Introducing The Sensational ASTROCAM 110 Aerial Camera,
Plus BATTLESTAR GALACTICA,™
STAR WARS™, STARTREK,™
and Space Shuttle Flying MODEL ROCKETS!

No. 791P
“Takes dramatic 110 color photos from hundreds of feet in the sky!”

50¢
NEW!

maxi alpha 3

“Pro-Demo” Model Rocketry Outfit

SKILL LEVEL 2

Suggested for individuals with some model building experience.

- GIANT MAXI-ALPHA III ROCKET - Nearly 3 feet long with pre-colored, easy-to-assemble, press-fit plastic fin unit and huge plastic nose cone. No painting required! Plus big decal and enormous 24" parachute. (See page 13)

- BIG FOOT™, Model Rocketry Launch System - Designed for launching the big ones with giant two-foot-print and 3/16” Maxi launch rod. Patterned launch controller features safety key, arming light, and ignition button. (See page 56)


Cat. No. 1411

Only $25.00

NEARLY 3 FEET TALL!

Flies Over 500 Feet

Recommended for individuals 10 years or older.

Easy To Assemble!

WELCOME!

It was just over 20 years ago, that I began to design and produce model rockets. It was a time when it appeared to all of us interested in the scientific community that the most exciting new wave of scientific development was going to be in outer space, and that... the very best way to develop and tap the scientific genius of this country was to begin involving our young people in the great adventure of space travel and exploration.

Since that time Model Rocketry has played a major role in introducing individuals, like yourself, to the exciting world of science and space flight. More than 150 Million model rockets have been launched by model rocketeers around the World. Men have walked on the Moon, placed unmanned craft on Mars, and have successfully flown sophisticated monitoring devices to the outer reaches of our solar system.

If you are new to Model Rocketry... then welcome... you're in for a real treat! If you have been a model rocketeer before... then welcome back... we are happy you have decided to rediscover “the most exciting hobby on earth”.

The “Big News”, in this new Catalog, is the introduction of BATTLESTAR GALACTICA™, flying model rockets on pages 8, 32 and 33. In addition, we are proud to unveil the incredible AstroCam 110, model rocketry’s most advanced aerial camera using standard 110 mini-cartridge color film. See outside cover and page 11 for complete details. Finally, real flying models from STAR WARS™ (pages 8, 9, 28, 30 and 31) and STAR TREK™ (page 49), plus NASA’s Space Shuttle (page 47) are also featured inside.

Page 2 of this Catalog is especially important. It explains how to use the Catalog and gives a brief description of our Skill Level coding. Please read it! To get the most out of your adventure in model rocketry, you should see page 12 for complete information on the Estes Aerospace Club (EAC). When you join, you receive a huge assortment of club materials and technical information plus a Viper rocket kit designed and flown exclusively by EAC members.

Please be sure to follow the Safety Code featured on the inside back cover of this Catalog. It's been responsible for more than 150 Million safe, successful model rocket launches... a truly “outstanding” Safety Record.

Through model rocketry you’ll be well on your way toward learning about... and eventually making a real contribution to... the real world of science and space flight. Once again welcome, good flying, and “may the force be with you”!

Sincerely,

Vern Estes

NASA SPACE SHUTTLE

STAR TREK

STAR WARS

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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 each 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.

<table>
<thead>
<tr>
<th>Skill Level No.</th>
<th>Description</th>
<th>To Be Built By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very Simple</td>
<td>Beginning Rocketeer</td>
</tr>
<tr>
<td>2</td>
<td>Fairly Easy</td>
<td>Intermediate Rocketeer</td>
</tr>
<tr>
<td>3</td>
<td>Average</td>
<td>Craftsman Rocketeer</td>
</tr>
<tr>
<td>4</td>
<td>Challenging</td>
<td>Advanced Rocketeer</td>
</tr>
<tr>
<td>5</td>
<td>Extremely Challenging</td>
<td>Expert Rocketeer</td>
</tr>
</tbody>
</table>

MODEL ROCKET FLIGHT SEQUENCE

Recommended Launch Area:

- In choosing a launch area, the larger the better. Football fields, parks, and playgrounds are great. The chart below shows the smallest recommended sizes. Remember, the larger the launch area, the better your chance of recovering your rocket. Choose a large field away from power lines, tall buildings, tall trees, and low flying aircraft.
- **MAKE SURE THE AREA WHERE YOU SET UP YOUR LAUNCHER IS CLEAR OF OBSTRUCTIONS AND HAS NO DRY WEEDS OR HIGHLY FLAMMABLE MATERIALS.**

**Engine Types**

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>Minimum Launch Site Dimension*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>1/4A - 1/2A</td>
<td>30 Feet</td>
</tr>
<tr>
<td>A</td>
<td>100 Feet</td>
</tr>
<tr>
<td>B</td>
<td>200 Feet</td>
</tr>
<tr>
<td>C</td>
<td>400 Feet</td>
</tr>
</tbody>
</table>

*Minimum Launch Site Dimension for Circular Area is Diameter in Feet, and for Rectangular Area is Shortest Side in Feet.

- **HIGH THRUST AND ACCELERATION FOR POWERED FLIGHT.**

- **ROCKET IGNITION AND LIFT-OFF FROM ELECTRICALLY OPERATED LAUNCH PAD.**

- **MODEL STREAKS SKYWARD TO PEAK ALTITUDE DURING COAST PHASE.**

- **MODEL REACHES PEAK ALTITUDE AND EJCTION CHARGE ACTIVATES RECOVERY SYSTEM.**

- **RECOVERY PARACHUTE IS DEPLOYED.**

- **TOUCH DOWN AND SAFE RECOVERY ... READY TO BLAST-OFF AGAIN!**

Unless otherwise stated, all the model rocket engines in this catalog are hobby kits requiring assembly. Launch systems, engines, glue, and finishing supplies are not included. Recommended for ages 10 to adult. Adult supervision suggested for those under 12 years of age when flying model rockets.

Estes model rocket engines are safety and contest certified by the National Association of Rocketry (N.A.R.) and meet the specifications and requirements set-forth by the National Fire Protection Association.
"THIS IS WHERE TO BEGIN"

DER
BIG RED MAX
Deluxe Model Rocketry Outfit

$24.19
VALUE
You Save
$7.24

Virtually everything you need to get started in Estes Model Rocketry in a "BIG" way.
Includes the Big Red Max Rocket, the ultra advanced Big Foot Launch Control System...
Engines... Launching Supplies... and the "Alpha Book of Model Rocketry."

At a moderate price you get practically everything needed for assembly, lift-off, and recovery. (Batteries, glue and finishing supplies are not included.)

Experience the fun of building and the thrill of flying the Big Red Max rocket. This big bird, over two feet long, is easy-to-assemble with die-cut balsa fins, quick-release engine mount, huge plastic nose cone, and "far-out" Red Max decal sheet. Excellent performance with giant 18" orange and white parachute.

Big Foot Launch Control System (page 56) is capable of launching all the rockets in this catalog and is especially recommended for launching Maxi-Bristes and other large rockets. Futuristically designed launch platform features rugged plastic construction and enormous "two foot print" for maximum launch pad stability. Requires four inexpensive "D" cell batteries for power (not included). Launch pad includes blast deflector plate, 1/8" x 36" two-piece launch rod, and adjustable swivel mount to compensate for wind direction.

Launch control unit features quick assembly plus safety key, continuity check light, ignition button and 15 feet of launch cable.

Flight Pak is complete with three high performance, N.A.R. safety-certified engines (two "B" type and one "C" type engines) plus parachute recovery wadding and "Solar" rocket igniters for your first series of exciting flights.

YOUR BIG FOOT LAUNCH CONTROL SYSTEM WILL LAUNCH EVERY ROCKET IN THIS CATALOG!

Only
$16.95

OVER 2 FEET TALL

THE ALPHA III STARTER KIT

FEATURES EASY-TO-ASSEMBLE ALPHA III ROCKET PLUS RUGGED, SPACE-AGE DESIGNED PORTA-PAD LAUNCHER 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 great reliability with instant flexibility. The Alpha III kit is a proven performer for flight-after-flight enjoyment. You'll be able to use this launch system with a standard 1/8" launch rod for most rockets, and with the 3/16" Maxi-Rod for giant "D" powered flying models.

In addition, the PORTA-PAD fits to your specifications giving you the option of distance as well as height. You have portability too, with the SOLAR LAUNCH CONTROL SYSTEM as it requires only 4 alkaline AA batteries for power (not included). Advanced shape allows for perfect hand-held control and is easily assembled in minutes.

KIT INCLUDES:
ALPHA III Rocket with bright plastic one-piece fin unit and nose cone for quick assembly. Realistic Decal sheet with water-soluble decals for easy application. Brightly colored 12" Recovery Parachute with shredding lines and shock cord.
PORTA-PAD launch platform made of heavy duty plastic with strong girdle construction, easy to disassemble and extremely portable. Features 36" long x 1/8" diameter standard launch rod and Blast Deflector Plate to protect the Porta-Pad.

Skill Level 1
Recommended
for Beginners

Only
$13.95

For full description of major items in this kit see: Alpha III (p. 16), Porta-Pad (p. 57) and Solar Launch Controller (p. 57).

Easy To Assemble!
Challenger-1 Flying Model Rocketry Starter Kit

This high performance Challenger-1 rocket is very easy-to-assemble with bright orange plastic nose cone and fin unit. Features quick-finish decor with precolored body tube and realistic roll pattern decals. No painting required! This Challenger-1 rocket can be launched over and over again and can attain altitudes over 1,000 feet! Returns via 12” recovery parachute. You need only replace the rocket engine, igniter, and recovery wadding for each new flight.

Challenger-1 Launch Control System features futuristic designed hand-held hand launch controller with arming lamp, safety key, launch button, and 15 feet of launch cable with micro igniter clips. Plus sleekly designed launch pad with blast deflector plate and 18” long two-piece launch rod. Entire system sets up quickly for launch and disassembles easily for compact storage.

Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery wadding, and high reliability Solar igniters for three exciting flights.

Special Bonus - New "Beginner's Tech Manual" filled with model rocketry data to get you started off right. (Ship. wt. 1 lb.)

Recommended Engines:
A8-3 88-4 C6-5

ONLY $9.95

FLIES OVER 1000 FEET

X-15 STARTER KIT

The perfect beginner's outfit for father and son. Be ready to launch your X-15 Rocket Plane in less than 15 minutes. Features all plastic snap-together construction for easy, quick assembly.

Ready-to-fly X-15 Rocket Plane comes with preassembled 10” parachute, authentic scale decor, and easy-lock engine mount. It looks like the real thing!

