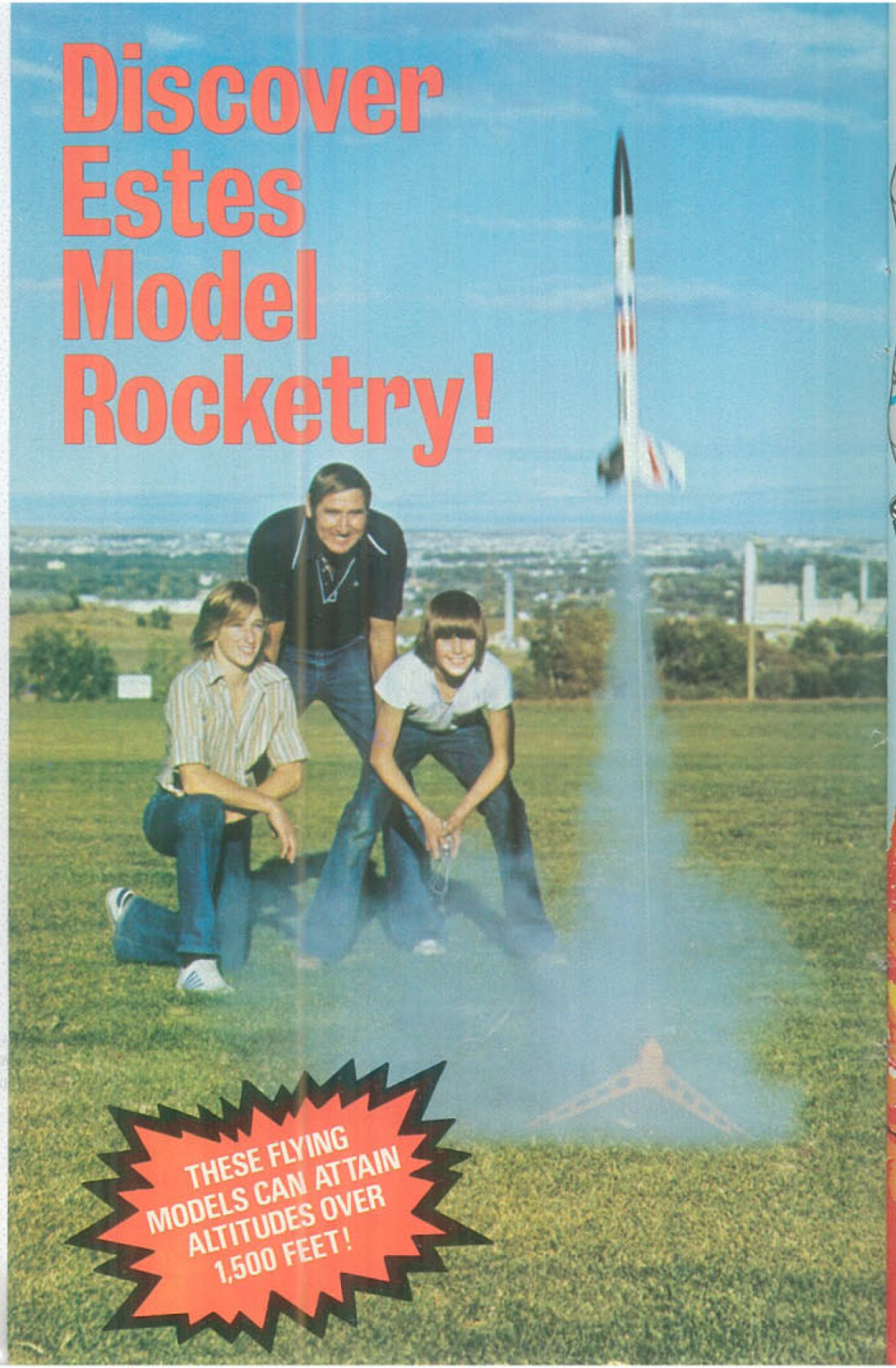
ESTES
A SUBSIDIARY OF DAMON
INSIDE!
REAL FLYING
MODEL ROCKETS!
NASA
1977
MODEL
ROCKETRY
CATALOG
no.771 35¢

Discover Estes Model Rocketry!



THESE FLYING MODELS CAN ATTAIN ALTITUDES OVER 1,500 FEET!

A Personal Message From Vern Estes

Welcome!

You may not have thought of it, but the men and women involved in the American and Soviet space programs -- particularly the Astronauts -- are among the greatest scientists the world has ever produced. They have to be expert in rocketry, aeronautics, astronomy, navigation, physics, geology, biology, electronics, and medicine.

The very best time to learn about rocketry is when you are young. And there is no better way than by building your own Estes flying model rockets. You'll discover in no time that you'll be familiar with the technology, the jargon, and the physics of space flight.

What's more, in some cases you'll be way ahead of NASA! For example, on page 38 of this catalog you'll find a flying model of the new Space Shuttle. The actual vehicle was rolled out for public display September 15, 1976. The Estes model -- an incredible recreation that lets you recover the boosters and external tank via an 18" recovery 'chute, while the orbiter glides back to earth -- was in stock and flying long before the NASA rollout. And our sleek Andromeda on page 32, which has been flying for us for several years, is but a gleam in the eyes of some futurists.

Someday it could be you standing on the surface of the moon looking out into space at an "Earthrise"... or on the red, rocky terrain of Mars where no earthling has ever been before. And if your name should be added to the list of great pioneers of manned flight -- the Wright brothers, Bleriot, Lindburgh, Richard Byrd, John Glenn, and Neil Armstrong -- you can look back with pride at where you got your start -- in the exciting world of Estes model rocketry!

Sincerely

Vern Estes

Vern Estes

PARENTS: Last Summer A Young Rocketeer Made The 100 Millionth Launch Of An Estes Model Rocket... So You Are Assured This Is One Of The Safest Hobbies In America, As Well As One That Is Tremendously Educational!

HERE'S HOW TO USE YOUR ESTES CATALOG.

1. Name of the kit.
2. Skill Level number recommends the general skill and experience necessary for a rocketeer to successfully complete the kit. Skill Level 1 kits are suggested for beginners, Skill Level 2 for intermediate rocketeers, and so on to Skill Level 5, Expert Rocketeer.
3. Special features and additional kit information.
4. Specifications including length, diameter, and weight, in both English and Metric Equivalents, plus shipping weight for the kit.
5. Recommended engines for flying the rocket. Engines are listed from least powerful to most powerful. Also, indicates which engine should be used for the first flight.
6. Catalog number for kit which should always be used when ordering.
7. Price of the kit.
8. The background color on each page reflects the appropriate Skill Level color for the kits shown. (See chart below) All kits in this catalog are grouped by Skill Level.

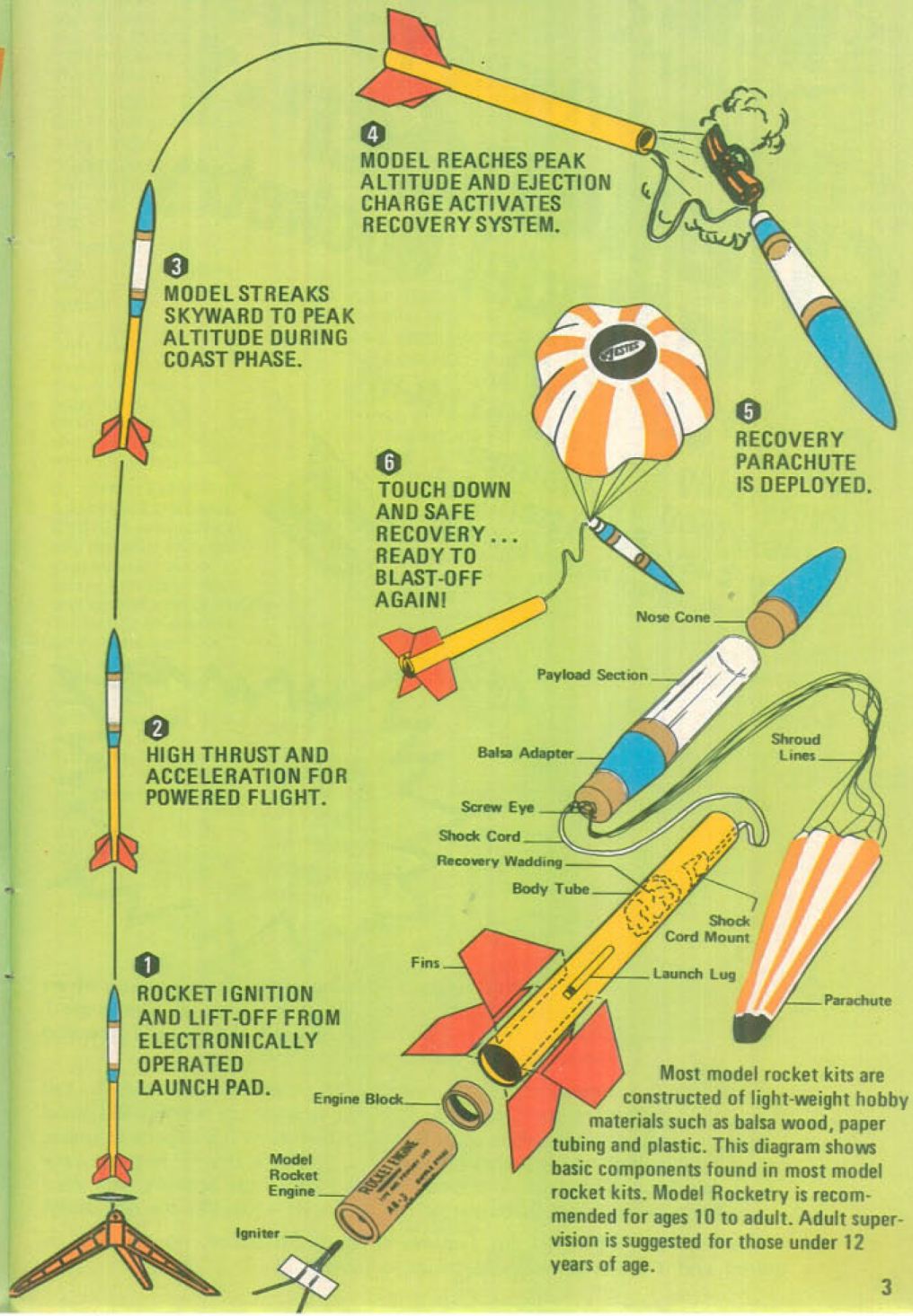
SKILL LEVELS

All model rocket kits in this catalog require assembly unless otherwise indicated. Some of these flying model rockets can be put together and be ready to launch in minutes. Others with their sophisticated aerodynamics and wealth of detail are more challenging. The Skill Level numbers given in each kit description recommend the skills and experience necessary for a rocketeer to successfully complete the kit. Generally speaking, it is not wise to jump skill levels. Unless you are an extremely experienced modeler, you should complete a kit of Skill Level 1 before attempting Skill Level 2 . . . and you should build a Skill Level 2 rocket before moving on to Skill Level 3 . . . and so on. For further information, refer to the chart below.

Skill Level No.	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

ESTES
A SUBSIDIARY OF DAMON

FLIGHT SEQUENCE & MODEL ROCKET PARTS



Most model rocket kits are constructed of light-weight hobby materials such as balsa wood, paper tubing and plastic. This diagram shows basic components found in most model rocket kits. Model Rocketry is recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years of age.

NEW!

"THIS IS WHERE TO BEGIN"

Challenger-1 Flying Model Rocketry Starter Kit

Everything you need for lift-off in less than 30 minutes! Very Easy-To- Assemble!
(less 6-volt lantern battery and glue)

THE CHALLENGER-1 LAUNCH SYSTEM Can Be Used Throughout Your Model Rocketry Career To Launch The Majority Of Your Estes Model Rockets!

Imagine this: A launch pad in the middle of an empty field or lot. On it is a slender Challenger-1 model rocket — poised for take-off, the sunlight gleaming on its realistic markings and insignia.

Suddenly there's an eruption! A powerful blast from the tail shoots your Challenger-1 rocket straight up nearly a thousand feet in the air with a great WHOOOOSH! Now it's a speck in space, high, high above, when suddenly. . . "There it is!" The recovery 'chute is deployed! A brightly colored parachute appears, and your Challenger-1 rocket floats gently back to Earth — just like the real thing!

Your CHALLENGER-1 kit features quick-finish decor, no painting required, and it can attain altitudes of up to 1000'!

HERE'S WHAT'S INCLUDED IN YOUR STARTER KIT:

1. CHALLENGER-1 ROCKET Sleek white body that requires no painting, easy-to-assemble with quick-release engine mount.

2. FIN UNIT Bright orange plastic, all in one piece.

3. DECALS Incredibly realistic, water soluble, easy to apply.

4. NOSE CONE Bright orange, simple two-piece plastic construction.

5. RECOVERY PARACHUTE ASSEMBLY Includes brightly-colored 12" 'chute (easy to spot from earth!), shroud lines, and shock cord plus all mounting materials.

6. CHALLENGER-1 LAUNCH CONTROL SYSTEM — Futuristically designed with ignition launch button. . . safety interlock key. . . and special arming lamp for testing to see that all systems are "GO." Also included: light-weight launch cable with micro-clips which attach to Solar Igniters for reliable rocket ignition.

7. LAUNCH ROD 1/8" x 1 yard tall to guide your CHALLENGER-1 straight up into space.

8. MINI-BLAST DEFLECTOR — Just like the real thing at Cape Canaveral. Protects your launch pad from the rocket's blast.

9. POWER CAP Fits easily on a 6 or 12-volt lantern battery, and serves as combination power source and launch pad. (Battery not included with kit.)

10. RECOVERY WADDING — Heat-resistant wadding to protect the recovery 'chute from the engine's ejection gases. (Important; Never substitute ordinary paper or tissue for this heat-resistant recovery wadding!)

11. BEGINNERS TECH MANUAL — A new publication featuring a variety of model rocketry data, so you can get started right!

12. THREE NAR SAFETY-CERTIFIED ROCKET ENGINES Will send your CHALLENGER-1 hundreds of feet straight into the sky, then when it reaches apogee, it will separate the nose cone from the body which releases the recovery 'chute, and the entire vehicle will come floating gently downward, ready for another launch. (NOTE: Your CHALLENGER-1 can also accommodate more powerful rocket engines — the B6-4 which will take it to over 750', and even the C6-5, which will send it shooting up over 1,000'.

13. SOLAR IGNITERS — The current from the battery passes through the micro-igniter clips to the igniters which create rocket engine ignition necessary for blast-off.

Shipping wt. 1 lb. 2 oz.

ESTES CHALLENGER-1 FLYING MODEL ROCKETRY STARTER KIT

Cat. No. 1416

ONLY $9.95

STAR TREK™ The Perfect Model Rocketry STARTER KIT

Complete with everything you need to lift-off in minutes.
(less 12-volt lantern battery and glue).

Right out of the future! Here's power. . . beauty. . . design — all fused into a neat, sleek starter kit that's easy to assemble, with no painting required.

While you'll want to use lower powered engines on your first flight, your STAR TREK rocket will take our higher powered engines, that will send it streaking skyward to over 1,000'. You'll almost hear Captain Kirk giving the orders while Spock scans the banks of instruments in preparation for return to Earth via the multi-colored 12" Recovery 'chute.

EASY-TO-ASSEMBLE

Ready-To-Launch In Less Than 30 Minutes

KIT INCLUDES:

1. **Star Trek rocket** that requires no painting with easy-to-assemble engine mount.
2. **Fin unit** of brightly colored plastic.
3. **Decals** of yellow and red for body and fins that simply press-on.
4. **Nose Cone** of rugged plastic.
5. **Recovery Parachute Assembly** that features spectacular 12" orange-and-white striped 'chute, shroud lines and shock cord, plus all mounting materials.
6. STAR TREK **Launch Control System,** futuristically designed to include launch button, safety interlock key, special arming lamp for testing circuitry, lightweight launch cable and micro-igniter clips.
7. **Launch Rod** 36" tall x 1/8" diameter to guarantee a straight, true lift-off every time.
8. **Mini-Blast Deflector** to protect your launch system at blast-off.
9. **Power Cap** of high-impact plastic to fit easily on 6- or 12-volt lantern battery to serve as combination power source and launch pad (12 volt lantern battery not included with kit).
10. **Three NAR Safety-Certified Rocket Engines** for your first three flights to send your STAR TREK rocket hundreds of feet into the sky. Later you can use more powerful engines to achieve heights over 1,000 feet!
11. **Recovery Wadding** to protect 'chute assembly from effects of rocket blast.
12. **Rocket igniters** for reliable rocket ignition every time.
13. **Beginners Tech Manual,** chock full of model rocketry information.

