

FLYING MODEL ROCKET CATALOG



A DAMON COMPANY

Stealth Fighter #1929
See pages 36, 37 and back cover.

No. 841 P \$1.00

HERE'S HOW TO USE YOUR ESTES CATALOG

Information on each rocket kit is provided on each page of the catalog where rockets are displayed. This information includes:

- Skill Level number recommends the general skill level 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 have the appropriate Skill Level indicated.
- Rocket type is indicated in the upper left corner of each catalog spread. Rocket kits in this catalog are grouped by type, whether sport fliers, mini brutes, multi-stagers, futuristic kits, scale models or "D" powered rockets.
- Name of kit.
- Special features and additional kit information including kit length, diameter and weight.
- Engine types lists all recommended engines for flying the rocket. Engines are listed from least powerful to most powerful. Also indicates which engines should be used for 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.
- Kit feature symbols indicate the following kit features:

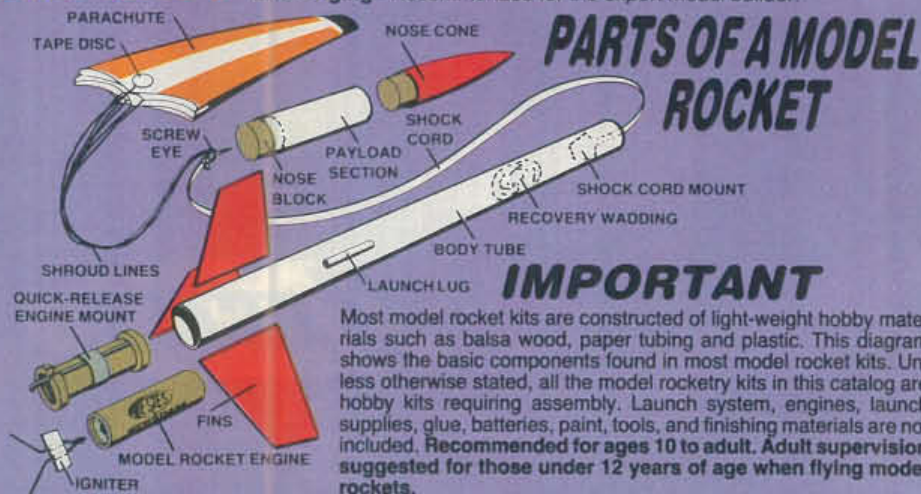
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|---|---|---|--|
|  Parachute & Size |  Plastic Nose Cone |  Die-Cut Balsa Fins or Paper Parts |  Kit Decals |
|  Streamer Recovery |  Balsa Nose Cone |  Plastic Fins or Fin-Unit |  Quick-Release Engine Mount |

All prices in this catalog are subject to change without notice.

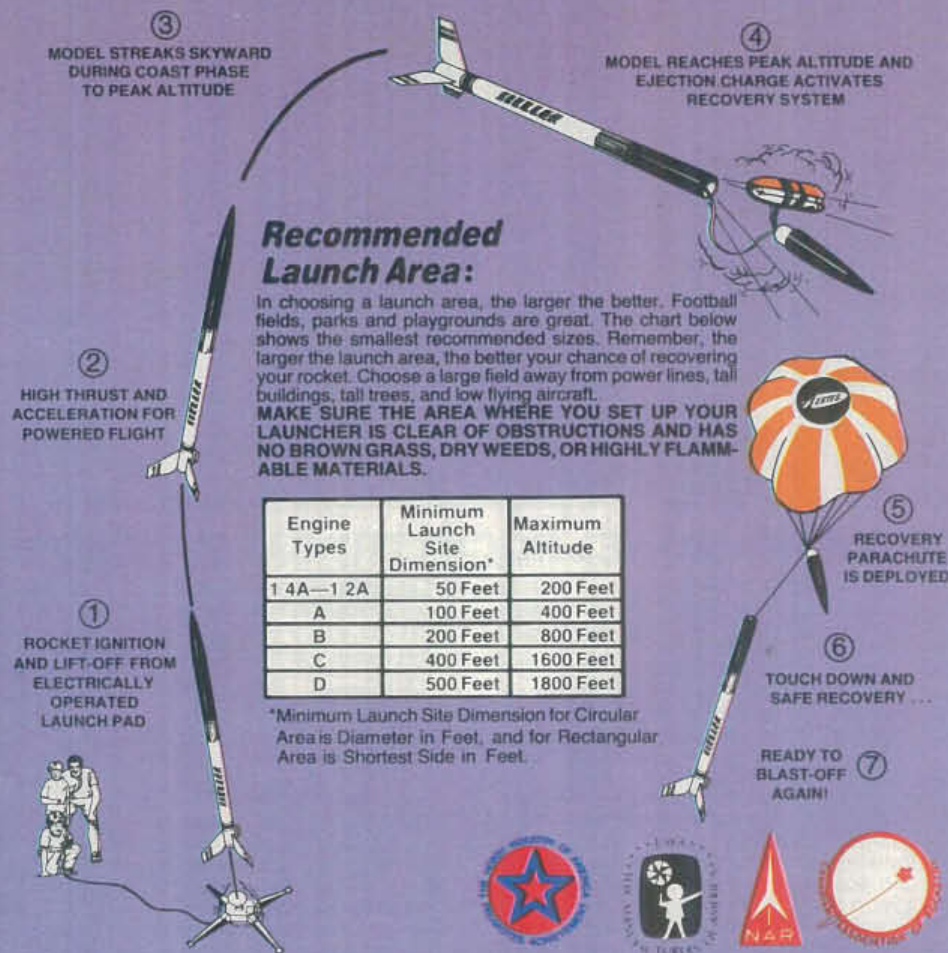
SKILL LEVELS

All model rocket kits in this catalog require assembly unless otherwise stated. Some of these flying model rockets can be put together and ready to launch in minutes. Others with their sophisticated aerodynamics and wealth of detail are more challenging. The Skill Level number given for each kit recommends 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.

- SKILL LEVEL 1** Very Simple - Recommended for beginners.
- SKILL LEVEL 2** Fairly Easy - Recommended for individuals with some model building experience.
- SKILL LEVEL 3** Average Challenge - Recommended for the experienced model builder.
- SKILL LEVEL 4** Very Challenging - Recommended for the advanced model builder.
- SKILL LEVEL 5** Challenging - Recommended for the expert model builder.



MODEL ROCKET FLIGHT SEQUENCE



MODEL ROCKETRY IS AN INTERNATIONALLY RECOGNIZED HOBBY WITH A SAFETY RECORD OF MORE THAN 210 MILLION SUCCESSFUL MODEL ROCKET LAUNCHINGS

Estes Model Rocket Engines Are Safety Tested And Contest Certified By:

- U.S. National Association of Rocketry
- Canadian Association of Rocketry

Estes Model Rocket Engines Have Been Tested And Approved By:

- United States Department of Transportation
- Truesdell 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
- International Maritime Organization
- Air Line Pilots Association

Model Rocketry is Endorsed As A Safe And Rewarding Hobby By:

- Cub Scouts of America
- Boy Scouts of America
- YMCAs
- 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





NAR/HIAA MODEL ROCKETRY SAFETY CODE

- Construction**—My model rockets will be made of lightweight materials such as paper, wood, plastic and rubber, without any metal as structural parts.
 - ENGINES**—I will use only pre-loaded factory-made N.A.R. Safety Certified model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.
 - Recovery**—I will always use a recovery system in my rockets that will return them safely to the ground so that they may be flown again.
 - Weight Limits**—My model rocket will weigh no more than 453 grams (16 oz.) at lift-off and the engine will contain no more than 113 grams (4 oz.) of propellant.
 - Stability**—I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
 - 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.
 - Launch Safety**—I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.
 - Flying Conditions**—I will not launch my model rockets in high winds, near buildings, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.
 - Launch Area**—My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use non-flammable recovery wadding in my rockets.
 - Jet Deflector**—My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.
 - Launch Rod**—To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.
 - Power Lines**—I will never attempt to recover my rocket from power lines or other dangerous places.
 - Launch Targets & Angle**—I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.
 - 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 _____

STARTER-KITS

The Beginner's Choice!

SIZZLER STARTER OUTFIT



SIZZLER FLYING MODEL ROCKETRY STARTER KIT

SKILL LEVEL 1 Includes the 23 inch long Sizzler model rocket kit featuring parachute recovery and flights over 900 feet. Also included is the Big Foot™ Launch System with big "two-foot-print" imprint for maximum launch pad stability. Includes blast deflector plate, and 1/8" x 36" launch rod. Legs remove easily for compact storage. Flight Pak includes three NAR safety-certified model rocket engines, recovery wadding and Solar Igniters. (Requires 4 alkaline type "D" cell batteries, glue and finishing supplies - Not Included.) Ship. Wt.: 2 lbs.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, C6-5.
No. 1432

\$23.95



STARTER KITS

READY-TO-LAUNCH X-15 STARTER KIT



ALPHA III STARTER KIT



CHALLENGER-1 STARTER KIT



Ready-To-Launch

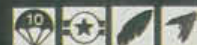
X-15 STARTER KIT

SKILL LEVEL 1 The Ideal starter kit for parent and child. Your X-15 rocket can be ready to launch in less than 15 minutes. Includes ready-to-fly X-15 Rocket Plane with 10" recovery parachute, authentic scale decor and easy-lock engine mount. Ruggedly designed portable launch system includes hand-held controller, realistic launch pad with 24" two-piece launch rod, blast deflector and pre-soldered micro clips. Entire system is pre-wired. Also included are 3 NAR safety-certified A3-4T Mini Engines, parachute recovery wadding and Solar Igniters. (Requires four AA size alkaline batteries for operation - Not Included). Ship. Wt. 2 lbs. 8 oz.

ENGINES: A3-4T (1st Flt.), A10-3T.

No. 0715

\$26.95



ALPHA III STARTER KIT

SKILL LEVEL 1 Includes easy-to-build Alpha III model rocket kit. Pre-colored Parts - no painting required! Also includes newly re-designed porta-pad tri-pod launcher with blast deflector plate and 1/8" x 36" two-piece launch rod, Solar Launch Controller and Flight Pak including three NAR safety-certified model rocket engines, parachute recovery wadding and Solar Igniters. (Requires 4 alkaline AA batteries, glue and finishing supplies-Not Included.) Ship. Wt. 3 lbs.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1406

\$19.95



CHALLENGER - 1 FLYING MODEL ROCKETRY STARTER KIT

SKILL LEVEL 1 Includes easy-to-assemble, high-performance Challenger-1 model rocket featuring orange plastic nose cone and fin-unit. No painting required! Flights over 1000 feet. Also includes Challenger-1 launch control system with futuristically designed launch controller, 15 feet of launch cable, micro-clips, launch pad with blast deflector plate and 1/8" x 36" launch rod. Flight pak includes three NAR safety-certified model rocket engines, parachute recovery wadding and reliable Solar Igniters for three exciting flights.

(Requires 6 or 12 volt lantern battery and glue - Not Included). Ship. Wt. 1 lb.

