FLYING MODEL ROCKET CATALOG

INSIDE!
More Than 100 Exciting Flying Model Rockets.

Starship Nova featured on page 38.
Welcome To Model Rocketry!

This will be a year of renewed interest in space science and planetary exploration as the United States launches the Space Shuttle on its first orbital flight. Already Americans have thrilled to the excitement of close-up pictures of the moons and rings of Saturn—and there’s more to come. Just when you think we’ve done it all, the endless reaches of deep space bring ever-new challenges to man.

Estes launches into this exciting year with 23 new products, including our first exotic Starter Outfit featuring the dramatic Falcon Commander spacecraft. Estes rocketeers will be able to follow their own space program and join in this national spirit of scientific exploration.

It’s a small world... but a vast universe... and the adventures of space go on and on. And again this year, the sky is the limit with Estes... AND YOU ARE THERE!

Sincerely,

Vern Estes

Here’s How To Use Your Estes Catalog.

1. 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. All kits in this catalog are grouped by Skill Level.
2. None of the kit.
3. Special features and additional kit information.
4. Specifications including length, diameter, and weight, in both English and Metric Equivalents.
5. Kit Feature Symbols indicate the following kit features:
   - Plastic Nose Cone
   - Die-Cut Balsa Fins
   - Kit Decals
   - Quick-Release Engine Mount
   - Parachute & Sled
   - Engine Types lists all 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.
   - Product number for kit which should always be used when ordering.
   - Price of kit. (Or see Price List)
   - Average Shipping Weight for these models.

All prices in this catalog are subject to change without notice.
Parts of a Model Rocket

Important
Most model rocket kits are constructed of lightweight hobby materials such as balsa wood, paper, tubing and plastic. This diagram shows the basic components found in most model rocket kits. Unless otherwise stated, all the model rocket kits in this catalog are hobby kits requiring assembly. Launch system, engines, launch stands, glue, batteries, paint, tools, and finishing materials are not included. Recommended for ages 10 to adult. Adult supervision suggested for those under 12 years of age when flying model rockets.

Skill Levels
1. Skill Level 1: Very Simple - Recommended for beginners
2. Skill Level 2: Fairly Easy - Recommended for individuals with some model building experience
3. Skill Level 3: Average Challenge - Recommended for the experienced model builder
4. Skill Level 4: Very Challenging - Recommended for the advanced model builder
5. Skill Level 5: Extremely Challenging - Recommended for the expert model builder

Model Rocket Flight Sequence

Recommended Launch Area:

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 size. 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 brown grass, dry weeds, or highly flammable materials.

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>Minimum Launch Site Dimension</th>
<th>Maximum Altitude</th>
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<tr>
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<td>1/4A - 1/2A</td>
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<tr>
<td>D</td>
<td>500 Feet</td>
<td>1600 Feet</td>
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</table>

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

Model Rocket Flight Sequence

1. Model streaks skyward to peak altitude during coast phase.
2. High thrust and acceleration for powered flight.
3. Recovery parachute is deployed.
4. Touch down and safe recovery, ready to blast-off again.

Model Rocketry is an Internationally Recognized Hobby with a Safety Record of More Than 175 Million Successful Model Rocket Launchings.

Estes Model Rocket Engines Are Safety Tested And Certified By:
- U.S. National Association of Rocketry
- Canadian Association of Rocketry
- Estes Model Rocket Engines Have Been Tested And Approved By:
  - United States B.O.E.
  - Testball Laboratories, Inc.
  - Canadian Department of Energy, Mines, and Resources
  - Government of West Germany

Estes Model Rocketry Products Meet the Standards And Requirements Established By:
- National Fire Protection Association
- U.S. Consumer Product Safety Commission
- U.S. Food & Drug Administration
- U.S. Department of Transportation
- Federal Aviation Administration
- U.S. Postal Service

- United Parcel Service
- American Insurance Association
- International Air Transport Association
- Inter-Governmental Maritime Consultative Organization

Model Rocketry Is Endorsed As A Safe And Rewarding Hobby By:
- Cub Scouts of America
- Boy Scouts of America
- YMCA's
- National 4-H Clubs
- Civil Air Patrol

- NASA
- United States Air Force
- U.S.A.F. - J.R.O.T.C. Programs
- 15,000 Elementary, Jr. High, and High Schools
- Major Colleges and Universities
- Hundreds of Camp and Recreation Programs
**Challenger-1**

**Flying Model Rocketry**

**Starter Kit**

**SKILL LEVEL 1**

Recommended for Beginners

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 pre-colored body tube and realistic roll pattern decals. No painting required! The 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 futuristically designed hand-held launch controller with arming lamp, safety key, launch button, and 16 feet of launch cable with micro-clips. Plus sleekly designed launch pad with blast deflector plate and 1/8" x 36" 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.**

**ENGINES: A-8 - 1st Fitt**

**B-64**

**B-65 C-65 C-67**

**No. 1416**

ONLY $9.95

**Assembles in less than 45 Minutes**

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**FALCON COMMANDER**

**Exotic Flying Model Rocket**

**Starter Kit**

**SKILL LEVEL 1**

Recommended for Beginners

NEW!

Dramatic Flights Over 1,000 Feet!

FEATURES:

Futuristic Forward Swept-Wing Falcon Commander Spacecraft. Easy-to-assemble with die-cut balsa fins, plastic nose cone, and quick-release engine mount. Great flights up to 1,000 feet with 12" parachute recovery. Simple paint scheme and realistic kit decals make it a great display model too!

Launch Control System includes launch pad with blast deflector plate and 1/8" x 36" two-piece launch rod. Futuristic, hand-held launch controller features arming light, safety key and ignition button, plus launch cable with micro-clips.

Flight Pak includes three high performance Model Rocket Engines plus Solar Igniters and Parachute Recovery Wadding for your first series of lift-offs.

Special Bonus - The Mini-Alpha Book of Model Rocketry is also included.

**Ship. Wt. 1 lb.**

**ENGINES: A-8 - 1st Fitt**

**A-8 B-64 B-64 B-85 B-85 C-65 C-67**

**No. 1428**

ONLY $10.95

(Requires 6 or 12 volt lantern battery, glue, and paint - Not Included.)
"This is Where to Begin"

THE ALPHA III STARTER KIT

IF YOU INTEND TO MAKE A REAL HOBBY OF ESTES MODEL ROCKETRY, THIS ALPHA III STARTER KIT IS A PROVEN PERFORMER FOR FLIGHT-AFTER-FLIGHT ENJOYMENT.

KIT INCLUDES:
- ALPHA III Rocket with bright red plastic fin-unit and nose cone for easy, quick assembly. Plus realistic kit decals and white body tube. No painting required.
- PORTA-PAD launch platform with strong girder construction and tilt-adjustment for wind direction. Features 36" long x 1/8" dia. launch rod with blast deflector plate.
- SOLAR LAUNCH CONTROLLER: extremely lightweight and futuristically designed, requiring only 4 alkaline AA batteries (not included). Advanced shape allows for perfect hand-hold control and is easily assembled in minutes. Features safety key, continuity check light, and launch button.

ENGINES: 1/2A5-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B6-5 B6-5 C6-5 C6-7
Ship. Wt. 3 lbs.
No. 1406 . . . . ONLY $16.95

Save big on the purchase of these exciting model rocketry outfits.
Individual components purchased separately cost more!

(Batteries, Glue, and Finishing Supplies not included.)
Ready-To-Launch X-15 STARTER KIT

U.S. AIR FORCE

THE PERFECT BEGINNER'S OUTFIT FOR PARENT AND CHILD. 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 8" recovery 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-held control with safety interlock key, arming light, and launch control button. Realistic launch pad features 24" two-piece launch rod, pre-soldered micro-clips, mini-blast deflector, and sturdy girder construction. The entire system is pre-wired. (Requires four AA size alkaline penlight batteries for operation - not included.)

X-15 Flight Pack includes 3 NAR Safety Certified A3-4T Mini engines, parachute recovery wadding, and Estes high reliability Solar Igniters. Special Bonus: The Mini-Alpha Book of Model Rocketry is also provided to get you started off right.

Ship Wt. 2 lbs. 8 oz.

No. 0715

ONLY $19.95

It Really Flies!

SKILL LEVEL 1
Recommended for Beginners.

FLY MODEL ROCKETRY'S LARGEST SCALE SHUTTLE ORBITER!