Portable futuristic launch control system is ruggedly designed to provide launch after launch enjoyment. Advanced launch controller is designed for easy-grip hand hold control with safety interlock key and launch control button. Realistic launch pad features 24” two-piece launch rod, pressurized micro clips, mini blast deflector, and sturdy girder construction. The entire system is pre-wired. (Requires four AA alkaline penlight batteries for operation.)

X-15 Flight Pak includes 3 N.A.R Safety Certified A34T mini engines, parachute recovery wadding, and Estes high reliability Solar Igniters.

Special Bonus. Model Rocketry Tech Manual is also provided to get you started off right. Ship. wt. 2 lbs. 8 oz.

Cat. No. 0715

ONLY $17.95
**NEW! BATTLESTAR GALACTICA**

**Available Now!**

**COLONIAL VIPER**

**Flying Model Rocketry Outfit**

**SKILL LEVEL 2**

Suggested for individuals with some model building experience.

This BATTLESTAR GALACTICA™ Model Rocketry Outfit features sport-scale Colonial Viper™ and complete launch control system, plus model rocket engines, parachute recovery system, and Solar Igniters for 3 exciting flights.

Colonial Viper™ is an easy-to-assemble sport-scale model with die-cut fins, quick-release engine mount, realistic decals and 12' parachutes.

Launch Control System features futuristically designed hand-held launch controller with

Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery system, and high reliability Solar Ignitors.

Recommended 6 Volt Lantern Batteries: Eveready #731 / Ray-O-Vac #918 / Burgess TW-1 N.E.D.A. Type #918.

Recommended Engines for Colonial Viper™ 864 or C6-5, Ship. Wt. 1 lb.

Cat. No. 1318................. Only $16.00

**STAR WARS**

**Proton Torpedo**

Build and fly the missile that destroyed the Imperial Deathstar!

The high performance Proton Torpedo rocket is easy-to-assemble with plastic nose cone and fin unit. Features quick-finish decor. No painting required. Can be launched over and over again and returns via 12' recovery parachute.

STAR WARS Launch Control System features futuristically designed hand-held launch controller with arming lamp, safety key, launch button, and 15 feet of launch cable. Plus sleekly designed launch pad with blast deflector plate and 1 3/8 x 36' two-piece launch rod.

Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery system, and Solar Igniters for three exciting flights.

Requires 6 volt lantern battery and glue (not included).

Shipping weight: 1 lb. 2 oz.

Cat. No. 1420

**Only $13.00**

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STAR WARS™
X-WING
Fighter™
Flying Model Rocketry Outfit
Skill Level 2

Suggested for individuals with some model building experience.

Features:
- Scale model of T-65 X-Wing Fighter (p. 31) piloted by Luke Skywalker during the Rebel Forces attack on the Imperial "Death Star." Highly detailed and easy to assemble. Spectacular flights over 300 feet with 12" recovery parachute. Plus, BIG FOOT Launch Control System (p. 56) capable of launching all Estes models including Maxi-Breeze. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot print" for maximum launch pad stability. Includes blast deflector plate, 1/8" x 36" two-piece launch rod, swivel mount that is adaptable to either 1/8" or 3/16" launch rods, and legs which remove easily for compact storage. This Launch Control unit is newly engineered for simple, quick assembly and features safety key, continuity check light, ignition button and 15 feet of launch cable. Uses 4 inexpensive "D" size alkaline batteries (not included). STAR WARS Flight Pak features two B4-2 and one C6-3 Model Rocket Engines, plus Solar Igniters, Recovery Wadding and the Alpha Book of Model Rocketry. Ship wt. 3 lbs. (Battery, paint and glue are not included.)

Cat. No. 1422

Only $18.95

NEW!
ESTES
ASTROCAM 110
Model Rocketry Outfit
With Delta II Launch Vehicle

Features:
- The AstroCam 110, model rocketry's most advanced aerial camera. Shoots sharp, crisp, clear color 110 photos...one per flight...from hundreds of feet above. Easy to assemble and simple to operate. Features include high performance shape, 1/1000th sec. shutter speed, high quality acrylic lens, plastic housing, and glass first surface mirror. Uses high speed, color 110 mini-cartridge film, available everywhere. (See outside back cover.)

* Delta II Launch Vehicle features two-color decals, 12" parachute, and special plastic fin unit for smooth and stable flights, time-after-time. All parts are pre-colored, no painting required. (See outside back cover.)

* Big Foot Launch System with giant two-foot print for maximum launch pad stability, 1/8" launch rod, blast deflector plate, and rugged gilder construction. Plus handheld launch controller with continuity check light, safety key, ignition button, and 15 feet of launch cable. (See page 56.) Requires 4 inexpensive "D" size alkaline batteries for power (not included).

* Flight Pak includes three C6-7, high performance Rocket Engines plus Solar Igniters, Recovery Wadding and the Alpha Book of Model Rocketry.

* Uses Kodak Kodacolor 110 color film print film, ASA 400, or equivalent - not included.

Cat. No. 1410

Only $30.00
Ship wt. 3 lbs.

Available
April 15, 1979

Take Incredible "Color" Aerial Photos From Hundreds of Feet In The Sky!
Join More Than 25,000 Estes Rocketeers Getting The Most Out Of Model Rocketry. BECOME A MEMBER OF THE estes aerospace CLUB today!

You'll discover membership in the Estes Aerospace Club opens up a whole new world of model rocket activities. Membership is permanent as long as you remain an active Estes Rocketeer. Your membership kit includes:

**VPER ROCKET** — Club's Exclusive High Performance Design.

**MEMBERSHIP CERTIFICATE** — Suitable for framing.

**CLUB EMBLEM** — Official Iron-on patch. As you progress to higher skill levels, you receive additional Iron-on "thrust" bars.

**DECAL SHEET** — Identify your rockets as part of the EAC fleet!

**RANGE BOX STICKERS** — Multi-purpose stick-ons for your range equipment.

**EAC STATIONERY** — Distinctive stationery for your special notes and letters.

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

**COPY OF MODEL ROCKET NEWS** — Features free plan designs, technical articles, contest, rocketeer contributions and more.

**EAC PRODUCTS BULLETIN** — Special offers for kits and products available only to members.

**JOIN NOW! BECOME AN ESTES AEROSPACE CLUB ROCKETEER TODAY!!**

Simply check the EAC box on your order form and include your payment.

Shipping wt. 9 oz.

Regular EAC membership ($14.47) $3.50

**EARLY PRODUCT ANNOUNCEMENTS AND NEW KIT OFFERS ARE EXCLUSIVE BENEFITS AVAILABLE ONLY TO CLUB MEMBERS. IF YOU ARE NOT ALREADY A MEMBER, YOU ARE URGED TO JOIN NOW!**

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**SKILL LEVEL 1**

**Polaris**

Skill Level 1

Sleek sounding rocket design with large payload section. Excellent performance for flights over 1,000 feet. Perfect for your small insect payloads. Returns gently to earth via 12" parachute recovery. Kit includes attractive decals, die-cut balsa fins, quick-release engine mount and plastic nose cone.

**Specifications**

- Length 18" (45.7cm)
- Diameter 0.076" (24.8mm)
- Weight 1.3 oz. (37g)
- Ship wt. 9 oz.

**Recommended Engines**

1/2A6-2  A8-3 (1st Flight)

**B4-4  B6-4  C6-5**

Cat. No. 1324

$4.00

**Gama**

Skill Level 1

Super-sport design for great performance. Attain altitudes over 1,000 feet with "C" type engines. Unique two-piece body construction for simplified two-color paint scheme. Contemporary kit name decals for a really sharp looking bird. Includes plastic nose cone, quick-release engine mount, die-cut balsa fins and 12" recovery parachute.

**Specifications**

- Length 20.1" (51.1cm)
- Diameter 0.076" (24.8mm)
- Weight 1.13 oz. (32g)
- Ship wt. 10 oz.

**Recommended Engines**

1/2A6-2  A8-3 (1st Flight)

**B4-4  B6-4  C6-5**

Cat. No. 1325

$4.00

**Kadet**

Skill Level 1

Achieve flights over 1,000 feet with this super high flying sport model. Nearly indestructible with pre-colored plastic nose cone and fin unit. Quick and easy-to-assemble. Also features quick-release engine mount, white body tube, and bright red kit name decal—no painting required! Easy-trak recovery with 30" fluorescent streamer.

**Specifications**

- Length 15" (38.1cm)
- Diameter .98" (25mm)
- Weight 1.125 oz. (32g)
- Ship wt. 5 oz.

**Recommended Engines**

A8-3 (1st Flight)  B4-4  B6-4  C6-5

Cat. No. 1328

$3.00

Engines, Launch System, Glue and Paint not included.
**Skill Level 1**

**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. (62.4g)
- Shipping wt.: 11 oz.

**Recommended Engines**
- AB-3
- B6-2 (First Flight)
- B6-4
- C6-5

Cat. No. 1223
Price: $5.25

**Alpha**
Skill Level 1
The ideal kit for your first 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. (23g)
- Shipping wt.: 5 oz.

**Recommended Engines**
- 1/2A6-2
- AB-3 (First Flight)
- B4-4
- B6-4
- C6-5

Cat. No. 1226
Price: $2.95

**Wizard**
Skill Level 1
Simple, quick construction with balsa nose cone and die-cut fins. One of the highest performing vehicles in Estes fleet with its 1600 foot altitude capability and huge 30 inch streamer recovery system that makes it easy to track. Includes great looking kit decals too!

**Specifications**
- Length: 12" (30.5cm)
- Diameter: 0.735" (18.7mm)
- Weight: 0.79 oz. (22g)
- Shipping wt.: 5 oz.

**Recommended Engines**
- 1/2A6-4
- AB-5 (First Flight)
- B4-6
- B6-6
- C6-7

Cat. No. 1292
Price: $1.95

**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. (33.9g)
- Shipping wt.: 10 oz.

**Recommended Engines**
- 1/2A6-2
- AB-3 (First Flight)
- B4-4
- B6-4
- C6-5

Cat. No. 1256
Price: $3.25

**Scout**
Skill Level 1
Estes Industries' first model rocket. 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. Stick fins and tumble recovery for really exciting flights.