1 lb. 2 oz.

STAR TREK FLYING MODEL ROCKETRY STARTER KIT

Cat. No. 1418 . . . . . **ONLY $9.95**

 ©1976 Paramount Pictures Corporation

THE ALPHA III STARTER KIT

Includes the Space-Age Designed PORTA-PAD and heavy duty SOLAR LAUNCH CONTROLLER!

If you intend to make a real hobby of Estes Model Rocketry, this ALPHA III Starter Kit gives you immediate flexibility, because you'll be able to use this launch system with a standard 1/8" launch rod for most rockets, and a 3/16" maxi-rod for the giant "D" powered flying model rockets like the unbelieveable Maxi-Brutes that stand more than 3' tall (see page 40 - 42).

If you intend to make a real hobby of Estes Model Rocketry, this ALPHA III Starter Kit gives you immediate flexibility, because you'll be able to use this launch system with a standard 1/8" launch rod for most rockets, and a 3/16" maxi-rod for the giant "D" powered flying model rockets like the unbelieveable Maxi-Brutes that stand more than 3' tall (see page 40 - 42).

KIT INCLUDES:

1. **ALPHA III Rocket** with rugged bright plastic one-piece fin unit and nose cone.
2. Realistic **Decal** sheet with water soluble decals for easy application.
3. Brightly colored 12" **Recovery Parachute** with shroud lines and shock cord.
4. PORTA-PAD **launch platform** of heavy duty plastic with strong girder construction, yet easy to disassemble and extremely portable. Features 36" long x 1/8" diameter standard launch rod.
5. **Blast Deflector Plate** to protect the Porta-Pad.
6. **SOLAR LAUNCH CONTROLLER,** extremely lightweight and futuristically designed, requiring only 4 alkaline AA batteries for ease of transport. (not included)
7. **Parachute Recovery Wadding.**
8. **Solar Igniters.**
9. Three NAR Safety Certified **Rocket Engines.**
10. **Alpha Book of Model Rocketry,** the complete beginner's tech manual and guide.

HERE'S THE STARTER KIT THAT'LL GIVE YOU THE SOPHISTICATED LAUNCH SYSTEM YOU'LL NEED FOR THE "BIG BIRDS" LATER ON!

Shipping wt. 3 lbs.

Cat. No. 1406

ONLY $12.95

THIS KIT-If Sold Separately-Would Cost Approximately $16.35. YOU SAVE $3.40

For full description of major items in this kit see: Alpha III (p. 13), Porta-Pad (p. 47), and Solar Launch Controller (p. 46).

(Not included: glue, paint, batteries, and modeling tools.)

DELUXE STARTER OUTFIT

Virtually everything you need to get started in Estes Model Rocketry in a big way. Includes Alpha Rocket. . . Sophisticated Porta-Pad and Solar Launch Control System . . .Paint. . . Hobby Knife. . . Alpha Book of Model Rocketry. . .

At one low price, you get everything needed for assembly, finishing, lift-off, and recovery. Included is the girder designed Porta-Pad Tripod Launcher with Blast deflector plate which you can use for all Estes flying model rockets, including the giant Maxi-Brutes (see pages 40-42) with their mighty "D" engine power plants. . . The Solar Launch Control System, futuristically designed to be used with just 4 tiny AA alkaline pen light batteries, so you are no longer locked into lugging an unwieldy 6v or 12v battery to the launch site. . . and the Alpha Rocket, the perfect beginner kit which will teach you in no time how to work with wood, glue, sealer, and paint — techniques you must acquire before you can move on to higher skill levels and more complex and exciting vehicles. . . plus a safety-designed retracting hobby knife, glue, paint, thinner, sandpaper, brush.

KIT INCLUDES:

1. **Alpha Rocket** (see page 12).
2. Complete **Porta-Pad Tripod Launcher** (see page 47).
3. **Solar Launch Controller** (See page 46).
4. **Multi-colored 12" Recovery 'chute** with shroud line and shock cord.
5. **Three NAR Safety Certified Rocket Engines** to guarantee you flights of hundreds of feet and more. (With more powerful engines later on, your Alpha can attain altitudes of over 1,000'!)
6. **Heat-resistant Parachute Recovery Wadding.**
7. **Solar Igniters** for rocket engine ignition.
8. **Construction and Finishing Supplies** including hobby knife, sandpaper, glue, paint, thinner, and brush.
9. **Alpha Book of Model Rocketry** for all-around information and ideas on Estes model rocketry. (Page 62)

Shipping weight 3 lbs. 1 oz.

Super-Complete, DELUXE STARTER OUTFIT

Cat. No. 1407 . . . . **ONLY $13.95**

THIS KIT-If Sold Separately-Would Cost Approximately $18.40. YOU SAVE $4.45

(Batteries are not included.)

ESTES
A SUBSIDIARY OF DAMON

ESTES READY-TO-FLY STARTER KIT Ready-to-Launch in 15 Minutes

GET A ROCKET INTO SPACE QUICKER & EASIER THAN WITH ANY OTHER STARTER KIT!

NO BUILDING... VERY LITTLE ASSEMBLY REQUIRED!

- ☐ The ideal beginner's outfit for father and son. Comes completely ready-to-launch in 10 to 15 minutes (less batteries). All plastic snap-together construction for easy, quick assembly.
- ☐ Ready-to-fly Vampire model rocket features operational status decor and easy-lock engine mount. Pre-assembled 10" parachute for launch-after-launch excitement.
- ☐ Portable Firing Line Launch System is ruggedly designed to provide countless launches. Easy grip hand held Launch Controller has advanced safety interlock key and distinctive launch control button. Realistic launch pad features 24" two-piece launch rod, pre-soldered micro-clips, mini-blast deflector, and sturdy girder construction. The entire system is pre-wired. (Requires four alkaline penlight batteries, size AA, for operation.)
- ☐ Firing Line Flight Pack includes 3 NAR Safety Certified A3-4T mini-engines, parachute recovery wadding, and Estes advanced Solar igniters.
- ☐ A special model rocketry tech manual is also enclosed for the novice.

Shipping weight 2 lbs., 8 oz.
Cat. No. 0701
ONLY $15.95

Features Everything you need to Lift-off TODAY!

Get the most out of model rocketry....

Join the estes aerospace CLUB today!

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'll receive your own special EAC membership kit which 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.

MEMBERSHIP CERTIFICATE — Handsome membership certificate suitable for framing.

CLUB EMBLEM — Official iron-on patch with EAC insignia for tee shirt or jacket. 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 rocketeer stationery for your most important notes and letters.

MODEL ROCKETRY TECHNICAL MANUAL — Includes information on construction techniques, finishing, stability, tracking, recovery systems, multi-staging, and boost gliders, plus many other subjects.

COPY OF MODEL ROCKET NEWS — Features free plan designs, technical articles, cartoons, contests, construction hints, rocketeer contributions, special projects, and much, much more.

EAC PRODUCTS BULLETIN — Special club flier featuring outstanding offers for EAC kits, parts and accessories, rocket plans and technical publications which are available ONLY to members.

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.

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.

Join More Than 85,000 Estes Rocketeers Getting The Most Out Of Model Rocketry!

You Get All This And MORE...

Further details on all these exciting programs and club services will be included with your EAC Membership Kit. Your EAC membership will remain in effect for as long as you remain an active Estes rocketeer.

Ship. wt. 9 oz.
Cat. No. 1447
EAC Membership **ONLY $3.00**

JOIN NOW! BECOME AN EAC ROCKETEER TODAY!!

Simply check the EAC membership box on your catalog order form and include **$3.00**

THRUST BAR ACHIEVEMENT PROGRAM

SKILL LEVEL ONE
BEGINNER/NEW EAC MEMBER

SKILL LEVEL TWO
INTERMEDIATE ROCKETEER

SKILL LEVEL THREE
CRAFTSMAN ROCKETEER

SKILL LEVEL FOUR
ADVANCED ROCKETEER

SKILL LEVEL FIVE
EXPERT ROCKETEER

SKILL LEVEL 1

Alpha

Skill Level 1
The ideal kit for your first or second rocket. Swept fin design makes it a really great performer. Balsa nose cone and fins, quick-release engine mount, and 12" parachute recovery.

Specifications
Length 12.25" (31.1cm)
Diameter 0.976" (24.8mm)
Weight 0.8 oz. (23 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight)
B4-4 B6-4 C6-5
Cat. No. 1225 . . . . . **$2.25**

Big Bertha

Skill Level 1
Perfect kit for a "big" second rocket. Ideal for demonstration launches. Slow, realistic lift-off for really spectacular flights. 24" from nose to tail, quick-release engine mount, and giant 18" parachute recovery make it a real favorite of rocketeers.

Specifications
Length 24" (61cm)
Diameter 1.637" (41.6mm)
Weight 2.2 oz. (64 g)
Shipping wt. 11 oz.
Recommended Engines
A8-3 B4-2 B6-2 (First flight) B6-4 C6-5
Cat. No. 1223 . . . . **$4.00**

Alpha III

Skill Level 1
Another great first or second kit. Plastic nose cone and fin assembly make for easy, quick assembly. This rocket will deliver outstanding performance flight after flight. Roll pattern decal, quick-release engine mount and 12" parachute are features.

Specifications
Length 12.25" (31.1cm)
Diameter 0.976" (24.8mm)
Weight 1.2 oz. (33.9 g)
Shipping wt. 10 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight) B4-4 B6-4 C6-5
Cat. No. 1256 . . . **$3.00**

SCOUT Estes Industries' first model rocket.

Skill Level 1
Originally developed in 1959, the Scout is still a super popular kit among rocketeers. Now our most historic rocket, it is sure to become a real collector's item. Teaches you elementary balance and design principles. Sleek lines and tumble recovery for really exciting flights.
Pat. No. 3,114,317

Specifications
Length 7" (17.8cm)
Diameter 0.765" (19.4mm)
Weight 0.3 oz. (9 g)
Ship. wt. 2 oz.
Recommended Engines
1/2A6-2 (First flight)
A8-3 B6-4 C6-5
Cat. No. 1201 . . . . **$1.25**

STREAK

Skill Level 1
Lightweight (1/8 oz. without engine) with wind-cheating design. Great for contests and records. Features simple feather-weight recovery.

Specifications
Length 5.6" (14.2cm)
Diameter 0.720" (18.3mm)
Weight 0.1 oz. (3 g)
Shipping wt. 4 oz.
Recommended Engines
1/2A6-4 (First flight)
A8-5 B6-6 C6-7
Cat. No. 1204 **$1.00**

Sky Hook

Skill Level 1
An excellent kit for your second rocket. Easy-to-build with 12" parachute recovery. Terrific performance flight after flight.

Specifications
Length 12" (30.5cm)
Diameter 0.765" (19.4mm)
Weight 0.7 oz. (20 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 (First flight) A8-3
B6-6 B4-4 C6-7
Cat. No. 1208 . . . . . **$2.00**

Engines, Launch System, and Glue not included.

SKILL LEVEL 1

Mark II

Skill Level 1
Ideal for sport or demonstration flying. Designed for midbody ejection/separation system with streamer recovery, it's an excellent challenge for the novice rocketeer. Top-notch performance every time.
Specifications
Length 9.1" (23.1cm)
Diameter 0.765" (19.4mm)
Weight 0.7 oz. (20 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 (First flight)
A8-3 B6-4 C6-5
Cat. No. 1202 . . . **$2.00**

QUASAR

Skill Level 1
Dramatic, easy-to-build model for beginners. Bright white plastic nose cone and fin assembly. Metallized-preprinted mylar wrap-on decal for the body tube. No painting required! Quick-release engine mount and recovery by 12" plastic parachute.
Specifications
Length 14" (35.6cm)
Diameter 0.976" (24.8mm)
Weight 1.5 oz. (42 g)
Shipping wt. 10 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight) A8-5 B4-4 B6-4 C6-5
Cat. No. 0650 . . **$3.00**

X-RAY

Skill Level 1
Perfect for your first payloader or second kit. Features large see-through payload/cargo section. Perfect for research work of all kinds. The recommended single-stage payload vehicle for small biological projects. 12" parachute recovery.
Specifications
Length 16.75" (42.5cm)
Diameter 0.736" (18.7mm)
Payload Sec. Dia. 0.976" (24.8mm)
Weight 0.7 oz. (20 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight)
B6-4 B14-5 C6-5
Cat. No. 1218 . . . . **$3.25**

ANTARES

Skill Level 1
Achieve flights over 1200 feet with this high performance sports model. Kit features include fin and roll pattern decals plus 12" parachute recovery. Easy assembly with plastic nose cone, die-cut balsa parts, and quick-release engine mount.
Specifications
Length 14.6" (37.1cm)
Diameter 0.976" (24.8mm)
Weight 0.77 oz. (22 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight) A8-5 B4-4 B6-4 C6-5
Cat. No. 1276
$2.75

NEW! SCAMP

Skill Level 1
Great sports flier with sleek, high performance design. Features 12" parachute recovery with roll pattern and fin decals. Easy-to-assemble with die-cut balsa parts, plastic nose cone and quick-release engine mount.
Specifications
Length 13.75" (34.9cm)
Diameter 0.976" (24.8mm)
Weight 0.8 oz. (23 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 (First flight) A8-3 B6-4 C6-5
Cat. No. 1286
$2.50

ICARUS

Skill Level 1
High altitude payload vehicle with see-through cargo section. Achieve flights of over 1,000 feet with lightweight payload. Simulated sounding rocket appearance with dual roll pattern decor & 12" parachute recovery. Plastic nose cone, die-cut balsa parts, and quick-release engine mount are included for rapid assembly and easy operation.
Specifications
Length 20.8" (52.8cm)
Diameter 0.976" (24.8mm)
Weight 1.3 oz. (37 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight) B4-4 B6-4 C6-5
Cat. No. 1277 . . . . . **$3.00**

Engines, Launch System, and Glue not included.

SUPER mini-BRUTES

SKILL LEVEL 1

mini Bertha

Skill Level 1
A little sister to the famous Big Bertha listed on page 12. Great performance with colorful 10" parachute recovery. Two-color decal sheet, quick-release engine mount, and balsa and paper construction.
Specifications
Length 11.25" (28.58cm)
Diameter 0.736" (18.69mm)
Weight 0.484 oz. (13.72 g)
Shipping wt. 6 oz.
Recommended Engines
1/2A3-2T (First flight)
A3-4T
A10-3T
Cat. No. 0803
$2.00

MOSQUITO

Skill Level 1
This smallest of all Mini-Brutes combines fantastic performance with feather weight recovery. Balsa and paper construction with simple spray paint decor makes for quick and easy assembly.
Specifications
Length 3.9" (9.9cm)
Diameter 0.541" (13.74mm)
Weight 0.1 oz. (2.83 g)
Shipping wt. 4 oz.
Recommended Engines
1/4A3-2T (First flight)
1/4A3-4T 1/2A3-4T
A3-6T A10-3T
Cat. No. 0801 . . . . . **$ .89**

Screamer

Skill Level 1
Another super performer featuring spectacular streamer recovery. Screaming off the pad this bird is sure to catch the attention at your launch site.
Specifications
Length 7.8" (19.81 cm)
Diameter 0.541" (13.74mm)
Weight 0.255 oz. (6.37 g)
Shipping wt. 6 oz.
Recommended Engines
1/4A3-2T (First flight)
1/4A3-4T 1/2A3-4T
A3-6T A10-3T
Cat. No. 0802 . . . . . **$2.00**

Engines, Launch System, and Glue not included.

Can Attain Altitudes Over 1,000 Feet!