ENGINES: 1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1416

\$13.95



STARTER KITS

SPACE SHUTTLE COLUMBIA STARTER KIT



DELUXE STARTER KIT



FALCON COMMANDER STARTER KIT



SPACE SHUTTLE COLUMBIA FLYING MODEL ROCKETRY STARTER KIT

SKILL LEVEL 2 Newly redesigned to include the latest technology, this starter kit features the Space Shuttle Columbia kit (see page 51), Power-Pulse™ Launch Controller, Porta Pad launcher with blast deflector and 1/8" x 36" launch rod. Also included are three NAR safety-certified model rocket engines, parachute recovery wadding and Solar Igniters - everything you need to get your Shuttle program started today.

(Requires 6 volt Polaroid® Pola-Pulse™ P-100 battery, white glue, plastic cement, paint and finishing supplies-Not Included.) Ship. Wt. 1 lb.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1433

\$23.95



DELUXE FLYING MODEL ROCKET STARTER KIT

SKILL LEVEL 1 Complete with everything you need including Alpha model rocket kit, construction supplies, finishing materials, Porta-Pad launcher with blast deflector plate and two-piece 1/8" x 36" launch rod, Solar Launch Controller, and Flight Pak with 3 high performance NAR safety-certified model rocket engines, Solar Igniters and parachute recovery wadding.

(Requires 4 alkaline AA batteries for operation-Not Included.) Ship. Wt. 3 lbs.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7

No. 1407

\$25.95



FALCON COMMANDER

EXOTIC FLYING MODEL ROCKET STARTER KIT

SKILL LEVEL 1 This exciting starter kit features the forward swept-wing Falcon Commander model rocket kit capable of flights to 1,200 feet. Launch control system is also included with hand-held launch controller, blast deflector plate and 1/8" x 36" two-piece launch rod. Also included is flight pak containing three high-performance NAR safety-certified model rocket engines, parachute recovery wadding and Solar Igniters.

(Requires 6 or 12 volt lantern battery, paint, and glue-Not Included.) Ship. Wt. 1 lb.

ENGINES: A8-3 (1st Flt.), A8-5, B4-4, B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1428

\$14.95



estes aerospace club



BECOME A MEMBER OF THE MOST EXCITING ROCKET CLUB ON EARTH!



ESTES AEROSPACE CLUB MEMBERSHIP

Join more than 25,000 Estes rocketeers getting the most out of model rocketry. 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 KIT** Club's Exclusive High Performance Design. REC. ENGINES: 1/2A3-2T (1st Flt.), A3-4T, A10-3T. (Not Included)
- MEMBERSHIP CERTIFICATE 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**
- EAC STATIONERY**
- 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, contests, rocketeer contributions and more.

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.

THRUST BAR ACHIEVEMENT PROGRAM



**SKILL LEVEL ONE
BEGINNER/NEW
EAC MEMBER**

**SKILL LEVEL TWO
INTERMEDIATE
ROCKETEER**

**SKILL LEVEL THREE
CRAFTSMAN
ROCKETEER**

**SKILL LEVEL FOUR
ADVANCED
ROCKETEER**

**SKILL LEVEL FIVE
EXPERT
ROCKETEER**



No. 1447 **ONLY \$6.00**

ASTRO-CAM 110



ASTRO-CAM 110
AERIAL CAMERA



Actual "Astro-Cam 110" Photo
Courtesy David Moosa Eunice, LA

ASTRO CAM 110 Aerial Camera with Delta II Launch Vehicle

SKILL LEVEL 2 Experience the excitement of taking color photographs from hundreds of feet in the sky. Astro Cam 110's 1/500th second shutter speed is activated at ejection just prior to parachute deployment. Features include easy assembly, acrylic lens, plastic housing, glass first-surface mirror and high performance design. Easy to operate and shoots one full-color 110 photo per flight. Delta II features white body tube and pre-colored plastic fin-unit for stability. No painting required. Uses Kodak Kodacolor 110 color print film, ASA 400, or equivalent-Not Included. *Film and developing are available locally.* Camera not sold separately. Use Delta II or Challenger II (see page 55) as launch vehicle. Other launch vehicles are not recommended. *Specifications-Camera with Launch Vehicle:* Length: 19.1" Dia. 1.34" Fin Span 4.75" Wt. 3.75 oz. Ship. Wt. 14 oz. *Camera Specifications:* Length: 6.5" Dia. 1.39" Wt. 1.36 oz. (without film). Wt. 1.76 oz. (with film). **ENGINES:** B8-5, C6-5, C6-7 (1st Flt.).

Engines, launch system, film, glue and finishing supplies-Not Included.

No. 1327 **\$24.00**



SPORT FLIERS



A DAMON COMPANY

ASTRO BEE

SKILL LEVEL 1 Reach altitudes over 1,200 feet with this sounding rocket style design. Length: 14.75" Dia. 0.976" Wt. 0.823 oz.

ENGINES: 1/2A6-2, A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1356

\$4.75



SIZZLER

SKILL LEVEL 1 High performance design for flights over 900 feet. A long bird that's great for demonstrations. Length: 23.5" Dia. 0.976" Wt. 1.41 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5

No. 1906

\$4.95



COUGAR

SKILL LEVEL 1 High performance, sleek sport flyer can attain altitudes over 1000 feet. Length: 17.5" Dia. 0.976" Wt. 1.06 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5.

No. 1923

\$3.75



HARPOON

SKILL LEVEL 1 Realistic missile design makes spectacular flights to 1,000 feet with 18" streamer recovery. Length: 13.75" Dia. 0.976" Wt. 1.3 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, C6-5

No. 1915

\$4.25



SPIN FIN

SKILL LEVEL 1 Unique spin-flight design creates dramatic curling smoke trail on its way up. Spectacular flights over 1,200 feet with 30" streamer recovery. Length: 11.6" Dia. 0.736" Wt. 0.6 oz.

ENGINES: 1/2A6-4, A8-5 (1st Fit.), B4-6, B6-6, C6-7.

No. 1355

\$3.25



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 10 oz.

SPORT FLIERS



A DAMON COMPANY

FIRECAT

SKILL LEVEL 1 Authentic looking anti-tank missile of the future. Features unique scale-like plastic nose cone. Flights over 1,000 feet are possible with a "C" engine. Length: 15" Dia. 1.04" Wt. 1.5 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1378

\$4.95



AERO-FIN

SKILL LEVEL 2 Unique five-fin design. Flights over 1200 feet with 18" streamer recovery. Length: 11.62" Dia. 0.736" Wt. 0.53 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1390

\$3.95



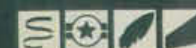
WIZARD

SKILL LEVEL 1 Simple and quick-to-assemble. One of the highest performing vehicles in Estes' fleet with its 1,600 foot altitude capability and huge 30" streamer recovery system that makes it easy to track. Length: 12" Dia. 0.736" Wt. 0.79 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1292

\$2.50



YANKEE

SKILL LEVEL 1 Easy-to-build, yet performance that will rival any rocket. Capable of flights over 2,000 feet with 30" long streamer recovery. Length: 11" Dia. 0.736" Wt. 0.42 oz.

ENGINES: 1/2A6-2, 1/2A6-4, A8-3, A8-5 (1st Flt.), B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1381

\$2.25



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 8 oz.

SPORT FLIERS



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. Length 12.25" Dia. 0.976" Wt. 1.2 oz.

ENGINES: 1/2A6-2, A8-3 (1st Fit.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1256

\$5.25



THE BAT

SKILL LEVEL 1 Unique sport model with far-out "Bat" decor. Easy-to-build. Delivers great flights over 1,000 feet and returns via 90" long streamer. Length 16.63" Dia. 0.976" Wt. .92 oz.

ENGINES: 1/2A6-2, A8-3 (1st Fit.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7

No. 1362

\$4.95



MAVERICK

SKILL LEVEL 1 This sleek sport performer features streamer recovery and flights over 1000 feet. Easy-to-build and fun-to-fly. Length: 16.5" Dia. 0.976" Wt. 1.13 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5

No. 1904

\$4.50



DER RED MAX

SKILL LEVEL 2 Far-out super-fun model. Large stable design gives great sport performance. Length: 16.25" Dia. 1.637" Wt. 2.38 oz.

ENGINES: B4-2 (1st Fit.), B4-4, B6-2, B6-4, B8-5, C6-5, C6-7

No. 0651

\$8.25



MINI SHUTTLE

SKILL LEVEL 2 Sport scale version of the space shuttle orbiter. Uses regular size engines. Length: 9.37" Dia. 1.63" Wt. 1.35 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1391

\$4.50



Engines, launch system, glue and finishing supplies-Not included. Avg. Ship. Wt. 10 oz.

SPORT FLIERS



A DAMON COMPANY

QUASAR

SKILL LEVEL 1 Dramatic, easy-to-build model for beginners. Bright white plastic nose cone and fin assembly. Metalized pre-printed mylar wrap-on decal for the body tube. No painting required! Length: 14" Dia. 0.976" Wt. 1.5 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), B4-2, B4-4, B6-2, B6-4, B8-5, C6-5.

No. 0650

\$6.95



COMET

SKILL LEVEL 1 High performance sport flyer over 2 feet long. Quick and easy-to-assemble. Delivers great flights over 1,200 feet. Length: 24.25" Dia. 1.325" Wt. 1.8 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1368

\$5.75



STINGER

SKILL LEVEL 1 A sleek sport performer capable of flights over 1000 feet. Easy-to-build and fun-to-fly. Length: 13.5" Dia. 0.976" Wt. 0.98 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1905

\$4.50



POLARIS

SKILL LEVEL 1 Sleek sounding rocket design with large payload section. Excellent performance for flights over 1,000 feet. Perfect for small insect payloads. Length: 18" Dia. 0.976" Wt. 1.3 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1324

\$6.75



ALPHA

SKILL LEVEL 1 The ideal kit for your first or second rocket. Swept-fin design makes it a really great performer. Features plastic nose cone and balsa fins. Length: 12.25" Dia. 0.976" Wt. 0.8 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1225

\$4.50



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 10 oz.

SPORT FLIERS

NEW!

MARAUDER

MARAUDER

SKILL LEVEL 1 Easy-to-build sport flier with large payload section. Flies cargo experiments to over 750 feet. Length: 20.4" Body Dia. 1.325" Payload Dia. 1.637" Wt. 2.3 oz.

ENGINES: B4-4 (1st Flt.), B6-4, C6-5.

No. 1922

\$5.50



CYCLONE

CYCLONE

SKILL LEVEL 1 Flights over 800 feet make this one you'll want to add to your fleet. Unique decal and big size make it ideal for demos. Length: 16" Dia. 1.32" Wt. 1.48 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1907

\$4.95



BIG BERTHA

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. A real favorite of rocketeers. Length: 24" Dia. 1.637" Wt. 2.2 oz.

ENGINES: A8-3, B4-2, B4-4, B6-2 (1st Flt.), B6-4, B8-5, C6-5

No. 1223

\$8.25



KADET

KADET

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. No painting required! Easy-track recovery with 30" fluorescent steamer. Length: 15" Dia. 0.98" Wt. 1.13 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7

No. 1328

\$4.95



NEW!

ZINGER

ZINGER

SKILL LEVEL 1 This sporty little flyer with 18" streamer recovery will reach "awesome" altitudes up to 2000 feet. Length: 10.25" Dia. 0.736" Wt. 0.3 oz.

ENGINES: 1/2A6-4 (1st Flt.), A8-5, B4-6, B6-6, C6-7.