**Specifications**
- Length: 7" (17.8cm)
- Diameter: 0.766" (19.4mm)
- Weight: 0.3 oz. (9g)
- Shipping wt.: 2 oz.

**Recommended Engines**
- 1/2A6-2 (First Flight)
- AB-3
- B6-4
- C6-5

Cat. No. 1201
Price: $1.75

**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: 0.735" (18.3mm)
- Weight: 0.1 oz. (3g)
- Shipping wt.: 4 oz.

**Recommended Engines**
- 1/2A6-4 (First Flight)
- AB-5
- B6-6
- C6-7

Cat. No. 1208
Price: $2.65

**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. (3g)
- Shipping wt.: 4 oz.

**Recommended Engines**
- 1/2A6-4 (First Flight)
- AB-5
- B6-6
- C6-7

Cat. No. 1204
Price: $1.50

Engines, Launch System, and Glue not included.
**Mark II**
Skill Level 1
Ideal for sport or demonstration flying. Designed for midbody ejection/separator 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  ...  **$2.65**

---

**Quasar**
Skill Level 1
Dramatic, easy-to-build model for beginners. Bright white plastic nose cone and fin assembly. Metallized pre-printed 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)
A8-6  B4-4
B6-4  C6-5

**Cat. No.** 0650  ...  **$4.25**

---

**X-Ray**
Skill Level 1
Perfect for your first payload or second kit. Features large sea 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.: 0.278" (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  ...  **$4.25**

---

**Antares**
Skill Level 1
Achieve flights over 1,200 feet with this high performance sports model. Kit features include fin and roll pattern decals plus 10" 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)
A8-6  B4-4
B6-4  C6-5

**Cat. No.** 1276  **$3.75**

---

**Scamp**
Skill Level 1
Great sport flyer 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  A8-3 (First flight)
A8-6  B4-4
B6-4  C6-5

**Cat. No.** 1286  **$3.75**

---

**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 decal & 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)
B6-4  C6-5

**Cat. No.** 1277  **$4.25**

*Engines, Launch System, Paint and Glue not included.*
**SUPER mini-BRUTES**

**MOSQUITO**

Skill Level 1

This smallest of all Mini-BBrites combines fantastic performance with featherweight 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. (2.83g)
- Shipping wt: 4 oz.

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

Cat. No. 00811

$0.99

**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" (19.81cm)
- Diameter: 0.541" (13.74mm)
- Weight: 0.256 oz. (7.25g)
- Shipping wt: 6 oz.

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

Cat. No. 00801

$2.65

**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. (9.6g)

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

Cat. No. 00815

$3.25

**LITTLE JOHN**

Skill Level 1

Authentic appearance of a semi-scale surface-to-surface military vehicle with U.S. Army decor. Die-cut balsa, quick-release engine mount and bright 10" parachute recovery.

**Specifications**
- Length: 14.0" (35.6cm)
- Diameter: 0.976" (24.81mm)
- Weight: 0.875 oz. (21.2g)
- Shipping wt: 6 oz.

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

Cat. No. 00819

$3.25

**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. (4.45g)

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

Cat. No. 00815

$3.25

**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. (21.26g)
- Shipping wt: 6 oz.

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

Cat. No. 00818

$2.75

Engines, Launch System, Paint and Glue not included.
**SUPER BRUTES**

**SKILL LEVEL 1**

**ECLIPSE**

Skilled Level 1 - Reach altitudes over 600 feet with this great "new" Mini-Brute sport flyer. High performance design with die-cut balsa fins, quick-release engine mount, kit decals, and 10" parachute recovery.

**Specifications**
- Length: 12.1" (30.73cm)
- Diameter: 0.238" (18.69mm)
- Weight: 0.51 oz. (14.5g)
- Ship. wt: 6 oz.

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

**Cat. No. 0846**

Price: $2.50

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**SKILL LEVEL 2**

**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.

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

**Recommended Engines**
- UPPER STAGE
  - 1/2A3-2T (First Flight)
  - A10-3T
- BOOSTER STAGE
  - 1/2A3-3T (First Flight)
  - A3-0T
  - A10-0T

**Cat. No. 0845**

Price: $3.00

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**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 para- 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,**

**Specifications**
- Booster Length: 18.25" (46.4cm)
- Booster Diameter: 0.736" (24.5mm)
- Weight (Booster w/glider): 1.0 oz. (28.3g)
- Glider Wing Span: 6.0" (15.2cm)
- Shipping wt: 12 oz.

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

**Cat. No. 0807**

Price: $4.25

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**Wolverine**

Skill Level 3 - Futuristic Russian hypersonic interceptor designed for near-space missions. Ramjet nose-cone and cockpit canopy. 10" parachute recovery with two-color Russian decals.

**Specifications**
- Length: 11.25" (28.6cm)
- Diameter: 0.736" (18.69mm)
- Weight: 0.875 oz. (24.5g)
- Shipping wt: 5 oz.

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

**Cat. No. 0816**

Price: $3.25

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**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 10" parachute recovery.

**Specifications**
- Length: 11.75" (29.95cm)
- Diameter: 0.736" (18.69mm)
- Weight: 1.0 oz. (28.3g)
- Wing Span: 4.5" (11.4cm)
- Shipping wt: 5 oz.

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

**Cat. No. 0806**

Price: $4.25

---

*Engines, Launch System, Paint and Glue not included.*
**SKILL LEVEL 2**

**TEROS**
Skill Level 2
Authentic anti-aircraft missile styling with U.S.A.F. decal.
Exciting scramjet design with ramjet nose.
Superb sport model with 12” parachute, die-cut balsa fins and quick-release engine mount.

**Specifications**
- Length 13” (33.0cm)
- Diameter 0.78” (2.0cm)
- Weight 1.2 oz. (33.9g)

**Recommended Engines**
1/2A6-2 (First Flight)
A8-3 96-4
Cat. No. 1285

$3.75

**Stiletto**
Skill Level 2
Exciting scale-like surface-to-air interceptor missile with realistic military decals.
Single-engine super-sport performance with two-stage appearance.
Kit includes plastic nose cone and deployable nozzle, die-cut balsa parts, quick-release engine mount, and 12” recovery parachute.

**Specifications**
- Length 22.4” (56.9cm)
- Diameter 0.97” (2.48mm)
- Weight 1.27 oz. (36g)

**Recommended Engines**
A8-3 (First Flight)
B6-4 96-4 C6-5
Cat. No. 1323

$4.00

**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” (41.8mm)
- Weight 2.375 oz. (67g)

**Recommended Engines**
B4-2 B6-2 B6-4 C6-5
Cat. No. 0661

$5.25

**BANDIT**
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” (41.8mm)
- Weight 3.3 oz. (94g)

**Recommended Engines**
B4-2 (First Flight)
B6-4 C6-5
Cat. No. 0851

$6.25

**NIKEX**
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.

**Specifications**
- Length 23.4” (59.4cm)
- Diameter 1.32” (33.7mm)
- Weight 2.3 oz. (65g)

**Recommended Engines**
A8-3 (First Flight) B4-4 C6-6
Cat. No. 1270

$5.25

**BANDIT’S ADVANCED EJECTION DUCTING SYSTEM**
- Cools ejection gases completely by the time they reach your parachute
- Rocket body tube
- Inner ducting tube
- Model rocket engine
- Outer ducting tube
- Ejection gases
**SKILL LEVEL 2**

**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.

**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. 3,202,902

Specifications
- Length: 32” (81.3cm)
- Diameter: 1.326” (33.7mm)
- Weight: 2.7 oz. (77g)
- Shipping wt: 16 oz.

Recommended Engines
- UPPER STAGE A8-5 B6-6 (First Flight)
- C6-6
- BOOSTER A8-0 B6-0 (First Flight)
- B4-4 C6-0

Cat. No. 1238 $5.25

**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: 1.326” (33.7mm)
- Weight: 2.25 oz. (64g)
- Shipping wt: 13 oz.

Recommended Engines
- UPPER STAGE A8-5 (First Flight)
- B6-6 C6-7
- BOOSTER A8-0 (First Flight)
- B6-0 C6-0

Cat. No. 1278 $5.25

**DETA STAR**

Skill Level 2

Really sleek, super high performance two-stage payloader capable of lofting a 1 oz. payload over 1,000’ with “C” type engines. Can be flown either single or multi-stage. Booster stage employs tumble recovery, Easy-to-assemble with die-cut balsa fins, quick-release engine mount, plastic nose cone, and red kit decals. Dramatic recovery via 12” parachute.

Specifications
- Length: 24” (61cm)
- Diameter: 1.38” (24.8mm)
- Weight: 1.1 oz. (32g)
- Shipping wt: 12 oz.

Recommended Engines
- SINGLE STAGE A8-3 B4-4 B6-4 C6-5
- TWO-STAGE A8-0 A8-5 (First Flight)
- B6-6 B6-5 C6-7

Cat. No. 1322 $5.00

**BLACK BRANT III**

Skill Level 2

Sounding scale model of the primary research vehicle produced by Canadian Bristol Aerospace. An excellent choice for your first scale project. Simple construction with plastic nose cone and engine nozzle, die-cut balsa fins and quick-release engine mount. Plus authentic scale decals and 12” parachute. Flies over 1,000 feet with "C" engine.

Specifications
- Length: 20.6” (52.3cm)
- Diameter: .976” (24.8mm)
- Weight: 1.06 oz. (30g)
- Shipping wt: 5 oz.

Recommended Engines
- A8-3 (First Flight)
- B4-4 B6-4 C6-5

Cat. No. 1293 $4.25

**NEW!**

**SANDHAWK**

(1/10th Scale)

Skill Level 2

A mighty "D" engine powered, ultra-detalled, 30” tall scale model. Actual rocket is 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 payload and 18” parachute for rocket.

Specifications
- Length: 30.1” (76.5cm)
- Diameter: 1.325” (33.7mm)
- Weight: 5 oz. (141.75g)
- Shipping wt: 11 oz.

Recommended Engines
- B4-2 C6-3 D12-5 (First Flight)

Cat. No. 1251 $6.25
**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 sound 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 10” parachute.

**Specifications**
- Length: 28.5” (72.3cm)
- Diameter: 1.325” (33.6mm)
- Weight: 2.75 oz. (78g)
- Shipping wt: 12.6 oz.
- Recommended Engines: D12-7
- Also: B6-4, B14-6, C6-5 (Using EM-2050 Adapter not included.)

Cat No: 1268       $7.50

**CHEROKEE-D**

Skill Level 2  

**Specifications**
- Length: 21.6” (54.9cm)
- Diameter: 1.325” (33.7mm)
- Weight: 2.75 oz. (78g)
- Shipping wt: 11 oz.
- Recommended Engines: D12-5 (First flight) D12-7

Cat No: 1247       $5.25

**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. (132g)
- Shipping wt: 12 oz.
- Recommended Engines: D12-6 (First flight) D12-7

Cat No: 1271       $6.25

**Sky Raider**

Skill Level 2  
Flights up to 1500 feet are possible with this big “D” engine powered payloader. Great sport model with long 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. (67.8g)
- Ship wt: 11 oz.
- Recommended Engines: D12-5, D12-7 (First flight)
- C6-5 (with EM-2050 adapter not included. See page 62)

Cat No: 1290       $5.25

 Engines, Launch System, Glue, and Paint not included.
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. (40g)
Ship, wt. 6 oz.
Recommended Engines
1/2A6-2: A8-3 (First Flight)
A8-5 B4-4 B6-4 C6-5
Cat. No. 101282 ... $4.25

Maxi-Brute!

