$ .25 each**

**WHETSTONE:** Keep knife blades extra sharp for easy cutting. Pocket size, 3½" x 3/4" x 3/8". Use with oil for best results.
Cat. No. 2709 . . . . . **$ .50**

# FINISHING SUPPLIES

**ASTROSEAL** balsa filler: Gives smooth surface for dope or enamel application. Sand between coats. Four ounce jar. Ship. wt. 7 oz.
Cat. No. SS-2 . . . . . **$1.25**

**HEAT RESISTANT PAINT:** Protects exposed rocket parts from heat damage up to 1000°. Bright metallic finish. Recommended for swept fins and other parts exposed to hot exhaust gases. 1½ ounce bottle. Shipping weight 6 oz.
Cat. No. AP-1 . . . **$ .75**

**FLUORESCENT SPRAY PAINT:** The brightest colors anywhere. Glowing, high visibility paint in 3 oz. spray cans. Dries in minutes. Rocket Red, Dazzling Orange, Solar Yellow, Brilliant Green, and Vibrant Pink. Specify colors when ordering. Shipping weight 14 oz.
Cat. No. FP-4 . . . . . **$1.25**

**ENAMEL SPRAY PAINT:** Top quality enamel in 3 oz. spray cans. Dries in minutes. Use indoors or outdoors. Not fluorescent. Royal Blue, Insignia Red, Yellow, Insignia Orange, Gloss White, Gloss Black, Flat White, Flat Black, Gold, Chrome Silver, and Clear. Specify colors when ordering. Ship. wt. 14 oz. each.
Cat. No. EP-4 . . . . **$1.00**

**MILITARY FLAT SPRAYS:** Perfect paints for scale models, especially the Maxi-Brute German V-2 and Pershing 1-A. In 3 oz. cans. Camouflage Gray, Light Earth, Artillery Olive, and Flat Red. Specify color when ordering. Shipping weight 14 oz.
Cat. No. FEP-4 . . . . **$1.00**

**ENAMEL PAINT:** Brushes on smoothly and easily. Perfect for touch-up jobs. 2/3 oz. bottles. Insignia Red, Insignia Orange, Yellow, Royal Blue, Gold, Chrome Silver, Gloss White, Gloss Black, Flat White, Flat Black, Flat Orange and Flat Red. Specify colors when ordering. Shipping weight 4 oz.
Cat. No. BEP-1 . . **$ .45**

**SANDING SEALER:** Fills small holes in balsa, paper and other porous materials, provides a smooth surface for paint or dope. In 1 oz. bottles. Shipping weight 4 oz.
Cat. No. SS-1. . . . . **$ .45**

**THINNER:** For diluting enamel, dope, sanding sealer and Astroseal. Excellent for brush cleaning. 2/3 oz. bottles. Specify type when ordering. Shipping weight 4 oz.
Thinner for enamel only
Cat. No. EPT-1 . . . **$ .45**
Thinner for dope, sanding sealer and Astroseal
Cat. No. BDT-1 . . . **$ .45**

**WHITE GLUE:** Sets fast, gives super strong joints with wood, paper, cloth and other porous materials. In 2 ounce plastic squeeze bottle. Shipping weight 6 oz.
Cat. No. WG-1 . . . . . **$ .85**

**BODY PUTTY:** Fill cracks, holes, grain marks in balsa parts, make smooth fin-body joints. 1 1/2 oz. tube. Shipping weight 5 oz.
Cat. No. FM-1 . . . . . **$ .60**

**FINISHING WAX:** For the high gloss finish and low drag. Recommended for use on enamel and butyrate finishes only. In 2 ounce jar. Shipping weight 5 oz.
Cat. No. FW-2 . . . . **$1.25**

**SANDING MATERIAL:** Special mylar plastic backed abrasive sheet can be used over and over again. Extra fine 320 grit in easy to handle 2½" x 2¼" sheets. Shipping weight 1 oz.
Cat. No. SP-320 6 for **$ .60**

**SANDPAPER:** Shape and smooth model rocket parts. Available in three grades. 3" x 3" sheets. Specify grade when ordering. Shipping weight 1 ounce for 6 sheets.
12 Sheets Medium —
Cat. No. SPM-2 . . . **$ .50**
12 Sheets Fine —
Cat. No. SPF-2 . . . . **$ .50**
12 Sheets Extra Fine —
Cat. No. SPEF-2 . . . **$ .60**
36 Sheets Assorted (6 each)
Cat. No. SPA-2 . . . . **$ .90**