NASA SPACE SHUTTLE ORBITER
Model Rocketry Outfit

Dramatic 1/87th semi-scale (H.O. Scale) NASA Space Shuttle with revolutionary new "SkyLite" skinned foam plastic construction. Easily assembled with molded plastic nose cone, vertical stabilizer fin, rear fuselage, and engine nozzle detail which removes for flight. Delivers spectacular flights over 400" and returns to Earth via huge 18" recovery parachute. Also features realistic kit decals and quick-release engine mount. (See page 33 for more details.)

Big Foot Launch Control System (see page 52) with giant "two-footprint" for maximum launch pad stability. Futuristic launch controller features safety key, arming light, and ignition button. Powered by four inexpensive "D" size alkaline batteries - not included.

Flight Pak with two B4-2 and one C6-3 high performance model rocket engines, parachute recovery wadding and Solar Igniters. Plus the Mini-Alpha Book of Model Rocketry.

Ship Wt. 3 lbs.

ENGINES: B4-2 (1st FIt) B6-2 C5-3 C6-3

No. 1425

ONLY $27.00

(Requires batteries, glue, and finishing supplies. Not Included.)
maxi alpha

“Pro-Demo” Model Rocketry Outfit

SKILL LEVEL 2
Suggested for individuals with some model building experience.

Perfect for professional style demonstrations.

Features:
GIANT MAXI-ALPHA III ROCKET - Nearly 3 feet long with easy-to-assemble, press-fit, plastic fin-unit and huge plastic nose cone. Features bright red plastic parts and pre-colored white body tube. No painting required! Plus big decal and enormous 24” parachute. (See page 34.)

BIG FOOT Model Rocketry Launch System - Designed for launching the big ones with giant two-foot-print, 3/16” x 3” Maxi-launch rod, and blast deflector plate. Futuristic launch controller features safety key, aiming light, and ignition button. (See page 52.)

HIGH PERFORMANCE FLIGHT PACK - Three “super-powered” D12-3 Rocket Engines, plus Parachute Recovery Wadding, Solar Igniters, and “The Mini-Alpha Book of Model Rocketry”. Ship. Wt. 4 lb. No. 1411...

ONLY $30.00

Nearly 3 Feet Tall and Flies Over 500 Feet High!

(Batteries, glue, and finishing supplies are not included.)

ASTROCAM 110
AERIAL CAMERA MODEL ROCKETRY OUTFIT With Delta II Launch Vehicle

SKILL LEVEL 2
The AstroCam 110 uses the Delta II Launch Vehicle or Challenger II Model Rocket. (See page 26) with special stabilizing fin-units for best photo results. Camera is not sold separately. Other launch vehicles are not recommended.

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.
* 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!
* Big Foot Launch System with giant two-foot print for maximum launch pad stability, 1/8” x 36” launch rod, blast deflector plate, and rugged gird construction. Plus hand-held launch controller with continuity check light, safety key, ignition button, and 15 feet of launch cable.
* Requires 4 alkaline type “D” size batteries for power (not included).
* Flight Pak includes three C6-7, high performance Estes Rocket Engines plus Solar Igniters, Recovery Wadding and the Mini Alpha Book of Model Rocketry.
* Uses Kodak Kodacolor 110 color print film, ASA 400, or equivalent - not included. Film and developing are available locally. Shp. Wt. 3 lbs.

ENGINE: BB-6 B8-7 B14-6 B14-7 C6-5 C6-7 (1st. Fls.)

No. 1410

ONLY $38.00

Actual “AstroCam 110” photo of Johnson Space Center, Houston, TX.

Take Incredible “Color” Photos From Hundreds of Feet In The Sky!

(Film, batteries, glue, and finishing supplies are not included.)
estes aerospace club
become a member today!

Join more than 24,000 Estes rocketeers getting the most out of model rocketry. You'll discover membership in the Estes Aerospace Club opens up a whole new world of model rocket activities. The EAC Thrust Bar Achievement Program awards members with iron-on thrust bars & achievement certificates as they progress from one skill level to the next. Your membership includes:

VIPER 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-taging, and boost gliders plus much, much, more.
COPY OF MODEL ROCKET NEWS — Features free plan designs, technical articles, contests, rocketeer contributions and more.
EAC PRODUCTS BULLETIN — Special offers for kits and products available ONLY to EAC members.

JOIN NOW!

BECOME AN ESTES AEROSPACE CLUB ROCKETEER TODAY!
Simply Check the EAC box on your order form and include your payment. Ship. Wt. 9 oz. Regular EAC membership

No. 1447 Only $5.00

You Get All This...

skill level 1

WIZARD

One of the highest performing models in Estes 300 series with 1,600 foot altitude capability and huge 30" streamer.
Length: 32" (81.3 cm)
Diameter: 1.77" (4.5 cm)
Launching: 1,600 feet
Weight: 0.78 oz. (22 g)
Engine: J-22A-6
Price: $2.25

FALCON COMMANDER

Can achieve altitudes up to 1,000 feet. Length: 19.72"
Diameter: 9.76" (24.8 cm)
Launching: 1,100 feet
Weight: 0.64 oz. (18 g)
Engine: A-64.5
Price: $4.00

KADET

Achieve flights over 1,000 feet with this super high-flying sport model. Easily reconstructable with pre-colored plastic nose cone and rudder. Quick and easy-to-assemble. No painting required!
Length: 18" (45.7 cm)
Diameter: 2.56" (6.5 cm)
Launching: 1,100 feet
Weight: 1.13 oz.
Engine: F-22A-6
Price: $4.00

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt: 8 oz.
SKILL LEVEL

STREAK Lightweight, wind-cheating design. Actual kit contains and records. Great for contests and displays. Length: 5.8" (14.2 cm). Dia: 0.720" (18.3 mm). Wt: 0.1 oz. (3 g). ENGINES: 1/2A8-4 (1st Fit). A8-5 B4.6 B6.6
No. 1204 ........ $1.95

NEW BAT

No. 1382 ........ $3.50

SCOUT Estes Industries first model rocket. Originally designed and developed in 1965. GREAT PLANE. Length: 9" (18 cm). Diameter: 0.750" (18.4 mm). Wt: 0.2 oz. (9 g). ENGINES: 1/2A8-2 (1st Fit). A8-3 B6.4
No. 1201 ........ $1.95

Mark II Ideal for sport or demonstration flying. Designed for moderate-altitude, separation system with streamer recovery. For match performance flights, ideal for the novice/intermediate. Length: 12" (30.5 cm). Diameter: 0.750" (18.4 mm). Wt: 0.7 oz. (20 g). ENGINES: 1/2A8-6 (1st Fit). A8-3 B4.4 B6.4
No. 1202 ........ $3.25

Alpha The ideal kit for your first or second rocket. Sweep-tail design makes it a really great performer. Length: 12.25" (31.1 cm). Diameter: 0.875" (22.2 mm). Wt: 0.8 oz. (23 g). ENGINES: 1/2A6-2 A8-3 (1st Fit). A8-5 B4.6 B6.6
No. 1225 ........ $3.50

X-RAY Perfect for your first payload or payload carrier. The recommended single-stage payload vehicle for small liquids or large payloads. Length: 15.0" (38.1 cm). Diameter: 0.736" (18.7 mm). Wt: 1.0 oz. (29 g). ENGINES: 1/2A6-2 A8-3 (1st Fit). B6.4
No. 1218 ........ $5.25

METEOR Super sport flyer with 30" streamer recovery. High performance flights. Length: 12.3" (31.3 cm). Diameter: 0.976" (24.8 mm). Wt: 1.2 oz. (34 g). ENGINES: 1/2A6-2 A8-3 (1st Fit). A8-5 B4.6 B6.6
No. 1370 ........ $3.50
**SKILL LEVEL 1**

**NEW!**

**Astro Bee**
Reach altitudes over 1,200 feet with this sounding rocket style design. Length: 14.75" (37.5 cm) Dia: 0.785" (2.0 cm) Wt: 3.3 oz (94 g) Engines: C6-4, B6-4, B6-6

No. 1356 ...... $3.00

**Alpha III**
Another great first or second kit. Plastic nose cone and fin assembly make for easy, quick assembly. This rocket will deliver outstanding performance. Length: 12.25" (31.2 cm) Dia: 0.785" (2.0 cm) Wt: 1.7 oz (48 g) Engines: C6-4, B6-4, B6-6

No. 1236 ...... $4.00

**Sky Hook**
An excellent kit for your second rocket. Easy-to-build, with terrific performance. Length: 12" (30.5 cm) Dia: 0.785" (2.0 cm) Wt: 0.7 oz (20 g) Engines: C6-4, B6-4, B6-6

No. 1208 ...... $3.25

Engines, Launch System, Glue, and Finishing Supplies not included.
Ave. Ship. Wt. 8 oz.