STAR WARS
X-WING Fighter
Exact Size Used by "STAR WARS" Special Effects Team
NEW!
Small fins have been added for Earth flight.

Alpha
Skill Level 2
Giant-scale version of one of the most popular rockets, the Alpha. Great for demonstration 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. Recommended for 3/16" launch rod.
Specifications
Length 33.2" (84.33cm)
Diameter 2.5" (66.04mm)
Weight 6.17 oz. (175g)
Ship, wt. 16 oz.
Recommended Engine D12-5
Cat. No. 101291 ... $9.50

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" die 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. (68g)
Ship, wt. 12 oz.
Recommended Engines
B3-4 B6-4 (First Flight)
Cat. No. 1011282 ... $5.25

Over 16"
Wingspan
And Nearly 22" Long
Cat. No. 1302
Only $19.95
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Engines, Launch System, Glue, and Paint not included.
**NEW!**

**STAR WARS**
Flying Model Rockets!

**X-WING Fighter**

**TIE Fighter**

Skill Level 3.
Primary attack craft of the Imperial Forces commanded by Lord Darth Vader. Technologically advanced propulsion systems combined with its awesome appearance give the TIE Fighter an overall effect of Gothic Evil. Key features include highly detailed, pre-colored plastic cockpit and fuselage, quick-release engine mount and big 1/8" recovery chute. Special parachute recovery probe attaches quickly for flight and removes easily for display.

**Specifications**

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
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<tbody>
<tr>
<td>Display Length</td>
<td>5-1/4&quot; (13.7cm)</td>
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<tr>
<td>Wing Span</td>
<td>5.0&quot; (12.7cm)</td>
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<tr>
<td>Flying Length</td>
<td>21.0&quot; (53.2cm)</td>
</tr>
<tr>
<td>Ship wt.</td>
<td>12 oz.</td>
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</tbody>
</table>

Recommended Engine:
CG-3
Cat. No. 1299

**ROBOT HERO**

**R2-D2**

Skill Level 2.

Own your very own STAR WARS R2-D2 robot! Destined to become the most famous movie robot of all time, our model is 1-5 actual size and actually flies. Artoo "pops his top" in normal model rocket fashion to deploy an 18" dia. recovery parachute for landing on the planet of your choice. Kit features include a molded plastic body dome and body skirt, a precisely detailed 4-color body wrap-on, quick-change engine mount and stabilizer leg fins. This cantankerous droid is certain to be everybody’s favorite at your launch site, or on your display shelf.

**Specifications**

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
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</thead>
<tbody>
<tr>
<td>Height</td>
<td>9.0&quot; (22.8cm)</td>
</tr>
<tr>
<td>Diameter</td>
<td>3.74&quot; (96.09mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>5.1 oz. (145 g)</td>
</tr>
</tbody>
</table>

**Recommended Engines**

B6-2 (First Flight)  
C6-3

Cat. No. 1301

**Price:** $7.00

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NEW!

BATTLESTAR GALACTICA

A DAMON COMPANY

ESTES

FLYING MODEL ROCKETS

COLONIAL VIPER™

Skill Level 2
Outstanding sport-scale model of the BATTLESTAR GALACTICA™ primary attack craft. Backbone of Colonial defense, the Colonial Viper™ is small, fast, and dead-on-target when encountering the treacherous Cylon Raiders™. This sensational kit is easy-to-assemble with die-cut fins, plastic nose cone, quick-release engine mount, and realistic BATTLESTAR GALACTICA™ decals. Can attain altitudes over 600 feet with "C" type rocket engines. The Colonial Viper™ deploys a 12" recovery parachute for a safe flight and gentle recovery time after time.

Specifications
- Length 11.75" (29.85cm)
- Diameter 0.976" (24.81mm)
- Fin Span 4.625" (11.75cm)
- Weight 2.01 oz. (57g)
- Ship wt. 6 oz.

Recommended Engines
B6-4 (First Flight)

Cat. No. 1310 .......... Only $7.00

Available Now!

Cylon Raider

Skill Level 3
Awesome sport-scale replica of the Cylon's primary attack craft. Its terrific maneuverability, fantastic speed, and deadly laser armament combine to make this craft the most vicious adversary of BATTLESTAR GALACTICA™ and its Colonial Viper™. Our model features pre-colored plastic fuselage, quick-release engine mount, three-color Cylon decals, and special flight probe which removes easily for display. Really spectacular flights with large 18" parachute recovery and alien style flying saucer appearance will make the Cylon Raider™ a unique and exciting addition to your fleet.

Specifications
- Display Length 7" (17.8cm)
- Wing Span 6.75" (22.2cm)
- Weight
- Ship wt. 16 oz.

Recommended Engine
C6-3
Cat. No. 1313

(Please do not order at this time)

$12.00

Available July 1, 1979

Laser Torpedo™

Skill Level 2
Envisioned by Estes designers to be the most powerful weapon carried aloft and deployed by the Colonial Viper™. Especially effective against the Cylon's thermal mines placed in various forbidden stellar regions. Our version features futuristic shaped nose cone, die-cut fins, quick-release engine mount, and scale-like laser weapon decals. The Laser Torpedo™ will reach altitudes over 800 feet with "C" type rocket engine and returns to earth via 12" recovery parachute.

Specifications
- Length 15" (38.1cm)
- Diameter 0.976" (24.8mm)
- Weight 1.06 oz. (30g)
- Ship wt. 6 oz.

Recommended Engines
A8-5 B4-4 86-4 C6-5
Cat. No. 1311

Only $6.00

Available Now!

STAR FIGHT!

Combination Offer
Buy Two And Save!

COLONIAL VIPER™ plus the Cylon Raider™

Only $17.00 Save $2.00

Cat. No. 1318
Available July 1, 1979

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SUPER-LONG SPORT-FLIEGS

Mean Machine
Skill Level 2
Tallest rocket in the Estes fleet. Over 6 feet long with giant 24" parachute recovery. "D" engine powered for spectacular flights over 800 feet. Easily assembled with decal, balsa fins, quick-release engine mount and plastic nose cone. Huge "kit-name" decal adds the finishing touch for a really great looking bird.

Specifications
Length: 78.75" (200cm)
Diameter: 1.837" (46.6mm)
Weight: 5.6 oz (164 g)
Ship wt.: 16 oz.
Recommended Engine: D12-6
Cat. No. 1295............ $8.50

Over 6 Feet Tall!

GODA 1500
Skill Level 2
Attain flights over 700 feet with "C" engine from this extra long sport flyer. Giant decal sheet plus die-cut balsa fins, quick-release engine mount and plastic nose cone. Perfect demonstration model with large 18" parachute recovery.

Specifications
Length: 59" (149.9cm)
Diameter: 1.325" (33.6mm)
Weight: 3.17 oz (90 g)

Recommended Engines
A8-3 (first flight) B4-4 B6-4 C6-5
Ship wt.: 12 oz.
Cat. No. 1294............ $5.25

Engines, Launch System, Glue, and Paint not included.

SKILL LEVEL 2
NEW!
P Erfect For Demonstrations!

COLOSSUS
Huge addition to our Maxi-Brute fleet! Over 4 feet long with big plastic nose cone and press-fit plastic fin unit. Quick and easy to assemble. Really spectacular "D" powered flights with slow realistic lift-off and dramatic 24" parachute recovery. Fin unit, body tube, and nose cone are all pre-colored. No painting required! Rocket shown features recommended paint and decor scheme for model. Includes giant kit decal plus quick-release engine mount. Recommended for 3/16" launch rod.

Specifications
Length: 51.25" (130.18cm)
Diameter: 2.6" (66.04mm)
Weight: 9.5 oz (270g)
Ship wt.: 16 oz.
Recommended Engine: D12-3
Cat. No. 1326............ $17.00

OVER 4 FEET TALL!

The Big Foot Launcher System featured on page 56 is especially recommended for launching these kits.

maxi alpha
Skill Level 2
Very easy-to-assemble giant scale version of one of our most popular kits. Can be ready-to-launch in approxi-
mately 30 minutes. Features new press-fit plastic fin unit plus plastic nose cone. "D" engine powered for truly spectacular flights up to 500 feet. Perfect for demonstrations. Really dramatic, recovery via huge 24" parachute. Nose cone, fin unit, and body tube are all pre-colored. No painting required! Includes big kit decals and quick-release engine mount tool.

Specifications
Length: 33.26" (84.45cm)
Diameter: 2.6" (66.04mm)
Weight: 7.4 oz (210g)
Ship wt.: 16 oz.
Recommended Engine: D12-3
Cat. No. 1321............ $11.00

NEARLY 3 FEET TALL!
**SKILL LEVEL 3**

**STARSHIP VEGA**


**Specifications**
- Length 19.5" (49.5cm)
- Diameter 0.976" (24.8mm)
- Weight 1.88 oz. (53g)
- Ship wt. 10 oz.

**Recommended Engines**
- B4-2
- B4-4
- B6-4 (First Flight)

**Cat. No.**
- 1320

$6.00

---

**SOLAR SAILER**

Skill Level 3

Simulates one of the newest, most sophisticated space concepts for the 1980's, and like the Space Shuttle Enterprise, these engineers have it flying long before NASA does. Developed for low cost, low duration, deep space missions the real vehicle will use sunlight pressure to push it away from Earth at speeds up to 35,000 mph. Our model features printed balsa fins, quick-release engine mount and realistic decals simulating solar panels and girder construction. Truly spectacular recovery with giant 24" solar sail "chute.

**Specifications**
- Length 39" (100cm)
- Diameter 1.76" (45.8mm)
- Weight 2.8 oz. (80g)
- Shipping wt. 11 oz.

**Recommended Engines**
- B6-4 (First Flight)

**Cat. No.**
- 1297...

$7.50

---

**Satellite Interceptors**

Skill Level 3

Envisioned by designers to be operational by 1990, this ultra-sophisticated interceptor patrols near-space for possible aggression by hostile satellites. Highly advanced defense systems include both nuclear and laser armaments. Kit features include printed balsa fins, plastic nose and exhaust cones, quick-release engine mount, and realistic two-color decals. Flights over 600' with 12" parachute recovery.

**Specifications**
- Length 22.25" (56.5cm)
- Diameter 0.976" (24.8mm)
- Fin Span 5.5" (14cm)
- Weight 1.38 oz. (39g)
- Shipping wt. 11 oz.