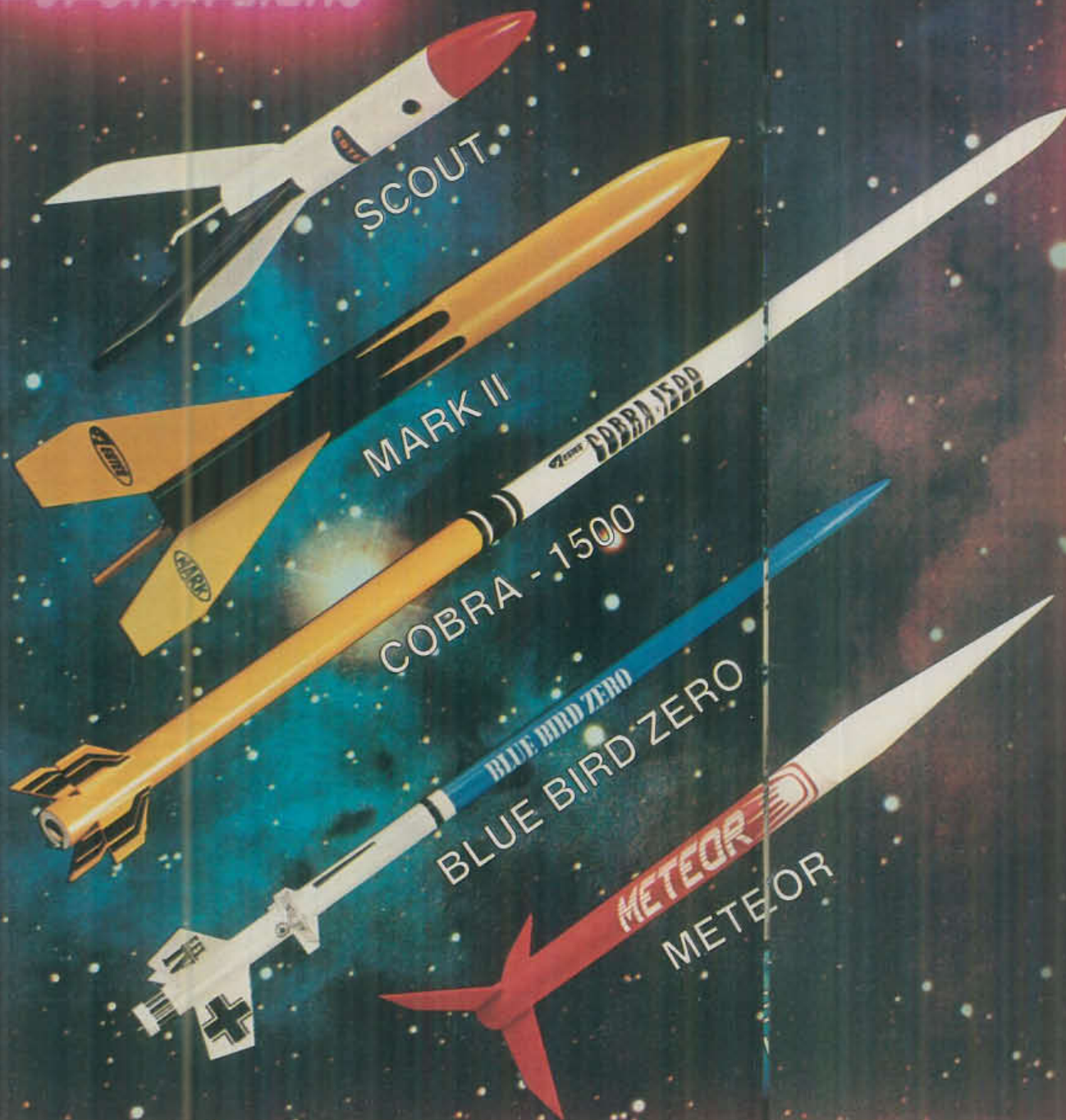
No. 1917

\$1.95



Engines, launch system, glue, and finishing supplies-Not included. Avg. Ship. Wt. 10 oz.

SPORT FLIERS



SCOUT

SKILL LEVEL 1 Estes Industries first model rocket, originally developed in 1959. Teaches you elementary balance and design principles. Sleek lines and tumble recovery for really exciting flights. Pat. No. 3,114,317. Length: 7" Dia. 0.765" Wt. 0.3 oz.

ENGINES: 1 2A6-2 (1st Flt.), A8-3, B4-4, B6-4, B8-5, C6-5.

No. 1201

\$2.50



MARK II

SKILL LEVEL 1 Ideal for sport or demonstration flying. Designed for midbody ejection separation system with streamer recovery. It's an excellent challenge for the novice rocketeer. Top-notch performance. Length: 9.1" Dia. 0.765" Wt. 0.7 oz.

ENGINES: 1 2A6-2 (1st Flt.), A8-3, B4-4, B6-4, B8-5, C6-5.

No. 1202

\$4.50



COBRA - 1500

SKILL LEVEL 2 Attains flights over 700 feet, with "C" type engine, from this extra long sport flier. Perfect demonstration model with large 18" parachute recovery. Length: 59" Dia. 1.325" Wt. 3.17 oz.

ENGINES: B4-2, B4-4 (1st Flt.), B6-2, B6-4, B8-5, C6-5.

No. 1294

\$8.95



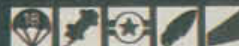
BLUE BIRD ZERO

SKILL LEVEL 2 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" Dia. 1.325" Wt. 2.7 oz.

ENGINES: B4-2, B4-4, B6-2, B6-4 (1st Flt.), B8-5, C6-5, C6-7.

No. 1335

\$8.50



METEOR

SKILL LEVEL 1 Super sport flyer with 90" streamer recovery. High performance flights to 1,200 feet. Length: 18.63" Dia. 0.976" Wt. 0.94 oz.

ENGINES: 1 2A6-2, A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1370

\$5.25

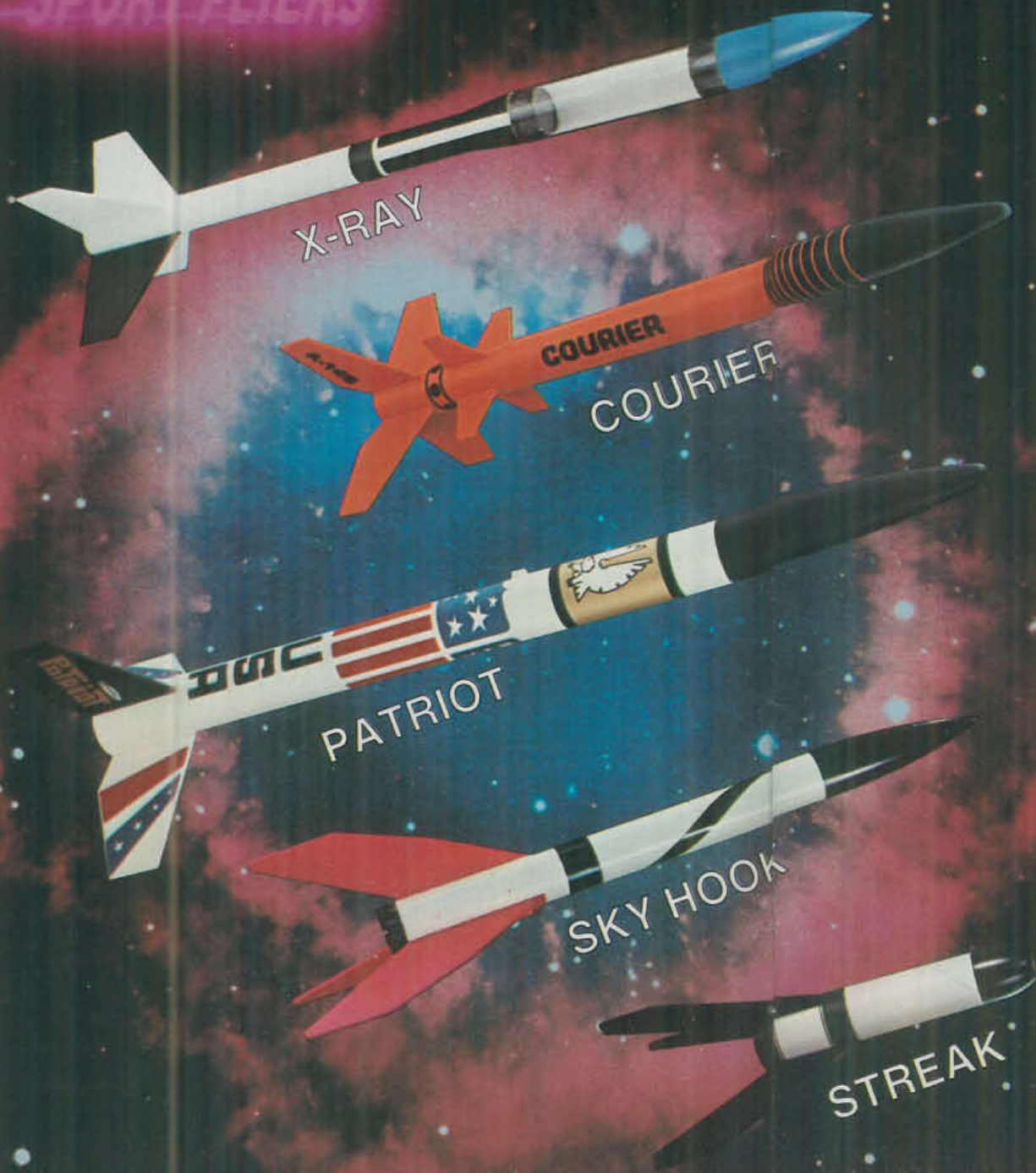


Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 10 oz.

SPORT FLIERS



A LARSEN & TUBB COMPANY



X-RAY

SKILL LEVEL 1 Perfect for your first payload or second kit. Features large see-through payload/cargo section. The recommended single-stage payload vehicle for small biological or insect projects. Length: 16.75" Dia. 0.736" Wt. 0.7 oz.

ENGINES: 1/2A6-2, A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1218
\$7.25



COURIER

SKILL LEVEL 1 Single Stage Performance. Scale-like appearance of two-stage sounding rocket. Flights over 1100 feet. Length: 12.13" Dia. 0.736" Wt. 0.53 oz.

ENGINES: 1/2A6-2, A8-5 (1st Flt.), B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1911
\$2.75



PATRIOT

SKILL LEVEL 2 Big, burly, and impressive sport model over 25" tall. Spectacular "All-American" red, white, and blue decor. Makes a great demonstration model. Fast, easy construction. Length: 26" Dia. 1.637" Wt. 3.3 oz.

ENGINES: B4-2 (1st Flt.), B4-4, B6-2, B6-4, B8-5, C6-5, C6-7.

No. 0652
\$9.95



SKY HOOK

SKILL LEVEL 1 An excellent kit for your second rocket. Easy-to-build with terrific performance flight-after-flight. Length: 12" Dia. 0.765" Wt. 0.7 oz.

ENGINES: 1/2A6-2 (1st Flt.), A8-3, A8-5, B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1208
\$4.50



STREAK

SKILL LEVEL 1 Lightweight, wind-cheating design (1/8 oz. without engine). Great for contests and records. Features simple feather-weight recovery. Length: 5.6" Dia. 0.720" Wt. 0.1 oz.