**PAINT BRUSHES:** Two #1 brush for extra fine work, two #4 brush for normal work and two #6 brush for covering large areas rapidly. Sets of six only. Shipping weight 2 oz.
Cat. No. PB-3 . . . . . **$1.00**

**STYRENE CEMENT:** 1/2 oz. bottle. For cementing plastic to plastic. Shipping weight 2 oz.
Cat. No. PC-1 . . . . . **$ .35**
1/2 oz. Tube. For cementing plastic to other materials. Shipping weight 2 oz.
Cat. No. PC-2 . . . . . **$ .30**



# DECALS

Deluxe Decals for roll pattern and fins. Red, white, orange and black 4" x 9" sheet.
Cat. No. D-13 **$ .60 each**

Kit Name Decals for your favorite models. Red, white, yellow and black 3-1/2" x 9-1/4" sheet.
Cat. No. D-11 **$ .35 each**

Gold Mine Special. Decals for lettering, vents, hatches, etc. Red, white, and black 3-1/2" x 9-1/4" sheet.
Cat. No. D-5 **$ .35 each**

Multi-Purpose Decals featuring a variety of favorite markings. Printed black on clear 3" x 4-1/2" sheet.
Cat. No. KD-45 **$ .20 each**

1/5" Checkerboards for colorful roll patterns. 4-1/4" x 10" sheet. Available in red, black, gold or white. Specify color when ordering.
Cat. No. D-7 **$ .35 each**

3/8" Checkerboards for authentic roll patterns. 4-1/4" x 10" sheet. Available in red, black, white or gold. Specify color when ordering.
Cat. No. D-8 **$ .35 each**

Patriot Decal. Features American Eagle roll pattern plus big USA lettering. Gold, black and white 6" x 7-1/2" sheet.
Cat. No. KD-M3B **$ .45 each**

Kit Name Decals for your favorite models. 4" x 8-1/4" sheet. Available in black or white. Specify color when ordering.
Cat. No. D-6 **$ .35 each**

Red, white and blue stars and stripes for fins and roll patterns. 6" x 12" sheet.
Cat. No. KD-M3A **$ .85 each**

Futuristic Starship Vega Decals for fins and roll patterns. Red, black and white 5" x 12" sheet.
Cat. No. KD-M4A **$ .55 each**

Orbital Transport Decals for fins and body tube decor. Red, black and yellow 4-1/4" x 11" sheet.
Cat. No. KD-42 **$ .70 each**

Red Max fun decals. Black and white skull and cross bones, iron crosses and other crazy markings. 5" x 11-1/2" sheet.
Cat. No. KD-M2 **$ .45 each**

Interceptor Decals. Futuristic USAF red, white, blue and black fin and body tube decor. 4-1/2" x 12-1/2" sheet.
Cat. No. KD-50A **$ .70 each**

Color Stripes for body tubes and fins. 4-1/4" x 10" sheet with ten stripes 1/32" through 1/2" wide and 9-1/2" long. Available in red, black or yellow. Specify color when ordering.
Cat. No. D-9 **$ .35 each**

Model markings for roll patterns, lettering, numbering, etc. Printed in black on 4" x 9" clear backing.
Cat. No. D-12 **$ .35 each**

1/4" Letters and Numbers to identify your models. Available in black or white. Specify color when ordering.
Cat. No. D-4 **$ .20 each**

3/8" Letters and Numbers for authentic markings. Available in black or white. Specify color when ordering.
Cat. No. D-3 **$ .20 each**

STARS and BARS sheet of twelve 1-1/4" red, white and blue USAF emblems. 2-1/2" x 4-3/4" sheet.
Cat. No. D-1 **$ .20 each**

STARS and BARS sheet of two 2-1/8" and two 1-3/4" red, white and blue USAF emblems plus other markings. 3-1/4" x 4-1/4" sheet.
Cat. No. D-2 **$ .20 each**

**DECORATING TAPE, black:** Thin, tough pressure sensitive tape is perfect for stripes, bars and other decoration. Only .0015" thick, in rolls 1/2 inch wide and 144 inches long. Shipping wt. 5 oz.
Cat. No. DT-1. **$ .40 each**

All Decals shipping wt. 2 oz.