**Recommended Engines**
- A8-3
- B4-4 (First Flight)
- B6-4
- C6-5

**Cat. No.**
- 1206...

$4.25

---

**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 colonist shuttles. Craft features unique ringfin 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" (70.5cm)
- Solar Panel Span 19.00" (48.26cm)
- Ring Diameter 4.0" (10.16mm)
- Weight 2.19 oz. (62g)
- Shipping wt. 11 oz.

**Recommended Engines**
- B6-4 (First Flight)

**Cat. No.**
- 1288...

$5.25

---

 Gleams Like a Jewel! High Up in Space!

Features Realistic Docking SHUTTLE CRAFT For Display!
**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 single-handedly with most alien vessels. Kit includes beautiful 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. (52.7g)
- **Shipping wt.**: 1 oz.

**Recommended Engines**

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

**Cat. No.**: 1283 ........................... $5.25

---

**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 your 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. (85g)
- **Ship wt.**: 11 oz.

**Recommended Engines**

- B6-4 (First Flight)
- C6-5

**Cat. No.**: 1273 ........................... $7.50

---

**Interceptor**

**Skill Level 3**

U.S. AIR FORCE FC-803


**Specifications**

- **Length**: 26' (66cm)
- **Wing Span**: 7.4" (18.8cm)
- **Diameter**: 1.328" (33.6mm)
- **Weight**: 3.85 oz. (109g)
- **Shipping wt.**: 12 oz.

**Recommended Engines**

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

**Cat. No.**: 1250 ........................... $8.50

**Replacement Plastic Parts Kit**

Includes nose cone, 2 wing pods and tail cone.

**Cat. No.**: 45010 ........................... $2.75

Engines, Launch System, Glue, and Paint 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: 1.0 oz (28 g)
- Shipping wt.: 5 oz
Recommended Engines:
- 1/2A6-2 (First Flight) A8-3
Cat. No. 1214 $4.25

**Sprint**
Skill Level 3
Real competition design. Highest performance in its class. Up to 1,600 ft with C6-7 engine. Low drag gives nose cone and reduces tail section. Contest winner, 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 (First Flight) B6-6
Cat. No. 1249 $3.65

**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 1,600 ft and more! Flight after flight with "D" engines. Dramatic recovery with big, 2" wide bright orange tracking streamer. Includes crazy decals and quick-release engine mount.
Specifications:
- Length: 14.32" (36.3cm)
- Diameter: 1.326" (33.6mm)
- Weight: 2.0 oz (56.6 g)
- Shipping wt.: 7 oz
Recommended Engines:
- D12-7 (A8-3, B6-4 and C6-6 with adapter EM-2060, not included. See page 90)
Cat. No. 1285 $5.25

**Shrike**
Skill Level 3
Specifications:
- Length: 29.8" (75.9cm)
- Diameter: 0.976" (24.8mm)
- Weight: 2.25 oz (64 g)
- Shipping wt.: 1.1 oz
Recommended Engines:
- UPPER STAGE: 1/2A8-4 A8-5 B6-4 B6-6 (First flight) B14-7 C6-7
- BOOSTER: A8-0 B6-6 (First flight) B14-0 C6-0
Cat. No. 1246 $7.50

**Omega**
Skill Level 3
Specifications:
- With payload section and nose cone.
- Length: 30.8" (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
Cat. No. 1200 $9.95

Engines, Launch System, Paint and Glue not included.
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 1/24 to 1 semi-scale model comes complete with authentic U.S. Army decals and realistic detailing. Kit includes 18" parachute recovery, die-cut balsa parts, and quick-release engine mount.

Specifications
- Length: 31.26" (79.38cm)
- Diameter: 1.325" (33.7mm)
- Weight: 2.6 oz. (74g)
- Shipping wt.: 11 oz.

Recommended Engines:
- A8-3
- B6-4
- B6-4 (First Flight)
- C6-5

Cat. No.: 1279

$6.25

(Semi-Scale)

SATURN V

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: 18.11" (46cm)
- Diameter: 1.537" (41.6mm)
- Weight: 1.9 oz. (54g)
- Shipping wt.: 12 oz.

Recommended Engines:
- A8-3 (First Flight)
- B6-4
- C6-5

Cat. No.: 1239

$6.25

BOMARC

Skill Level 3

Beautifully detailed, 1/24th scale flying model, of the famous U.S.A.F. surface-to-air interceptor missile. Our scale replica features authentic four-color decals, die-cut balsa fins, plastic nose cone and quick-release engine mount. Great performance too with dramatic 18" parachute recovery.

Specifications
- Length: 22" (55.8cm)
- Diameter: 1.325" (33.6cm)
- Span: 9" (22.9cm)
- Weight: 3.8 oz. (109g)
- Shipping wt.: 12 oz.

Recommended Engines:
- B4-4
- B6-2 (First Flight)
- C6-3
- C6-5

Cat. No.: 0057

$7.50

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 Italian version, known for its Uhura satellite which discovered the existence of "black holes" in space. This model is extremely detailed with many plastic parts and realistically decorated 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" (91.7cm)
- Diameter: 1.637" (41.98mm)
- Weight: 3.85 oz. (109g)
- Shipping wt.: 11 oz.

Recommended Engines:
- C6-5

Cat. No.: 1287

$7.50
**German V-2**

This giant scale model is a replica of the ground-to-ground ballistic missile developed at Peenemünde before and during World War II. This 1/9th scale Maxi-Brute features "D" engine power, detailed plastic nose cone, dual 24" parachute recovery, and pre-shaped fins. The 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 (354.38g)
- **Shipping wt.:** 2 lbs

**Recommended Engine**
D12-3

**Cat. No.:** 1267

**$19.95**

**NEARLY 3 FEET TALL!**

**Honest John**

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 fantasy with pre-shaped, accurately scaled fins and molded plastic nose cone. Spectacular recovery with a dual 24" parachute and flutter canopy features. Detailed 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 (397g)
- **Shipping wt.:** 2 lbs

**Recommended Engine**
D12-3

**Cat. No.:** 1269

**$19.95**

**PERSHING-1A**

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, pre-shaped fins, detailed molded plastic nose cone, and dual 24" parachute recovery. A 3/16" launch rod should be used for best lift-off results. The unusual fin configuration of this model 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 (326.03g)
- **Shipping wt.:** 2 lbs

**Recommended Engine**
D12-3

**Cat. No.:** 1268

**$19.95**

**OVER 3 FEET TALL!**
**SKILL LEVEL 3**

**Apogee II**

**Farside**

**SCISSOR-WING TRANSPORT**

**SKILL LEVEL 4**

**Space Shuttle**

**Model Rocketry's First Scale**

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

**Dramatic 1/162nd scale reproduction of America's newest space vehicle. Designed as a reusable near space transportation system, tests of the real thing have been taking place for several months. 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 vacuumed plastic and die-cut parts plus quick-release engine mounts.**

**Specifications**

**Shuttle Length**
13.6" (34.6cm)

**Diameter**
2.09" (51.8mm)

**Orbiter Length**
9.0" (22.9cm)

**Orbiter Wingspan**
7.1" (18.1cm)

**Weight**
4.37 oz. (124 g)

**Shipping wt.**
16 oz.

**Recommended Engines**

**C6-3**

**Engines; Launch System, Paint and Glue are not included with this kit.**

**Cat. No. 1234**

**Only $10.50**

**46**

**Cat. No. 1265**

**$7.50**

---

**Recommended Engines**

**B6-2**

**B6-3**

**B8-2**

**C6-3**

**C6-4**
**Skill Level 4**

**Orbital Transport**

Skill Level 4

Only a gleam in the eye of NASA, but its flying for Estes rocketeers right now! Astoundingly 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.

**Transport Ship**
- Length: 23" (58.4 cm)
- Diameter: 0.876" (22.3 mm)
- Wing Span: 7.9" (20 cm)
- Weight: 2 oz. (57 g)

**Re-entry Vehicle**
- Length: 8.6" (21.8 cm)
- Diameter: 0.758" (18.7 mm)
- Wing Span: 5" (12.7 cm)
- Weight: 0.5 oz. (14 g)
- Shipping wt.: 16 oz.

Recommended Engines: [B6-2] [B6-4] [Cat. No. 1242] $6.25

---

**Skill Level 4**

**Mars Snoopers II**

Skill Level 4

Looks like a real spaceship. Futuristic decor, advanced styling, and simulated touch-down pogo 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" (56.6 cm)
- Diameter: 0.576" (24.8 mm)
- 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** $6.25

---

**Star Trek**

**Flying Model Rockets**

**Klingon Battle Cruiser**

Skill Level 4

Accurately detailed, our flying scale cruiser has been modified to permit atmospheric operation. 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" (38.4 cm)
- Wing Span: 8.9" (22.6 cm)
- Weight: 2.5 oz. (70 g)
- Shipping wt.: 12 oz.

**Recommended Engines**
- [B4-2 (First flight)]
- [B6-4]
- [C6-5]

**Cat. No. 1274** $8.50

---

**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" (42.6 cm)
- Recovery Probe Length: 25.9" (65.8 cm)
- Primary Hull Dia.: 7.5" (19 cm)
- Weight: 3.5 oz. (110 g)
- Shipping wt.: 15 oz.

**Recommended Engines**
- [B6-2 (First flight)]
- [C6-3]

**Cat. No. 1275** $9.50

© 1976 Paramount Pictures Corporation

Engines, Launch System, Glue, and Paint not included.
**MARS LANDER**

**Skill Level 5**

Displays futuristic concept for interplanetary exploration and landing vehicle. Spring-loaded landing gear simulates realistic upright touchdown. 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)
- Weight: 3.0 oz. (85 g)

**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 in assemblies and escape tower. Launchings simulate real space missions at Mercury capsule returns via bright orange and white 12" canopy 'chute and rocket descends 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)

**Recommended Engines**
- A8-3
- B6-4 (First Flight)
- C6-5

Cat. No. 1241 ........................................ $6.25

---

**GIANT MAXI-BRUTE!**

**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 43.5" tall. Single "D" engine power gives this baby a spectacular launch. Gemini and Apollo capsules 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. (283g)
- Shipping wt.: 3 lbs., 5 oz.