**NEW!**

**Spin Fin**
Unique, spin-flight design creates dramatic curving smoke trail on its way up. Spectacular flights over 1,200 feet with J-84 engines. Length: 11.6" (29.5 cm) Dia: 0.785" (2.0 cm) Wt: 1 oz (28 g) Engines: C6-4, B6-4, B6-6

No. 1355 ...... $2.25

**Polaris**
Design with large payload section. Excellelent performance. Engines: C6-4, B6-4, B6-6

No. 1324 ...... $5.00

**Icarus**
High altitude payload vehicle with see-through case section. Achieve flights of over 1,000 feet with lightweight payload. Simulated sounding rocket appearance with dual rocket design. Length: 20.8" (53 cm) Dia: 0.785" (2.0 cm) Wt: 1.3 oz (37 g) Engines: C6-4, B6-4, B6-6

No. 1277 ...... $5.25
SKILL LEVEL

QUASAR


Wt: 0.5 oz (14.2 g).

ENGINES: 1/2A-2

No. 0650 . . . . . . $8.00

Big Bertha

Perfect kit for a "big" second rocket. Ideal for demonstration launches. Slow, realistic lift-off for really spectacular flights.
Length: 24" (61 cm).
Dia: 1.577" (40.1 mm).
Wt: 2.2 oz (62.4 g).

ENGINES: A-3 B-4 4 B-6 1 (1st Fld.)

No. 1223 . . . . . . $6.25

SCAMP

Great sport flyer with sleek, high performance design. Flies over 1,000 feet. Uses C-type engine.
Length: 13.75" (34.9 cm).
Dia: 0.976" (24.8 mm).
Wt: 1.0 oz (28 g).

ENGINES: 1/2A-2 (1st Fld.)

No. 1286 . . . . . . $4.75

Antares

Achieve flights over 1,200 feet with this high performance sports model. Very easy to assemble.
Length: 14.6" (37.1 cm).
Dia: 0.976" (24.8 mm).
Wt: 0.77 oz (21.7 g).

ENGINES: 1/2A-2

No. 1276 . . . . . . $4.50

Gamma

Super-sport design for great performance. Unique two-piece body construction for simplified two-color paint scheme.
Length: 11.3 oz (32 g).
Dia: 0.976" (24.8 mm).
Wt: 1.1 oz (31.1 g).

ENGINES: 1/2A-2

No. 1325 . . . . . . $5.00

Comet

Delivers great flights over 2 feet long. Chuck and easy to assemble. High performance sport flyer over 2 feet long.
Length: 24.25" (61.6 cm).
Dia: 1.326" (33.7 mm).
Wt: 1.8 oz (50.7 g).

ENGINES: A-3 (1st Fld.)

No. 1368 . . . . . . $4.00

NEW!

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt: 10 oz.
SKILL LEVEL 1

MINI-BRUTES

ROGUE
- Scale-like sounding research vehicle.
- Excellent performance for great sport flying.
- Length: 11 1/2" (29.7 cm) Dia: 0.736" (18.7 mm)
- Wt: 0.78 oz (21.9 g)
- ENGINES: 1A4-2T (1st F.I.T.) 1/2A4-2T A3-4T
- No. 0818...$3.50

STAR DART
- High performance, mini-engine powered rocket returns via streamer recovery.
- Very easy to assemble.
- Length: 9 1/4" (23.5 cm) Dia: 0.411" (10.5 mm)
- Wt: 2.25 oz (64 g)
- ENGINES: 1A4-2T (1st F.I.T.) 1/4A4-3T 1/2A4-4T A3-6T
- No. 0860...$1.75

LITTLE JOHN
- Authentic appearance of a semi-scale surface-to-surface missile vehicle with U.S. Army decor.
- Length: 14" (35.7 cm)
- Dia: 0.756" (19.2 mm) Wt: 0.75 oz (21.7 g)
- ENGINES: 1/2A3-2T (1st F.I.T.) A3-4T A10-3T
- No. 0819...$4.00

ECLIPSE
- Reach attitudes over 800 feet.
- Very high performance design.
- Length: 12 1/4" (31.2 cm)
- Dia: 0.735" (19.2 mm) Wt: 0.31 oz (8.8 g)
- ENGINES: 1/2A3-2T 1/2A4-2T (1st F.I.T.) A3-4T A10-3T
- No. 0846...$3.50

Engines, Launch System, Glue, and Finishing Supplies not included.
**MOSQUITO**
The smallest of all Mini-Brutes combines fantastic performance with feather-weight recoverability. Blu-eps and paper construction with simple spray paint decals makes for quick and easy assembly.  
Length: 2-3/4" (6.9 cm)  Width: 5/8" (1.6 cm)  Weight: .07 oz. (2 g)  ENGINE: 1/4A-4/2T (3J fit)  A3-T A10-T  
No. 0001 ....... $ .99

**Javelin**
Super performance, easy-to-build competition rocket. Scale-like sound and recovery. Great for over 900 ft. (279 cm)  Wide: 3/8" (9.5 cm)  Weight: 0.64 oz. (18 g)  ENGINE: 1/4A-3/2T (1J fit)  A3-T  
No. 0815 ....... $4.00

**Super Flea & Javelin Only $4.00**

**TWO FOR THE PRICE OF ONE!**

**Screamer**
Another super performer. Featuring spectacular streamers and recovery. She screams off the pad! "Don't Blink", or you'll miss her.  
Length: 7-3/4" (19.8 cm)  Weight: 0.25 oz. (7.2 g)  ENGINE: 1/4A-3/2T (1J fit)  A3-T A10-T  
No. 0802 ....... $3.90

**NEW!**

**Estes Starliner**
Estes version of a commercial space transpor to strip of the 21st Century. Mini-engine powered for low flight speeds.  
Length: 12.6" (32 cm)  Weight: 9 oz. (255 g)  ENGINE: 1/4A-3/2T (1J fit)  A3-T  
No. 0863 ....... $3.00

**NEW!**

**A.S.P.**
Mini-engine powered, semi-scale model of an atmospheric sounding projectile. Features spinning rotors for realistic anti-flight performance.  
Length: 20.5" (52 cm)  Width: .62" (1.6 cm)  ENGINE: 1/4A-4/2T  A10-T  
No. 0862 ....... $3.00
**SKILL LEVEL 2**

**CHEROKEE-D**
- Slack and powerful "D" engine rocket that will practically sail, out-of-sight. Big 18" chutes brings it down safely flight-after-flight. A really beautiful model for your first "D" powered kit.
- Length: 21.6" (54.9 cm)
- Dia: 1.225" (31.7 mm)
- Wt: 2.75 oz (78 g)
- ENGINES: D11-9, D12-5 (1st F1K) D12-7
- No. 1247 .... $6.25

**NEARLY 5 FEET LONG!**

**COBRA-1500**
- "C" type engine, from this extra long sport flier. Perfect demonstration model with large 18" parachute recovery.
- Length: 59" (149.9 cm)
- Dia: 1.225" (31.7 mm)
- Wt: 3.17 oz (92 g)
- ENGINES: B4-2, B4-4 (1st F1K) B6-2, B6-4, B6-5, B6-6, B6-7 C6-5
- No. 1294 .... $6.50

**SKYBOLT**
- Super "D" engine powered high performance sport model. Spectacular flights over 1,000 feet plus dramatic recovery with 90" streamer.
- Easy-to-assemble and finish.
- Length: 23" (58.4 cm)
- Dia: 1.225" (31.7 mm)
- Wt: 1.75 oz (50 g)
- ENGINES: D11-9, D12-7 (1st F1K)
- No. 1334 .... $4.50

**Sky Raider**
- Flights up to 1,500 feet are possible with this big "D" engine powered payloader. Great sport model with large payload section.
- Length: 32.75" (83.2 cm)
- Dia: 1.325" (33.7 mm)
- Wt: 2.59 oz (72.8 g)
- ENGINES: D12-5, D12-7 (1st F1K) C6-5
- No. 1290 .... $6.25

**BANDIT**
- Features advanced ejection ducting system. It never needs recovery wadding! High performance design and military style appearance makes the Bandit a really impressive bird. Over 28" long with large payload section.
- Length: 27.75" (70.5 cm)
- Dia: 1.325" (33.6 mm)
- Wt: 2.8 oz (81 g)
- ENGINES: A8-3, B4-4, B6-4 (1st F1K) B8-5 B14-5 C6-5
- No. 1248 .... $7.25

**BANDITS ADVANCED EJECTION DUCTING SYSTEM**
- Deals ejection gase completely by the time they reach your parachute.
- Rodдут Body Tube
- Inner Ducting Tube
- Ejection Cases
- Model Rocket Engine

**Models, Launch System, Ducting, and Finishing Supplies not included.
Avg. Ship. Wt: 11 oz.**
**SKILL LEVEL**

2

**ORBITAL INTERCEPTOR**

Exotic short range interceptor designed for orbital patrol and larger service role. Spectacular for flights over 1,200 feet.