# ACCESSORIES AND SUPPLIES

**LAUNCH LUGS:** Super strength laminated launch lugs feature mylar plastic core for durability, paper outer layer for easy gluing. Inside diameter 5/32", fit 1/8" rod. Shipping wt. 1 oz.

1 1/4" long: Cat. No. LL-2A
**12 for $ .60**

2 3/8" long: Cat. No. LL-2B
**10 for $ .60**

5" long: Cat. No. LL-2C
**6 for $ .70**

8" long: Cat. No. LL-2D
**4 for $ .70**

**WIND METER:** Rugged, pocket-size instrument for determining wind velocity. Indispensible to the serious rocketeer for studying wind effects on rocket and parachute performance. Shipping weight 5 oz.
**Discontinued**

**FOAM PADDING:** Protect payload specimens, pad payload capsules with plastic foam. Pieces are 6" x 6" x ¼". Can be cut and secured in place with white glue. Net weight 0.08 oz. Shipping weight 1 oz.
Cat. No. PSP-1
**3 for $ .80**

**NYLON SCREWS:** Extra light, high strength screws for elevon adjustment on boost-gliders. ½" long, 1/16" thread diameter. Read TR-4 for information on gliders and their design. Shipping weight 1 oz.
Cat. No. AS-1
**6 for $ .80**

**PAYLOAD:** How high can your rocket lift an ounce of lead? This 1 oz. payload weight, ¾" in diameter, is used in some altitude competition events. Shipping wt. 2 oz.
Cat. No. PL-1
**2 for $1.10**

**REINFORCING:** Reinforce fin joints, attach shock cords. 3" x 12" sheets of gauze.
Cat. No. GR-2
**6 for $ .70**

3" x 9" self-adhesive treated paper
Cat. No. PRM-1
**6 for $ .55**

**STYROFOAM BALLS:** Featherweight 3" diameter styrofoam balls for "odd ball" designs. Use white glue for best results in attaching legs, antennas, stabilizers, etc. Net weight 0.2 oz. Shipping weight 5 oz.
Cat. No. SB-3
**2 for $ .80**

**DOWELS:** Extra strong, light weight, seasoned maple dowels. Shipping weight 5 oz.
1/8" x 18" –
Cat. No. WD-1
**8 for $ .50**

1/12" x 12" –
Cat. No. WD-2
**8 for $ .50**

**GLUE GUN:** Handles all makes of glue and cement. Conserves glue, speeds assembly. Shipping weight 1¾ oz.
Cat. No. GG-1
**$1.75**

**WEIGHTS:** Balance rockets for stability.

ROUND LEAD WEIGHTS – 11/16" dia., center hole. Weight: 0.12 oz. each. Shipping wt.: 1 oz.
Cat. No. NCW-1
**6 for $ .70**

BALANCING WEIGHTS – Flexible lead strips. 3" x ½" x 0.02". Weight: 0.085 oz. each. Shipping weight: 1 oz.
Cat. No. NCW-3
**10 for $ .70**

**ENGINE HOLDER:** Flat spring steel design gives easy installation and low drag. Recommended for sport and demonstration models built from BT-20 and BT-30, the engine holder is 2.8" long, 0.1" wide and only 0.025" thick. Mount in on the model with gauze and glue as shown on page 74. Net weight 0.032 oz. Shipping weight 1 oz.
Cat. No. EH-2
**3 for $ .70**

# TECHNICAL REPORTS
## SPECIAL PUBLICATIONS

**ROCKET STABILITY:** Easy-to-read report explaining how rockets are designed to fly properly and including a before-launch test to assure rocket stability.
Cat. No. TR-1 ..... $ .35

**MULTI-STAGING:** A complete easy-to-understand report providing the information needed for designing, building, and flying multi-stage rockets.
Cat. No. TR-2 ..... $ .35

**ALTITUDE TRACKING:** The classic work on simple altitude tracking for model rocketeers with easy-to-understand computation.
Cat. No. TR-3 ..... $ .35

**REAR ENGINE BOOST-GLIDERS:** Basic information covering design, construction, and operation of rear engine boost-gliders.
Cat. No. TR-4 ..... $ .35