2 For The Price Of 1 Super Flea & Javelin Only $2.50

Super Flea

Skill Level 1
The "Flea" has a competition design for ultra-high performance. Reaches incredible altitudes with ogive nose cone and swept fins. Easy-to-build and features break-away drag recovery.
Specifications
Length 7.34" (18.64cm)
Diameter 0.541" (13.74mm)
Weight 0.158 oz. (4.5 g)
Recommended Engines
1/4A3-2T (First flight) 1/2A3-2T
1/2A3-4T A3-4T A10-3T
JAVELIN & SUPER FLEA COMBINATION
Shipping wt. 6 oz.
Cat. No. 0815 . . . . . **$2.50**

Javelin

Skill Level 1
Super performance, easy-to-build competition design with streamer recovery. Scale-like sounding rocket appearance. Reaches altitudes over 1,000 feet.
Specifications
Length 12.4" (31.5cm)
Diameter 0.541" (13.74mm)
Weight 0.34 oz. (9.6 g)
Recommended Engines
1/4A3-2T (First flight)
1/2A3-2T A10-3T
A3-4T

rogue

Skill Level 1
Scale-like sounding research vehicle with realistic decor. Excellent performance for great sport flying. 10" parachute recovery and die-cut balsa parts.
Specifications
Length 11.7" (29.7cm)
Diameter 0.736" (18.7mm)
Weight 0.75 oz. (21.26 g)
Shipping wt. 6 oz.
Recommended Engines
1/4A3-2T (First flight)
1/2A3-2T A3-4T A10-3T
Cat. No. 0818 . . . . . **$2.00**

LITTLE JOHN

Skill Level 1
Authentic appearance of a semi-scale surface-to-surface military vehicle with U.S. Army decor. Die-cut fins, quick-release engine mount and bright 12" parachute recovery.
Specifications
Length 14.0" (35.6cm)
Diameter 0.976" (24.81mm)
Weight 0.875 oz. (21.2 g)
Shipping wt. 6 oz.
Recommended Engines
1/2A3-2T (First flight) A3-4T A10-3T
Cat. No. 0819 . . . . . **$2.50**

SUPER mini-BRUTES
SKILL LEVEL 2

Pegasus

Skill Level 2
U.S. Air Force Mach 3 reconnaissance missile of the near future. Designed for launch from the wing of a supersonic bomber about to enter enemy territory, Pegasus transmits vital real-time intelligence data on the enemy's defences. Kit features scale-like 2-color decals and huge high performance fan jets for super-fast acceleration. Plus die-cut balsa parts, quick-release engine mount and 12" parachute.

Specifications

Length	14.0" (35.56cm)
Diameter	0.736" (18.69mm)
Weight	0.74 oz. (21 g)
Wing Span	5.75" (14.61cm)
Shipping wt.	5 oz.

Recommended Engines
1/4A3-2T (First flight) 1/2A3-2T A3-4T

Cat. No. 0806 ..... **$2.50**

BETA

Skill Level 2
Two-stage Mini-Brute for really high flights. Low-drag design with sounding rocket style decor. Booster stage has tumble recovery while top stage returns on 10" parachute.
Pat. No. 3,392,302

Specifications

Length	13.76" (34.95cm)
Diameter	0.736" (18.69mm)
Weight	0.75 oz. (21.3 g)
Shipping wt.	6 oz.

Recommended Engines
UPPER STAGE
1/4A3-2T (First flight) 1/2A3-4T A3-6T A10-3T
BOOSTER STAGE
1/2A3-0T (First flight) A3-0T A10-0T

Cat. No. 0845 ..... **$2.25**

mini BOMARC

Skill Level 3
Scale model of famous surface-to-air interceptor missile. Authentic Canadian Air Force decor. Features die-cut fins, quick-release engine mount, and 8" parachute recovery.

Specifications

Length	11.75" (29.85cm)
Diameter	0.736" (18.69mm)
Weight	1.0 oz. (28 g)
Wing Span	4.5" (11.43cm)
Shipping wt.	5 oz.

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

Cat. No. 0805 ..... **$3.50**

SUPER mini-BRUTES
SKILL LEVEL 3

CONDOR

Skill Level 3
Designed by Estes engineers as a futuristic orbital booster with recoverable shuttle for near-Earth missions, this exotic sports model will be an exciting addition to your model rocketry collection. Shuttle-like parasite glider gives flights up to 90 sec. while realistic booster is recovered via 12" parachute. Economically mini-engine powered, the Condor features great looking decals, die-cut balsa fins, quick-release engine mount, and molded plastic nose cone.

Specifications
Booster Length 18.25" (46.4cm)
Booster Diameter 0.976" (24.8mm)
Weight (Booster w/Glider) 1.0 oz. (28.3 g)
Glider Wing Span 5.0" (12.7cm)
Ship. wt. 12 oz.

Recommended Engines
1/2A3-2T (First flight) A3-2T A3-4T

Cat. No. 0807 ..... **$3.50**

Wolverine

Skill Level 3
Futuristic Russian hypersonic interceptor designed for near-space missions. Ram jet nose cone and cockpit canopy. 12" parachute recovery with two-color Russian decals.

Specifications
Length 11.25" (28.6cm)
Diameter 0.976" (24.8mm)
Weight 0.875 oz. (24.8 g)
Shipping wt. 5 oz.

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

Cat. No. 0816 ..... **$2.50**

STAR BLAZER

Skill Level 3
Authentic space vehicle appearance with its forward crew cockpit canopy, structural fairing strips, and streamlined design. Three-color U.S.A.F. decals and 10" parachute recovery.

Specifications

Length	11.5" (29.2cm)
Diameter	0.736" (18.7mm)
Weight	0.73 oz. (20.7 g)
Shipping wt.	5 oz.

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

Cat. No. 0831 ..... **$3.00**

Engines, Launch System, and Glue not included.

SKILL LEVEL 2

NEW!

TEROS

Skill Level 2
Authentic anti-aircraft missile styling with U.S.A.F. decor. Exciting scramjet design with ram-jet nose. Super sports model with 12" parachute, die-cut balsa fins and quick-release engine mount.
Specifications
Length 13" (33.0cm)
Diameter 0.976" (24.8mm)
Weight 1.2 oz. (33.9 g)
Shipping wt. 10 oz.
Recommended Engines
1/2A6-2 (First flight)
A8-3 B6-4
C6-5
Cat. No. 1285
$3.00

SAROS

Skill Level 2
An excellent scale-like sounding rocket vehicle. High performance design for really high flights. Payload section plus plastic nose cone, adapter section, and fin unit. Embossed metallic fin rivet press-on with three-color decals. Quick-release engine mount and 12" parachute recovery.
Specifications
Length 22.5" (57.2cm)
Diameter 0.976" (24.8mm)
Weight 1.5 oz. (43 g)
Shipping wt. 8 oz.
Recommended Engines
A8-3 (First flight)
A8-5 B4-4
C6-5
Cat. No. 1254
$5.00

DER RED MAX

Skill Level 2
Far-out super-fun model. Large stable design gives great sport performance. Freaky "Red Max" decal sheet. Molded plastic nose cone and die-cut fins. 18" parachute recovery for perfect launch, flight after flight.
Specifications
Length 16.25" (41.3cm)
Diameter 1.637" (41.6mm)
Weight 2.375 oz. (67 g)
Shipping wt. 12 oz.
Recommended Engines
B4-2 (First flight)
B6-2 B6-4 C6-5
Cat. No. 0651
$4.00

Saros Replacement Plastic Parts Kit
Includes nose cone, adapter and fin unit.
Cat. No. 45012 . . . . $2.25

Engines, Launch System, and Glue not included.

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)
Diameter 1.637" (41.6mm)
Weight 3.3 oz. (94 g)
Shipping wt. 12 oz.
Recommended Engines
B4-2 (First flight)
B6-4 C6-5
Cat. No. 0652 . **$5.00**

BANDIT

Skill Level 2
Features advanced ejection ducting system. It never needs recovery wadding! High performance design and military style appearance makes the Bandit a really impressive bird. Over 25" long with large payload section, die-cut fins, quick-release engine mount, U.S.A.F. decals, and 12" parachute recovery.
Specifications
Length 27.75" (65.4cm)
Diameter 1.325" (33.6mm)
Weight 2.6 oz. (37.9 g)
Shipping wt. 12.5 oz.
Recommended Engines
A8-3 B4-4
B6-4 (First flight)
B14-5 C6-5
Cat. No. 1248
$6.00

NIKE-X

Skill Level 2
Scale-like single-stage model of U.S. Army's 4th generation, two-stage surface-to-air interceptor missile. Nike-style design with U.S. Army decor. Great performance for really impressive flights. Easy-to-assemble. Realistic roll pattern decals, quick-release engine mount, die-cut fins, and big 18" parachute.
Specifications
Length 23.4" (59.4cm)
Diameter 1.325" (33.7mm)
Weight 2.3 oz. (65 g)
Shipping wt. 9 oz.
Recommended Engines
A8-3 (First flight) B4-4
B6-4 C6-5
Cat. No. 1270 . . . . **$5.00**

BANDIT'S ADVANCED EJECTION DUCTING SYSTEM

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

SKILL LEVEL 2

"D" POWERED BIRDS

Using our mighty "D" engines these kits offer the ultimate in power and performance. Perfect for high altitude research and many payload experiments. All kits come complete ready-to-assemble with instructions. Engines not included.

A-20 DEMON

Skill Level 2

Super performing payload carrier with sounding research vehicle appearance. Bright silver easy-track foil press-on decal for payload section. Allows for accurate in-flight tracking and recovery. Quick-release engine mount, sleek die-cut fins and 18" parachute.

Specifications

Length 26.5" (67.3cm)
Diameter 1.325" (33.6mm)
Weight 2.75 oz. (78 g)
Shipping wt. 12.5 oz.

Recommended Engines

D12-7
Also:
B6-4 B14-5 C6-5
(Using EM-2050 Adapter, not included.)

Cat. No. 1258 . . . . . **$6.00**

CHEROKEE-D

Skill Level 2

Sleek and powerful "D" engine rocket that will practically sail out-of-sight. Big 18" 'chute brings it down safely flight after flight. Die-cut fins, quick-release engine mount and sharp two-color decals. A really beautiful model for your first "D" powered kit.

Specifications

Length 21.6" (54.9cm)
Diameter 1.325" (33.7mm)
Weight 2.75 oz. (78 g)
Shipping wt. 11 oz.

Recommended Engines

D12-5 (First flight) D12-7
Cat. No. 1247 . . . . . **$4.50**

renegade

Skill Level 2

Spectacular, ultra-high performance "D" bird over 33" long. R&D style design gives it a real test-vehicle appearance. Low-drag styling and giant 18" 'chute means an outstanding flight every time. Contemporary decals, quick-release engine mount and die-cut fins.

Specifications

Length 33.8" (85.9cm)
Diameter 1.637" (41.6mm)
Weight 4.6 oz. (132 g)
Shipping wt. 12 oz.

Recommended Engines

D12-5 (First flight) D12-7
Cat. No. 1271 . . . . . **$5.00**

NEW! SKY RAIDER

Skill Level 2

Flights up to 1500 feet are possible with this big "D" engine powered payloader. Great sports model with large payload section, die-cut balsa fins and quick-release engine mount. Includes great looking kit name decal, high performance plastic nose cone and giant 18" parachute.

Specifications

Length 32.75" (83.2cm)
Diameter 1.325" (33.7mm)
Weight 2.39 oz. (67.8 g)
Ship. wt. 11 oz.

Recommended Engines

D12-5 D12-7 (First flight)
C6-5 (with EM-2050 adapter not included. See page 56.)

Cat. No. 1290
$4.00

Engines, Launch System, and Glue not included.

SKILL LEVEL 2

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)
Diameter	1.325" (33.7mm)
Weight	2.7 oz. (77 g)
Shipping wt.	16 oz.

Recommended Engines
UPPER STAGE
A8-5 B6-6 (First flight) C6-7
BOOSTER
A8-0 B6-0 (First flight) B14-0
C6-0
Cat. No. 1238 . . . . . **$5.00**

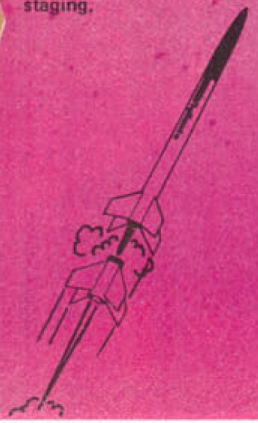
Vigilante

Skill Level 2
Ultra-high performance two-stage model for flights over 1100 feet. Kit features include impressive kit name decal, low drag plastic nose cone, and die-cut balsa fins. Sleekly designed upper stage returns via 18" parachute while the booster employs tumble recovery.

Specifications
Length 26.5" (67cm)
Diameter 1.325" (33.6mm)
Weight 2.25 oz. (64 g)
Shipping wt. 13 oz.
Recommended Engines
UPPER STAGE
1/2A6-4 A8-5 (First flight)
B4-6 B6-6 C6-7
BOOSTER
A8-0 (First flight) B6-0
C6-0
Cat. No. 1278 . . . . . **$5.00**

MULTI-STAGERS

Multi-Staging is the next step in expanding your model rocketry skills. Each kit demonstrates how real space ships operate. The first stage is always ignited electrically. Second stage ignition occurs automatically in mid-flight upon burnout of the first stage. Performance and maximum altitude are dramatically increased thru multi-staging.



PHOTON DISRUPTOR

Skill Level 2
Equip your star fleet with this sophisticated scale missile from the 23rd century. Designed primarily as a mass conversion weapon to overload the defensive screens of an enemy vessel, the actual Photon Disruptor may also be programmed as an interceptor missile, a proximity space mine, or a space distress signal. Exact size, speed, range, and destruct radius of this vehicle are classified. Photon Disruptor uses impulse power unit and guidance system for launch from planetary surface. Kit features operational status detailing decor and comes complete with 12" parachute. Assembly and operation are made easy with plastic nose cone, die-cut balsa parts, and quick-release engine mount.

Specifications
Length 18.25" (46.4cm)
Diameter 0.976" (24.8mm)
Weight 1.4 oz. (40 g)
Shipping wt. 6 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight)
A8-5 B4-4 B6-4 C6-5
Cat. No. 1282 . . . . . **$3.00**

NEW!

Odyssey

Skill Level 2
This unique interstellar spacecraft is conceived to perform a variety of space rescue, exploratory, or intruder intercept missions. Odyssey's modular configuration permits rapid pre-launch preparation to flight status. Impulse power unit jettisons after lift-off from planetary launch site. Its two-man crew and engineering section are then accelerated to near-light velocities for rendezvous and space rescue operations. Our designer's version includes die-cut balsa fins, 18" dia. recovery parachute and two-color rescue vehicle decor. Quick-release engine mount and super-detailed plastic nose section complete the exotic styling of this advanced spacecraft.

Specifications:

Length	24.1" (61.21cm)
Diameter	1.325" (33.7mm)
Weight	2.40 oz. (68 g)
Shipping wt.	12 oz.

Recommended Engines
B4-4 B6-4 (First flight) C6-5
Cat. No. 1289 . . . . . **$5.00**

AVAILABLE March 15, 1977

Engines, Launch System, and Glue not included.

WAC CORPORAL

Skill Level 2
Great model for your first scale bird. U.S. Army ground-to-ground ballistic and research vehicle. Low-drag design makes it a terrific sport-flier too! Accurate 1/16th scale. Die-cut fins and 12" 'chute.

Specifications
Length 11.8" (30cm)
Diameter 0.736" (18.7mm)
Weight .7 oz. (20 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 (First flight)
A8-3 B6-4 C6-5
Cat. No. 1211 . . . . . **$2.50**

SANDHAWK
(1/10th Scale)

Skill Level 2
A mighty "D" engine powered, ultra-detailed, 30" tall scale model. Actual rocket is a single-stage, solid-propellant vehicle developed for upper-atmosphere research experiments. Real Sandhawk is capable of reaching a 100 mile apogee with 200 lb. payload. Our scale version features all plastic, highly-detailed nose cone, payload section, fins and tail assembly. Quick-release engine mount plus 12" 'chute for payload and big 18" parachute for rocket.

Specifications
Length 30.1" (76.5cm)
Diameter 1.325" (33.7mm)
Weight 5 oz. (14.2 g)
Shipping wt. 11 oz.

AWK
nded Engines
-3 D12-5 (First flight)
050 adapter for other than "D"
ot included. See page 56.
251 . . . . . **$5.00**

nt Plastic Parts Kit:
WK ONLY)
il section, fins, payload
se cone and antennae.
5011 . . . . . **$2.50**

FIREFLY
PARASITE GLIDER

Skill Level 2
"Hitchhikes" on other larger models for glide durations of up to 30 seconds beginning at apogee. Perfect kit for your first glider with die-cut balsa parts. Impressive performance.

Specifications
Length 12" (30.5cm)
Wing Span 4.5" (11.4cm)
Weight 0.16 oz. (4.6 g)
Shipping wt. 5 oz.
Cat. No. 1280 . . . . . **$1.25**

Rocket Not Included.