Length: 17.5" (44.2 cm);
Diameter: 2.5" (6.3 cm);
Weight: 5 oz. (142 g);
Engine: 1/4 A4G2, 1/2 A8-2, A8-3 (1st F1), B44, B6.4 B6-5 C6-3

No. 1369 ........ $3.75

**NEW!**

**Star Speeder**

Single place galactic fighter capable of tremendous speed and maneuverability. The Estes version sports a great performance.

Length: 13.75" (34.9 cm);
Weight: 3.5 oz. (99 g);
Engine: 1/2A4-3 (1st F1), B4-4 B6.4 B8.5 C6-6

No. 1366 ........ $4.00

**NEW!**

**NASA SPACE SHUTTLE ORBITER**

Dramatic 1/87th semi-scale (H.O. Scale) NASA Space Shuttle with revolutionary new "SkyLite" skinned foam plastic construction, fully assembled with molded plastic nuts, washers and bolts, which removes for flight. Delta I: 16" recovery parachute, wing span 10" (25 cm), wt. 3.76 oz.

Length: 15-1/4" (38.9 cm);
Diameter: 1.1 oz. (31.8 g);
Engine: B4-2 (1st F1), B6-2 C6-3 C6-6

No. 1367 ........ $13.00

**NEW!**

**F-61 STARFIGHTER**

Futuristic starfighter designed with new plastic cockpit canopy and simulated air-to-air missiles, laser cannons, and infrared photon torpedos. Great flights up to 900 feet.

Length: 16.75" (42.4 cm);
Weight: 11 oz. (310 g);
Engine: B4-4 B6.4 (1st F1), B6-2 B6.4 B8.5 C6-8

No. 1368 ........ $6.50

**NEW!**

**STELLAR FORCES**

Interplanetary fighter craft designed with dual directional thrusters, wing mounted laser cannon, and dramatic canopy base cone. A significant step forward in the use of real-world models.

Length: 13.1 cm (5.19 cm);
Weight: 5 oz. (142 g);
Engine: A9.3 (1st F1), B4-4 B6.4 B8.5 C6-3 C6-8

No. 1361 ........ $6.00

**Skytracers**

Engines, Launch System, Glue, and Finishing Supplies not included.

**MaxiCetus**

Huge super "D" engine powered payload model with large, see-thru cargo section. Delivers spectacular flights over 1,900 feet. Over 6 cubic inches or up to 80 grams of payload capacity.

Length: 29.75" (75.6 cm) Dia: 1.64" (41.6 mm) Wt: 3.2 oz (90 g).

**ENGINE:** D12-6

**No. 1331** ........................................... **$9.00**

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**Mean Machine**

Tallest rocket in the Estes fleet. "D" engine powered for spectacular flights over 200 feet. Over 6 feet long with a giant 24" chute. Easy-to-assemble for a really great-looking bird. Uses 3/16" launch rod. Length: 78.75" (200 cm) Dia: 1.637" (41.6 mm)

**ENGINE:** D12-6

**No. 1295** ........................................... **$10.00**

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**Perfect for Demonstrations!**

**MaxiAlpha**

Very easy-to-assemble giant scale version of one of our most popular kits. Can be ready-to-launch in approximately 30 minutes. Features new press-fit plastic fins, plus plastic nose cone. "D" engine powered for truly spectacular flights up to 600 feet. Perfect for demonstrations. No painting required. Uses 3/16" (4.76 mm) Wt: 7.4 oz (210 g).

**ENGINE:** D12-3

**No. 1321** ........................................... **$12.50**

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**Colossus**

Huge addition to our Maxi-Brute fleet. Over 4 feet long with big plastic nose cone and press-fit plastic fins. Quick and easy-to-assemble. Really spectacular "D" powered flights with slow realistic liftoff. No painting required. Uses 3/16" (4.76 mm) Dia: 2.6" (66.04 mm) Wt: 9.6 oz (270 g).

**ENGINE:** D12-3

**No. 1326** ........................................... **$18.00**

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**Blue Bird Zero**

Experimental sounding design over 3 feet tall. Easy-to-assemble. Delivers high performance flights and gentle recoveries with big 18" recovery chute.

Length: 39.75" (101 cm) Dia: 1.326" (33.7 mm) Wt: 2.7 oz (76.5 g)

**ENGINE:** B6-5 B4-4 B6-4 (1st thru) B6-6 B14-6 C6-5 C6-7

**No. 1335** ........................................... **$6.50**

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**Over 6 Feet Tall!**

**Nearly 3 Feet Tall!**

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**Avg. Ship. Wt. 15 oz.**
**Multi-Stagers**

Multi-staging is the next step in expanding your model rocketry skills. Each stage demonstrates how real spaceships 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 through multi-staging.

**SKY-HI**

High performance two-stage with single stage, sounding rocket appearance. Nesting fins create very sleek design. Simplified construction.

- Length: 25" (63.5 cm)
- Dia: .976" (24.8 mm)
- Wt: 1.7 oz.
- Engines: Single Stage A8-3 (1st Fill) B4.4 B6.4

No. 1365 ....... $4.50

**AVENGER**

Bird the sounding rocket look. Large 18" chutes brings payload section back gently. Booster employs tumble recovery.

- Length: 32" (81.3 cm)
- Dia: 1.325" (33.7 mm)
- Wt: 2.7 oz. (77 g)

No. 1238 ....... $6.25

**VIGILANTE**

Ultra high performance two-stage model for flights over 1,100 feet. sleekly designed upper stage returns via 18" parachute while the booster employs tumble recovery.

- Length: 26.5" (67 cm)
- Dia: 1.325" (33.6 mm)
- Wt: 2.25 oz. (64 g)

No. 1278 ....... $6.25
**SKILL LEVEL 3**

**Starship NOVA**
Truly awesome in appearance, this inter-galactic explorer is believed to be outfitted with both conventional atomic engines and hyperspace star drive. Heavily armed with multiple phaser banks, photon torpedoes, and energy deflection shields, the Nova is prepared to meet any foe. The Earth version of the magnificent starship is perfect for demonstrations and really great for display.

- Length: 10.75" (27.2 cm)
- Dia.: .976" (24.8 mm)
- Wt.: 2.3 oz. (65 g)

No. 1371 ..... $6.00

**alien explorer**
Incredible alien starship believed to be from a distant galaxy. Is it friend or foe? Its size and unique appearance make it a most dramatic demonstration and display model. Really spectacular lift-off and recovery. Length: 46" (114.3 cm) Dia.: .976" (24.8 mm) Wt.: 2.43 oz. (68.6 g)

No. 1372 ..... $7.50

**NEARLY 4 FEET LONG!**

**ORION STARFIGHTER**
Parameter defense starcluster. Outfitted with white plasma energy shield and Estegon crystal engines for star-struck acceleration.

- Length: 20.25" (51.44 cm)
- Dia.: .976" (24.81 mm)

Wt.: 1.115 oz. (31.6 g)

ENGINES: 4B-2 4B-4 (1st FIt.) B6-2 B6-4 B8-5

B14-5 C6-5 C6-7

**SUPER VALUE! STARFIGHTER COMBO KIT**
Onion StarFighter and Torellian Invader

These science fiction kits deliver great flights and are terrific display models.

**TORELLIAN INVADER**
Galactic invader and primary attack fighter from the Torellian Empire. Capable of deploying Zarehrona space mines and launching photon torpedoes.