**BUILDING A WIND TUNNEL:** Full plans and information for building and using a wind tunnel with data on both hand-powered and motorized versions.
Cat. No. TR-5 ..... $ .35

**CLUSTER TECHNIQUES:** The complete report on clustering engines to launch larger payloads.
Cat. No. TR-6 ..... $ .35

**FRONT ENGINE BOOST-GLIDERS:** Valuable information on designing, building, and flying front engine boost-gliders.
Cat. No. TR-7 ..... $ .35

**MODEL ROCKETRY STUDY GUIDE:** A planned sequence of activities to guide anyone toward becoming an expert model rocketeer.
Cat. No. TR-8 ..... $ .85

**DESIGNING STABLE ROCKETS:** Based on standard engineering practices, this report presents a method of designing rockets for proper stability on paper before any construction work is done.
Cat. No. TR-9 ..... $ .35

**ALTITUDE PREDICTION CHARTS:** Explains a relatively simple method by which aerodynamic drag and other atmospheric effects can be taken into account in predicting rocket peak altitude.
Cat. No. TR-10 ..... $1.25

**AERODYNAMIC DRAG OF MODEL ROCKETS:** All factors that influence drag are explained, and practical examples of ways to minimize drag are given.
Cat. No. TR-11 ..... $1.25

**THE ALPHA BOOK OF MODEL ROCKETRY:** The things you will want to know before, during, and after your first flights are explained to help you get the most fun from your new hobby.
Cat. No. 2820 ..... $ .60

**MODEL ROCKET LAUNCH SYSTEMS:** An easy-to-understand booklet covering basic electrical theory, launcher design, multiple launchers, and electrical math.
Cat. No. BK-12 ..... $ .35

**SPACE AGE TECHNOLOGY:** A comprehensive mini-text for use in aerospace education, science, and industrial arts classes.
Cat. No. BK-14 ..... $1.25

A "Teacher's Manual" (Cat. No. BK-14TM) is available to educators for $1.25

**ESTES MODEL ROCKET CONTEST GUIDE:** Great for planning model rocket contests and meets. Features rules for exciting competitive events plus suggestions for contest organization.
Cat. No. BK-17 ..... $ .60

**AEROSPACE EDUCATION AND MODEL ROCKETRY:** An excellent teacher's guide for introducing model rocketry into the classroom.
Cat. No. BK-18 ..... $1.25

(Single copies free to educators requesting it on school stationery.)

**ESTES GUIDE FOR AEROSPACE CLUBS:** Features complete details for club organization and activities. A must for active clubs.
Cat. No. BK-19 ..... $ .60

**MODEL ROCKET ENGINES:** Large time-thrust curves suitable for use in displays, plus other data.
Cat. No. TN-1 ..... $ .35

**MODEL ROCKET ENGINE PERFORMANCE:** Technical information. Includes formulas for calculating engine performance.
Cat. No. TN-2 ..... $ .35

**IS THAT PARACHUTE TOO BIG?** Information on model rocket recovery systems with suggestions on modifying parachutes.
Cat. No. TN-3 ..... $ .35

**THE FINE ART OF PAYLOAD LAUNCHING:** Information on payload launching with data on possible payloads, available payload compartments, and suggestions on preparation and launch of payloads.
Cat. No. 84703 (TN-4) ..... $ .35

# Get more out of model rocketry...

# Join the estes aerospace CLUB

The most exciting hobby on Earth is even more fun when you are a member of the most exciting rocket club on Earth — The Estes Aerospace Club.

As soon as you join, you receive your own special EAC membership kit that includes the following exciting items:

**VIPER ROCKET** — Special kit designed exclusively for members of the Estes Aerospace Club. Features sleek styling, parachute recovery, and Mini-Brute power for maximum high performance. The Viper is the first special kit which will be available ONLY to EAC members.

**MEMBERSHIP CARD** — Impressive I.D. card identifying you as an official member of the Estes Aerospace Club. Wallet size card features identification information, rocket safety code, chapter affiliation information, and your own rocketeer achievement record.