Engines, Launch System, and Glue not included.

Drifter

Skill Level 3
Swept-fin design, low weight, and large 'chute capacity make this 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)
Diameter 0.976" (24.8mm)
Weight 1 oz. (28 g)
Shipping wt. 5 oz.
Recommended Engines
1/2A6-2 (First flight) A8-3 B6-4
C6-5
Cat. No. 1214 . . . . . **$3.25**

SPRINT

Skill Level 3
Real competition design. Highest performance in its class. Up to 1,600 ft. with C6-7 engine. Low drag ogive nose cone and reducer tail section. Contest winning die-cut elliptical fins, decals, and streamer recovery.

Specifications
Length 13.8" (35cm)
Diameter 0.976" (24.8mm)
Weight 1.0 oz. (28 g)
Shipping wt. 7 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight)
B14-5 B4-6 B6-6 C6-7
Cat. No. 1249 . . . . . **$3.00**

"D" ENGINE POWERED

GOBLIN

Skill Level 3
Powerful and fast, this spooky little kit really gets up and moves. You'll need a good recovery team to retrieve her as she'll reach 1,500 feet and more flight after flight with "D" engines. Dramatic recovery with big, 2" wide bright orange tracking streamer. Includes die-cut fins, crazy decals and quick-release engine mount.

Specifications
Length 14.32" (36.3cm)
Diameter 1.325" (33.6mm)
Weight 2.0 oz. (56.6 g)
Shipping wt. 7 oz.
Recommended Engines
D12-7 (A8-3, B6-4 and C6-5 with adapter EM-2050, not included. See page 56.)
Cat. No. 1255 . . . . . **$4.00**

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 rocket. 10" pre-assembled parachute and tumbling re-entry booster. Includes Tech Report on Multi-Staging. Pat. No. 3,292,302.

Specifications

Length 14.7" (37.5cm)
Diameter 0.736" (18.7mm)
Weight 0.6 oz. (17 g)
Shipping wt. 6 oz.

Recommended Engines

UPPER STAGE
1/4A3-4
1/2A6-4 (First flight)
A8-5 B4-6 B6-6
B14-7 C6-7
BOOSTER
1/2A6-0 (First flight)
A8-0 B6-0 B14-0
C6-0

Cat. No. 1205 . . . . . **$3.25**

Farside

Skill Level 3

Sophisticated 3-stage ultra-high altitude probe. Flies to well over 2,500 feet. Top stage cargo compartment makes it an excellent payload vehicle. Booster stages tumble back to earth while upper stage returns via 12" bright orange and white 'chute. Includes Tech Report on staging.

Pat. No. 3,292,302

Specifications

Length 21.5" (54.6cm)
Diameter 0.976" (24.8mm)
Weight 2.0 oz. (57 g)
Shipping wt. 6 oz.

Recommended Engines

FIRST STAGE
1/2A6-0 A8-0 B14-0 (First flight)
SECOND STAGE
1/2A6-0 (First flight) A8-0 B6-0
B14-0 C6-0
TOP STAGE
1/2A6-4 (First flight) A8-5
B4-6 B6-6 B14-6 C6-7

Cat. No. 1212 . . . . . **$4.50**

"SCRAMBLER"

Skill Level 3

A super big "egg lofter" for sport or contest flying. Huge see-through payload section holds an egg or any other large payload. Three-engine cluster gives you the power you need to boost your cargo. Capable of lofting a grade A hens egg over 1,000 ft. and then gently returning it to earth. Kit includes two 18" parachutes, decals, and Tech Report on clustering.

Specifications

Length 23.5" (59.7cm)
Diameter 1.637" (41.6mm)
Payload Dia. 1.796" (45.6mm)
Weight 2.8 oz. (79 g)
Shipping wt. 13 oz.

Recommended Engines

Requires 3 identical engines at launch.
A8-3 B6-4 (First flight) B14-5
C6-5

Cat. No. 1237 . . . . . **$7.00**

SKILL LEVEL 3

SHRIKE

Skill Level 3

Employs easy pop-and-go staging method. Just insert engines, plug the stages together and you're ready-to-go! Transparent payload section for your cargo. Really sleek design for super high performance flights. Die-cut fins and deluxe four-color decals. Optional 12" or 18" parachute recovery with tumbling booster.

Specifications

Length 29.5" (74.9cm)
Diameter 0.976" (24.8mm)
Weight 2.25 oz. (64 g)
Shipping wt. 11 oz.

Recommended Engines

UPPER STAGE
1/2A6-4 A8-5 B6-4
B6-6 (First flight) B14-7
C6-7
BOOSTER
A8-0 B6-0 (First flight)
B14-0 C6-0

Cat. No. 1246 . . . . . **$7.00**

OMEGA

Skill Level 3

Recommended launch vehicle for the Cineroc aerial movie camera. Ultimate in two stage, "D" engine performance for lofting heavier payloads. Features pop-and-go staging, high performance plastic ogive nose cone, large payload section and die-cut fins. Plus two-color fin decals, 18" parachute recovery and tumbing booster.

Specifications

With Payload Section and nose cone (for use without Cineroc).
Length 30.5" (77.5cm)
Diameter 1.637" (41.6mm)
Weight 4.0 oz. (113 g)
Shipping wt. 15 oz.

Recommended Engines

D12-5 (First flight) Booster: D12-0
Upper Stage: D12-7
Single Stage Flights: D12-5
(Does not include camera)

Cat. No. 1200 . . . . . **$8.00**

Engines, Launch System, and Glue not included.

gyROC

Skill Level 3

An amazing and unique "helicopter" recovery system makes the Gyroc a must for your fleet. Lifts-off with main fins in straight-away position. Engine's ejection charge allows rear fin tips to snap sideways causing rotor effect and helicopter recovery. Unusual appearance and strange performance is sure to catch the interest of on-lookers.

Specifications

Length	9.8" (24.9cm)
Diameter	0.736" (18.7mm)
Weight	0.6 oz. (17 g)

Shipping wt. 5 oz.

Recommended Engines

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

Cat. No. 1224 . . . . . **$2.00**

SCISSOR-WING TRANSPORT

Skill Level 3

This exciting bird introduces the revolutionary new Scissor-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 (First flight) B6-2 C6-3

Cat. No. 1265 . . . . . **$6.00**

SKILL LEVEL 3

constellation

Skill Level 3

Sleekly styled single-stage payloader, perfect for those smaller cargos. Exotic appearance, plus fin tip "landing shocks" gives it a real "space ship" look. Great performance for sport flying. See-through payload section, and 12" parachute recovery.

Specifications

Length	16.2" (41.4cm)
Diameter	0.976" (24.8mm)
Weight	1.0 oz. (28 g)

Shipping wt. 5 oz.

Recommended Engines

1/2A6-2 A8-3 (First flight)

B6-4 B14-5 C6-5

Cat. No. 1235 . . . . . **$3.00**

U.S.S. ATLANTIS

Skill Level 3

Patrolling the distant outposts of our galaxy are super-fast starships like the USS Atlantis. This multi-mission star cruiser is designed for patrol, escort, transport, and fleet battle operations. Star flight capability is provided by two giant aft propulsion units. The unique, multi-level flight deck allows massive planet-side operations from synchronous or standard planetary orbit. In addition to superior speed and maneuverability, its powerful weaponry enables it to deal singlehandedly with most alien vessels. Kit includes colorful decals, die-cut balsa fins, plastic nose cone, and quick-release engine mount. Excellent performance with impressive 12" parachute recovery for flight-after-flight enjoyment.

Specifications

Length	23.3" (59.2cm)
Diameter	0.976" (24.8mm)
Weight	1.86 oz. (56.2 g)

Shipping wt. 11 oz.

Recommended Engines

A8-3 B4-4 B6-4 (First flight) C6-5

Cat. No. 1283 . . . . . **$5.00**

Engines, Launch System, and Glue not included.

NEW!

starlab

Skill Level 3

Advanced concept for NASA Space Station designed for either Earth or lunar orbit. Envisioned as a manned scientific laboratory assembled in space and operational by the year 2000, its multi-national crew would be resupplied by Earth or perhaps via a lunar colony shuttle craft. Our version features unique ring/fin stabilization, simulated solar panels and realistic docking shuttlecraft for display (removes quickly for flight). Plus dramatic 3-color decal, quick-release engine mount and 12" parachute recovery.

Specifications

Length 27.75" (70.49cm)
Solar Panel Span 7.4" (18.80cm)
Ring Diameter 4.0" (101.6mm)
Weight 2.19 oz. (62 g)
Shipping wt. 11 oz.

Recommended Engines

B6-4 (First flight) C6-5

Cat. No. 1288 . . . . . **$5.00**

Features Realistic Docking SHUTTLE CRAFT For Display!

Alien INVADER

RED ALERT PRIORITY MESSAGE FROM RIEGEL IV COLONY . . . . START – UNIDENTIFIED ALIEN SPACECRAFT HAVE ATTACKED RIEGEL IV COLONY – LARGE NUMBER ALIEN CRAFT ARRIVED SIMULTANEOUSLY VIA HYPERSPACE – OUTPOST DEFENSES CURRENTLY ENGAGING ENEMY VESSELS – SENSORS UNABLE TO FULLY PENETRATE ENEMY SCREENS – END TRANSMISSION **Previous is excerpt from first report of contact with Alien Invaders.**

Skill Level 3

By computer enhancement of declassified portion of sensor readings, Estes engineers have produced a replica of the Alien Invader spacecraft. Available data indicates alien spacecraft capable of limited atmospheric operations. Precise crew complement, internal features, and weaponry not determined from sensor data secured by Riegel IV outpost before aliens disengaged and fled. Your model includes a plastic forward command hull, engine-engineering section, and outboard atmospheric propulsion units. Kit is complete with die-cut balsa parts, quick-release engine mount, 12" 'chute, and unusual battle insignia decals.

Specifications

Length 20.5" (52cm)
Diameter 0.976" (24.8mm)
Weight 1.62 oz. (46 g)
Shipping wt. 8 oz.

Recommended Engines

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

Cat. No. 1281

$4.00

Andromeda

Skill Level 3

Designed for journeys to distant planets this incredible "starship of the future" will be an outstanding addition to your model rocket collection. Performing interplanetary missions within the galaxy, our engineer's conception of the actual ship features simulated hybrid fission-ion propulsion engines, forward crew module and colorful mission decor. This beauty is over 43" long and represents a unique entry to our own Starship Fleet. Kit features include die-cut parts, highly detailed decals, and quick-release engine mount. Andromeda's flights are of course most spectacular, especially with giant 18" parachute recovery.

Specifications

Length 43.3" (110cm)
Diameter 0.736" (18.7mm)
Fin Span 11.8" (30.1cm)
Weight 3.0 oz. (85 g)

Recommended Engines

B6-4 (First flight) C6-5
Ship wt. 11 oz.

Cat. No. 1273 . . . . . **$6.00**

INTERCEPTOR

Skill Level 3

Futuristic version of real interplanetary interceptor. Deep space exotic design makes it the pride of any modeler. Delivers excellent performance for really sensational flights. Dramatic 18" parachute recovery, two big sheets of four-color decals, and quick-release engine mount. Plus all die-cut balsa parts and detailed plastic nose cone, wing pods and tail cone.

Specifications

Length 26" (66cm)
Wing Span 7.4" (18.8cm)
Diameter 1.325" (33.6mm)
Weight 3.85 oz. (109 g)
Shipping wt. 12 oz.

Recommended Engines

B4-2 B6-4 (First flight) C6-5

Cat. No. 1250 . . . . . **$8.00**

Replacement Plastic Parts Kit
Includes nose cone, 2 wing pods and tail cone.
Cat. No. 45010 . . . . . **$2.50**

Engines, Launch System, and Glue Not included.

SKILL LEVEL 3

V-2 *(1/49th Scale)*

Skill Level 3
Scale model of the WW II German ground-to-ground ballistic missile. Its development opened the door to the exploration of space. The V-2 was the first rocket to solve the problems of propulsion and guidance. Our replica of this historic missile has excellent performance with impressive 12" parachute recovery. Ready-to-assemble with balsa nose and tail cones.

Specifications
Length 11.2" (28.4cm)
Diameter 1.325" (33.7mm)
Weight 1.4 oz. (40 g)
Shipping wt. 7 oz.
Recommended Engines
1/2A6-2 A8-3
B6-4 (First flight)
B14-5 C6-5
Cat. No. 1222
$4.00

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. Comes with pre-printed wrap-on decor, clear plastic fins, quick-release engine mount and 12" parachute recovery.

Specifications
Length 18.1" (46cm)
Diameter 1.637" (41.6mm)
Weight 1.9 oz. (54 g)
Shipping wt. 12 oz.
Recommended Engines
A8-3 (First flight) B6-4
C6-5
Cat. No. 1239 . . . . . **$4.50**

NIKE AJAX

Skill Level 3
The first supersonic anti-aircraft missile, the Nike Ajax, was developed to defend large cities and industrial complexes against enemy bomber attack. Actual vehicle has a range of 30 to 50 miles and an effective altitude capability of approximately 60,000 feet at a speed of more than 1500 miles per hour. Real vehicle is boosted by a solid propellant rocket which drops away at a predetermined height as a sustaining liquid propellant motor cuts in. Our 12.4 to 1 semi-scale model comes complete with authentic U.S. Army decor and realistic detailing. Kit includes 18" parachute recovery, die-cut balsa parts, and quick-release engine mount.

Specifications
Length 31.25" (79.38cm)
Diameter 1.325" (33.7mm)
Weight 2.6 oz. (74 g)
Shipping wt. 11 oz.
Recommended Engines
A8-3 B4-4 B6-4 (First flight) C6-5
Cat. No. 1279 . . . . . **$6.00**

Engines, Launch System, and Glue not included.

AEROBEE 300

Skill Level 3
Another great kit for your first or second scale model. Orginally developed in 1947, the Aerobee performed heavy duty upper-atmosphere research during the International Geophysical Year 1957 - 58. The real rocket has recorded peak altitudes of 260 miles above the earth. Our smaller version features authentic scale decals, balsa detailing and 12" 'chute. 1/15th Scale.

Specifications
Length 20" (50.8cm)
Diameter 0.976" (24.8mm)
Weight 0.9 oz. (26 g)
Shipping wt. 14 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight)
B6-4 C6-5
Cat. No. 1217 . . . . . **$3.25**

ARCAS®

Skill Level 3
A precise reproduction of the well-known Atlantic Research Corp. sounding rocket. Designed to collect meteorological data at altitudes up to 40 miles. Original high performance design gives great performance to our smaller 1:3.4 scale version. Kit includes detailed fin mounts, authentic ARCAS decal, and 18" parachute.

Specifications
Length 22.8" (58cm)
Diameter 1.325" (33.7mm)
Weight 1.4 oz. (40 g)
Shipping wt. 11 oz.
Recommended Engines
A8-3 (First flight) B6-4
C6-5
Cat. No. 1226 . . . . . **$4.00**

NEW!

1/24th Scale

LTV Scout

Skill Level 3
The Scout is a four-stage, solid-propellant launch vehicle used for a variety of space missions including orbital, probe and re-entry by the United States and an impressive list of European nations. Since its first mission in 1960, Scout has been the launch vehicle for more than 90 missions, holding the record for consecutive successes among all NASA launch vehicles. We have chosen to scale the Italia version, known for its Uhura satellite which discovered the existance of "black holes" in space. This model is extremely detailed with many plastic parts and realistically decored with with 2-color decals. Other features include molded plastic fins and adapter sections, quick-release engine mount and big 18" parachute recovery.

Specifications
Length 36.09" (91.67cm)
Diameter 1.637" (41.58mm)
Weight 2.82 oz. (80 g)
Ship wt. 11 oz.
Recommended Engine
C6-3
Cat. No. 1287
$6.00

OVER 3 FEET TALL!

AVAILABLE March 15, 1977

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

SKILL LEVEL 4

Orbital Transport

Skill Level 4

Only a gleam in the eye of NASA, but it's flying for Estes rocketeers right now! Astonishingly realistic recovery system where engine booster system returns to Earth via huge 18" multi-colored parachute, and interplanetary vehicle glides home. Long and sleek, developed for both orbital and near-space missions, rocket with transport vehicle piggy-backed go straight up, then separate at apogee for spectacular dual recovery. Includes realistic 3-color decals.