**Recommended Engines**
- May be flown as 3 engine cluster or single engine.

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

Cat. No. 1236 .................................. $25.95

---

*Engines, Launch System, Glue, and Paint not included.*
**Tracking Equipment**

**Altirak™ Altitude Finder**

Skill Level 1

Track your rocket to the top of its flight and instantly lock-in its altitude on the "view" Altirak altitude finder. Displays exact model rocket altitude on metric scale-no guessing! (Conversion table included for feet.) A precision instrument made of durable plastic. Easy to assemble and looks like futuristic laser pistol. How high did it go? Now you'll know! Shipped wt. 18 oz. Cat. No. 2232 Only $6.00

**Predicted Altitude Computer**

The Estes Pocket Size Altitude Computer enables any rocketeer to predict his model rockets altitude in a matter of seconds. Just move the center slide in simple procedure for fast, accurate results. Three color calculator comes complete with instructions. Shipped wt. 3 oz. Cat. No. 9015 Only $1.25

**Designer's Special**

Ideal parts assortment for the creative rocketeer. Develop your own R & D Program. Over 75 pieces at an excellent savings!

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Only $14.95

**Model Rocket Engines**

Reliability-proven in over 150 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 result of 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. Safe, non-toxic ingredients, allow for a timed delay period to peak altitude while delivering a smoke trail for easy tracking and supplies ejection power for the parachute or other recovery system for your rocket's safe return to earth.

Reliability-proven in over 150 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.**

**Ejection Charge for Deployment of Recovery System**

**Deployment of Recovery System**

**Coast Phase and Tracking Smoke**

**CLAY RETAINER CAP**

**ENGINE CODING**

**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 G-6 model rocket engine. Ideal for displays and exhibits.

**Dimensions:**

- Length: 12.8" (32.6cm)
- Body Dia.: 0.976" (24.8mm)
- Weight: 1.35 oz. (38.3g)
- Shipping wt.: 3 oz.

Cat. No. 1207 Only $3.75
### Rocket Engine Selection Chart

#### Single Stage Engines

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Engine Type</th>
<th>Prices</th>
<th>Total Impulse</th>
<th>Time Delay</th>
<th>Max. Lift</th>
<th>Max. Thrust</th>
<th>Initial Weight</th>
<th>Supplier</th>
<th>Propellant Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>1/4 A3-2T</td>
<td>4 for $1.85</td>
<td>0.14</td>
<td>0.625</td>
<td>2 sec.</td>
<td>1 oz.</td>
<td>0.18 sec.</td>
<td>0.173</td>
<td>4.9</td>
</tr>
<tr>
<td>1503</td>
<td>1/2 A3-2T</td>
<td>4 for $1.95</td>
<td>0.28</td>
<td>1.25</td>
<td>2 sec.</td>
<td>2 oz.</td>
<td>0.36 sec.</td>
<td>0.196</td>
<td>6.6</td>
</tr>
<tr>
<td>1506</td>
<td>A3-2T</td>
<td>4 for $2.05</td>
<td>0.56</td>
<td>2.50</td>
<td>2 sec.</td>
<td>3 oz.</td>
<td>0.66 sec.</td>
<td>0.254</td>
<td>7.2</td>
</tr>
<tr>
<td>1507</td>
<td>A3-4T</td>
<td>4 for $2.05</td>
<td>0.56</td>
<td>2.50</td>
<td>2 sec.</td>
<td>3 oz.</td>
<td>0.66 sec.</td>
<td>0.254</td>
<td>7.2</td>
</tr>
<tr>
<td>1511</td>
<td>A10-3T</td>
<td>4 for $2.05</td>
<td>0.56</td>
<td>2.50</td>
<td>2 sec.</td>
<td>3 oz.</td>
<td>0.66 sec.</td>
<td>0.254</td>
<td>7.2</td>
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<tr>
<td>1501</td>
<td>1/4 A3-4</td>
<td>4 for $1.85</td>
<td>0.14</td>
<td>0.625</td>
<td>2 sec.</td>
<td>1 oz.</td>
<td>0.18 sec.</td>
<td>0.187</td>
<td>5.9</td>
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<tr>
<td>1504</td>
<td>1/4 A3-4T</td>
<td>4 for $1.95</td>
<td>0.28</td>
<td>1.25</td>
<td>2 sec.</td>
<td>2 oz.</td>
<td>0.36 sec.</td>
<td>0.196</td>
<td>6.6</td>
</tr>
<tr>
<td>1508</td>
<td>A3-6T</td>
<td>4 for $2.05</td>
<td>0.56</td>
<td>2.50</td>
<td>2 sec.</td>
<td>3 oz.</td>
<td>0.66 sec.</td>
<td>0.254</td>
<td>7.2</td>
</tr>
</tbody>
</table>

**Upper Stage Engines**

**Booster Engines**

#### Single Stage Engines

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Engine Type</th>
<th>Prices</th>
<th>Total Impulse</th>
<th>Time Delay</th>
<th>Max. Lift</th>
<th>Max. Thrust</th>
<th>Initial Weight</th>
<th>Supplier</th>
<th>Propellant Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1666</td>
<td>D12-3</td>
<td>3 for $3.70</td>
<td>4.48</td>
<td>20.00</td>
<td>3 sec.</td>
<td>14 oz.</td>
<td>1.50 sec.</td>
<td>1.49</td>
<td>42.2</td>
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<tr>
<td>1667</td>
<td>D12-5</td>
<td>3 for $3.70</td>
<td>4.48</td>
<td>20.00</td>
<td>5 sec.</td>
<td>10 oz.</td>
<td>1.50 sec.</td>
<td>1.52</td>
<td>43.1</td>
</tr>
</tbody>
</table>

**Upper Stage Engines**

**Booster Engines**

### Important

- All the rockets shown in this catalog can be flown over and over again. Simply replace the engine, igniter, and recovery wadding for each new flight.

**Astron Igniters:** Easy to use for reliable ignition every time. Recommended for launch systems using 6 to 12 volt car batteries or 12 volt lantern batteries. Installation procedure featured on engine instructions. (Patent No. 3,363,659). Shipping weight 1 oz. Not recommended for Solar Launch Controller or Big Foot Launch Systems.

**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) and Big Foot Launch Control System (#2206). Features easy engine installation and is suitable for all of Estes launch control systems. Unique four-element design makes it the most dependable igniter made. Shipping weight 1 oz.

**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 1 oz.

**Model Rocket Recovery Wadding**

- **D** engines are 2.75 in. (69.9cm) 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.
**Big Foot**

**MODEL ROCKET LAUNCH CONTROL SYSTEM**

The all-new Estes Big Foot launch control system is capable of launching all Estes models including Maxi-Brutes. Futuristic-designed launch platform features rugged plastic construction and enormous "two foot print" for maximum launch pad stability. Includes blast deflector plate, 1-1/4" x 3" two-piece launch rod, adjustable swivel mount to compensate for wind direction and is adaptable to either 1/8" or 3/16" launch rods, and legs which remove easily for compact storage. This launch control unit is newly engineered for simple quick assembly and features safety key, continuity check, light, ignition button and 15 feet of launch cable. Uses 4 inexpensive "D" cell batteries and Estes Solar Igniters (not included).

Shipping weight 2 lbs.
Cat. No. 2906

**Only $14.95**

**USES INEXPENSIVE "D" CELL BATTERIES!**

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**SOLAR LAUNCH CONTROLLER**

**MODEL ROCKERY'S MOST ADVANCED LAUNCH SYSTEM**

The Solar Launch Control System should be standard equipment in your range box. This futuristically designed launch control unit requires only 4 alkaline AA pen light batteries for power. Advanced shape allows for perfect handheld control. Unit is easily assembled in minutes and features safety key, continuity check, light, ignition button, and 15 feet of lightweight launch cable. System is constructed of durable "non-breakable" plastic. Micro-clips are provided. Use with Estes Solar Igniters (not included). Length 6.13" (15.57 cm); Height 2.36" (6.05 cm); Width 1.44" (3.66 cm); Weight (with batteries) 7 oz. (199 g).

Shipping weight 6 oz.
Cat. No. 2300 $7.25

**PORTA-PAD**

**PLASTIC LAUNCH PAD**

Space-age designed, the Porta-Pad is rugged enough to take the stress of countless launches, even with the big Estes "D" engines, yet is lightweight and compact enough for easy carrying and storage. Strong, lighter construction. Orange plastic legs snap off for storage in range box. Friction grip secures rod firmly. Accommodates standard 1/8" rod (#2234) or heavy-duty 3/16" Maxi-Rod (#2239). Tilt adjustment allows you to compensate for wind.

Shipping weight is 1 lb. 8 oz.
Cat. No. 2217 $6.25

**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 $6.25

The Solar Launch Controller (#2300) or the Astron Launch Control System (#2212) are the recommended launch control systems for use with the Porta-Pad (#2217).
TECHNICAL REPORTS
SPECIAL PUBLICATIONS

ROCKET STABILITY – TR-1
Cat. No. 84721 ........ $ .50

ALTITUDE TRACKING – TR-3
Cat. No. 84723 ........ $ .50

MODEL ROCKETRY STUDY GUIDE – TR-8
Cat. No. 84728 ........ $ 1.00

ALTIMETER PREDICTION CHARTS – TR-10
Cat. No. 84730 ........ $ 1.50

AEROPLANE TECHNOLOGY CAT. No. 2833 ........ $ 1.50
A "Teacher's" Manual (Cat. No. 2833) is available to
educators for $1.50

ESTES MODEL ROCKET CONTEST GUIDE
Cat. No. 2816 ........ $ .75

AEROSPACE EDUCATION AND MODEL ROCKETRY
Cat. No. 2916 ........ $ 1.50
(Single copies free to educators requesting it on school
stationery.)

PROJECTS IN MODEL ROCKETRY
Cat. No. 2831 ........ $ .75

ROCKET LAUNCH SYSTEMS
Cat. No. 2811 ........ $ .50

LAUNCH SUPPLIES

1/8" DIA. TWO-PIECE LAUNCH ROD: Handy collapsible two-piece rod for port-
able launchers. Pieces slip together to make a 36" long
rod. Base rod has a diameter of 1/8". Shipping weight 6 oz.
Cat. No. 2234 ........ $ .95

ADD-ON ROD: Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod
to 53" length. Shipped wt. 6 oz, Cat. No. 2235 $ .50 per section

3/16" DIA. MAXI-ROD: Perfect for launching Maxi-Brute kits and other large rockets.
Fits Porta-Pod Tripod (#2217) and Big Footy Launch Pad
(#2208). Two-piece construction, 36" long, lightweight aluminum launch rod. Collapsible
for easy storage. Shipped wt. 12 oz. Cat. No. 2239 $ 1.90

BLAST DEFLECTOR PLATE: Slip-on metal deflector plate fits any
launcher using 1/8" or 3/16" rods, protects launcher base from rocket blast. Four-inch
diameter. Shipping weight 5 oz. Cat. No. 2241 $ 1.00

MICRO-CLIPS: Equip your
launched 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. Attaches to leads with or without solder.
Shipping wt. 1 oz. Cat. No. 2247 2 for $ .75

BATTERY CLIPS: Hook-up
car batteries. Heavy-duty clips connect to terminals up to
1" in dia. With insulators.
Shipping wt. 5 oz. Cat. No. 2245 2 for $ .95

MODEL ROCKETS

ROCKET STABILITY – TR-1
Cat. No. 84721 ........ $ .50

ALTITUDE TRACKING – TR-3
Cat. No. 84723 ........ $ .50

MODEL ROCKETRY STUDY GUIDE – TR-8
Cat. No. 84728 ........ $ 1.00

ALTIMETER PREDICTION CHARTS – TR-10
Cat. No. 84730 ........ $ 1.50

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ROCKET LAUNCH SYSTEMS
Cat. No. 2811 ........ $ .50

RECOVERY SUPPLIES

PARACHUTE KITS: Get the best in parachute recovery! Two-color printed plastic chutes give
maximum visibility with easy-trak design. 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 chutes material, tape discs, and shroud lines. Shipping weight 2 oz.