**MEMBERSHIP CERTIFICATE** — Handsome membership certificate signifying your EAC affiliation. Suitable for framing.

**CLUB EMBLEM** — Official iron-on patch with EAC insignia. Perfect for tee shirt or jacket, and lets the world know you are a member of the EAC. And as you progress to higher skill levels, you'll receive additional iron-on "thrust bars" signifying your achievements.

**DECAL SHEET** — Special EAC rocket decals to identify your models as part of the EAC fleet.

**RANGE BOX STICKERS** — Bright, multipurpose stick-ons for your range equipment.

**EAC STATIONERY** — Distinctive EAC rocketeer stationery for your most important notes and letters.

**MODEL ROCKETRY TECHNICAL MANUAL** — 16-page technical manual covering a variety of model rocketry topics. Includes information on construction techniques, finishing, stability, tracking, recovery systems, multi-staging, and boost gliders, plus many other subjects.

**MODEL ROCKET NEWS** — Subscription to model rocketry's most exciting publication. Features free plan designs, technical articles, cartoons, contests, construction hints, rocketeer contributions, special projects, and much, much more.

**EAC PRODUCTS SHEET** — Special club flier featuring exciting items like club jackets, patches, and tee shirts, plus outstanding offers for EAC kits, parts and accessories, rocket plans and technical publications which will be available ONLY to members. Remember, your money flies further in the EAC.

**EAC ACTION BOX** — Membership kit box doubles as sturdy cardboard carrying case for your model rocketry materials.

## INDIVIDUAL MEMBERSHIP KIT

- Membership in the Estes Aerospace Club opens up a whole new world of exciting model rocket activities. Your EAC Membership Kit is just the beginning.
- As an EAC member you will receive a special iron-on club insignia. This club emblem is styled to accommodate four additional iron-on thrust bars, each a different exciting color signifying your EAC skill level. "Thrust bars" and EAC achievement certificates are awarded to you as you advance toward the status of Expert Rocketeer. (Details on skill level requirements and advancement will be included with your Membership Kit).
- You'll be eligible to participate in special projects and exciting contests open only to EAC members — many of them involving valuable prizes.
- As an official EAC club member you will be eligible for exclusive kits and special product offers.
- You'll have the opportunity to be selected as a member of the EAC Advisory Board which will suggest new product ideas to Estes Industries. EAC Advisory Board members may be asked to test fly new rocket designs and comment directly to Estes engineers.
- You'll be the first to receive the latest information on new products, technical reports, rocket plans, special projects, and major EAC model rocketry events as soon as it is available.
- Further details on all these exciting programs and club services will be included with your EAC Membership Kit.
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# ENTER THE DESIGN OF THE MONTH CONTEST

## YOUR DESIGN COULD WIN YOU A $50 MERCHANDISE CERTIFICATE

Have an idea for an original design? Enter our Design of the Month competition today! Simply follow the rules below. Keep those entries coming, and maybe you'll be our next winner!!

### DOM RULES

1. All entries become the property of Estes Industries and cannot be returned.
2. Employees of Estes Industries and members of their immediate families are not eligible.
3. Any type of model rocketry design can be entered (rockets, boost-gliders, launching or recovery devices, etc.).
4. Designs should be new, original, and different, but they also need to be workable. The goal is to develop something new that other rocketeers can build and use successfully, too.
5. Entries will be judged on practicality, originality, neatness, completeness, and clarity. Plans do not have to be flight tested and proven. However, a proven design is more apt to win.
6. Your design entry should include a parts list and any instructions or diagrams you feel would be helpful.
7. Please do not send the actual model as it cannot be returned.
8. Photos of entries are greatly appreciated, but are not required.
9. You may send as many entries as you like.
10. New contest every month.
11. All designs reaching Estes Industries during the calendar month will be entered in that month's competition. (Date of receipt, not postmark, will determine the month in which a design will be entered.)
12. If two or more exceptional entries are received during any month, the judges may, at their discretion, make identical first-place awards or give additional honorable mentions.
13. Designs should be sent to the Design of the Month Editor, Estes Industries, Inc., Penrose, Colorado 81240. However, all plans sent to us which are not specifically addressed to another contest or department will be automatically placed in the Design of the Month Competition.
14. Each month the designer of the winning entry will receive a certificate entitling him to $50.00 in merchandise and an award certificate suitable for framing. Award winners will be notified by mail.

GOOD LUCK!!!