RE-ENTRY VEHICLE
Length 8.6" (21.8cm)
Diameter 0.736" (18.7mm)
Wing Span 5" (12.7cm)
Weight 0.5 oz. (14 g)
Shipping wt. 16 oz.
Recommended Engines
B6-2 B6-4 (First flight) C6-5
Cat. No. 1242 . . . . . **$5.50**

TRANSPORT SHIP
Length 23" (58.4cm)
Diameter 0.976" (24.8mm)
Wing Span 7.9" (20cm)
Weight 2 oz. (57 g)

Sky Dart

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. 12" 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. 0.976" (24.8mm)
Weight 1.25 oz. (35.4 g)
Weight of Glider with Pod 2.5 oz. (70.8 g)

Recommended Engines
A8-3 B4-2 B6-2 (First flight) C6-3
Shipping wt. 12 oz.
Cat. No. 1257 . . . . . **$6.00**

HONEST JOHN

Skill Level 4

Highly detailed version of U.S. Army's surface-to-surface ballistic missile. Many small parts and authentic decals for a really good looking 1/24th scale model. Gives an excellent challenge to the experienced rocketeer. Dramatic flights with 12" parachute recovery.

Specifications
Length 13.75" (35cm)
Diameter 0.976" (24.8mm)
Weight 1.2 oz. (34 g)
Shipping wt. 7 oz.
Recommended Engines
1/2A6-2 A8-3 (First flight) B4-4 B6-4 C6-5
Cat. No. 1227 . . . . . **$4.00**

MARS SNOOPER II

Skill Level 4

Looks like a real space ship. Futuristic decor, advanced styling, and simulated touchdown pads gives it a real science-fiction appearance. Eye-catching flights with big 18" parachute recovery. Includes die-cut parts, kit decals, and quick-release engine mount.

Specifications
Length 22.3" (56.5cm)
Diameter 0.976" (24.8mm)
Weight 2.3 oz. (66 g)
Shipping wt. 8 oz.

Recommended Engines
A8-3 (First flight) B4-2 B6-4 C6-5
Cat. No. 1220 . . . . . **$5.00**

STAR TREK™ FLYING MODEL ROCKETS

KLINGON

Skill Level 4

Accurately detailed, our flying scale cruiser has been modified to permit atmospheric operations. Kit includes accurately detailed molded plastic and die-cut parts, Klingon warship insignia, quick release engine mount and colorful orange and white canopy 'chute.

Specifications
Length 15.1" (38.4cm)
Wing Span 8.9" (22.6cm)
Weight 2.5 oz. (70 g)
Shipping wt. 12 oz.
Recommended Engines
B4-2 (First flight) B6-4 C6-5
Cat. No. 1274 . . . . . **$7.00**

STARSHIP ENTERPRISE

Skill Level 4
Scaled from official STAR TREK drawings, our model starship has been modified for operations within planetary atmospheres. A parachute recovery probe attaches quickly for flight and removes easily for display. Other kit features include highly detailed molded plastic and die-cut parts, authentic decals, quick-release engine mount and 18" recovery parachute.

Specifications
Display Length 16.8" (42.6cm)
Recovery Probe Length 25.9" (65.8cm)
Primary Hull Dia. 7.5" (19cm)
Weight 3.8 oz. (110 g)
Shipping wt. 16 oz.
Recommended Engines
B6-2 (First flight) C6-3
Cat. No. 1275 . . . . . **$8.00**

©1975 Paramount Pictures Corporation

Engines, Launch System, and Glue not included.

Model Rocketry's First Scale

space shuttle

So Realistic, That From A Distance, You'd Swear It Was The Real Thing!!

Skill Level 4

Dramatic 1/162nd scale reproduction of America's newest space vehicle. Designed as a reuseable near space transportation system, tests of the real thing are scheduled for the Winter/Spring of 1977. This semi-scale orbiter employs glide recovery just like the real thing while boosters and external tank return via 18" parachute recovery. Our model features special stabilizer fins for atmospheric flight which remove easily for display. Kit components include injection molded and vacuformed plastic and die-cut parts plus quick-release engine mount.

Specifications

Shuttle Length 13.6" (34.5cm)
Diameter 2.04" (51.8mm)
Orbiter Length 9.0" (22.9cm)
Orbiter Wingspan 7.1" (18.9cm)
Weight 4.37 oz. (124 g)
Shipping wt. 16 oz.

Recommended Engine

C6-3

(Engines, Launch System, and Glue are not included with this kit.)

Cat. No. 1284

Only $8.00

ASTONISHINGLY REALISTIC RECOVERY SYSTEM! Space Shuttle and Booster Rockets separate in space! Boosters return to earth via giant 18" recovery 'chute, while orbiter glides home!

SKILL LEVEL 5

MARS LANDER

Skill Level 5

Displays futuristic concept for a planetary exploration and landing vehicle. Spring-loaded landing gear simulates realistic upright touch-down. Big 18" bright orange and white canopy 'chute makes for a really great recovery sequence. Includes highly detailed body panels, colorful scale-like decals, and quick-release engine mount.

Specifications

Height 12" (30.5cm)
Diameter 3.8" (96.5mm)
Landing Gear Span 13.2" (33.5cm)
Weight 3.0 oz. (85 g)
Shipping wt. 16 oz.

Recommended Engines

B4-2 (First flight) B6-2 C6-3

Cat. No. 1243 . . . . . **$9.95**

MERCURY REDSTONE

Skill Level 5

Famous NASA vehicle which boosted Commander Alan Shepard on America's first manned space flight. Beautifully scaled to 1/42nd actual size our Mercury Redstone features intricately detailed fin assemblies and escape tower. Launchings simulate real space missions as Mercury capsule returns via bright orange and white 12" canopy 'chute and rocket desends on larger 18" parachute. Kit includes scale decals and quick-release engine mount.

Specifications

Length 23.5" (59.7cm)
Diameter 1.637" (41.6mm)
Weight 2.1 oz. (60 g)
Shipping wt. 12 oz.

Recommended Engines

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

Cat. No. 1241 **$5.00**

BOMARC

Skill Level 4

A beautifully detailed, 1/24th 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 jettisoned and desends via 12" parachute while the Bomarc returns as a boost-glider . . . with a gentle, almost horizontal glide path.

Specifications

Length 23" (58.4cm)
Diameter 1.325" (33.6mm)
Weight 3.8 oz. (108 g)
Shipping wt. 12 oz.

Recommended Engines

B4-2 B6-2 (First flight) C6-3

Cat. No. 0654 . . . . . **$7.00**

Engines, Launch System, and Glue not included.

GIANT Flying Rockets Over 3-Feet Tall MAXI-BRUTES!

NEW!

Maxi Alpha

SKILL LEVEL 2

Skill Level 2

Giant scale version of our most popular rocket, the Alpha. Great for demonstrations with slow realistic lift-off and dramatic 24" parachute recovery. Flights up to 500 feet with "D" engine. Comes with die-cut balsa fins, molded plastic nose cone, quick-release engine mount and huge decals. Assembles in approximately 30 minutes. Perfect launch vehicle for one, two, or three Firefly Gliders (See page 26.).

Specifications
Length 33.2" (84.33cm)
Diameter 2.6" (66.04mm)
Weight 6.17 oz. (175 g)
Ship. wt. 16 oz.
Recommended Engine
D12-5
Cat. No. 1291 . . . . . **$8.00**

AVAILABLE March 15, 1977

German V-2

Skill Level 3

This giant scale model is a replica of the ground-to-ground ballistic missile developed at Peenemunde before and during World War II. This 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 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" (85cm)
Diameter 3.938" (100mm)
Weight 12.5 oz. (354.38 g)
Shipping wt. 2 lbs.
Recommended Engine
D12-3
Cat. No. 1267 . . . . **$16.95**

NEARLY 3 FEET TALL!

SKILL LEVEL 3

HONEST JOHN

Skill Level 3

1/9th scale model of the famous U.S. Army surface-to-surface, supersonic ballistic missile, one of the mainstays of the Army's atomic weapons capability. This new, highly detailed model uses a single "D" engine for power and comes with pre-shaped, accurately scaled fins and molded plastic nose cone. Spectacular recovery with giant, dual 24" orange and white canopy 'chutes. Great for demonstrations and perfect as an impressive display model. A 3/16" launch rod is recommended for best lift-off results.

Specifications
Length 37" (94cm)
Diameter 2.6" (66mm)
Weight 14 oz. (397 g)
Shipping wt. 2 lbs.
Recommended Engine
D12-3
Cat. No. 1269
$16.95

PERSHING-1A

Skill Level 3

This Maxi-Brute is a true scale model of the U.S. Army's surface-to-surface ballistic missile produced by Martin-Marietta and deployed with NATO units in Europe. Our 1/10 scale model is "D" engine powered with three color decals, preshaped 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 makes it one of the most unique scale models ever to be offered. Additional historical background data is also included.

Specifications
Length 41" (104.14cm)
Diameter 3.938" (100mm)
Weight 11.5 oz. (326.03 g)
Shipping wt. 2 lbs.
Recommended Engine
D12-3
Cat. No. 1268
$16.95

OVER 3 FEET TALL!

Engines, Launch System, and Glue not included.

SKILL LEVEL 5
GIANT MAXI-BRUTES!

SATURN 1-B *(1/70th Scale)*

Skill Level 5

Completely detailed model of the giant rocket that first lofted the lunar module into earth orbit. A real NASA workhorse, the Saturn 1B has most recently been used to shuttle astronaut crews to Skylab. Features four-engine cluster power for really dramatic lift-offs. Highly scaled escape tower and stabilizer fin assembly. Includes authentic U.S.A./NASA decor, quick-release engine mounts, and die-cut balsa parts. Plus big, dual 24" orange and white parachutes for main booster and 12" 'chute for Apollo capsule. Tech report on engine clustering also included.

Specifications

Length 37" (94cm)
Diameter 3.938" (100mm)
Weight 9.9 oz. (280 g)
Shipping wt. 3 lbs., 5 oz.

Recommended Engines

A8-3 B6-2 (First flight)
B6-4 C6-5
(4 engines required. All must be the same type.)

Cat. No. 1229 . . . . . **$14.95**

(1/100th Scale)

SATURN V

Skill Level 5

A truly magnificent scale reproduction of the world's most famous rocket.....the mighty Saturn V. First space vehicle to carry men to the moon and most recently utilized to place Skylab in orbit around Earth. Scaled to 1/100th of its actual size, our model stands an impressive 43-1/2" tall. Single "D" engine power gives this baby a spectualr Cape Kennedy style lift-off. Apollo capsule has life-like recovery with bright 12" orange and white canopy 'chute while big ship returns on giant dual 24" parachutes. Precision molded plastic engine nozzles and Apollo capsule with escape tower give detailed authenticity. Corrugated body wrap-ons make this one of our most precise scale models. Also includes Tech Report on clustering.

Specifications

Length 43.5" (110cm)
Diameter 3.938" (100mm)
Weight 9.9 oz. (280 g)
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. 1236 . . . . . **$19.95**

Engines, Launch System, and Glue not included.

MODEL ROCKET ENGINES

ESTES
A SUBSIDIARY OF DAMON

Reliability-proven in over 100 Million launchings!
Quality-Tested for High Performance Flights!!
The finest engine made .... you can depend on it .... for every flight application!!!

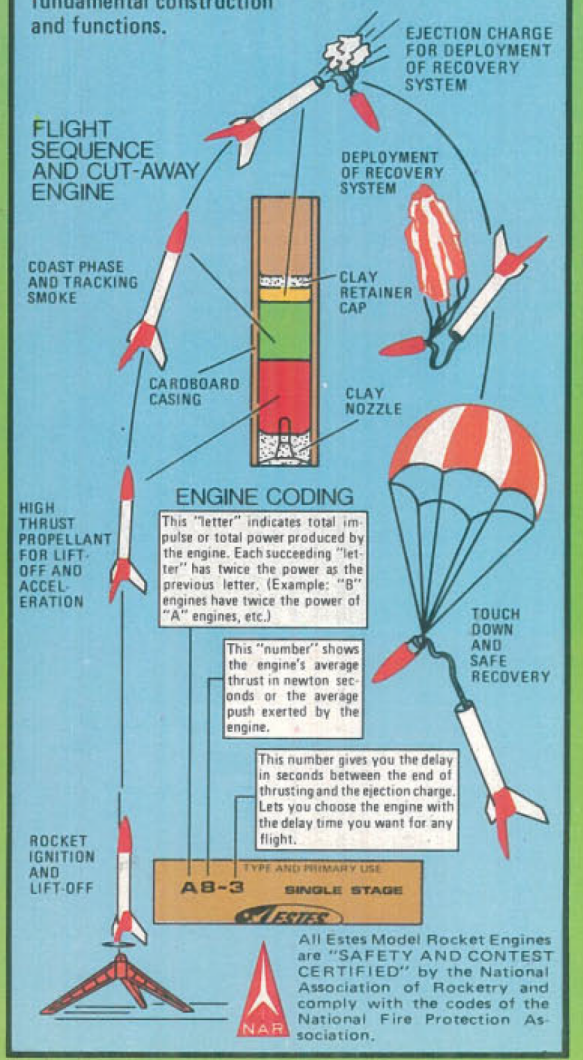
The design and development of the Estes model rocket engine was the real beginning of the safe, educational and exciting hobby that model rocketry has become.

Today's modern rocket engine is the result of over 15 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines for his use.

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 100 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 all your model rocketry activities.

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



Educational See-Thru Rocket with Recovery System, Parachute, Wadding, Engine Mount, and Cut-Away Engine!

PHANTOM

Perfect static demonstration model for workshops and presentations. Shows all internal components of a model rocket plus special cut-away version of C6-5 model rocket engine. Ideal for displays and exhibits.

Length 12.6" (32.0cm)
Body Dia. 0.976" (24.8mm)
Weight 1.35 oz. (38.3 g)
Shipping wt. 3 oz.

Cat. No. 1207 . . . . . **$3.00**

ROCKET ENGINE SELECTION CHART

Cat. No.	Engine Type	Prices 3 for	Total Impulse lb-sec① n-sec②		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						**GREEN LABEL**						
1593	1/2A6-2	3 for $1.40	0.28	1.25	2 sec.	2.5 oz.	46 oz.	0.20 sec.	0.53	15.0	0.055	1.56
1598	A8-3	3 for $1.50	0.56	2.50	3 sec.	4.0 oz.	48 oz.	0.32 sec.	0.57	16.2	0.110	3.12
1601	B4-2	3 for $1.60	1.12	5.00	2 sec.	4.0 oz.	48 oz.	1.20 sec.	0.70	19.8	0.294	8.33
1602	B4-4	3 for $1.60	1.12	5.00	4 sec.	3.5 oz.	48 oz.	1.20 sec.	0.74	21.0	0.294	8.33
1605	B6-2	3 for $1.60	1.12	5.00	2 sec.	4.5 oz.	48 oz.	0.83 sec.	0.68	19.3	0.220	6.24
1606	B6-4	3 for $1.60	1.12	5.00	4 sec.	4.0 oz.	48 oz.	0.83 sec.	0.78	22.1	0.220	6.24
1609	B14-5*	3 for $1.80	1.12	5.00	5 sec.	5.0 oz.	7 lb.	0.35 sec.	0.69	19.6	0.220	6.24
1613	C6-3	3 for $1.80	2.25	10.00	3 sec.	4.0 oz.	48 oz.	1.70 sec.	0.88	24.9	0.440	12.48
1614	C6-5	3 for $1.80	2.25	10.00	5 sec.	4.0 oz.	48 oz.	1.70 sec.	0.91	25.8	0.440	12.48
UPPER STAGE ENGINES③						**PURPLE OR BLUE LABEL**						
1594	1/2A6-4	3 for $1.40	0.28	1.25	4 sec.	1.0 oz.	46 oz.	0.20 sec.	0.54	15.3	0.055	1.56
1599	A8-5	3 for $1.50	0.56	2.50	5 sec.	2.0 oz.	48 oz.	0.32 sec.	0.62	17.6	0.110	3.12
1604	B4-6	3 for $1.60	1.12	5.00	6 sec.	1.5 oz.	48 oz.	1.20 sec.	0.78	22.1	0.294	8.33
1607	B6-6	3 for $1.60	1.12	5.00	6 sec.	2.0 oz.	48 oz.	0.83 sec.	0.71	20.1	0.220	6.24
1611	B14-7*	3 for $1.80	1.12	5.00	7 sec.	2.5 oz.	7 lb.	0.35 sec.	0.73	20.7	0.220	6.24
1615	C6-7	3 for $1.80	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**						
1595	1/2A6-0	3 for $1.40	0.28	1.25	none	4.0 oz.	46 oz.	0.18 sec.	0.48	13.6	0.055	1.56
1600	A8-0	3 for $1.50	0.56	2.50	none	4.0 oz.	48 oz.	0.30 sec.	0.51	14.2	0.110	3.12
1608	B6-0	3 for $1.60	1.12	5.00	none	4.0 oz.	48 oz.	0.80 sec.	0.58	16.4	0.220	6.24
1612	B14-0*	3 for $1.80	1.12	5.00	none	6.0 oz.	7 lb.	0.35 sec.	0.61	17.3	0.220	6.24
1616	C6-0	3 for $1.80	2.25	10.00	none	4.0 oz.	48 oz.	1.68 sec.	0.80	22.7	0.440	12.48

Complete instructions and Astron igniters are included with each package of Estes model rocket engines.