Cat. No. | Description | Parachute Diameter | Net Weight | Price Each
-------- | ----------- | ------------------- | ---------- | -------
2261     | PK-8       | 8 inches            | 0.39 oz    | $ .70  
2264     | PK-12      | 12 inches           | 0.78 oz    | $ .75 
2267     | PK-18      | 18 inches           | 1.44 oz    | $ .80  
2271     | PK-24      | 24 inches           | 2.96 oz    | $1.00  

LAUNCH ROD SAFETY CAP
with UNIVERSAL SAFETY KEY

for Launch Pad Safety! Shipped wt. 4 oz.
Cat. No. 2205 Only $ 50

SHROUD LINES: Build reliable, durable, custom para-
chutes with this strong, hard
surface shroud line cord.
Comes in 70 yard spools.
Shipping weight 5 oz.
Cat. No. 2340 $ .90

TAPE STRIPS: For top strength, low bulk and light 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 $ .90

SNAP SWIVELS: For quick, simple and reduced tangling in your recovery systems, use these tiny 1" long snap swivels.
Net weight 0.1 oz. 2 for 12 swivels, 1 oz.
Cat. No. 2292 12 for $1.25
ENTER THE DESIGN OF THE MONTH CONTEST... YOUR DESIGN COULD WIN YOU A $75.00 MERCHANDISE CERTIFICATE

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 rocket design can be entered (rockets, glider, 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 that other rocketeers can build and use successfully, too.
5. Entries will be judged on originality, creativity, and clarity. They will be flight tested and proven.
6. Your design entry should include a parts list and diagram(s). Your entry fee will be 30 cents, and your entry must be postmarked by May 15th.
7. Your design entry must be submitted by May 15th.
8. Photos of entries are greatly appreciated, but are not required.
9. Your entry must be properly marked with your name and address.
10. New contest every month.

GOOD LUCK!!

Build Your Own Design With Estes Quality Model Rocket Parts

Once you have constructed several model rocket kits and have become familiar with the basic Estes Technical Reports, you will 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 generic description number. Those which do not feature an additional explanation as to where they can be used are called standard or main parts. Using these, 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 #20E engine block (EB-20E). Further, a #2060 tube adapter (TA-2060) will work with a BT-20 to a BT-60, and a #5055 centering ring (AR-5055) will center a BT-50 within a BT-65. By using balsa or paper adaptations almost any combination of parts can be joined together. For ordering, be sure to use both the catalog number and the series description number (first).

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.

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.

<table>
<thead>
<tr>
<th>Shape</th>
<th>No.</th>
<th>Cat. No.</th>
<th>Description</th>
<th>Price</th>
<th>Dimensions (in inches)</th>
<th>Average Weight</th>
<th>Ship Weight</th>
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<tbody>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>BT-5</td>
<td>1</td>
<td>8002</td>
<td>BNC-5V</td>
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<td>2</td>
<td>8000</td>
<td>BNC-56</td>
<td>$0.32</td>
<td>1-3/8&quot;</td>
<td>0.541&quot;</td>
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<td></td>
<td>3</td>
<td>8001</td>
<td>BNC-5S</td>
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<td>4</td>
<td>8003</td>
<td>BNC-5W</td>
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<td>4/4&quot;</td>
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<td>BT-20</td>
<td>5</td>
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<td>BNC-20A</td>
<td>$0.60</td>
<td>13/16&quot;</td>
<td>0.736&quot;</td>
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<td>6</td>
<td>8005</td>
<td>BNC-20B</td>
<td>$0.75</td>
<td>1-11/16&quot;</td>
<td>0.736&quot;</td>
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<td>7</td>
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<td>BNC-20R</td>
<td>$0.95</td>
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<td>8006</td>
<td>BNC-20N</td>
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<td>3/4&quot;</td>
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<td>BNC-50J</td>
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<td>1/2&quot;</td>
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<td>8009</td>
<td>BNC-50K</td>
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<td>11</td>
<td>71008</td>
<td>PNC-50K</td>
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<td>1/2&quot;</td>
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<td>12</td>
<td>8010</td>
<td>BNC-50X</td>
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<td>3-1/4&quot;</td>
<td>0.976&quot;</td>
<td>3/8&quot;</td>
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<tr>
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<td>8011</td>
<td>BNC-50Y</td>
<td>$1.30</td>
<td>4-3/8&quot;</td>
<td>0.976&quot;</td>
<td>3/8&quot;</td>
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<td>4-3/8&quot;</td>
<td>0.976&quot;</td>
<td>3/8&quot;</td>
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<td>BT-55</td>
<td>15</td>
<td>8012</td>
<td>BNC-55AA</td>
<td>$1.20</td>
<td>3-1/4&quot;</td>
<td>1.325&quot;</td>
<td>1/2&quot;</td>
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<tr>
<td></td>
<td>16</td>
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<td>BNC-55F</td>
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<td>1.325&quot;</td>
<td>1/2&quot;</td>
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<td>8013</td>
<td>BNC-55AC</td>
<td>$1.60</td>
<td>5-3/8&quot;</td>
<td>1.325&quot;</td>
<td>5/8&quot;</td>
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<td>18</td>
<td>71075</td>
<td>PNC-55AC</td>
<td>$1.55</td>
<td>5&quot;</td>
<td>1.325&quot;</td>
<td>5/8&quot;</td>
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<td>8020</td>
<td>PNC-60L</td>
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<td>PNC-60AH</td>
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<td>7/8&quot;</td>
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<td>BT-70</td>
<td>21</td>
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<td>BNC-70AJ</td>
<td>$2.75</td>
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<td>2.217&quot;</td>
<td>1&quot;</td>
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<td>BT-101</td>
<td>22</td>
<td>71050</td>
<td>PNC-101</td>
<td>$2.50</td>
<td>12-1/2&quot;</td>
<td>3.938&quot;</td>
<td>3/4&quot;</td>
</tr>
</tbody>
</table>

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<thead>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3165</td>
<td>BFS-20</td>
<td>$0.75</td>
<td>1/16 x 3 x 9</td>
<td>0.130</td>
<td>4</td>
<td>High Performance</td>
</tr>
<tr>
<td>3166</td>
<td>BFS-20L</td>
<td>$0.90</td>
<td>1/16 x 3 x 12</td>
<td>0.173</td>
<td>4</td>
<td>High Performance</td>
</tr>
<tr>
<td>3167</td>
<td>BFS-20F</td>
<td>$0.80</td>
<td>3/32 x 3 x 9</td>
<td>0.133</td>
<td>4</td>
<td>Sport Models</td>
</tr>
<tr>
<td>3170</td>
<td>BFS-30L</td>
<td>$0.95</td>
<td>3/32 x 3 x 9</td>
<td>0.200</td>
<td>6</td>
<td>Sport Models</td>
</tr>
<tr>
<td>3172</td>
<td>BFS-40</td>
<td>$0.90</td>
<td>1/8 x 3 x 9</td>
<td>0.200</td>
<td>4</td>
<td>Cluster Rockets</td>
</tr>
<tr>
<td>3174</td>
<td>BFS-40L</td>
<td>$0.95</td>
<td>1/8 x 3 x 12</td>
<td>0.265</td>
<td>6</td>
<td>Glider Wings</td>
</tr>
</tbody>
</table>
## BODY TUBES

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Price Each</th>
<th>Inside Diameter</th>
<th>Outside Diameter</th>
<th>Wall Thickness</th>
<th>Weight in OZ.</th>
<th>Net. Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>3070</td>
<td>BT-5</td>
<td>$ .70</td>
<td>1/8&quot;</td>
<td>1&quot;</td>
<td>0.041&quot;</td>
<td>0.013&quot;</td>
<td>.219</td>
</tr>
<tr>
<td>3072</td>
<td>BT-20</td>
<td>$ .75</td>
<td>1/8&quot;</td>
<td>1/2&quot;</td>
<td>0.170&quot;</td>
<td>0.013&quot;</td>
<td>.288</td>
</tr>
<tr>
<td>3073</td>
<td>BT-50</td>
<td>$ .85</td>
<td>1/8&quot;</td>
<td>2&quot;</td>
<td>0.950&quot;</td>
<td>0.013&quot;</td>
<td>.378</td>
</tr>
<tr>
<td>3074</td>
<td>BT-55</td>
<td>$1.05</td>
<td>1/8&quot;</td>
<td>2 1/2&quot;</td>
<td>1.283&quot;</td>
<td>0.021&quot;</td>
<td>.672</td>
</tr>
<tr>
<td>3075</td>
<td>BT-60</td>
<td>$1.15</td>
<td>1/8&quot;</td>
<td>3&quot;</td>
<td>1.595&quot;</td>
<td>0.021&quot;</td>
<td>.960</td>
</tr>
</tbody>
</table>

## 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 thru for normal ejection.

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Price Each</th>
<th>Outside Dia.</th>
<th>Inside Dia.</th>
<th>Length</th>
<th>Fits</th>
<th>Weight in OZ.</th>
<th>Net. Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>3131</td>
<td>EB-20A</td>
<td>$3.50</td>
<td>.708&quot;</td>
<td>.65&quot;</td>
<td>1/4&quot;</td>
<td>BT-20</td>
<td>.009</td>
<td></td>
</tr>
</tbody>
</table>

## ENGINE MOUNTS

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

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>Cat. No.</th>
<th>Description</th>
<th>Price Each</th>
<th>Fits</th>
<th>Weight OZ.</th>
<th>Net Weight OZ.</th>
<th>Shipping Weight OZ.</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Series I &amp; II Engines - A, B, &amp; C type</td>
<td>3151</td>
<td>EH-2055</td>
<td>$ .80</td>
<td>BT-50</td>
<td>0.14</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>3152</td>
<td>EH-2060</td>
<td>$ .80</td>
<td>BT-60</td>
<td>0.17</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For Series IV Engines - D type</td>
<td>3153</td>
<td>EM-5063</td>
<td>$1.00</td>
<td>Saturn V</td>
<td>0.4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>For T Series Mini-Engines .5&quot; x 1.75&quot;</td>
<td>3154</td>
<td>EM-2050</td>
<td>$ .85</td>
<td>BT-50</td>
<td>0.19</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

## BALSA ADAPTERS

Adapters give flexibility for rocket design. Switch from one size body tube to another for payload capsules, parachute compartments, propulsion sections, etc. Any adapter can be hollowed to make a passage for ejection gases. All adapters have at least 1/2" mating surface on each end.