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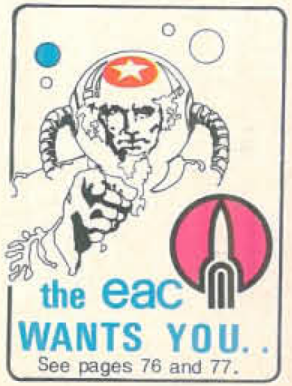





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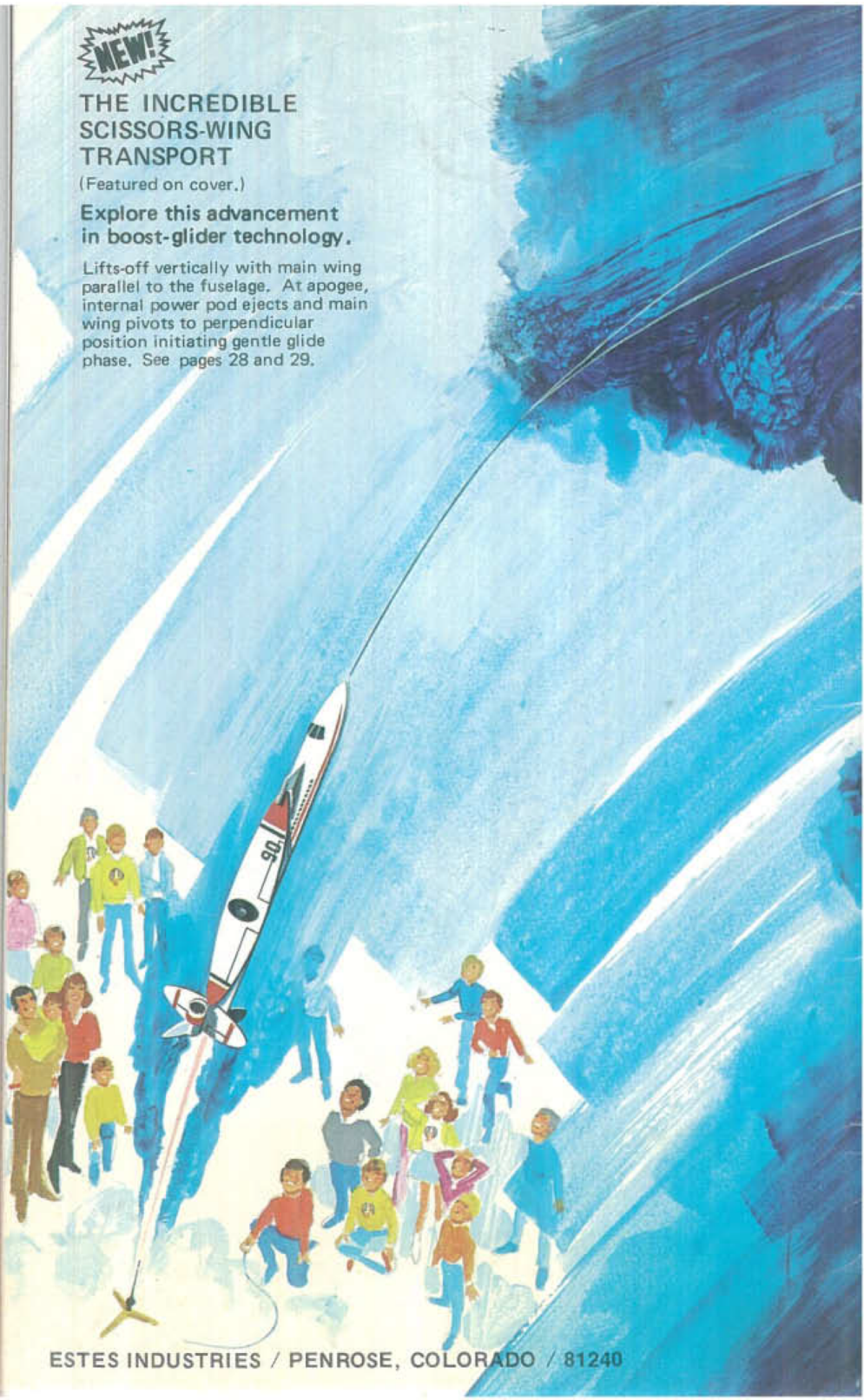
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