*Series II engines have core-burning grain with large propellant burning area for high initial thrust with short thrust duration.

All engines listed on this page are 2.75 in. (6.99cm) long and 0.690 in. (1.75cm) dia.

Shipping weight of each package of engines is approximately 4 oz.

NOTES:

① Pound - seconds (Figures shown are maximum.)

② Newton - seconds (Figures shown are maximum.)

③ Or Single Stage Engine if used in very light rocket.

ASTRON IGNITERS: Easy to use for reliable ignition every time. Recommended for launch systems using 6 to 12 volts. Same type as supplied with all packages of Estes engines. Installation procedure featured on engine instructions. (Patent No. 3,363,559). Shipping weight 1 oz. (Not recommended for Solar Launch Controller.)

Cat. No. 2225 ..... **6 for $ .50**

SOLAR IGNITERS: Add increased reliability at lift-off with Estes "high performance" Solar Igniters. This uprated igniter is designed especially for the Solar Launch Controller (#2300). Features easy engine installation and is suitable for all Estes launch control systems. Unique four-element design makes it the most dependable igniter made. Shipping weight 1 oz.

Cat. No. 2301 ..... **6 for $ .50**

MINI-ENGINE SELECTION CHART

Cat. No.	Engine Type	Prices 4 for	Total Impulse lb-sec① n-sec②		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												
1500	1/4 A3-2T	4 for $1.50	0.14	0.625	2 sec.	1 oz.	23 oz.	0.18 sec.	0.173	4.9	0.031	0.88
1503	1/2 A3-2T	4 for $1.60	0.28	1.25	2 sec.	2 oz.	28 oz.	0.36 sec.	0.198	5.6	0.062	1.75
1506	A3-2T	4 for $1.70	0.56	2.50	2 sec.	3 oz.	28 oz.	0.86 sec.	0.254	7.2	0.124	3.50
1507	A3-4T	4 for $1.70	0.56	2.50	4 sec.	2 oz.	28 oz.	0.86 sec.	0.268	7.6	0.124	3.50
1511	A10-3T	4 for $1.70	0.56	2.50	3 sec.	5 oz.	48 oz.	0.26 sec.	0.277	7.9	0.133	3.78
UPPER STAGE ENGINES③												
1501	1/4 A3-4T	4 for $1.50	0.14	0.625	4 sec.	1 oz.	23 oz.	0.18 sec.	0.187	5.3	0.031	0.88
1504	1/2 A3-4T	4 for $1.60	0.28	1.25	4 sec.	1 oz.	28 oz.	0.36 sec.	0.212	6.0	0.062	1.75
1508	A3-6T	4 for $1.70	0.56	2.50	6 sec.	1 oz.	28 oz.	0.86 sec.	0.282	8.0	0.124	3.50
BOOSTER ENGINES												
1505	1/2 A3-0T	4 for $1.60	0.28	1.25	none	3 oz.	28 oz.	0.36 sec.	0.166	4.7	0.062	1.75
1509	A3-0T	4 for $1.70	0.56	2.50	none	3 oz.	28 oz.	0.86 sec.	0.226	6.4	0.124	3.50
1510	A10-0T	4 for $1.70	0.56	2.50	none	5 oz.	48 oz.	0.26 sec.	0.235	6.7	0.133	3.70

Mini-Engines are 1.75 in. (4.45cm) long and .500 in. (1.27cm) dia. Shipping weight of each package of mini-engines is approximately 2-1/2 oz.

MIGHTY 'D' ENGINES

Recommended Only for Experienced Rocketeers!

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 "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.

Cat. No.	Engine Type	Prices 3 for	Total Impulse lb-sec① n-sec②		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												
1666	D12-3	3 for $3.00	4.48	20.0	3 sec.	14 oz.	9 lb.	1.50 sec.	1.49	42.2	0.879	24.93
1667	D12-5	3 for $3.00	4.48	20.0	5 sec.	10 oz.	9 lb.	1.50 sec.	1.52	43.1	0.879	24.93
UPPER STAGE ENGINES③												
1668	D12-7	3 for $3.00	4.48	20.0	7 sec.	8 oz.	9 lb.	1.50 sec.	1.55	44.0	0.879	24.93
BOOSTER ENGINES												
1665	D12-0	3 for $3.00	4.48	20.0	none	14 oz.	9 lb.	1.48 sec.	1.44	40.9	0.879	24.93

RECOVERY WADDING: Provides protection from hot ejection gases for parachutes and streamers. Each package contains approximately 75—4-1/2" squares-enough wadding for up to 25 flights. Instructions for installation are included in each package. Shipping weight 6 oz.

Cat. No. 2274 ..... **$ .70**

Complete instructions and rocket igniters are included with each package of Estes model rocket engines.

"D" engines are 2.75 in. (6.99cm) long and 0.945 in. (2.40cm) dia.

Shipping weight of each package of "D" engines is approximately 6-1/2 oz.

NOTES:

① Pound - seconds (Figures shown are maximum.)

② Newton - seconds (Figures shown are maximum.)

③ Or Single Stage Engine if used in very light rocket.

ESTES
A SUBSIDIARY OF DAMON

SOLAR LAUNCH CONTROLLER

MODEL ROCKETRY'S MOST ADVANCED LAUNCH SYSTEM

SOLAR LAUNCH CONTROLLER

The Solar Launch Control System should be standard equipment in your range box. 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, ignition button, and 15 feet of lightweight launch cable. System is constructed of durable "non-breakable" plastic. Micro-clips are presoldered. Use with Estes Solar Igniters (#2301). (Batteries not included.)

Length	6.13" (15.57cm)
Height	2.38" (6.05cm)
Width	1.44" (3.66cm)
Weight (with batteries)	7 oz. (199 g)

Shipping weight 8 oz.
Cat. No. 2300 . . . . . **$5.50**

Here's The Perfect Launch Pad For All Your "Birds"!

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 range box. Friction grip secures rod firmly (accommodates standard 1/8" rod (#2235) or heavy-duty 3/16" Maxi-rod (#2239). Tilt adjustment allows you to compensate for wind.
For extra versatility, Porta-pad can be adapted for rail launchings with Estes "C" Rail (#2250). Shipping weight is 1 lb. 8 oz.
Cat. No. 2217 . . . . . **$5.00**

***Rockets Not Included**
The Solar Launch Controller (#2300) or the Astron Launch Control System (#2212) are the recommended launch systems for use with the Tilt-A-Pad or Porta-Pad.

TILT-A-PAD

WOODEN TRIPOD

This flexible launcher gives you ideal launch control and convenience. Hardwood construction for durability. 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. 2216 . . . . . **$6.00**

Astron Launch Control System

Newly redesigned Launch Controller features futuristic design and provides greater reliability with simplified assembly. Bright orange plastic controller gives realistic ignition system appearance. Recommended for 6 or 12 volt power sources. Perfect Launch Controller for your 12 volt car battery. No need to remove battery from car, simply connect launch system's battery clips to terminals. Features include arming lamp, safety key, launch button, battery clips, micro-clips, and 18 feet of launch cable. Shipping weight 12 oz.
Cat. No. 2212 . . . . . **$6.00**

ESTES
A SUBSIDIARY OF DAMON

THE FANTASTIC ESTES LAND ROCKETS™

Get the ESTES LAND ROCKET Race Kit!

"Screamin' Eagle" Racer with T-wing Air Foil and Racing Slicks

Drag Chute*

Race Flags*

XR 100 Re-usable Engine

Racing Decals

Synchro Line and Anchor System*

COLDPOWER Propellant*

*Included in race kit only.

FEATURES EVERYTHING YOU NEED TO RACE TODAY!

Discover the thrill and excitement of Land Rocket racing. Watch your machine streak away from the starting line in a cloud of jet exhaust. As she sprints across the finish, realistic drag 'chute is deployed just like the real thing. Kit includes Screamin' Eagle racer with T-wing airfoil, mag wheels and racing slicks. Plus XR-100 re-useable rocket engine, colorful drag chute, official race flags, sponsor decals, and "Competition Guide". Plus ColdPower propellant and synchro line with anchor system.
Ship. wt. 27 oz.
Cat. No. 4000. . . . . **$7.95**

Race'em alone or with friends! Hold your own Le Mans, Grand Prix, or Championship Drags!!

SCREAMIN' EAGLE

This wide track monster looks like a "Mustang Funny Car" with giant slicks and T-wing airfoil ready for the Winter Nationals. 11.4" long. (28.96cm)
Ship wt. 15 oz.
Cat. No. 4001. . . . . **$4.95**

COLDPOWER PROPELLANT

High performance, non-flammable fuel for all Estes Land Rockets.
15 oz. can provides 10-15 runs.
Ship. wt. 16 oz.
Cat. No. 3404 . . . . **$2.50**

LIGHTNIN' BUG

A real four wheel bomb featuring "VW Funny Car" design with simulated 'chute pouch and far-out decals. 11.4" long, (28.96cm). Ship Wt. 15 oz.
Cat. No. 4002 . . . . . **$4.95**

SCORCHER

This "Salt Flats Machine" is a rocket engine on wheels ready to set a new land speed record. 12" long, (30.48cm). Ship. Wt. 15 oz.
Cat. No. 4003 . . . . . **$4.95**

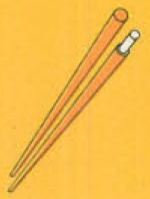
STARFIRE

A "Rocket Powered Rail Job" low to the ground with sleek lines ready to sprint the strip. Watch out, dragsters! 13.25" long, (33.66cm). Ship. Wt. 15 oz.
Cat. No. 4004 . . . . . **$4.95**

Easy to build and fun to race.

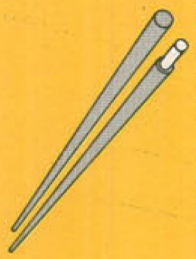
Each Land Rocket is uniquely designed in the Estes quality tradition. Engineered for action and performance, attain scale speeds over 700 m.p.h. (Actual speeds over 35 m.p.h.) All models powered by safe ColdPower propellant. Each car features light-weight, vacuum-formed body, T-wing airfoil, high performance design, mag wheels and racing slicks. Plus colorful decals, built-in guide lugs and re-usable XR-100 ColdPower rocket engine.

LAUNCH SUPPLIES

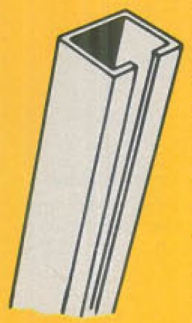


1/8" DIA. TWO-PIECE LAUNCH ROD: Handy collapsible two-piece rod for portable launchers. Pieces slip together to make a 36" long rod. Base rod has a diameter of 1/8". Shipping weight 6 oz.
Cat. No. 2335 . . . . . **$ .70**

ADD-ON ROD: Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod to 53" length. Ship. wt. 6 oz. Cat. No. 2236
$ .35 per section



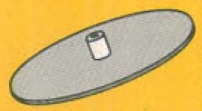
3/16" DIA. MAXI-ROD: Perfect for launching Maxi-Brutes (German V-2, Pershing 1-A, Honest John and "new" Maxi-Alpha). Fits Porta-Pad Tripod (#2217). Two-piece construction. 36" long, lightweight aluminum launch rod. Collapsible for easy storage. Ship. wt. 12 oz.
Cat. No. 2239 . . . . . **$1.75**



LAUNCH RAILS: Rigid aluminum 'C' rails offer countless possibilities for launcher designs.

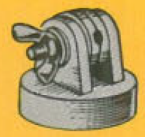
'C' RAIL: 3/8" square (outside). Comes in 18" long sections. Durable aluminum for long life and rust-free service. Use at least 2 sections connected with a joiner (see below). Ship wt. 6 oz.
Cat. No. 38095 **2 for $2.00**

RAIL JOINER: Spring clip 2" long by 1/4" wide, fits inside rail ends, holds two rail sections securely together. Ship wt. 2 oz.
Cat. No. 2252 . **$ .65 each**



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. 2241 . . . . . **$ .95**

DELUXE BLAST DEFLECTOR: Durable pressed steel plate deflects engine blast outward away from launcher.
Ship. wt. 5 oz.
Cat. No. 2240 . . . . . **$ .85**



SWIVEL ASSEMBLY: Provides 360° rotation and full tilt adjustment, yet locks in selected position. Handles 1/8" rod, 3/16" rod, and C-rail. Ship. wt. 3/4 oz.
Cat. No. 2219 . . . . . **$2.00**

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. 2247 . **2 for $ .60**

BATTERY CLIPS: Hook-up to car batteries. Heavy-duty clips connect to terminals up to 1" in dia. With insulators. Ship. wt. 5 oz.
Cat. No. 2245 . **2 for $1.25**

NICHROME WIRE: Model rocket ignition wire. No. 30 recommended for use with car batteries, No. 32 for use with other power supplies.
No. 30, 15-Foot Roll:
Cat. No. 2228 . . . . . **$ .75**
No. 32, 15-Foot Roll:
Cat. No. 2229 . . . . . **$ .95**

UNIVERSAL SAFETY KEY: Replacement safety interlock key for all Estes Launch Control Systems except Ready-To-Fly kits #0701 and #0715.
Cat. No. 38099 . . . . **$ .25**

Fin-Kwik

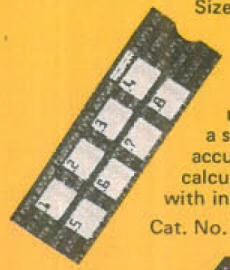
Fast!
Simple!
Accurate!

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

Cat. No. 2713 . . . . . **ONLY $7.95**

TRACKING EQUIPMENT

PREDICTED ALTITUDE COMPUTER



The Estes Pocket Size Altitude Computer enables any rocketeer to predict his model rocket's altitude 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. Ship. wt. 3 oz.
Cat. No. 9015 . . . . . **$ .85**

ALTISCOPE

Find out how high your rocket went with this Altiscope! 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. Ship. wt. 20 oz.
Cat. No. 1415 . . . . . **$6.95**

HOW HIGH DID IT GO?