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Price Each</th>
<th>Outside Diameter</th>
<th>Inside Diameter</th>
<th>Length</th>
<th>Taper Length</th>
<th>Weight OZ.</th>
<th>Net. Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>8031</td>
<td>TA-520</td>
<td>$ .75</td>
<td>BT-5 to BT-20</td>
<td>1.75&quot;</td>
<td>0.75&quot;</td>
<td>.04</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>8032</td>
<td>TA-550</td>
<td>$ .80</td>
<td>BT-5 to BT-50</td>
<td>2.00&quot;</td>
<td>0.80&quot;</td>
<td>.16</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>8041</td>
<td>TA-505A</td>
<td>$ .65</td>
<td>BT-5 to BT-50</td>
<td>2.00&quot;</td>
<td>0.65&quot;</td>
<td>.14</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>8033</td>
<td>TA-2055</td>
<td>$ .90</td>
<td>BT-5 to BT-50</td>
<td>2.50&quot;</td>
<td>1.5&quot;</td>
<td>.22</td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td>8034</td>
<td>TA-2060</td>
<td>$1.55</td>
<td>BT-5 to BT-50</td>
<td>3.00&quot;</td>
<td>2.00&quot;</td>
<td>.20</td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td>8035</td>
<td>TA-5055</td>
<td>$1.05</td>
<td>BT-50 to BT-50</td>
<td>3.00&quot;</td>
<td>2.00&quot;</td>
<td>.20</td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td>8036</td>
<td>TA-5060</td>
<td>$1.95</td>
<td>BT-50 to BT-50</td>
<td>3.00&quot;</td>
<td>2.95&quot;</td>
<td>.20</td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td>8038</td>
<td>TA-5560</td>
<td>$1.05</td>
<td>BT-55 to BT-50</td>
<td>3.00&quot;</td>
<td>2.00&quot;</td>
<td>.20</td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td>8039</td>
<td>TA-6070</td>
<td>$1.80</td>
<td>BT-60 to BT-70</td>
<td>3.75&quot;</td>
<td>2.75&quot;</td>
<td>.20</td>
<td>.44</td>
<td></td>
</tr>
</tbody>
</table>

## 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.

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Price Each</th>
<th>Outside Diameter</th>
<th>Inside Diameter</th>
<th>Length</th>
<th>Fits</th>
<th>Average Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>3050</td>
<td>JT-5C</td>
<td>$ .45</td>
<td>.513&quot;</td>
<td>.455&quot;</td>
<td>3/4&quot;</td>
<td>BT-5</td>
<td>.020</td>
</tr>
<tr>
<td>3051</td>
<td>JT-20C</td>
<td>$ .45</td>
<td>.708&quot;</td>
<td>.650&quot;</td>
<td>3/4&quot;</td>
<td>BT-20</td>
<td>.027</td>
</tr>
<tr>
<td>3052</td>
<td>JT-50C</td>
<td>$ .60</td>
<td>.948&quot;</td>
<td>.920&quot;</td>
<td>1&quot;</td>
<td>BT-50</td>
<td>.051</td>
</tr>
<tr>
<td>3053</td>
<td>JT-55C</td>
<td>$ .85</td>
<td>1.28&quot;</td>
<td>1.25&quot;</td>
<td>1-1/2&quot;</td>
<td>BT-55</td>
<td>.088</td>
</tr>
<tr>
<td>3054</td>
<td>JT-60C</td>
<td>$ .85</td>
<td>1.59&quot;</td>
<td>1-1/2&quot;</td>
<td>1-1/2&quot;</td>
<td>BT-60</td>
<td>.124</td>
</tr>
<tr>
<td>3055</td>
<td>JT-70A</td>
<td>$ .75</td>
<td>2.175&quot;</td>
<td>2.115&quot;</td>
<td>1-1/4&quot;</td>
<td>BT-70</td>
<td>.140</td>
</tr>
</tbody>
</table>

## PAPER ADAPTERS

**MULTI-PURPOSE SET** — Includes a total of 20 rings for positioning BT-5 in BT-20; BT-5, BT-20, and BT-50 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. 0930 $ .85

**RA-2050 RINGS** — 20 rings for centering and mounting BT-20 in BT-50. Shipping weight 2 oz. Cat. No. 3110 $ .65 per set

**RA-2055 RINGS** — 10 rings for centering and mounting BT-20 in BT-55. Shipping weight 2 oz. Cat. No. 3111 $ .70 per set

**RA-2060 RINGS** — 10 rings for centering and mounting BT-20 in BT-60. Shipping weight 2 oz. Cat. No. 3113 $ .75 per set

## NOSE BLOCKS

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

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
<th>Price Each</th>
<th>Outside Diameter</th>
<th>Inside Diameter</th>
<th>Length</th>
<th>Weight OZ.</th>
<th>Net. Ship</th>
</tr>
</thead>
<tbody>
<tr>
<td>70152</td>
<td>NB-20</td>
<td>$ .55</td>
<td>.710&quot;</td>
<td>3/4&quot;</td>
<td>BT-20</td>
<td>.014</td>
<td></td>
</tr>
<tr>
<td>70158</td>
<td>NB-50</td>
<td>$ .65</td>
<td>1.960&quot;</td>
<td>1&quot;</td>
<td>BT-50</td>
<td>.040</td>
<td></td>
</tr>
<tr>
<td>70162</td>
<td>NB-55</td>
<td>$ .65</td>
<td>1.283&quot;</td>
<td>1-1/4&quot;</td>
<td>BT-55</td>
<td>.115</td>
<td></td>
</tr>
<tr>
<td>70164</td>
<td>NB-60</td>
<td>$ .80</td>
<td>1.595&quot;</td>
<td>1-1/4&quot;</td>
<td>BT-60</td>
<td>.190</td>
<td></td>
</tr>
</tbody>
</table>

## CONSTRUCTION SUPPLIES

**MAXI-ROD LAUNCH LUG:** 2" long fits 3/16" dia. rod. Cat. No. 2328 $ .70

**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. w. 2 oz. Cat. No. 38292 $ .2135
CONSTRUCTION SUPPLIES

LAUNCH LUGS: Superstrength laminated launch lug features a full 35° plastic core for durability, paper outer layer for easy gluing, Inside diameter of 1/8" and Ship wt. 1 oz. Cat. No. 2321. 1-1/4" long. 2 Cat. No. 2322. 10 for $6.95

ENGINE HOLDER: Flat spring steel design gives easy installation and low drag. Recommended for sport and demonstration models built from BT-5, and BT-20. For Regular and "H" Engines. Ship Wt. 1 oz. Cat. No. 3140... 3 for $1.00 Cat. No. 3143... 3 for $3.80

ENGINE INDEX

A
220 Inch Kit A
220 Inch Kit B
220 Inch Kit C
220 Inch Kit D
220 Inch Kit E
220 Inch Kit F
220 Inch Kit G
220 Inch Kit H
220 Inch Kit I
220 Inch Kit J
220 Inch Kit K
220 Inch Kit L
220 Inch Kit M
220 Inch Kit N
220 Inch Kit O
220 Inch Kit P
220 Inch Kit Q
220 Inch Kit R
220 Inch Kit S
220 Inch Kit T
220 Inch Kit U
220 Inch Kit V
220 Inch Kit W
220 Inch Kit X
220 Inch Kit Y
220 Inch Kit Z

DOWELS: Extra strong, light-weight seasoned maple dowels. Ship Wt. 1 oz. 1/8" x 1/8" Cat. No. 32068... 8 for $0.65 3 Cat. No. 32068... 8 for $0.65

PRODUCT INDEX

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z

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 oz.) at lift-off, and the engines will contain no more than 113 grams (4 oz.) of propellant.

5. Stability - I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.

6. Launching System - The system I use to launch my model rockets must be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 10 feet from any rocket that is being launched.

7. Launch Safety - I will not let anyone approach a model rocket on a launching 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 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 that 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 store it so that the launching 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 that their flight path will take 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.

Signature ____________________________

This Solid Propellant Model Rocketry Safety Code is Approved by The National Association of Rocketry and the Hobby Industry Association of America.
NEW! ASTROCAM 110
Aerial Camera with Delta II Launch Vehicle

Available April 15, 1979

Experience the thrill and excitement of taking incredible color aerial photographs from hundreds of feet in the sky. As your rocket reaches apogee and begins its descent to Earth, the ejection charge of your rocket engine trips the AstroCam 110's 1/1000th sec. shutter and “snap” ... you have just taken a dramatic aerial photograph from far above. The “new” AstroCam 110 uses high speed Kodak Kodacolor 110 color print film, ASA 400, or equivalent. (Not Included.)

Special features include easy, quick-assembly, high quality acrylic lens, molded plastic housing, glass first surface mirror, and high performance aerodynamic design for minimum drag and maximum altitude. Simple to operate and shoots one, crisp, full color 110 photo per flight.

Delta II launch vehicle features specially designed, pre-colored plastic fin-unit for consistently smooth and stable flights. Plus white body tube, quick-release engine mount and great looking, two-color kit decals with dual roll patterns. No painting required! Returns to Earth via 12” dia. canopy parachute. Ship wt. 14 oz.

Specifications - Camera with Launch Vehicle:

- Length: 19.1” (48.5 cm)
- Diameter: 1.39” (35.3 mm)
- Fin Span: 4.75” (12.0 cm)
- Weight: 3.75 oz. (106.3 g)

(The AstroCam 110 requires Delta II Launch Vehicle with special stabilizing fin-unit for best photo results. Camera and launch vehicle are not sold separately. Other launch vehicles are not recommended.)

Estimated retail price: Only $15.00

Cat. No. 1327

Estes products distributed in Canada by:
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Rexdale, Ontario
M9W 1B4

Simulated photo showing typical field of view. Quality may vary due to atmospheric or climatic conditions. Courtesy of USAF.

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PENROSE, COLORADO 81240 USA
PN 2845