- Dia.: .976" (24.8 mm) Wt.: 1.231 oz. (35.6 g)

ENGINES: 4B-2 4B-4 (1st FIt.) B6-2 B6-4 B8-5

B14-5 C6-5 C6-7

ORION STARFIGHTER & TORELLIAN INVADER COMBINATION KIT

No. 1343 ..... $9.00

**WORLD FEDERATION STAR PROBE**

Our engineer's conception of deep space exploratory craft. Powered by atom fuelled Nerva thrusters, this futuristic interplanetary voyager utilizes advanced loop-stabilization. Its mission is to peacefully seek out and discover other life forms. Unique "Loops-Fly" design leverages spectacular flight. (78.7 cm) Dia.: .976"

- Length: 2.56 oz. (70 g)

Wt.: 2.44 oz. (68.4 g)

ENGINES: 4B-2 4B-4 (1st FIt.) B6-5

B14-5 C6-5 C6-7

No. 1341 ..... $6.50
SKILL LEVEL 3

Satellite Interceptor
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, fine, plus plastic nose and exhaust cones. Fly over 900 feet. Length: 22.26" (56.5 cm), Dio. 0.976" (24.8 mm), Wt. 1.35 oz. (39 g).

ENGINE: 72A6-2
C6-5 C6-7
No. 1296 . . . . $5.25

NEW!

U.S. SPACE FORCE CF-308
Streak-interplanetary interceptor with futuristic detailed nose cone. A really sharp display model with flight up to 900 feet. Length: 25.5" (64.8 cm), Dia. 1.325" (33.7 mm), Wt. 2.6 oz. (72.4 g).

ENGINE: 64-2 66-4 (1st Flt.) B6-6 C6-3 C6-6
No. 1367 . . . . $6.00

NEW!

Vindicator
Slender interplanetary interceptor with starflight camouflage decor. Great demonstration model with flight up to 900 feet. Length: 25.5" (64.8 cm), Dia. 1.325" (33.7 mm), Wt. 2.6 oz. (72.4 g).

ENGINE: 66-4 (1st Flt.) B6-6
No. 1367 . . . . $6.00

OVER 43" LONG!

Andromeda
Designed for journeys to distant planets this incredible "spaceship of the future" will be an outstanding addition to your model rocket collection. Performing interplanetary missions within the galaxy, our engines' conception; the actual ship features simulated hybrid fission-fusion propulsion engines, forward crew module and colorful mission decor. This beauty is over 43" long and represents a unique entry to our own Starship Fleet. Andromeda's flights are most spectacular. Length: 43.3" (110 cm), Dia. 0.736" (18.7 mm), Wt. 3.0 oz. (85 g).

ENGINE: 64-2 66-4 66-2 B6-4 (1st Flt.) B6-6 B6-6 C6-6
No. 1273 . . . . $9.50

S.S. Cassiopia
Envisioned as an interplanetary passenger starship by Estes engineers. This impressive model is a challenge to build and beautiful to display. Dramatic flights up to 900 feet. Length: 52" (132 cm), Dia. 0.976" (24.8 mm), Wt. 2.5 oz. (72.5 g).

ENGINE: 64-2 66-4 66-2 B6-4 (1st Flt.) B6-6 C6-5 C6-7
No. 1369 . . . . $6.00

SPACETRANSporter AMERICA
Future "single-stage-to-orbit" (SSTO) concept. Gigantic space booster will carry huge payloads into Earth orbit and then return like an airplane. Kit includes plastic nose cone and display tail unit with scale engine nozzles. Really impressive flights. Length: 21.75" (55.3 cm), Dio. 1.837" (46.6 mm), Wing Span 70" (178 cm), Wt. 2.5 oz. (70 g).

ENGINE: 64-2 66-4 (1st Flt.) C6-6
No. 1338 . . . . $7.75

Glue, and Finishing Supplies not included.
Av. Sh. Wt. 14 oz.
**Skill Level 3**

**The Good Guy**

**Excalibur**
Patrol Cruiser

Flanked and powerful, the Excalibur is the pride of the Intergalactic Patrol. Hardened in the ship's nest on a retractable carriage is a nuclear-tipped, intoxicated 280-barreled, Mono-Ballistic-Controlled Vacuum Gun. Speeds in the Star-Fall category are possible and range is reported to be an incredible 63 billion miles without refueling. Our display model of this heroic spaceship delivers really spectacular flights - Length: 30.125" (76.4 cm), Dia: 1.625" (41.6 mm).

**No. 1338**... **$7.75**

**The Bad Guy**

**Galactic Pirates**

**Dragon Ship 7**
Dreaded Dragonship based on the asteroid Galac-7, is an outstanding example of the evil technical genius. Designed by the Crew's Twin Hynon-6, this alien marauder from deep space is actually named and university a terrifying display model - Length: 10.75" (27.2 cm), Dia: 1.637" (41.6 mm).

**No. 1345**... **$7.75**

**Starblazer X-20**

Envisioned as a military in the space arsenal of the U.N. and Earth Forces, the Starblazer X-20 is utilized for daily patrol and emergency intercept missions in Earth's outer atmospheres. Length: 19.25" (48.9 cm), Dia: 1.976" (49.8 mm), Wt: 1.17 oz.

**No. 1342**... **$4.50**

**Tiger**

Very exotic, two-stage, interplanetary voyage. Features highly detailed future-like nose cone, plus simulated touchdown shock. Envisioned as a scene research vehicle of the 24th century. Length: 28.6" (72.6 cm), Dia: 1.325" (33.7 mm), Wt: 2.7 oz.

**No. 1363**... **$7.00**

**Scissor-Wing Transport**

This exciting kit introduces the revolutionary new Scissor-Wing concept. Features super SD styling and high flight reliability. Can glide and glide as much as 90 minutes. Designed for ease-to-assemble with two parts and two color decals. Length: 22.82" (57.9 cm), Body Dia: 0.976" (24.8 mm), Wing Span: 16" (40.6 cm), Wt: 1.3" (7.1 g).

**No. 1265**... **$8.90**

**Engine, Launch System, Glue, and Finishing Supplies not included.**

Avg. Ship, Wt: 12 oz.
SKILL LEVEL 3

**MA GORLIN**
Powerful and fast, this spunky little kit really gets up and moves. You'll need a good recovery team to retrieve her as she'll reach 1,400 ft and more flight-sta time with simple D engines. Features: 12 parachute recovery, boom recovery, and D engine. Length: 44.32" (36.3 cm) Dia: 3.125" (33.8 mm) Wt: 2.0 oz. B:163, B:24, B:6, B:6-6, B:6-7.

**SEA STRIKE I**
A scale-like ship-to-air missile with two-stage stability. Features: 1,400 ft flights, realistic military appearance, features. Length: 31" (78.75 cm) Dia: 1.39" (35 mm) upper stage. Length: 31" (78.75 cm) Dia: 1.39" (35 mm) upper stage. Wt: 3.35 oz. (95 g) ENGINES: SINGLE STAGE D11.9 D12.9 (1st Fit) D12.9 (2nd Fit) D12.7 upper stage D11.9 D12.7 Booster stage D12.0

**GYROC**
"With Helicopter Recovery" An amazing and unique "helicopter" recovery system makes the Gyro a must for your fleet. Features: 12 parachute recovery, boom recovery, and D engine. Length: 9.6" (24.9 cm) Dia: 0.736" (18.7 mm) Wt: 0.6 oz.

**MULTI-ROC**
Really exciting multi-purpose sport flyer featuring a large payload section high performance parasite, and two-stage booster power. Can be flown in eight different flight configurations. Payload slider releases from upper stage rocket or internal rocket. Parafoil section provides stable, smooth flight. Length: 24.5" (62.2 cm) Dia: 3.95" (94.7 mm) Wt: 1.94 oz. ENGINES: SINGLE STAGE A-8-3 B-6-4 B-6-5 B-6-6 B-6-7 B-6-8 B-6-9 C-6-7 Booster stage A-8-0 (1st Fit) B-6-0 B-6-3-6-0

**LTV Scout**
The Scout is a four-stage solid-propellant rocket which has the record for consecutive launches among all NASA launch vehicles. We have chosen this kit for its unique appearance and detailed with many plastic parts, Length: 36" (91.4 cm) Dia: 0.373" (9.48 mm) Wt: 3.89 oz. (109.9 g) ENGINE: C-6-5

**Apogee II**
Ultimate in 2-stage performance and reliability. See-through payload section lets you observe payload. Features: 12 parachute recovery, boom recovery, and D engine. Length: 47.4" (115.7 cm) Dia: 0.736" (18.7 mm) Wt: 0.6 oz. (17 g). ENGINES: B-6-7 B-6-7 Booster stage A-8-0 (1st Fit) A-8-0

Photo by David Brownell

Engines, launch system, glue, and finishing supplies not included. Avg. ship wt: 10 oz.
**NEW!**

**TARTAR**
Semi-scale anti-aircraft missile manufactured by Convair Corp. for the U.S. Navy. Actual vehicle is utilized for ship-to-shore bombardment. Length: 23.25 in (59.1 cm), Dia: 1.325 (34 mm), Wt: 24 oz (68 g).