ENGINES: 1/2A6-4 (1st Flt.), A8-5, B4-6, B6-6, C6-7.

No. 1204
\$2.50



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

MINI-BRUTES



A GANNON COMPANY

ESTES STARLINER

SKILL LEVEL 3 Futuristic Estes version of a commercial space transport ship of the 21st Century. Mini-engine powered for low cost flights. Length: 12.6" Dia. 0.736" Wt. 0.9 oz.

ENGINES: 1/2A3-2T (1st Flt.), A3-2T, A3-4T, A10-3T.
No. 0863
\$4.75



MINI MEAN MACHINE

SKILL LEVEL 1 Mini-powered version of our huge Mean Machine kit. Over 38 inches long and capable of flights over 700 feet. Length: 38.5" Dia. 0.736" Wt. 1.06 oz.

ENGINES: 1/2A3-2T, A3-2T (1st Flt.), A10-3T.
No. 0865
\$5.50



ECLIPSE

SKILL LEVEL 1 Reach altitudes over 600 feet with this great Mini-Brute sport flier. Very high performance design. Length: 12.1" Dia. 0.736" Wt. 0.51 oz.

ENGINES: 1/2A3-2T (1st Flt.), 1/2A3-4T, A3-4T, A3-6T, A10-3T
No. 0846
\$4.75



BIG YANK

SKILL LEVEL 1 Mini-engine powered sport flier. Easy-to-build and capable of flights over 400 feet. Length: 26.5" Dia. 0.736" Wt. 0.92 oz.

ENGINES: 1/2A3-2T (1st Flt.), A3-4T, A10-3T.
No. 0868
\$3.50



MOSQUITO

SKILL LEVEL 1 The smallest of all Mini-Brutes combines fantastic performance with featherweight recovery. Balsa and paper construction with simple spray paint decor makes for quick-and-easy assembly. Length: 3.9" Dia. 0.541" Wt. 0.1 oz.

ENGINES: 1/2A3-4T (1st Flt.), A3-6T, A10-3T
No. 0801
\$.99



Engines, launch system, glue and finishing supplies -Not Included. Avg. Ship. Wt. 6 oz.

MINI-DRUTES



STAR DART

SKILL LEVEL 1 High performance, mini-engine powered sport rocket. Flies over 1,000 feet and returns via streamer recovery. Very easy-to-assemble. Length 8.4" Dia. 0.541" Wt. 0.225 oz.

ENGINES: 1/2A3-4T (1st Flt.), A3-6T.

No. 0860

\$2.50



MINI TRI PAK

SKILL LEVEL 2 Three unique rocket kits in one package - for one low price!

Kit includes:

STAR SEEKER

Interstellar speeder for short hops between galaxies. Mini-power boosts it near 1500 feet. The model breaks apart into two connected pieces for safe recovery. Length: 6.9" Dia. 0.5" Wt. 0.26 oz.

ENGINES: 1/2A3-2T (1st Flt.), 1/2A3-4T, A3-2T, A3-4T, A3-6T, A10-3T.



STING RAY

Two-stage mini performance. Out-of-sight flights to 2500 feet! Length: 8.4" Dia. 0.5" Wt. 0.33 oz.

ENGINES: Booster: A10-0T (1st Flt.)

Upper Stage: 1/2A3-2T (1st Flt.), 1/2A3-4T, A3-2T, A3-4T, A3-6T, A10-3T.



SCRAM

Military styled surface-to-air missile. Flights over 1000 feet. Break-apart recovery. Length: 7.3" Dia. 0.5" Wt. 0.29 oz.

ENGINES: 1/2A3-2T (1st Flt.), 1/2A3-4T, A3-2T, A3-4T, A3-6T, A10-3T.



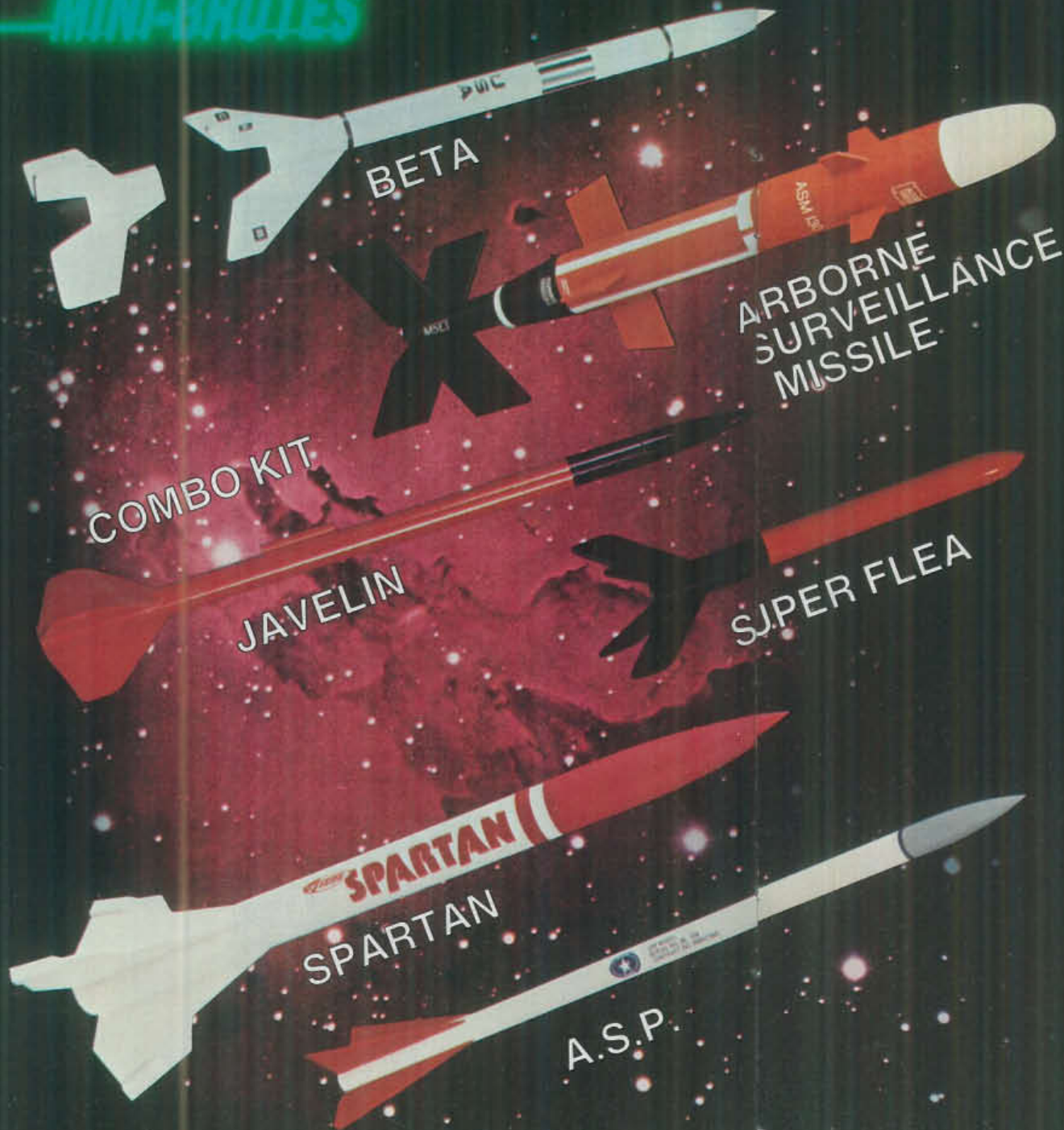
MINI TRI PAK

No. 0866

\$5.50

Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 9 oz.

MINI-BRUTES



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 via parachute. Pat. No. 3,392,302. Length: 13.76" Dia. 0.736" Wt. 0.75 oz.
ENGINES: Upper Stage: 1/2A3-4T (1st Fit.), A3-6T, A10-3T.
 Booster Stage: A10-0T (1st Fit.).

No. 0845
 \$4.95



AIRBORNE SURVEILLANCE MISSILE

SKILL LEVEL 3 Unique scale-like appearance and a challenge to build. Length: 11.4" Dia. 0.976" Wt. 0.71 oz.
ENGINES: A3-4T (1st Fit.), A10-3T.

No. 0867
 \$3.50



COMBO KIT:

SKILL LEVEL 1 Two mini kits for the price of one!
 Includes: **JAVELIN**

Super performance, easy-to-build competition design with streamer recovery. Scale-like sounding rocket appearance. Reaches altitudes over 1,000 feet. Length: 12.4" Dia. 0.541" Wt. 0.34 oz.

ENGINES: 1/2A3-2T (1st Fit.), A3-4T, A10-3T.

SUPER FLEA

The "Flea's" competition design gives ultra-high performance. Reaches incredible altitudes with ogive nose cone and swept fins. Easy-to-build and features break-away drag recovery. Length: 7.34" Dia. 0.541" Wt. 0.158 oz.

ENGINES: 1/2A3-2T (1st Fit.), 1/2A3-4T, A3-4T, A10-3T.

No. 0815 JAVELIN & SUPER FLEA COMBO KIT
 \$5.25

SPARTAN

SKILL LEVEL 1 This super-sleek mini-powered model flies over 400 feet and returns to Earth on a brightly colored 30" streamer. Length: 14.2" Dia. 0.976" Wt. 0.91 oz.

ENGINES: 1/2A3-2T, A3-4T (1st Fit.), A10-3T.

No. 0864
 \$4.75



A.S.P.

SKILL LEVEL 2 Mini-engine powered, semi-scale model of famous atmospheric sounding projectile. Features spinnerons for realistic spin-flight performance. Length: 20.5" Dia. 0.736" Wt. 0.82 oz.

ENGINES: 1/2A3-4T (1st Fit.), A3-4T, A10-3T.

No. 0862
 \$4.50



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 10 oz.

MULTI-STAGERS



HERCULES



SCORPION



SKY-HI



A DAMON COMPANY

HERCULES

SKILL LEVEL 3 Clear payload section highlights this two-stager. Sleek design that can be flown as a single or two-stage model. Flights over 2,500 feet! Length: 21.6" Dia. 0.976" Wt. 1.84 oz.

ENGINES: Single Stage: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

Upper Stage: A8-5 (1st Flt.), B6-6, B8-5, C6-7.

Booster: A8-0 (1st Flt.), B6-0, C6-0.

No. 1377

\$6.75



SCORPION

SKILL LEVEL 2 High flying two-stage sport model with research vehicle styling. Easy-to-build and exciting to fly with all plastic fin-units. Booster employs tumble recovery while upper stage streaks skyward to altitudes over 1,000 feet. Length: 26.5" Dia. 0.976" Wt. 1.8 oz.

ENGINES: Single Stage: A8-3 (1st Flt.), A8-5, B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.

Upper Stage: A8-5 (1st Flt.), B4-6, B6-6, C6-7.

Booster Stage: A8-0 (1st Flt.), B6-0, C6-0.

No. 1333

\$7.75



SKY-HI

SKILL LEVEL 2 High performance two-stager with single stage, sounding rocket appearance. Nesting fins create very sleek design. Simplified construction. Length: 25" Dia. 0.976" Wt. 1.7 oz.