RECOVERY 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.	Description	Parachute Diameter	Net Weight	Price Each
2261	PK-8	8 inches	.035 oz.	$ .60
2264	PK-12	12 inches	.078 oz.	$ .65
2267	PK-18	18 inches	.144 oz.	$ .70
2271	PK-24	24 inches	.298 oz.	$1.00

ALUMINIZED PARACHUTE MATERIAL: Extra strong coated polyethylene. 3 feet x 3 feet. 1.25 mil. thick. Perfect for custom 'chutes, para-wings, etc. Shipping weight 2 oz.
Cat. No. 2259 . . . . . **2 for $2.00**

RECOVERY WADDING: Provides protection from hot ejection gases for parachutes and streamers. Each package contains approximately 75 — 4-1/2" squares — enough wadding for up to 25 flights. Instructions included in each package. Shipping weight 6 oz.
Cat. No. 2274 . . . . . **$ .70**

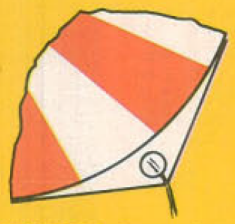
RECOVERY SUPPLIES

SHOCK CORD: Specify width when ordering. Shipping weight 1 oz.
1/8" wide: Net wt. 0.039 oz.,
Cat. No. 2276 **$ .25**
1/4" wide: Net wt. 0.078 oz.,
Cat. No. 2277 **$ .30**

Also 36" long for greater stretch on those larger birds.
1/8" wide: Net wt. 0.078 oz.,
Cat. No. 85744 . . . . . **$ .30**

SCREW EYES: Specify size when ordering. Shipping weight for 6 eyes, 1 oz.
LARGE EYE:
1" long; .04 oz.
Cat. No. 2280 . . **6 for $ .50**
SMALL EYE:
3/4" long; .03 oz.
Cat. No. 2283 . . **6 for $ .50**
EXTRA SMALL EYE:
5/8" long; .01 oz.
Cat. No. 2281 . . **6 for $ .50**

STREAMER MATERIAL: Bright orange, flame-resistant crepe paper streamers. In 7½-foot lengths, enough for two to eight streamers. Specify size when ordering. Shipping weight 1 oz.
1" wide — Net wt. .092 oz.
Cat. No. 2341 **6 for $1.25**
2" wide — Net wt. .184 oz.
Cat. No. 2343 **6 for $1.25**



TAPE DISCS: Fasten shroud lines to plastic parachutes or streamers with these 3/4" pressure sensitive Tape Discs. In sheets of 6 discs. Shipping weight 1 oz.
Cat. No. 2294
4 sheets of 6 for $ .65

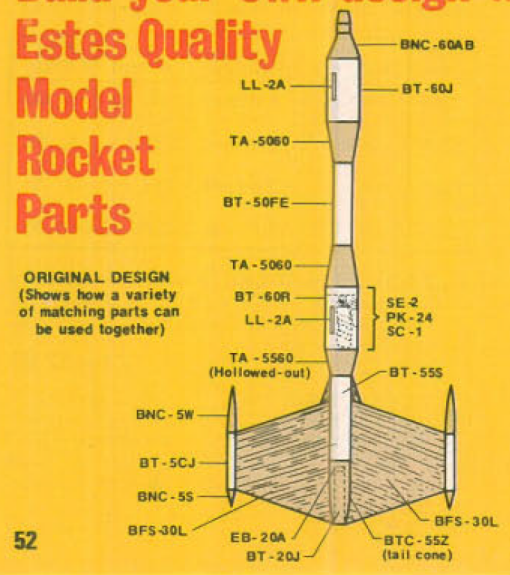
SHROUD LINES: Build reliable, durable, custom parachutes with this strong, hard surface shroud line cord.

Comes in 70 yard spools. Shipping weight 5 oz.
Cat. No. 2340 . . . . . **$ .70**

TAPE STRIPS: For top strength, low bulk and low weight, fasten shroud lines with these 1/4" x 3/4" tape strips, in sheets of 12 strips. Shipping weight 1 oz.
Cat. No. 38412
6 sheets of 12 for $ .80

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. 2292 . **12 for $1.00**

Build your own design with Estes Quality Model Rocket Parts



ORIGINAL DESIGN
(Shows how a variety of matching parts can be used together)

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 description numbers.

Nearly all matching Estes parts have the same series description number. Those which do not feature an additional explanation as to where they can be used. Normally, parts listing the same series description 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. For ordering, be sure to use both the catalog number and the series description number (name).

Create your own award winning design...

YOUR DESIGN COULD WIN YOU A $75 MERCHANDISE CERTIFICATE

ENTER THE DESIGN OF THE MONTH CONTEST

Have an idea for an original design? Enter our Design of the Month competition today. Your design could be published in an issue of Model Rocket News, plus win you $75.00 in Free merchandise from this catalog. Simply follow the rules below. Keep those entries coming, and maybe you'll be our next winner!!

DESIGN OF THE MONTH 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 $75.00 in merchandise and an award certificate suitable for framing. Award winners will be notified by mail.

GOOD LUCK!!

BODY TUBES

SPIRAL

Cat. No.	Description	Price Each	Length	Inside Diameter	Outside Diameter	Wall Thickness	Weight in Oz. Net.	Ship.
Spiral-Wound Paper Tube, for nose sections and strap-on payloads								
3070	BT-5	$ .55	18"	0.515"	0.541"	0.013"	.219	11
Spiral-Wound Paper Tube, for competition and sport models								
3072	BT-20	$ .55	18"	0.710"	0.736"	0.013"	.288	11
30320	BT-20B	$ .25	8.65"	0.710"	0.736"	0.013"	.138	4
30326	BT-20J	$ .20	2.75"	0.710"	0.736"	0.013"	.044	4
Spiral-Wound Paper Tube, for sport and high performance payload models								
3073	BT-50	$ .65	18"	0.950"	0.976"	0.013"	.378	11
30372	BT-50W	$ .45	9.5"	0.950"	0.976"	0.013"	.200	5
Spiral-Wound Paper Tube, for sport and demonstration models								
3074	BT-55	$ .90	18"	1.283"	1.325"	0.021"	.672	11
Spiral-Wound Paper Tube, for sport and demonstration models								
3075	BT-60	$ .95	18"	1.595"	1.637"	0.021"	.960	11
30406	BT-60D	$ .65	11"	1.595"	1.637"	0.021"	.583	11
Spiral-Wound Paper Tube, for monster models and tail rings								
3076	BT-70	$1.25	17.5"	2.175"	2.217"	0.021"	1.300	14
Spiral-Wound Paper Tube, for giant-scale models								
30438	BT-101	$1.95	16.5"	3.896"	3.938"	0.021"	1.974	16

PARALLEL

Cat. No.	Description	Price Each	Length	Inside Diameter	Outside Diameter	Wall Thickness	Weight in Oz. Net.	Ship.
Parallel-Wound Paper Tube, for sport models								
30338	BT-30	$ .45	9"	0.725"	0.765"	0.021"	.270	4

CLEAR

Cat. No.	Description	Price Each	Length	Inside Diameter	Outside Diameter	Wall Thickness	Weight in Oz. Net.	Ship.
Clear Plastic Tubes, for payload sections								
30602	PST-20	$ .50	8"	0.710"	0.736"	0.013"	.168	4
30604	PST-20J	$ .25	2.75"	0.710"	0.736"	0.013"	.058	4
30608	PST-50S	$ .40	4"	0.950"	0.976"	0.013"	.110	4
30614	PST-60R	$ .65	5"	1.595"	1.637"	0.021"	.350	6
30616	PST-65R	$ .70	5"	1.750"	1.796"	0.023"	.450	6
Mylar Plastic Tube, for featherweight models								
30312	BT-10	$ .40	9"	0.710"	0.720"	0.005"	.088	4

PAYLOAD SECTIONS

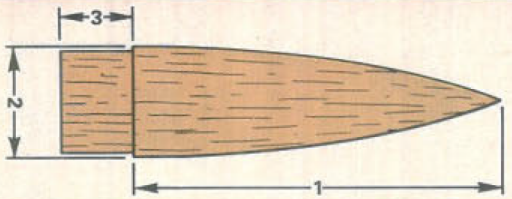
Cat. No.	Description	Price Each	Body Mat'l.	Fits	Inside Diameter	Inside Length	Overall Length	Weight in Oz. Net.	Ship.
3010	PS-20A	$1.25	Clear Plastic	BT-20	.710"	2"	4.00"	.16	1
3012	PS-20C	$1.25	Clear Plastic	BT-20	.950"	3"	7.00"	.40	4
3014	PS-30B	$1.00	Regular Tube	BT-30	.725"	2"	3.75"	.24	1
3016	PS-50A	$1.25	Clear Plastic	BT-50	.950"	3"	6.50"	.39	4
3020	PS-50C	$2.50	Clear Plastic	BT-50	1.59"	4"	10.50"	1.00	11
3025	PS-50E	$2.50	Clear Plastic	BT-50	1.75"	4"	10.50"	1.10	11
3026	PS-55B	$2.25	Regular Tube	BT-55	1.28"	3"	7.63"	.53	11
3028	PS-60A	$2.50	Clear Plastic	BT-60	1.59"	4"	9.50"	.98	11
3032	PS-60C	$2.50	Clear Plastic	BT-60	1.75"	4"	9.50"	1.00	11

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

NOSE CONES

Nose cone dimensions listed in columns 1, 2, and 3.

In "Description" column BNC stands for balsa nose cone and PNC for plastic nose cone.

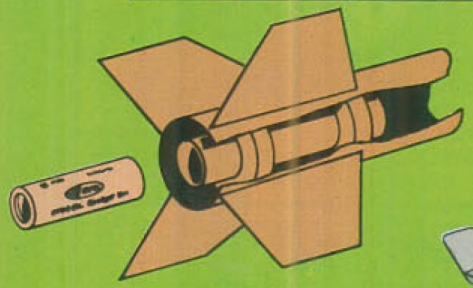


Shape	No.	Cat. No.	Description	Price Each	Dimensions 1	2	3	Average Weight	Ship. Weight
BT-5	1	8002	BNC-5V	$ .50	3/4"	0.541"	1/4"	0.013 oz.	1 oz.
	2	8000	BNC-5E	$ .50	1-3/8"	0.541"	1/4"	0.020 oz.	1 oz.
	3	8001	BNC-5S	$ .50	1-1/2"	0.541"	1/4"	0.016 oz.	1 oz.
	4	8003	BNC-5W	$ .65	2-7/8"	0.541"	1/4"	0.039 oz.	2 oz.
BT-10	5	70220	BNC-10A	$ .40	13/16"	0.728"	1/4"	0.03 oz.	1 oz.
	6	70222	BNC-10B	$ .45	1-11/16"	0.728"	5/16"	0.05 oz.	1 oz.
BT-20	7	8004	BNC-20A	$ .50	13/16"	0.736"	1/4"	0.03 oz.	1 oz.
	8	70238	BNC-20P	$ .45	1-5/16"	0.900"	7/16"	0.07 oz.	4 oz.
	9	8005	BNC-20B	$ .55	1-11/16"	0.736"	5/16"	0.05 oz.	1 oz.
	10	8007	BNC-20R	$ .65	2-3/4"	0.736"	3/8"	0.07 oz.	2 oz.
	11	8006	BNC-20N	$ .70	2-3/4"	0.736"	1/2"	0.08 oz.	2 oz.
BT-30	12	70242	BNC-30C	$ .45	3/4"	0.767"	3/8"	0.04 oz.	1 oz.
	13	70244	BNC-30D	$ .50	1-1/2"	0.767"	3/8"	0.06 oz.	1 oz.
	14	70248	BNC-30M	$ .55	1-1/2"	0.767"	1/2"	0.06 oz.	1 oz.
	15	70246	BNC-30E	$ .60	2-3/16"	0.767"	7/16"	0.07 oz.	1 oz.
	16	70250	BNC-30N	$ .65	2-3/4"	0.767"	1/2"	0.08 oz.	2 oz.
BT-50	17	8008	BNC-50J	$ .65	1-3/8"	0.976"	1/2"	0.08 oz.	4 oz.
	18	8009	BNC-50K	$ .75	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	18	71008	PNC-50K	$ .65	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	19	8010	BNC-50X	$ .90	3-1/4"	0.976"	1/2"	0.15 oz.	4 oz.
	20	8011	BNC-50Y	$1.00	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
	20	71009	PNC-50Y	$ .95	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
BT-55	21	8012	BNC-55AA	$1.00	3-1/8"	1.325"	1/2"	0.15 oz.	4 oz.
	22	8014	BNC-55F	$1.25	3-7/8"	1.325"	1/2"	0.19 oz.	4 oz.
	23	71070	PNC-55AC	$1.10	5-3/8"	1.325"	3/8"	0.32 oz.	6 oz.
	24	71075	PNC-55AO	$1.10	5"	1.325"	3/4"	0.43 oz.	4 oz.
BT-60	25	70284	BNC-60AB	$ .80	2-5/8"	1.637"	3/8"	0.23 oz.	4 oz.
	26	70294	BNC-60T	$1.00	2-7/8"	1.637"	1/2"	0.17 oz.	4 oz.
	27	8020	PNC-60L	$1.00	3-1/8"	1.637"	5/8"	0.34 oz.	4 oz.
	28	70286	BNC-60AH	$2.00	6-5/8"	1.637"	7/8"	1.0 oz.	6 oz.
	28	8021	PNC-60AH	$2.00	6-5/8"	1.637"	7/8"	1.0 oz.	6 oz.
PST-65	29	70298	BNC-65L	$1.00	3-1/4"	1.796"	1/2"	0.41 oz.	4 oz.
BT-70	30	8019	BNC-70AJ	$2.00	4-1/4"	2.217"	1"	0.85 oz.	6 oz.
TAIL CONE FOR BT-55*	31	70532	BTC-55Z	$1.20	3"	1.325"	1/2"	0.25 oz.	4 oz.

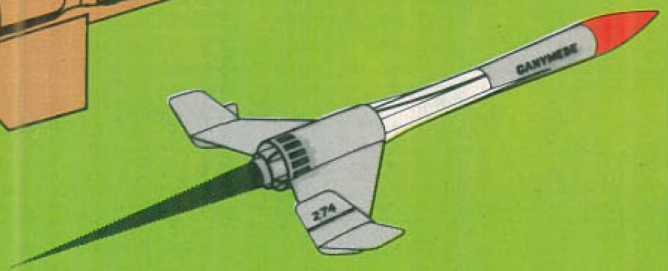
*(With pre-drilled hole)

ENGINE MOUNTS

Engine Type	Cat. No.	Description	Price	Fits	Net Weight Oz.	Shipping Weight Oz.
For Series I & II Engines—A, B, & C type 0.69"x2.75"	3150 3151 3152	EH-2050 EH-2055 EH-2060	$ .65 $ .65 $ .65	BT-50 BT-55 BT-60	0.1 0.14 0.17	5 5 5
For Series IV Engines-D type 0.945" x 2.75"	3155	EM-5063	$ .85	Saturn V	0.4	5
For T Series Mini-Engines .5"x1.75"	3153	EM-520	$ .60	BT-20	0.09	5
Special Purpose Quick-Change Conversion Mount —From Series IV Engines to Series I & II Engines	3154	EM-2050	$ .70	BT-50	0.19	5



Use Estes, high performance engine mounts for your original designs. All engine mounts feature easy-to-assemble instructions and lightweight 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.

Cat. No.	Description	Price 3 for	Outside Dia.	Inside Dia.	Length	Fits	Weight in Oz. Net.	Ship.
3131	EB-20A	3/$.40	.708"	.65"	1/4"	BT-20	.009	1
3134	EB-20B	3/$.40	.708"	.65"	1/8"	BT-20	.005	1
3136	EB-30A	3/$.40	.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.

Cat. No.	Description	Price Each	Outside Diameter	Length	Fits	Weight in Oz. Net.	Ship.
70152	NB-20	$ .55	.710"	3/4"	BT-20	.014	1
70156	NB-30	$ .50	.725"	3/4"	BT-30	.014	1
70158	NB-50	$ .65	.950"	1"	BT-50	.040	4
70162	NB-55	$ .65	1.283"	1-1/4"	BT-55	.115	4
70164	NB-60	$ .80	1.595"	1-1/2"	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 1/2" mating surface on each end.

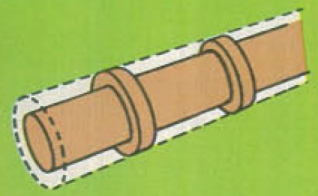
Cat. No.	Description	Price Each	Mates Tubes	Length	Taper Length	Weight Oz. Net.	Ship.
8031	TA-520	$ .55	BT-5 to BT-20	1.75"	0.75"	0.04	1
8032	TA-550	$ .60	BT-5 to BT-50	2.2"	1.0"	0.06	4
70008	TA-2050A	$ .50	BT-20 to BT-50	2.0"	1.0"	0.11	4
8033	TA-2055	$ .70	BT-20 to BT-55	2.5"	1.5"	0.22	4
8034	TA-2060	$1.30	BT-20 to BT-60	3.0"	2.0"	0.20	4
8035	TA-5055	$ .85	BT-50 to BT-55	2.0"	1.0"	0.60	4
8036	TA-5060	$1.60	BT-50 to BT-60	3.0"	2.0"	0.23	4
70020	TA-5065	$ .95	BT-50 to PST-65	3.0"	2.0"	0.26	4
8038	TA-5560	$ .90	BT-55 to BT-60	2.2"	1.0"	0.25	4
70030	TA-5565	$ .80	BT-55 to PST-65	2.7"	1.5"	0.38	4
70032	TA-6065	$ .75	BT-60 to PST-65	2.0"	0.5"	0.23	4
8039	TA-6070	$1.50	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.