**No. 1360** ... $5.50

**FLYS TO 1600 FEET!**

**SPRINT**
Highest performance in its class. Up to 1,500 ft. with C-67 engine. Elliptical fins, and streamer recovery. Length: 13.5 in (34.8 cm), Dia: 0.976 (24.8 mm), Wt: 1.0 oz (28 g).

**No. 1243** ... $4.50

**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. The 24" parafoil recovery system is attached to the missile with a 3/8" launch rod. Length: 41 in (104.4 cm), Dia: 3.936 (100 mm), Wt: 11.5 oz (328.03 g).

**No. 1268** ... $24.95

**US ARMY**
**HONEST JOHN**
1/9th scale model of the famous U.S. Army surface-to-surface, supersonic, ballistic missile. One of the many real-scale units in Europe. Detailed model includes a "D" engine and three separate tail fins. Length: 37" (94 cm), Dia: 2.6" (66 mm), Wt: 14 oz (397 g).

**No. 1269** ... $24.95

**NEARLY 3 FEET TALL!**

**German V-2**
This giant scale model is a replica of the ground-to-ground ballistic missile developed at Peenemunde before and during World War II. This 1/8th scale Maxi-Brute features a "D" engine, detailed plastic nose cone, BT-101 parachute recovery, and pre-shaped fins. Length: 37.5" (95 cm), Dia: 3.935" (100 mm), Wt: 12.5 oz (354.38 g).

**No. 1267** ... $24.95
SKILL LEVEL

Orbital Transport

Only a gleam in the eye of NASA, but it's flying for Estes rockets as a flight model. A richly realistic recovery system, with a 12:1 scale model, returns to Earth via a huge return parachute and recovery system. Designed for both orbital and space-tested gliding and recovery, the Transport Vehicle is ideal for use in dual recovery systems and to free-space for propulsion. Transport Vehicle: Length 23" (58.4 cm), Dia. 0.75", separate at source for both orbital and space-tested recovery. Transport Vehicle: Length 23" (58.4 cm), Dia. 0.75", separate at source for both orbital and space-tested recovery. Transport Vehicle: Length 23" (58.4 cm), Dia. 0.75", separate at source for both orbital and space-tested recovery. No. 1242 $7.50

MERGENCY REDSTONE

Famous NASA vehicle which boosted Commander Alan Shepard on America's first manned space flight. Includes detailed interior and exterior features for a realistic presentation of the Mercury Redstone capsule. Simulate fueling and flight conditions with this 1/42 scale model. Engines: AB-3 B44/B64/B80 (1st Filt.) No. 1241 $7.50

MARS LANDER

A planetary exploration and landing vehicle. Spring-loaded landing gear simulates realistic jump, touch down, and recovery. Results high detailed parts, colorful scale; includes landing gear and launch gear. No. 1243 $12.00

SKILL LEVEL

NASA Photo

BOEING ALCM CRUISE MISSILE

America's newest weapon system. Designed to be launched from a large aircraft, it can deliver a nuclear weapon with pinpoint accuracy. Once launched, the weapon can deliver a powerful blast for the maximum damage effect. The missile is a challenging target, with a slow-moving, slow-mo, slow-moving target at or above tree-top altitude. The missile is a challenging target, with a slow-moving, slow-moving target at or above tree-top altitude. Engines: A-63, B-44 (1st Filt.) B6-4 B6-5 B14-5 C6-5 No. 1336 $3.00
SATURN V MOON ROCKET

(1/100th Scale)

Skill Level 5

The mighty Saturn V, first space vehicle to carry men to the moon and now recently utilized to place Skylab in orbit around Earth, scaled to 1/100th of its actual size, our model stands an imposing 43 1/2" tall. Single "D" engine power gives this baby a spectacular Cape Canaveral style liftoff. Apollo capsule with authentic recovery fin. Precision molded plastic engine nozzles make this one of our most popular scale models. Also includes Techline "D" power ON-OFF switch. Ship Wt. 5.0 oz. (140 g). No. 123-6 (1 required).

No. 123-6......ONLY $29.95

Engine, Launch System, Glue, and Paint not included.
Ship Wt. 3 lbs. 5 oz.

AltTrak™ Altitude Finder

Skill Level 1

Track your rocket to the top of its flight and instantly lock-in its altitude on the "new" AltTrak altitude finder. Displays exact model rocket altitude on metric scale - no guessing! (Conversion chart 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! Ship Wt. 15 oz.

No. 2232......ONLY $6.50

Predicted Altitude Computer

The Estes Pocket Size Altitude computer enables any rocketeer to predict his model rocket's altitude in a matter of seconds. Just move the center slide in a simple procedure for fast, accurate results. Three color calculator comes complete with instructions. Ship Wt. 3 oz.

No. 9015......ONLY $1.50

Designer's Special

Over $43.00 Value!

Ideal parts assortment for the creative rocketeer. Develop your own R & D Program. Over 75 pieces at an excellent savings! Ship Wt. 2 lbs.

ASTRONAUT IN SPACE

© NASA Photograph.
**Launch Equipment**

**Big Foot**

"Designed for the Big Ones!"

**MODEL ROCKET LAUNCH CONTROL SYSTEM**

The 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, 1/8" x 36" two-piece launch rod, adjustable swivel mount to compensate for wind direction which is adaptable to either 1/8" or 3/16" launch rods, and has legs which remove easily for compact storage. This launch control unit is engineered for simple, quick assembly and features safety key, continuity check light, ignition button and 15 feet of launch cable. (Uses 4 alkaline type "D" cell batteries and Estes Solar Igniters #2301 — not included.) Ship. Wt. 2 lbs.

No. 2208...... ONLY $17.95

**PORTA-PAD**

Plastic Launch Pad

Space-age designed, the Porta-Pad is rugged enough to take the stress of countless launchings, even with the big Estes "D" engines, yet is lightweight and compact enough for easy carrying and storage. Strong, lighter construction. Orange plastic legs snap off for storage in range box. Friction grip secures rod firmly. Accommodates standard 1/8" rod (#2224) or heavy-duty 3/16" Maxi-Rod (#2239). Tilt adjustment allows you to compensate for wind. Ship. Wt. 1 lb. 8 oz.

No. 2217...... ONLY $7.75

**Astron Launch Control System**

Heavy-Duty 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. 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. Ship. Wt. 12 oz.

No. 2221...... ONLY $7.75

**SOLAR LAUNCH CONTROLLER**

**MODEL ROCKETRY’S MOST ADVANCED LAUNCH SYSTEM**

The Solar Launch Control System should be standard equipment in your range box. This futuristic design launch control unit requires only 4 alkaline type AA size batteries for power. Advanced shape allows for perfect hand-held control. Unit is easily assembled in minutes and features safety key, continuity check lamp, ignition button, and 15 feet of lightweight launch cable. System is constructed of durable "non-breakable" plastic. Micro-clips are presoldered. Use with Estes Solar Igniters (#2301). (Batteries not included.) Length: 6.1" (15 cm) Ht: 2.4" (6 cm). Width 1.44" (4 cm) Wt. (with batteries) 7 oz. (199 g). Ship. Wt. 6 oz.

No. 2300...... ONLY $8.95

**Launch Supplies**

1/8" DIA. TWO-PIECE LAUNCH ROD: Handy collapsible two-piece rod for portable launchers. Pieces slip together to make a 36" long rod. Base rod has a diameter of 1/8". Ship. Wt. 8 oz.

No. 2234...... $1.15

ADD-ON ROD: Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod to 54" length. Ship. Wt. 8 oz.

No. 2236...... $1.35


No. 2239...... $2.25

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

No. 2247...... 2 for $ .95

**LAUNCH ROD SAFETY CAP with UNIVERSAL SAFETY KEY**

**BATTERY CLIPS:** Hook-up to car batteries. Heavy-duty clips connect to terminals up to 1" in dia. With insulators. Ship. Wt. 5 oz.