ENGINES: Single Stage: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

Upper Stage: A8-5 (1st Flt.), B6-6, C6-7.

Booster Stage: A8-0 (1st Flt.), B6-0, C6-0.

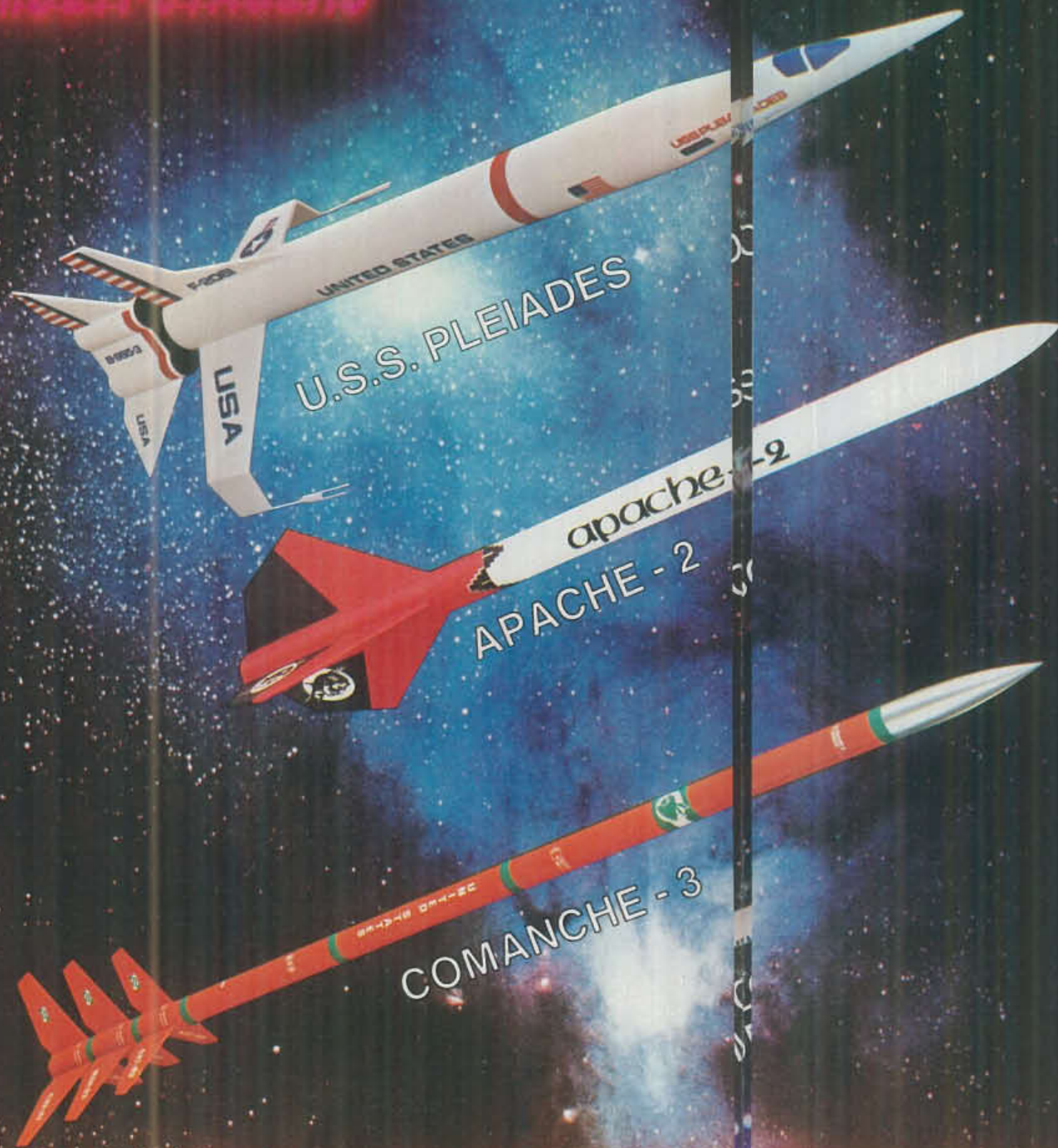
No. 1365

\$6.25



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

MULTI-STAGERS



U.S.S. PLEIADES

SKILL LEVEL 3 Two-stage exotic space fighter. Our engineer's concept of a futuristic space interceptor. Flights to 900 feet. Length: 20.625" Dia. 1.325" Wt. 2.3 oz.

ENGINES: Single Stage: A8-3, B4-4 (1st Flt.), B6-4, B8-5, C6-5.
Upper Stage: A8-5 (1st Flt.), B4-6, B6-6, C6-7.
Booster: A8-0 (1st Flt.), B6-0, C6-0.

No. 1910

\$7.25



APACHE - 2

SKILL LEVEL 3 Ultra-high performance two-stager with unique kit decal. Streamer for reliable high-altitude recovery. Capable of flights over 2500 feet. Length: 18.25" Dia. 0.976" Wt. 1.34 oz.

ENGINES: Single Stage: 1/2A6-2, A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.
Upper Stage: 1/2A6-4, A8-5 (1st Flt.), B4-6, B6-6, C6-7.
Booster: A8-0 (1st Flt.), B6-0, C6-0.

No. 1388

\$5.50



COMANCHE - 3

SKILL LEVEL 3 Big three-stager with mighty "D" powered booster. Can be flown in single, two-stage or three-stage configurations. Incredible flights over 2,600 feet. Length: 41" Dia. 0.976" Wt. 2.08 oz.

ENGINES: Single Stage: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.
Upper Stage: A8-5 (1st Flt.), B4-6, B6-6, C6-7.
Second Stage: A8-0 (1st Flt.), B6-0, C6-0.
Booster: D12-0 (1st Flt.)

No. 1382

\$6.75



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

FUTURISTIC

NEW!



STEALTH

SKILL LEVEL 3 Radar invisible fighter from the future closes in on its opponents from seemingly nowhere. Outfitted with lazer weaponry it seeks and destroys in ultimate silence. Our model can reach altitudes up to 900 feet. Length: 16.25" Dia. 1.125" Wt. 2.3 oz.

ENGINES: A8-3, B4-4 (1st Flt.), B6-4, C5-3, C6-3, C6-5.

No. 1929

\$5.95



ATTACK CRAFT

ORION

SKILL LEVEL 3 Unique design for dramatic space fighter of the future with quad mounted laser cannons in nose and dual fusion reactor engines. Flies over 1,300 feet with "C" engine. Length: 12.3" Dia. 0.976" Wt. 1.41 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C5-3, C6-5.

No. 1374

\$6.95



ORBITAL TRANSPORT

SKILL LEVEL 4 Only a gleam in the eye of NASA, but it's flying for Estes rocketeers right now! Astonishingly realistic recovery system where mothership returns to Earth via huge 18" parachute and interplanetary orbiter glides home. Long and sleek, developed for both orbital and near-space missions. Transport vehicle and glider fly piggy-backed and separate at apogee for spectacular dual recovery. **TRANSPORT SHIP** Length: 23" Dia. 0.976" Wing Span 7.9" Wt. 2 oz. **RE-ENTRY VEHICLE** Length: 8.6" Dia. 0.736" Wing Span 5" Wt. 0.5 oz.

ENGINES: B4-2, B4-4, B6-2, B6-4 (1st Flt.), B8-5, C6-5.

No. 1242

\$10.50



GALACTIC TAXI

SKILL LEVEL 3 Lightweight 3 passenger planet hopping taxi. Flights to 1,000 feet with 12" parachute recovery. Ideal display model and impressive in the air. Length: 13" Dia. 0.976" Wt. 1.27 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1914

\$6.75



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

FUTURISTIC



STAR SPEEDER

ASTEROID EXPLORER

SPACE STATION AQUARIUS

NOVA SCOUT SHIP

SCORPIUS

FALCON COMMANDER

STAR SPEEDER

SKILL LEVEL 2 Single place galactic fighter capable of tremendous speed and maneuverability. The Estes version sports great performance with flights over 800 feet. Length: 13.75" Dia. 0.736" Wt. 1.3 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5.

No. 1366

\$5.75



ASTEROID EXPLORER

SKILL LEVEL 2 Geological data gathering probe of the 1900's. Probes asteroids and other large masses for ore samples. Great display model and capable of flights over 1,000 feet. Length: 16.6" Dia. 0.976" Wt. 1.09 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1386

\$5.50



SPACE STATION AQUARIUS

SKILL LEVEL 3 Large, deep space research station. Carries crew of 260 to the edges of the galaxy. This big bird flies to over 800 feet and returns safely to Earth via big 18" parachute. Length: 20.75" Dia. 0.976" Wt. 1.84 oz.

ENGINES: A8-3 (1st Fit.), B4-2, B4-4, B6-2, B6-4, C5-3, C6-3, C6-5.

No. 1902

\$8.75



NOVA SCOUT SHIP

SKILL LEVEL 2 Scout ship of the awesome Star Ship Nova intergalactic explorer (see page 41). Designed for planetary exploration. Flies to 900 feet. Length: 15" Dia. 0.976" Wt. 1.29 oz.

ENGINES: A8-3 (1st Fit.), B4-2, B4-4, B6-4, B8-5, C6-3, C6-5.

No. 1392

\$5.50



SCORPIUS

SKILL LEVEL 3 Futuristic cruise ship for deep space exploration powered by two ion induction electrification engines. An incredible display model. Length: 15.25" Dia. 0.976" Wt. 1.59 oz.

ENGINES: A8-3, B4-4 (1st Fit.), B6-4, B8-5, C6-5.

No. 1375

\$5.95



FALCON COMMANDER

SKILL LEVEL 1 Futuristic forward swept-wing space-craft. Terrific Skill Level 1 exotic model. Can achieve altitudes up to 1,000 feet. Length: 19.12" Dia. 0.976" Wt. 1.1 oz.

ENGINES: A8-3 (1st Fit.), A8-5, B4-4, B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1364

\$5.75



Engines, launch system, glue and finishing supplies-Not included. Avg. Ship. Wt. 12 oz.

FUTURISTIC



NASA PEGASUS



STAR SHIP NOVA



X-16



ARIES S.S.T.



A DAVISON COMPANY

NASA PEGASUS

SKILL LEVEL 2 Medium range research craft for NASA missions after the Space Shuttle. Flies over 850 feet. Length: 19.75" Dia. 1.325" Wt. 2.36 oz.
ENGINES: A8-3(1st Fit.), B4-2, B6-4, B8-5, C5-3, C6-3.
No. 1376
\$7.25



STAR SHIP NOVA

SKILL LEVEL 3 Truly awesome in appearance, this inter-galactic explorer is believed to be outfitted with both conventional atomic engines and hyper-space starflight drive. Heavily armed with multiple phaser banks, photon torpedoes, and energy deflection shields, the Nova is prepared to meet any foe. The Estes version of the magnificent starship is perfect for demonstrations and really great for display. Length: 19.75" Dia. 0.976" Wt. 2.3 oz.
ENGINES: B4-2 (1st Fit.), B6-2, C5-3, C6-3.
No. 1371
\$8.25



X-16

SKILL LEVEL 3 Far in the future the Air Force may be flying this experimental model into Earth's outer atmosphere to test hyper velocity near space travel. Our version can fly to 1,000 feet. Length: 17.25" Dia. 0.976" Wt. 1.45 oz.
ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5.
No. 1933
\$5.50



ARIES S.S.T.