Cat. No.	Description	Price Each	Outside Diameter	Inside Diameter	Length	Fits	Average Weight
3050	JT-5C	$ .30	.513"	.455"	3/4"	BT-5	.020 oz.
3051	JT-20C	$ .30	.708"	.650"	3/4"	BT-20	.027 oz.
30256	JT-30C	$ .20	.724"	.650"	3/4"	BT-30	.030 oz.
3052	JT-50C	$ .35	.949"	.920"	1"	BT-50	.051 oz.
3053	JT-55C	$ .35	1.28"	1.25"	1.3"	BT-55	.088 oz.
3054	JT-60C	$ .35	1.59"	1.55"	1-1/2"	BT-60	.124 oz.
3055	JT-70A	$ .55	2.175"	2.115"	1-1/4"	BT-70	.140 oz.

CENTERING RINGS



AR-2050 CENTERING RINGS
For centering a BT-20 body tube within a BT-50. Greater strength makes for use with high thrust engines. Weight per pair .285 oz. Shipping weight 3 oz.
Cat. No. 3100 . . . . . 10 for $ .80

AR-5055 CENTERING RINGS
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. 3102 . . . . . 4 for $ .60

PAPER ADAPTERS

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. 8030 . . . . . $ .55

RA-2050 RINGS — 20 rings for centering and mounting BT-20 in BT-50. Shipping weight 2 oz.
Cat. No. 3110 . . . . . $ .50 per set

RA-2055 RINGS — 10 rings for centering and mounting BT-20 in BT-55. Shipping weight 2 oz.
Cat. No. 3111 . . . . . $ .55 per set

RA-2060 RINGS — 10 rings for centering and mounting BT-20 in BT-60. Shipping weight 2 oz.
Cat. No. 3113 . . . . . $ .55 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.

Cat. No.	Description	Price	Dimensions (In Inches)	Weight in Oz. Net.	Ship.	Major Use
32100	BFS-10	3 for $ .75	1/32x3x9	.065	4	High Performance
32102	BFS-20	3 for $ .65	1/16x3x9	.130	4	High Performance
32106	BFS-20L	3 for $ .80	1/16x3x12	.173	6	High Performance
32104	BFS-20B	2 for $ .20	1/16x1/2x6	.015	2	Glider Elevon
32108	BFS-30	3 for $ .70	3/32x3x9	.150	4	Sport Models
32110	BFS-30L	3 for $ .85	3/32x3x12	.200	6	Sport Models
32116	BFS-40	3 for $ .80	1/8x3x9	.200	4	Cluster Rockets
32118	BFS-40L	3 for $ .90	1/8x3x12	.265	6	Glider Wings
32114	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.

Cat. No. 84465, SHEET No. 2 (14 patterns) ..... $ .40
Cat. No. 84466, SHEET No. 3 (15 patterns) ..... $ .40

CONSTRUCTION SUPPLIES

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 beginning rocketeer 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 Emergy 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 lbs.
Cat. No. 1400
$6.85 Value
Only $4.95

WEIGHTS: Balance rockets for stability. ROUND LEAD WEIGHTS — 11/16" dia., center hole. Weight: 0.12 oz. each. Shipping wt. 1 oz.
Cat. No. 2305 **6 for $ .75**
BALANCING WEIGHTS — Flexible lead strips. 3"x1/4"x 0.02". Weight: 0.085 oz. each. Shipping wt. 1 oz.
Cat. No. 2307 **10 for $ .75**

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. Ship wt. 1 oz.
1-1/4" long:
Cat. No. 2321 **12 for $ .75**
2-3/8" long:
Cat. No. 2322 **10 for $ .75**
5" long:
Cat. No. 2325 **6 for $ .85**
8" long:
Cat. No. 2326 **4 for $ .85**

MAXI-ROD LAUNCH LUG: 2" long fits 3/16" dia. rod.
Cat. No. 2328 **4 for $ .50**

FOAM PADDING: Protect payload specimens, pad payload capsules with plastic foam. Pieces are 6"x6"x1/4". Can be cut and secured in place with white glue. Net weight 0.08 oz. Shipping wt. 1 oz.
Cat. No. 4511 **3 for $ .85**

COMPETITION PAYLOAD: How high can your rocket lift an ounce of lead? This 1 oz. payload weight, 3/4" in diameter, is certified for NAR competition. Ship wt. 2 oz.
Cat. No. 38292 **2 for $1.10**

NYLON SCREWS: Extra light, high strength screws for elevon adjustment on boost-gliders. 1/2" long, 1/16" thread diameter.
Cat. No. 9004 **6 for $ .90**

REINFORCING: Reinforce fin joints, attach shock cords, 3"x12" sheets of gauze.
Cat. No. 3006 **6 for $ .70**
3"x9" self-adhesive treated paper.
Cat. No. 3005 **6 for $ .70**

DOWELS: Extra strong, lightweight, seasoned maple dowels. Ship. wt. 5 oz.
1/8"x18'
Cat. No. 32056 **8 for $ .55**
1/12"x12"
Cat. No. 32058 **8 for $ .55**

ENGINE HOLDER: Flat spring steel design gives easy installation and low drag. Recommended for sport and demonstration models built from BT-5, BT-20 and BT-30. For Regular and "D" Engines. Ship wt. 1 oz.
Cat. No. 3140 **3 for $ .85**
For Mini-Engines.
Ship wt. 1 oz.
Cat. No. 3143 **3 for $ .70**

ESTES
A SUBSIDIARY OF DAMON

CUSTOMIZING MATERIALS

Launcher's Special

Perfect starter assortment for developing 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 Streamer Material
2 TD–2 Tape Discs
1 SLT–1 Shroud Line
6 SC–1 Shock Cord
1 SC–2 Shock Cord
9 SE–2 Screw Eye

Miscellaneous
1 TJ–60C Stage Couple
1 NB–30 Nose Block
1 NB–20 Nose Block
1 EH–2060 Engine Holder
1 TA–2060 Balsa Adapter
1 TA–1 Multi-Purpose Paper Adapter Set
3 NCD–2 Nose Cone Dowels
3 LL–2C Launch Lug
3 EB–20A Engine Blocks
3 EB–30A Engine Blocks
3 NCW–1 Nose Cone Weight
1 NCS–1 Nose Stock
1 NCS–2 Nose Stock
1 D–5 Decal
1 2820 Alpha Book of Model Rocketry
1 PP–2 Fin Patterns
1 PP–3 Fin Patterns

Shipping wt. 2 lbs
Cat. No. 1462 .. $15.00 Value **ONLY $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 Cone
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

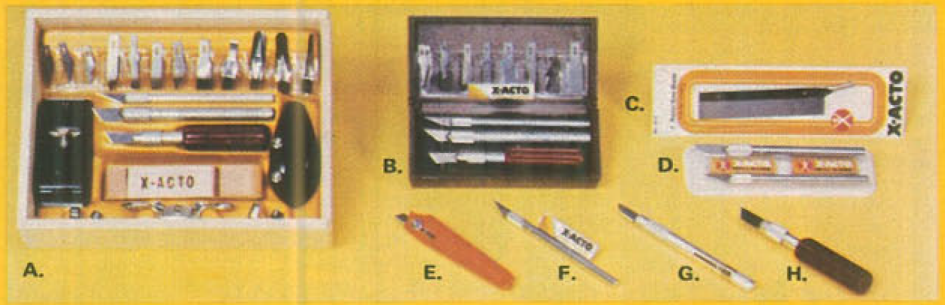
Recovery Equipment
1 PK–8A
2 PK–12A
1 SM–1 Streamer Material
1 TD–2 Tape Discs
5 SC–1 Shock Cord
1 SLT–1 Shroud Line
5 SE–2 Screw Eye

Miscellaneous
1 Alpha Book of Model Rocketry (#2820)
1 PP–2 Fin Patterns
1 PP–3 Fin Patterns
5 LL–2A Launch Lug
5 EB–30A Engine Blocks

Shipping wt. 1 lb., 10 oz.
Cat. No. 1461 .... $7.00 Value
ONLY $5.00

ESTES MODELING TOOLS

A SUBSIDIARY OF DAMON



A. KNIFE AND TOOL SET: Contains small, medium, and heavy-duty knives and an entire assortment of blades, gouges, routers, and punches. Plus planer, 1" sander, spokeshave, and balsa stripper. In wooden box. Shipping weight 2 lbs.
Cat. No. 2693 . . . . . **$14.95 each**

B. KNIFE CHEST: Small, medium, and heavy-duty knives plus 9 assorted extra blades. In natural finish wood chest. Shipping weight 1 lb., 8 oz.
Cat. No. 2692 . . . . . **$5.50**

C. 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**

D. DOUBLE KNIFE SET: Nos. 1&2 knives with 10 extra asstd. blades. Shipping weight 8 oz.
Cat. No. 2674 . . . . . **$3.00**

E. UTILITY KNIFE: The 3-Position blade is reversible, retractable, and replaceable! Excellent modeling knife. Shipping weight 3 oz.
Cat. No. 2688 . . . . . **$ .30 each**

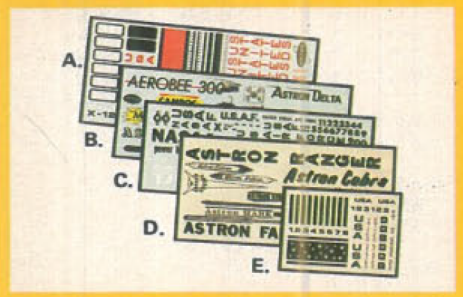
F. PRECISION KNIFE SET: Includes one 4-1/4" long no. 1 aluminum handle and 5 assorted blades. Recommended for precision work. Shipping weight 2 oz.
Cat. No. 2673 . . . . . **$ .70 each**

G. 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**

H. HEAVY DUTY KNIFE: Set of one 4-3/4" long and #4 plastic handle with metal chuck and one general purpose knife blade.
Shipping wt. 6 oz.
Cat. No. 2689 . . . . . **$1.40 each**

ESTES DECALS

A SUBSIDIARY OF DAMON



A. Deluxe Decals for roll pattern and fins. Red, white, orange, and black 4" x 9" sheet.
Cat. No. 37013 . . . . . **$ .70 ea.**

B. Kit Name Decals for your favorite models. Red, white, yellow and black 3-1/2" x 9-1/4".
Cat. No. 37011 . . . . . **$ .35 ea.**

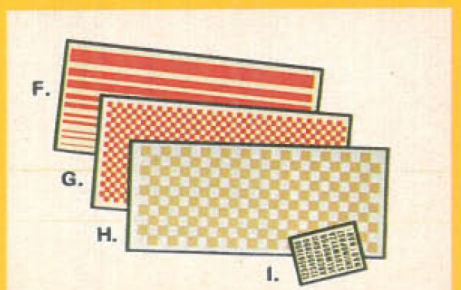
C. Gold Mine Special, Decals for lettering, vents, hatches, etc. Red, white, and black 3-1/2" x 9-1/4" sheet.
Cat. No. 37055 . . . . . **$ .35 ea.**

D. Kit Name Decals for your favorite models. 4" x 8-1/4" sheet. Available in black or white. Specify color when ordering.
Cat. No. 36930 . . . . . **$ .35 ea.**

E. Multi-Purpose Decals featuring a variety of favorite markings. Printed black on clear 3" x 4-1/2" sheet.
Cat. No. 37043 . . . . . **$ .30 ea.**

F. Color Stripes for body tube 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. 36950 . . . . . **$ .45 ea.**

G. 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. 36935 . . . . . **$ .35 ea.**



H. 3/8" Checkerboards for authentic roll patterns. 4-1/4" x10" sheet. Available in red, black, white, or gold. Specify color when ordering.
Cat. No. 36940 . . . . . **$ .45 ea.**

I. 1/4" Letters and Numbers to identify your models. Available in black or white. Specify color when ordering.
Cat. No. 36920 . . . . . **$ .45 ea.**

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. Ship. wt. 5 oz.
Cat. No. 2501 . . **$ .40 ea.**

ESTES FINISHING SUPPLIES

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A. STYRENE CEMENT: 1/2 oz. bottle. For cementing plastic to plastic. Ship. wt. 2 oz.
Cat. No. 2532 . . . . . **$ .35**

B. WHITE GLUE: Sets fast, gives super strong joints with wood, paper, cloth, and other porous materials. In 2 oz. plastic squeeze bottle. Ship. wt. 6 oz.
Cat. No. 86016 . . . . . **$ .85**

C. 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. Ship. wt. 14 oz.
Cat. No. 2640 . . . . . **$1.25**

D. 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. Ship. wt. 14 oz.
Cat. No. 2650 . . . . . **$1.00**

E. 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.
Cat. No. 2620 . . . . . **$1.00**

F. SANDING SEALER: Fills small holes in balsa, paper, and other porous materials, provides a smooth surface for paint or dope. In 1 oz. bottles. Ship. wt. 4 oz.
Cat. No. 2525 . . . . . **$ .55**

G. 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, Flat White, Gloss Black, Flat Black, Flat Orange, and Flat Red. Specify colors when ordering. Ship. wt. 4 oz.
Cat. No. 2600 . . . . . **$ .45**

H. THINNER: For diluting enamel, dope, and sanding sealer. Excellent for brush cleaning. 2/3 oz. bottles. Specify type when ordering. Ship. wt. 4 oz.
Thinner for enamel only.
Cat. No. 2619 . . . . . **$ .45**
Thinner for dope and sanding sealer.
Cat. No. 2541 . . . . . **$ .45**

I. BODY PUTTY: Fill cracks, holes, grain marks in balsa parts, make smooth finbody joints. 1-1/2 oz. tube. Ship. wt. 5 oz.
Cat. No. 2503 . . . . . **$ .70**

J. STYRENE CEMENT: 1/2 oz. tube. For cementing plastic to other materials.
Ship wt. 2 oz.
Cat. No. 2533 . . . . . **$ .30**

K. SANDPAPER: Shape and smooth model rocket parts. Available in three grades. 3" x 3" sheets. Specify grade when ordering. Ship. wt. 1 oz. for 6 sheets.
12 Sheets Medium –
Cat. No. 2518 . . . . . **$ .60**
12 Sheets Fine –
Cat. No. 2516 . . . . . **$ .60**
12 Sheets Extra Fine –
Cat. No. 2514 . . . . . **$ .70**
36 Sheets Assorted (12 ea.)
Cat. No. 2512 . . . . . **$ .90**

L. SANDING MATERIAL: Special mylar plastic backed abrasive sheet can be used over and over again. Extra fine 320 grit in easy to handle 2-1/2" x 2-1/4" sheets. Ship. wt. 1 oz.
Cat. No. 2510 . . . . . **6 for $ .70**

M. PAINT BRUSHES: Two #1 brushes for extra fine work, two #4 brushes for normal work, and two #6 brushes for covering large areas rapidly. Sets of six only. Ship. wt. 2 oz.
Cat. No. 2505 . . . . . **$1.00**

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ROCKET STABILITY — TR-1: Easy-to-read report explaining how rockets are designed to fly properly, including a before-launch test to assure rocket stability.
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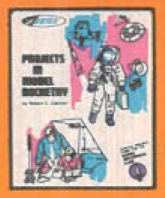

PROJECTS IN MODEL ROCKETRY: Suggestions on how to plan, prepare, and present model rocketry research projects. Perfect for Science Fair entries. Ideas for about 100 projects.
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ESTES MODEL ROCKET CONTEST GUIDE: Great for planning model rocket contests and meets. Features rules for exciting competitive events plus suggestions for contest organization.
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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.
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ESTES GUIDE FOR AEROSPACE CLUBS: Features complete details for club organization and activities.
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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 pre-loaded factory made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.
3. Recovery – I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.
4. Weight Limits – My model rocket will weigh no more than 453 grams (16 ozs.) at liftoff, and the engines will contain no more than 113 grams (4 ozs.) of propellant.
5. Stability – I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
6. Launching System – The system I use to launch my model rockets must be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 10 feet away from any rocket that is being launched.
7. Launch Safety – I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.
8. Flying Conditions – I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.
9. Launch Area – My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use non-flammable recovery wadding in my rockets.
10. Jet Deflector – My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.
11. Launch Rod – To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.
12. Power Lines – I will never attempt to recover my rocket from power lines 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.

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 _____

NAR

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

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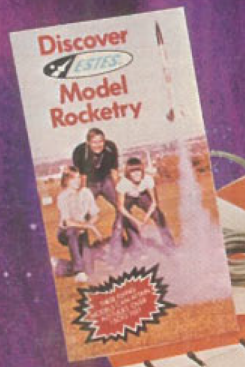

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