No. 2245...... 2 for $1.16
Model Rocket Engines

- Reliability-Proven In Over 175 Million Safe Launchings!
- Quality-Tested for High Performance Flights!!
- The Finest Engine Made...
  You Can Depend On It....
  For Every Flight Application!!

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

Today's modern rocket engine is the result of over 21 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines for his use.

The energy-packed, solid propellant Estes model rocket engine is a complete power system for your rocket. It is designed and pre-manufactured to perform all power functions for dependable launch and activation of a recovery system. In one compact package it provides thrust for quick lift-off and acceleration to high altitudes, allows for a timed delay period to reach peak altitude, delivers 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 175 million launchings. Estes engines are manufactured under strict, quality-controlled conditions within existing tolerance limits. You can count on them for consistent performance from one rocket to the next. You'll launch with confidence in all your model rocketry activities.

More than 3% of all Estes model rocket engines produced are static tested to insure rocketeers of the highest performing, most reliable model rocket engines made. Here, an Estes employee static tests an engine for overall performance and safety in the advanced, Estes engine testing facility.

EMERGENCY REPAIR KIT

A must for every range box. Features many essential materials for "on-the-spot" repair of your model rockets. Ship. Wt. 8 oz.

INCLUDES:
- Sandpaper
- Screw Eyes
- White Glue Packet
- Launch Rod Safety Cap
- Universal Safety Key
- Reclosable Pouch
- Recovery Wadding
- 12" Parachute
- 1/8" and 1/4" Shock Cords
- Shock Cord Mounts
- Tape Ties
- Launch Lugs
- 144" Shroud Line

No. 2233 . . . . ONLY $2.00

PHANTOM

SKILL LEVEL

Educational, See-Thru Rocket with Recovery System, 10" Parachute, Engine Mount, and Cut-Away Engine!

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

Ideal for displays and exhibits.

Length: 12.6" (32.0 cm) Dia. 0.976" (24.8 mm) Wt. 1.35 oz. (38.3 g) Ship. Wt. 3 oz.

No. 1207 . . . . ONLY $4.25

START A MODEL ROCKET PROGRAM IN YOUR SCHOOL!

Want to get your teacher interested in a model rocketry program? Send us (1) your teacher's name, (2) the name of your school, and (3) the school's address (include street address, city, state, and zip). If your teacher has a specialty (such as science, industrial arts, physics, etc.), tell us. Send this information to Education Dept., Estes Industries, Dept. 51, Penrose, CO 81240. We will send your teacher information on how to start an educational model rocketry program.

ATTENTION 4-H, Scout, Cub, Camp, and Recreation Leaders: For information on how model rocketry can help in your own program write: Education Department, Estes Industries, Dept. 51, Penrose, CO 81240. State type of group and what you would like to do.
### ROCKET ENGINE SELECTION CHART

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Prices</th>
<th>Total Impulse (in-lb sec)</th>
<th>Time Delay (+ 15%)</th>
<th>Max. Lift Wt.</th>
<th>Max. Thrust</th>
<th>Initial Weight (oz)</th>
<th>G.</th>
<th>Propellant Weight (oz)</th>
<th>G.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1962</td>
<td>1/2A-2</td>
<td>$2.25</td>
<td>0.26  1.25</td>
<td>2 sec.</td>
<td>0.20 oz</td>
<td>0.63 oz</td>
<td>15.0 oz</td>
<td>0.855</td>
<td>0.56 oz</td>
<td>4.15</td>
</tr>
<tr>
<td>1963</td>
<td>2A-3</td>
<td>$2.35</td>
<td>0.56  2.50</td>
<td>3 sec.</td>
<td>0.48 oz</td>
<td>0.57 oz</td>
<td>16.2 oz</td>
<td>0.590</td>
<td>0.76 oz</td>
<td>2.35</td>
</tr>
<tr>
<td>1965</td>
<td>2A-4</td>
<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1966</td>
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<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1967</td>
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<td>1.12  5.00</td>
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<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
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<td>3.30</td>
</tr>
<tr>
<td>1968</td>
<td>8A-4</td>
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<td>3.30</td>
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<tr>
<td>1601</td>
<td>2A-3</td>
<td>$2.35</td>
<td>2.56  12.0</td>
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<td>0.70 oz</td>
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<td>3.30</td>
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<td>1611</td>
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<td>2.56  12.0</td>
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<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1621</td>
<td>4A-3</td>
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<td>2.56  12.0</td>
<td>6 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
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<td>1631</td>
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<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1641</td>
<td>6A-3</td>
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<td>2.56  12.0</td>
<td>6 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
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</table>

### MINI-ENGINE SELECTION CHART

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Prices</th>
<th>Total Impulse (in-lb sec)</th>
<th>Time Delay (+ 15%)</th>
<th>Max. Lift Wt.</th>
<th>Max. Thrust</th>
<th>Initial Weight (oz)</th>
<th>G.</th>
<th>Propellant Weight (oz)</th>
<th>G.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>1/2A-3</td>
<td>$2.25</td>
<td>0.26  1.25</td>
<td>2 sec.</td>
<td>0.20 oz</td>
<td>0.63 oz</td>
<td>15.0 oz</td>
<td>0.855</td>
<td>0.56 oz</td>
<td>4.15</td>
</tr>
<tr>
<td>1962</td>
<td>2A-4</td>
<td>$2.35</td>
<td>0.56  2.50</td>
<td>3 sec.</td>
<td>0.48 oz</td>
<td>0.57 oz</td>
<td>16.2 oz</td>
<td>0.590</td>
<td>0.76 oz</td>
<td>2.35</td>
</tr>
<tr>
<td>1963</td>
<td>2A-5</td>
<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1964</td>
<td>2A-6</td>
<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1965</td>
<td>2A-7</td>
<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1966</td>
<td>2A-8</td>
<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1967</td>
<td>2A-10</td>
<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1968</td>
<td>2A-11</td>
<td>$2.45</td>
<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
<tr>
<td>1969</td>
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<td>1.12  5.00</td>
<td>4 sec.</td>
<td>0.48 oz</td>
<td>0.70 oz</td>
<td>19.0 oz</td>
<td>0.254</td>
<td>0.83 oz</td>
<td>3.30</td>
</tr>
</tbody>
</table>

**IMPORTANT! 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 8 or 12 volt car batteries on 12 volt, lantern batteries, or D-cell batteries. Installation procedure featured on engine instructions. (Patent No. 3,383,659) Not recommended for Solar Launch Controller (#2300) or Big Foot Launch Control System (#2208). Ship. Wt. 1 oz.

**SOLAR IGNITERS:** Add increased reliability at lift-off with Estes "high performance" Solar Igniters. This upgraded igniter is designed especially for the Solar Launch Controller (#2300) and Big Foot Launch Control System (#2208). Features easy engine installation and is suitable for all Estes launch control systems. Unique four element design makes it the most dependable igniter made. Ship. Wt. 1 oz.

**RECOVERY WADDING:** Provides protection from high 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. Ship. Wt. 6 oz.

---

**MIGHTY "D" ENGINES**

Recommended Only for Experienced Rocketeers!

**"D" engines** are 2.75 in. (6.99 cm) long and 0.945 in. (2.40 cm) dia. Ship. Wt. of each package of "D" engines is approximately 6-1/2 oz.

Complete instructions and Solar Rocket Ignitors are included with each package of Estes model rocket engines.

**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.
WIN $75.00 IN FREE MERCHANDISE!!
ENTER THE DESIGN OF THE MONTH CONTEST
Have an idea for an original design? Enter our Design of the Month competition today. Your design could be published in an issue of Model Rocket News. Simply follow the rules below.

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 rocket or rocket kit design can be entered (fractoons, boost-gliders, launching or recovery devices, etc.).
4. Designs should be new, original, and different, but they also need to be workable. The goal is to develop something new that other rocketeers can build and use successfully.
5. Entries will be judged on originality, simplicity, neatness, completeness, and clarity. All plans must be flight tested and proven.
6. Your entry should include a parts list and any instructions or diagrams you feel would be helpful.
7. Please do not send the actual model as it cannot be returned.
8. Photos of designs are greatly appreciated, but are not required.
9. You may send as many entries as you like.

NAR/HIAA Model Rocketry Safety Code

1. Construction - My model rockets will be made of lightweight materials such as paper, wood, plastic and rubber, without any metal as structural parts.
2. Engines - I will use only pre-loaded factory-made model rocket engines in the manner recommended by the engine manufacturer, and I will not change in any way nor attempt to reload these engines.
3. Recovery - I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.
4. Weight Limits - My model rocket will weigh no more than 453 grams (16 ozs.) at liftoff and the engine will contain no more propellant than 1 1/2 ozs. of propelant.
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 15 feet from any rocket that is being launched.
7. Launch Safety - I will not let anyone launch a rocket on a launcher unless 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 rockets when winds are blowing, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.