SKILL LEVEL 2 Futuristic transport capable of flights to 1,000 feet. Length: 13.5" Dia. 0.976" Wt. 1.34 oz.
ENGINES: A8-3 (1st Fit.), B4-4, B6-4, C6-5.
No. 1927
\$5.00



Engines, launch system, glue and finishing supplies -Not Included. Avg. Ship. Wt. 12 oz.



VINDICATOR



U.S.S.F. FIREFLASH



ADVANCED TARGET DRONE

NEW!



STARSHIP EXCALIBUR



SCISSOR-WING TRANSPORT

VINDICATOR

SKILL LEVEL 3 Sleek interplanetary interceptor with futuristically detailed nose cone. A really sharp display model with starflight camouflage decor. Great demonstration model with flights up to 900 feet. Length: 25.5" Dia. 1.325" Wt. 2.6 oz.

ENGINES: B4-2, B6-2, B6-4 (1st Fit.), B8-5, C6-3, C6-5.

No. 1367

\$8.25



U.S.S.F. FIREFLASH

SKILL LEVEL 3 High performance U.S. Space Force fighter craft. Features new Space Force color scheme and is armed with two gattling barreled infra-iscopic laser cannon. Flights to 900 feet. Length: 16" Dia. 0.976" Wt. 1.7 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5.

No. 1909

\$7.25



ADVANCED TARGET DRONE

SKILL LEVEL 2 U.S.A.F. Target Drone used to test the surface-to-air missiles of the 21st Century. Although it looks complex, the A.T.D. is fast and easy to build. Length: 15.3" Dia. 0.976" Wt. 1.48 oz.

ENGINES: A8-3, B4-4 (1st Fit.), B6-4, B8-5, C6-5.

No. 1913

\$6.75



STARSHIP EXCALIBUR

SKILL LEVEL 3 Immense starship armed with laser weaponry and defense shields voyages far into deep space on peaceful missions. Our version of this starship can fly to 1,000 feet. Length: 15.5" Dia. 0.976" Wt. 1.89 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, C6-5.

No. 1920

\$5.50



SCISSOR-WING TRANSPORT

SKILL LEVEL 3 This exciting bird introduces the revolutionary new Scissor Wing concept. Features super SST styling and high flight reliability. Capable of glide times of more than 60 seconds. Internal ejection power pod features vertical stabilizer fins. Comes ready-to-assemble with die-cut parts and two-color decals. Length: 22.75" Body Dia. 0.976" Wing Span 16" Wt. w/pod 2.5 oz. w/out pod 1.8 oz.

ENGINES: B4-2 (1st Fit.), B6-2, C5-3, C6-3.

No. 1265

\$11.00



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

FUTURISTIC

NEW!



DELTA WEDGE

XARCONIAN DESTROYER

SOARING EAGLE

NEW!

MANTA BOMBER



A DAMON COMPANY

DELTA WEDGE

SKILL LEVEL 3 Exotic fighter capable of ultra-light speed passes through time-windows to evade or strike the enemy. Our model of this fighter can attain altitudes over 1,000 feet. Length: 16.5" Dia. 0.736" Wt. 1.52 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1931

\$4.50



XARCONIAN DESTROYER

SKILL LEVEL 3 Futuristic battle cruiser featuring organic design. Beautifully detailed and capable of flights over 750 feet. Eighteen inch parachute recovery. Length: 14.7" Dia. 1.325" Wt. 2.2 oz.

ENGINES: A8-3 (1st Flt.), B4-2, B4-4, B6-2, B6-4, B8-5, C5-3, C6-3, C6-5.

No. 1903

\$7.25



SOARING EAGLE

SKILL LEVEL 4 Estes' first flex-wing glider. Goes up like a rocket, pod ejects and wings unfold. Glide times up to 2 minutes. Length: 23.6" Dia. 0.976" Wt. 2.42 oz.

ENGINES: B4-2 (1st Flt.), B6-2, B8-5, C5-3, C6-3.

No. 1373

\$8.50



MANTA BOMBER

SKILL LEVEL 3 Fighter and mainstay of the Ray Galaxy fleet is heavily armed and driven by twin circulating vectron engines. Estes' model will fly to 1,000 feet. Length: 14.75" Dia. 0.976" Wt. 1.76 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, C5-3, C6-3.

No. 1928

\$5.95



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

SCALE MODELS



TITAN II

SKILL LEVEL 2 Semi-scale version of the Titan ICBM with flights to 750 feet. Model features removable display engine nozzles and detachable clear plastic fin-unit which must be added for flight. Length: 19.5" Dia. 1.595" Wt. 2.37 oz.
ENGINES: B4-4 (1st Flt.), B6-4, C6-3, C6-5.
No. 1918
\$6.95



MERCURY REDSTONE

SKILL LEVEL 5 Historical 1/35 scale model of the Mercury sub-orbital rocket used to launch Alan Shepard into space flight May 5, 1961. Authentic detailing includes large decal and injection molded Mercury capsule and tower. Rocket and capsule each return to Earth via 12" chute recovery. Length: 28.75" Dia. 2.04" Wt. 3.0 oz.
ENGINE: C5-3 (1st Flt.).
No. 1921
\$11.95



EXOCET

SKILL LEVEL 3 Nearly two feet tall, this semi-scale model of the French anti-ship missile produced by the Societe Nationale Industrielle Aerspatiale is an excellent sport flyer capable of altitudes up to 900 feet. It's also an excellent display model. Length: 21.375" Dia. 1.325" Wt. 1.69 oz.
ENGINES: A8-3, B4-6 (1st Flt.), B6-6, B8-5, C6-5, C6-7.
No. 1925
\$6.50



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 15 oz.

Photo Courtesy NASA

Photo Courtesy Societe Nationale Industrielle Aerspatiale (Product of France)

SCALE MODELS

NEW!

HONEST JOHN

SATURN V MOON ROCKET

V-2

PHOENIX

NEW!

HONEST JOHN

SKILL LEVEL 2 Updated version of this famous U.S. Army Missile. Flights to 1,000 feet. Length: 19.2 Dia. 1.325 Wt. 1.78 oz.

ENGINES: A8-3 (1st Flt.), B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1919

\$5.25



SATURN V MOON ROCKET

SKILL LEVEL 5 A truly magnificent scale reproduction of the world's most famous rocket...the mighty Saturn V. First space vehicle to carry men to the moon and most recently utilized to place Skylab in orbit around Earth. Scaled to 1/100th of its actual size, our model stands an impressive 43-1/2" tall. Single "D" engine power gives this baby a spectacular Cape Canaveral style lift-off. Apollo capsule has life-like recovery with bright 12" orange and white chute. Precision molded plastic engine nozzles and Apollo capsule with escape tower give detailed authenticity. Corrugated body wrap-ons make this one of our most precise scale models. Also includes Tech Report on clustering. Length: 43.5 Dia. 3.938" Wt. 9.9 oz.

ENGINES: May be flown as a 3 engine cluster or single engine. Cluster Power: C5-3 or C6-3 (3 required). "D" Power: D12-3 (1 required).

No. 1236

\$43.95



V-2

SKILL LEVEL 4 Large semi-scale version of the World War II ballistic missile. The original German version stood 46 feet high, weighed over 14 tons and could travel as much as 200 miles at nearly 2,000 mph. Length: 22.4' Dia. 2.60' Wt. 4.9 oz.

ENGINES: D12-3 (1st Flt.), D12-5.

No. 1926

\$9.95



PHOENIX

SKILL LEVEL 3 Big semi-scale model of the famous Phoenix air-to-air supersonic missile. Impressive in the air and on display. Single "D" powered engine provides a slow, realistic lift-off and flights over 600 feet. Length: 30" Dia. 2.60" Wt. 6.6 oz.

ENGINE: D12-3 (1st Flt.)

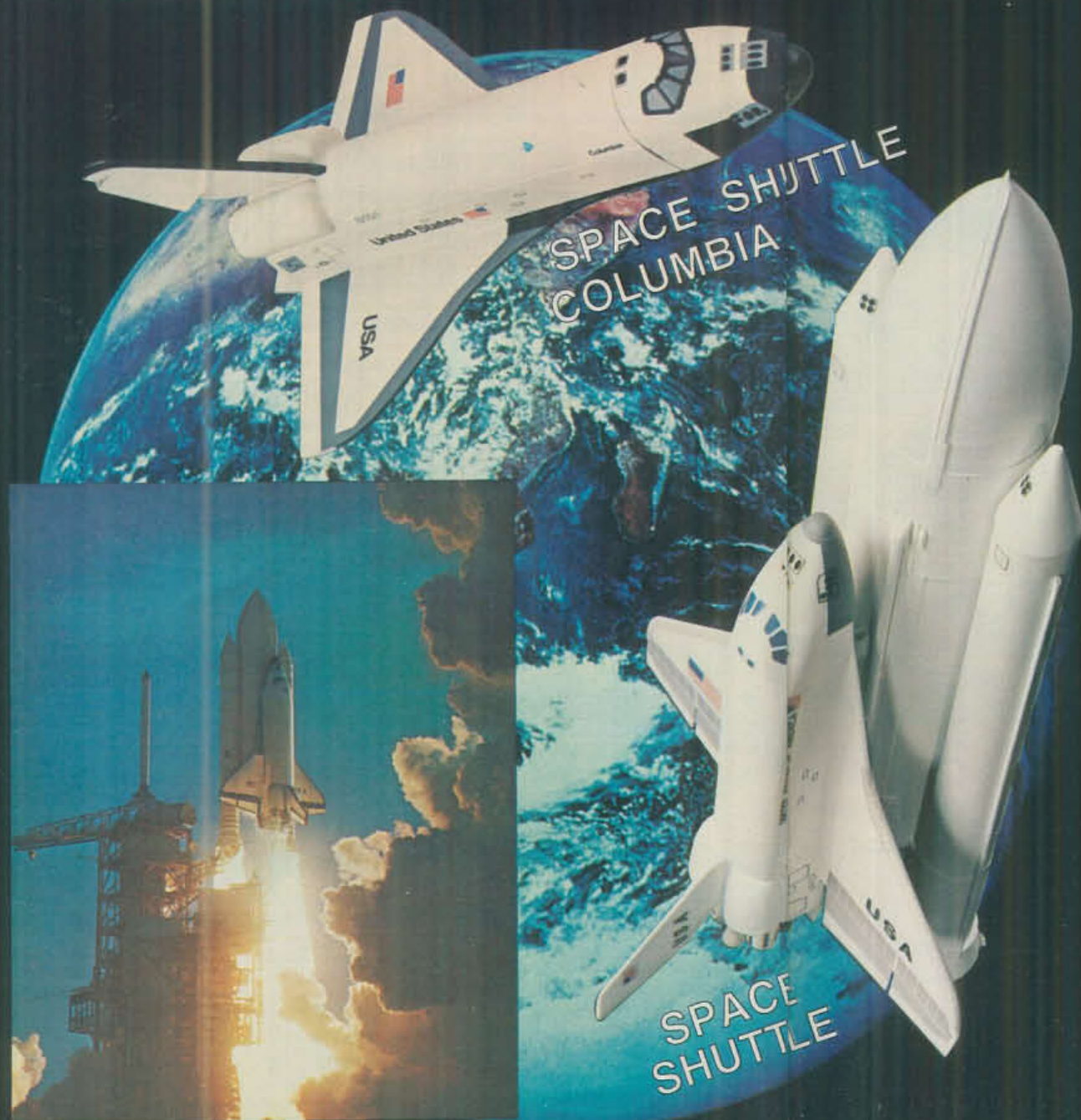
No. 1380

\$12.00



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 32 oz.

SCALE MODELS



SPACE SHUTTLE COLUMBIA

SKILL LEVEL 2 Beautiful semi-scale model of America's newest spaceship. Assembles easily with molded plastic nose cone and orbital maneuvering system pods. Spectacular flights over 500 feet with 18" parachute recovery. Makes a great display model too! Length: 10.7" Wing Span 8.125" Dia. 1.637" Wt. 1.98 oz.

ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5.

No. 1385

\$8.50



SPACE SHUTTLE

SKILL LEVEL 4 Dramatic 1/162nd scale reproduction of America's newest space vehicle. Designed as a reusable near space transportation system with satellite deployment and retrieval capability. Delivers really spectacular flights. 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, vacu-formed plastic and die-cut parts. Incredible display model with authentic NASA decor. Shuttle Length: 13.6" Dia. 2.04" Orbiter Length: 9.0" Orbiter Wingspan 7.1" Wt. 4.37 oz.

ENGINES: C5-3 (1st Fit.), C6-3.

No. 1284

\$16.50



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 11 oz.

NASA STS DATA

On a standard mission, the Orbiter will remain in orbit for 7 days, return to the Earth, land like an airplane, and be readied for another flight in 14 days. It can deploy and retrieve satellites and can place deep-space vehicles in their initial low-Earth orbit. The STS will also be used to transport the European Space Agency's Spacelab into orbit.

The Space Shuttle is comprised of the following three main units:

- Two solid rocket boosters (SRB's) which have a sea level thrust of 2,600,000 pounds each.
- The orbiter which is 121' long with a wing span of 79', weighs about 150,000 pounds without fuel. It has a payload bay 60' long and 15' in diameter. Payload capacity is 65,000 pounds.
- The external tank (ET) is 154' long and 28.6' in diameter. At lift-off the tank contains 1,550,000 pounds of liquid hydrogen and oxygen. These are in separate compartments of the tank and are fed to the orbiter's three main rocket engines which have a thrust of 470,000 pounds each. The tank is not reusable.

Maximum altitude of the Space Shuttle is 600 miles.

Photo and STS DATA Courtesy of NASA

SCALE MODELS



BOEING A.L.C.M.

CRUISE MISSILE

SKILL LEVEL 4 Designed to be launched from a large aircraft like the Lockheed C5-A Galaxy or the B-52 Bomber, the Cruise Missile can deliver a nuclear warhead with pin-point accuracy to its target. The Estes near-scale version of this vehicle is a challenging model with blow-molded plastic body, die-cut plastic fins & wings, and injection molded plastic parts. Also included is a 4-color decal sheet, 12" chute, and wings that swing out for display. Length: 12.3" Wing Span 7.75" Wt. 2.79 oz. ENGINES: A8-3, B4-4 (1st Flt.), B6-4, B8-5, C6-5.

No. 1336
\$12.00



SEA DART

SKILL LEVEL 2 Semi-scale model of the British Aerospace Sea Dart surface-to-air missile. Used successfully in the Falkland's battles. Flights over 800 feet on a "C" engine. Length: 16.5" Dia. 1.325" Wt. 1.7 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, C6-5.

No. 1901
\$6.75



NIKE-X

SKILL LEVEL 2 Scale-like single-stage model of U.S. Army's 4th generation, two-stage surface-to-air missile. Nike-style design with U.S. Army decor. Great performance for really impressive flights. Easy-to-assemble. Length: 23.4" Dia. 1.325" Wt. 2.3 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1270
\$8.25



SANDPIPER

SKILL LEVEL 2 Semi-scale model of actual target drone. Impressive in the air and on display. Spectacular flights over 900 feet. Length: 14.3" Dia. 0.976" Wt. 1.0 oz.

ENGINES: A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5.

No. 1389
\$5.95



MX MISSILE

SKILL LEVEL 1 Easy-to-build semi-scale model of our nation's newest ICBM proposal with flights to 750 feet. Features include removable display engine nozzle and detachable clear plastic fin-unit which must be added for flight. Length: 15.5" Dia. 1.595" Wt. 1.94 oz.

ENGINES: A8-3, B4-4 (1st Flt.), B6-4, C6-3, C6-5.

No. 1916
\$5.95



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

NEW!

D-POWERED

NEW!



MAXI ALPHA 3

SKILL LEVEL 2 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 fin-unit, plus plastic nose cone. "D" engine powered for truly spectacular flights up to 500 feet. Perfect for demonstrations. No painting required! Uses 3/16" launch rod. Length: 33.25" Dia. 2.6" Wt. 7.4 oz.

ENGINES: D12-3 (1st Fit.), D12-5.

No. 1321

\$16.50



DEFENDER

SKILL LEVEL 2 "D" Powered high-performance sport flier capable of flights over 1,200 feet. Length: 25" Dia. 1.325" Wt. 1.8 oz.

ENGINE: D12-5 (1st Fit.).

No. 1924

\$5.00



MACH - 2

SKILL LEVEL 2 Experimental sounding rocket design. This bird is easy-to-assemble and mighty "D" engine powered for flights over 1,000 feet. Length: 25.5" Dia. 1.637" Wt. 2.6 oz.

ENGINES: D12-5 (1st Fit.), D12-7.

No. 1379

\$7.75



SKYBOLT

SKILL LEVEL 2 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" Dia. 1.325" Wt. 1.75 oz.

ENGINES: D11-9, D12-7 (1st Fit.).

No. 1334

\$6.50



CHALLENGER - II

SKILL LEVEL 2 High performance "D" engine powered sport model. Easy-to-assemble and fly in less than one hour. No painting required with black plastic fin-unit, yellow nose cone, and pre-colored white body tube. Recommended high altitude launch vehicle for the Astro Cam 110 Aerial Camera (see page 11). Take fantastic aerial photos from over 1,200 feet. (Astro Cam 110 Camera-Not Included.) Length: 24.25" Dia. 1.34" Wt. 3.0 oz.

ENGINES: D11-9, D12-7 (1st Fit.).

No. 1330

\$8.95



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 12 oz.

D-POWERED

NEW!



WASP

SKILL LEVEL 2 This sporty model with scale-like appearance is "D" powered for flights up to 1,200 feet. Foil wrap-on decal assists in tracking and locating. Length: 16.4" Dia. 1.325" Wt. 1.6 oz.

ENGINES: D12-3 (1st Flt.), D12-5.

No. 1930

\$4.50



MAXI ICARUS

SKILL LEVEL 2 Huge super "D" engine powered payload model with large see-thru cargo section. Delivers spectacular flights over 1,000 feet. Over 6 cubic inches or up to 80 grams of payload capacity. Length: 29.75" Dia. 1.64" Wt. 3.2 oz.

ENGINE: D12-5.

No. 1331

\$12.00



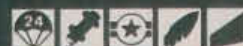
MEAN MACHINE

SKILL LEVEL 2 Tallest rocket in the Estes fleet. "D" engine powered for spectacular flights over 800 feet. Over 6 feet long with giant 24" chute. Easy-to-assemble for a really great looking bird. Uses 3/16" launch rod. Length: 78.75" Dia. 1.637" Wt. 5.8 oz.

ENGINE: D12-5

No. 1295

\$12.75



SCRAMBLER: 2

SKILL LEVEL 3 "D" powered payloader for those fragile biological payloads. Try launching a fresh egg! Flights over 1,000 feet. Length: 25.4" Body Dia. 1.32" Payload Dia. 1.64" Wt. 3.2 oz.

ENGINES: D12-5.

NO. 1908

\$7.75



MAXI STREAK

SKILL LEVEL 2 High altitude "D" powered version of the famous Estes Streak. Delivers flights over 1,300 feet and returns via huge 90" streamer recovery. Length: 13.1" Dia. 1.637" Wt. 1.76 oz.

ENGINES: D11-9, D12-5, D12-7 (1st Flt.).

No. 1387

\$5.25



Engines, launch system, glue and finishing supplies-Not Included. Avg. Ship. Wt. 15 oz.

POWER-PULSE™ LAUNCH CONTROLLER



Slim line, futuristically designed launch controller uses revolutionary new 6 volt, Polaroid® Polapulse™ P-100 battery. Super thin, space age battery allows for perfect hand-held styling and delivers consistent ignition performance for more than 150 launchings.

Made of rugged styrene plastic, the Power-Pulse launch controller features safety key, arming light, and launch button, plus 15 feet of launch cable and pre-soldered micro-clips. Very easy-to-assemble and is small and compact for range box storage. Battery can be instantly removed from launch controller for use in other electronic devices. Use with Estes Solar Igniters (#2301). (Battery Not Included.)



Polaroid® Polapulse™ P-100 Battery

Revolutionary new, super thin, high performance, 6 volt battery. Measures only 3.7" high by 3" wide by 0.18" thick, yet packs the power for more than 150 launchings. Use with Power-Pulse Launch Controller (No. 2210) and Solar Igniters (No. 2301). Ship Wt. 4 ounces



No. 2211
\$3.95

This launch controller of tomorrow features state-of-art technology. It's a must for every rocketeer, so make the Power-Pulse a part of your launch equipment today!

Length: 4-7/8"
Width: 3-7/8"
Depth: 15/16" to 1-13/16"
Ship. Wt. 12 oz.

No. 2210
\$10.95

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. 2212
\$10.50

PORTA-PAD LAUNCH PAD

Newly re-designed for increased stability, the Porta-Pad is rugged enough to take the stress of countless launchings, even with the big Estes "D" engines, yet is lightweight and compact enough for easy carrying and storage. Strong, girder construction allows for launching all Estes rockets. Accommodates standard 1/8" rod (#2243) or heavy-duty 3/16" Maxi-Rod (#2244). Tilt adjustment allows you to compensate for wind direction. Ship. Wt. 1 lb. 8 oz.

No. 2217 \$10.50

NEWLY
Re-designed



The Power-Pulse™ Launch Controller (#2210), 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).



SOLAR LAUNCH CONTROLLER

The Solar Launch Control System should be standard equipment in your range box. This futuristically designed launch control unit requires only 4 alkaline 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 pre-soldered. Use with Estes Solar Igniters (#2301). (Batteries not included.) Length: 6.1" Ht. 2.4" Width 1.44" Wt. (with batteries) 7 oz. Ship. Wt. 8 oz.



No. 2300
\$12.00

MODEL ROCKETRY'S PROVEN LAUNCH SYSTEM

Big Foot™

MODEL ROCKET LAUNCH CONTROL SYSTEM



"Designed for the Big Ones!"

The Estes Big Foot launch control system is capable of launching all Estes models. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot-print" for maximum launch pad stability. Includes blast deflector plate, 1/8" x36" 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 \$24.95

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". Includes Safety Cap & Key. Ship. Wt. 6 oz.

No. 2243 \$2.50

ADD-ON ROD: Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod to 54" length. Ship. Wt. 6 oz.