Recovery Supplies
PARACHUTE KITS: Get the best in parachute recovery! Two-color printed plastic chutes give maximum visibility with easy-rak design. Lightweight, durable, and easily folded. Chutes are only 0.0075" thick, allowing the most material to be packed into the least body space. Each kit comes complete with chute material, tape discs, and shroud lines. Ship. Wt. 2 oz.

SHOCK CORD: Specify width desired. Ship. Wt. 1 oz. 1/8" wide: Net Wt. 0.039 oz. No. 2269...$0.50 1/4" wide: Net Wt. 0.078 oz. No. 2270...$0.85 Also 38' long for greater stretch on larger birds. 1/8" wide: Net Wt. 0.078 oz. No. 85744...$0.60

TAPE DISCS: Fasten shroud lines to plastic parachutes with these 3/8" dia., pressure sensitive Tape Discs, in sheets of 6 discs. Ship. Wt. 1 oz.
No. 2294 4 sheets of 6...$1.10

SCREW EYES: Specify size when ordering. Ship. Wt. for 2 ea., 1 oz. LARGE EYE: 1" long, 0.04 oz. No. 2280...$1.00 SMALL EYE: 3/4" long, 0.03 oz. No. 2279...$0.95 EXTRA SMALL EYE: 3/8" long, 0.01 oz. No. 2281...$0.85

No. 2341...$1.85 2 oz. Net Wt. 0.092 oz. No. 8574...$2.10

SNAP SWIVELS: For quick changes and reduced tangles in your recovery systems, use these 1/4" long snap swivels. Ship. Wt. 0.01 oz. 1 oz.
No. 2292...$1.50

TECHNICAL REPORTS
SPECIAL PUBLICATIONS

Rocket Stability - TR-1
No. 84721...$0.50
Multi-Staging - TR-2
No. 84722...$0.50
Altitude Tracking - TR-3
No. 84723...$0.50
Rear Engine Boost Gliders - TR-4
No. 84224...$0.50
Cluster Techniques - TR-6
No. 84226...$0.50
Front Engine Boost Gliders - TR-7
No. 84227...$0.50
Model Rocketry Study Guide - TR-8
No. 84228...$0.50
Model Rocket Engine Performance - TN-2
No. 84701...$0.50
Elementary Mathematics of Model Rocket Flight - TN-4
No. 84704...$0.50
Recovery Techniques - TN-6
No. 84705...$0.50
ALPHA - Mini Book of Model Rocketry
No. 90102...$0.25
Model Rocket Launch Systems
No. 2611...$0.50
Estes Guide for Aerospace Clubs
No. 2628...$0.75
Space Age Technology
No. 2613...$1.50
Aerodynamic Drag of Model Rockets - TR-11
No. 84231...$1.50
Model Rocket Engines - TN-1
No. 84709...$0.50
Estes Model Rocket Contest Guide
No. 2615...$0.15
Model Rocketry Technical Manual
No. 2819...$0.15
Building a Wind Tunnel - TR-5
No. 84725...$0.50
Is That Parachute Too Big? - TN-3
No. 84702...$0.50
RECCRO - Recreational Program
No. 2426...$1.25
Camp Leader's Model Rocketry Manual
No. 2822...$1.00
## 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 no doubt have a variety of ideas for unique designs of your own. In order to select the proper parts for your original design it is important for you to understand our system of parts description numbers.

Nearly all matching Estes parts have the same series description number. Those which do not feature an additional explanation as to where they can be used. Normally, parts listing the same series description number will be interchangeable with each other. For instance, a #20 body tube (BT-20) would mate with a #20A balsa nose cone (BNC-20A), a #20C payload section (PS-20C), or a #20B engine block (EB-20B). Further, a #2060 tube adapter (TA-2060) will adapt a BT-20 to a BT-60, and a #6050 centering ring (AR-6050) will center a BT-60 within a BT-55. By using balsa or paper adapters almost any combination of parts can be joined together. For ordering, be sure to use both the product number and the series description number (name).

### Model Rocket Parts

#### Fin Stack
Top quality balsa sheeting for making fins for model rockets. For maximum strength, grain of wood should follow the leading edge of fin.

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Description</th>
<th>Price</th>
<th>Dimensions (in. inches)</th>
<th>Weight in Oz.</th>
<th>Major Use</th>
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</thead>
<tbody>
<tr>
<td>3164</td>
<td>BFS-20</td>
<td>$1.00</td>
<td>1/16x3/8</td>
<td>.130 4</td>
<td>High Performance</td>
</tr>
<tr>
<td>3168</td>
<td>BFS-30</td>
<td>$1.26</td>
<td>1/16x3/8</td>
<td>.136 4</td>
<td>High Performance</td>
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<td>3166</td>
<td>BFS-50</td>
<td>$1.05</td>
<td>3/32x3/8</td>
<td>.150 4</td>
<td>Sport Models</td>
</tr>
<tr>
<td>3170</td>
<td>BFS-60</td>
<td>$1.10</td>
<td>5/32x3/8</td>
<td>.200 4</td>
<td>Sport Models</td>
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<tr>
<td>3174</td>
<td>BFS-40</td>
<td>$1.20</td>
<td>1/8x3/8</td>
<td>.200 4</td>
<td>Cluster Rockets</td>
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<tr>
<td>3172</td>
<td>BFS-41</td>
<td>$1.25</td>
<td>1/8x3/8</td>
<td>.256 4</td>
<td>Glider Wings</td>
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</table>

#### Body Tubes
Spiral-Wound Paper Tube for nose sections and strap-on payloads.

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Description</th>
<th>Price</th>
<th>Length</th>
<th>Inside Diameter</th>
<th>Outside Diameter</th>
<th>Wall Thickness</th>
<th>Weight in Oz.</th>
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<td>3070</td>
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<td>.103</td>
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<td>BT-65</td>
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<td>18</td>
<td>.197</td>
<td>.137</td>
<td>.021</td>
<td>1.300</td>
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</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>Prod. No.</th>
<th>Description</th>
<th>Price</th>
<th>Fits</th>
<th>Weight in Oz.</th>
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<tbody>
<tr>
<td>3100</td>
<td>EB-20A</td>
<td>$1.05</td>
<td>1 oz</td>
<td>.85</td>
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<tr>
<td>3101</td>
<td>EB-20B</td>
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<td>1 oz</td>
<td>.85</td>
</tr>
<tr>
<td>3102</td>
<td>EB-20C</td>
<td>$1.05</td>
<td>1 oz</td>
<td>.85</td>
</tr>
<tr>
<td>3103</td>
<td>EB-20D</td>
<td>$1.05</td>
<td>1 oz</td>
<td>.85</td>
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### Engine Blocks

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Description</th>
<th>Price</th>
<th>Length</th>
<th>Fits</th>
<th>Weight in Oz.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3131</td>
<td>EB-20A</td>
<td>$1.05</td>
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<td>.85</td>
<td>1 oz</td>
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<td>3132</td>
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<td>1 oz</td>
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<tr>
<td>3133</td>
<td>EB-20C</td>
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<td>.85</td>
<td>1 oz</td>
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<tr>
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### Engine Mounts

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**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.
### Balsas 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 propellant gases. All adapters have at least 1/2" mating surface on each end.

### Stage Coupler
For multi-staging, joining body tubes, positioning a adapter rings, etc. Make perfect guides for cutting body tubes and saving cut edges of body tubes, too. Ship. Wt. for all is 3 oz. each.

### 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.

### Construction Supplies

#### Centering Rings

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#### Other Companies

- **Hi-Flier Corporation**
  - Arrow Industries, Inc.
  - 80 Wilson Way, Westfield, MA 02090
  - Tel: 217-449-0800

**DAMON**

- 80 Wilson Way, Westfield, MA 02090
- Tel: 217-449-0800

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Shuttle Length: 13.6" (34.5 cm) Dia. 2.04" (51.8 mm) Orbiter Length: 9.0" (22.9 cm) Orbiter Wingspan: 7.1" (18.9 cm) Wt: 4.37 oz (124 g). Ship: Wt: 16 oz.

ENGINES: C6-3 (1st Fll) C6-0

No. 1284... ONLY $13.00