No. 2236 \$1.00

3/16" DIA. MAXI-ROD: Perfect for launching giant models and other large rockets. Fits Porta-Pad Tripod (#2217) and Big Foot Launch Pad (#2208). Two-piece construction 36" long, lightweight aluminum launch rod. Collapsible for easy storage. Includes Safety Cap & Key. Ship. Wt. 12 oz.

No. 2244 \$3.95

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 \$1.05

LAUNCH ROD SAFETY CAP WITH UNIVERSAL SAFETY KEY



LAUNCH ROD SAFETY CAP with UNIVERSAL SAFETY KEY: For Launch Pad Safety! Includes plastic launch rod cap, universal safety key, and elastic cord. Fits all Estes launch control systems. Ship. Wt. 4 oz.

No. 2205 \$.95

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. Ship. Wt. 5 oz.

No. 2241 \$1.80

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 \$1.65

AltiTrak™ Altitude Finder



HOW HIGH DID IT GO?

Skill Level 1

Track your rocket to the top of its flight and instantly lock-in its altitude on the "new" AltiTrak 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! Ship. Wt. 15 oz.

No. 2232 \$8.25

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 \$2.50

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

Recloseable Pouch
Recovery Wadding
12" Parachute
1/8" and 1/4" Shock Cords
144" Shroud Line

Tape Discs
Launch Lugs
Shock Cord Mounts

No. 2233

\$2.50

PHANTOM

Skill Level 1

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" Dia. 0.976" Wt. 1.35 oz. Ship. Wt. 3 oz.

No. 1207 \$5.50



FUTURISTIC PARTS ASSORTMENT

Create your own interplanetary voyagers and space fighters with this selection of science-fiction-style parts. Ideal for the creative designer. Over 50 parts! Includes special exotic fin patterns and design idea sheet. Ship. Wt. 2 lb.

Nose Cones	Body Tubes	Miscellaneous
1 PNC-50KA	1 BT-5	1 Nose Block (NB-20)
1 PNC-50F	1 BT-20	1 Nose Block (NB-50)
1 PNC-50SP	2 BT-50	1 Multi-Purpose Adapter Set (TA-1)
1 PNC-50	2 BT-55	1 Fin Pattern Sheet
1 PNC-55B		1 Exotic Fin Pattern Sheet
Fin Material	Parachute	1 Design Idea Sheet
2 BFS-20	1 PK-10	1 Mini Alpha Book of Model Rocketry
2 BFS-30	2 PK-12	
1 BFS-40	1 PK-18	
	1 PK-24	
Recovery Equipment		
3 Shock Cord 1/8" x 18"		3 Engine Blocks (EB-20A)
1 Shock Cord 1/4" x 36"		1 Stage Coupler (JT-50C)
1 Streamer Material 1" x 30"		1 Stage Coupler (JT-55C)
		3 Engine Holders (EH-2)
		12 Launch Lugs (LL-2B)
		2 Engine Mounts (EH-2050)

No. 1465 \$26.95

FIN ALIGNMENT GUIDE

Position and glue fins quickly and easily. Fits body tubes up to BT-101. Designed for either 3 or 4 finned rockets, aligning fins at 90° or 120° to each other. Easily assembled with slip-together plastic parts. Adjusts quickly with plastic fin position clips. Ship. Wt. 3 lbs.

No. 2231 \$8.95



Designer's Special

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

Body Tubes	Recovery Equipment
2 BT-5	3 Shock Cord 1/8" x 18"
2 BT-20	1 Shock Cord 1/8" x 36"
2 BT-50	1 Shock Cord 1/4" x 36"
1 BT-55	1 Streamer Material 1" x 30"
1 BT-60	6 Screw Eyes
Nose Cones	Miscellaneous
1 BNC-5E	3 Engine Blocks (EB-20A)
1 BNC-5S	3 Engine Holders (EH-3)
1 BNC-20B	3 Engine Holders (EH-2)
1 BNC-20R	1 Engine Mount (EH-2050)
1 PNC-50KA	1 Engine Mount (EH-2060)
1 PNC-50Y	1 Nose Block (NB-20)
1 PNC-55AC	1 Nose Block (NB-50)
1 PNC-60L	1 Stage Coupler (JT-55C)
Fin Material	1 Stage Coupler (JT-60C)
2 BFS-20	1 Balala Adapter (TA-2050A)
2 BFS-30	1 Multi-Purpose Paper Adapter Set (TA-1)
2 BFS-40	12 Launch Lugs (2-3/8" long)
Parachutes	1 Alpha Book of Model Rocketry
1 PK-10	1 Fin Pattern Sheet No. 2
2 PK-12	1 Fin Pattern Sheet No. 3
1 PK-16	
1 PK-24	

No. 1463 \$21.95



MODEL ROCKET ENGINES

MODEL ROCKET ENGINE CONSTRUCTION AND PERFORMANCE FUNCTIONS

Reliability-Proven In Over 210 Million Safe Launchings!

Quality-Tested For High Performance Flights!!

The Finest Engine Made ... You Can Depend On It ... For Every Flight Application!!

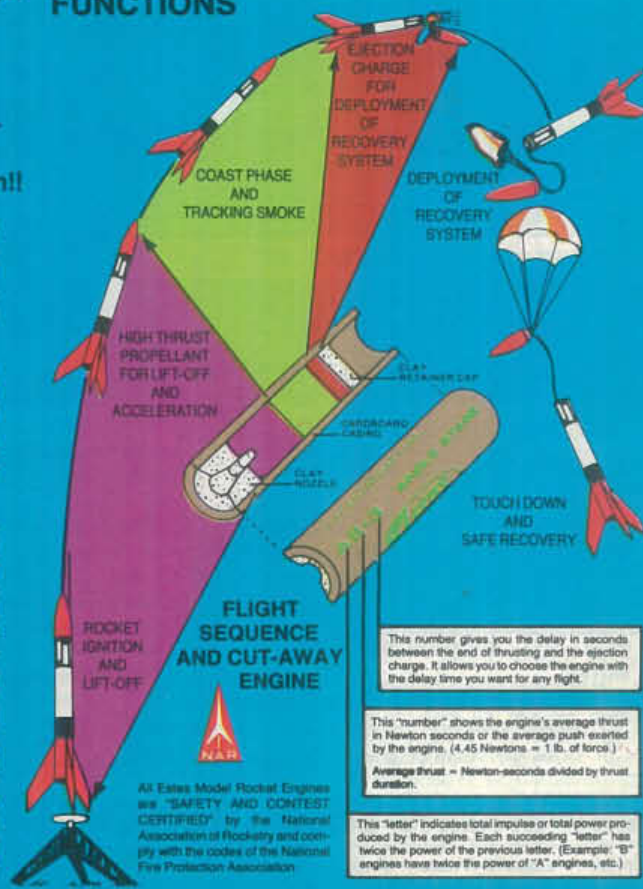
The design and development of the Estes model rocket engine was the real beginning of the safe, educational and exciting hobby that model rocketry has become.

Today's modern rocket engine is the result of over 26 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines for his or her use.

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

Reliability-proven in over 210 million launchings, Estes engines are manufactured under strict, quality-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.

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.



This number gives you the delay in seconds between the end of thrusting and the ejection charge. It allows you to choose the engine with the delay time you want for any flight.

This "number" shows the engine's average thrust in Newton seconds or the average push exerted by the engine. (4.45 Newtons = 1 lb. of force.)

Average thrust = Newton-seconds divided by thrust duration.

This "letter" indicates total impulse or total power produced by the engine. Each succeeding "letter" has twice the power of the previous letter. (Example: "B" engines have twice the power of "A" engines, etc.)

All Estes Model Rocket Engines are "SAFETY AND CONTEST CERTIFIED" by the National Association of Rocketry and comply with the codes of the National Fire Protection Association.



ROCKET ENGINE SELECTION CHART

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec ^①	n-sec ^②	Time Delay (±15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
SINGLE STAGE ENGINES GREEN LABEL										
1593	1/2A6-2	\$2.85	0.28	1.25	2 sec.	2.5 oz.	46 oz.	0.20 sec.	0.53 15.0	0.055 1.56
1598	A8-3	\$3.00	0.56	2.50	3 sec.	4.0 oz.	48 oz.	0.32 sec.	0.57 16.2	0.110 3.12
1601	B4-2	\$3.00	1.12	5.00	2 sec.	4.0 oz.	48 oz.	1.20 sec.	0.70 19.8	0.294 8.33
1602	B4-4	\$3.00	1.12	5.00	4 sec.	3.5 oz.	48 oz.	1.20 sec.	0.74 21.0	0.294 8.33
1605	B6-2	\$3.00	1.12	5.00	2 sec.	4.5 oz.	48 oz.	0.83 sec.	0.68 19.3	0.220 6.24
1606	B6-4	\$3.00	1.12	5.00	4 sec.	4.0 oz.	48 oz.	0.83 sec.	0.71 20.1	0.220 6.24
1620	B8-5*	\$3.15	1.12	5.00	5 sec.	5.0 oz.	5 lb.	0.60 sec.	0.68 19.3	0.220 6.24
1617	C5-3	\$3.25	2.25	10.00	3 sec.	8.0 oz.	5 lb.	2.10 sec.	0.90 25.5	0.450 12.70
1613	C6-3	\$3.25	2.25	10.00	3 sec.	4.0 oz.	48 oz.	1.70 sec.	0.88 24.9	0.440 12.48
1614	C6-5	\$3.25	2.25	10.00	5 sec.	4.0 oz.	48 oz.	1.70 sec.	0.91 25.8	0.440 12.48

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec ^①	n-sec ^②	Time Delay (±15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
UPPER STAGE ENGINES^③ PURPLE OR BLUE LABEL										
1594	1/2A6-4	\$2.85	0.28	1.25	4 sec.	1.0 oz.	46 oz.	0.20 sec.	0.54 15.3	0.055 1.56
1599	A8-5	\$3.00	0.56	2.50	5 sec.	2.0 oz.	48 oz.	0.32 sec.	0.62 17.6	0.110 3.12
1604	B4-6	\$3.00	1.12	5.00	6 sec.	1.5 oz.	48 oz.	1.20 sec.	0.78 22.1	0.294 8.33
1607	B6-6	\$3.00	1.12	5.00	8 sec.	2.0 oz.	48 oz.	0.83 sec.	0.78 22.1	0.220 6.24
1615	C6-7	\$3.25	2.25	10.00	7 sec.	2.5 oz.	48 oz.	1.70 sec.	0.95 26.9	0.440 12.48

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec ^①	n-sec ^②	Time Delay (±15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
BOOSTER ENGINES RED LABEL										
1600	A8-0	\$3.00	0.56	2.50	none	4.0 oz.	48 oz.	0.30 sec.	0.51 14.2	0.110 3.12
1608	B6-0	\$3.00	1.12	5.00	none	4.0 oz.	48 oz.	0.80 sec.	0.58 16.4	0.220 6.24
1616	C6-0	\$3.25	2.25	10.00	none	4.0 oz.	48 oz.	1.68 sec.	0.80 22.7	0.440 12.48

All engines listed above are 2.75 in. long and 0.690 in. dia.

Ship. Wt. of each package of engines is approximately 4 oz.

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

*Series II engines have semi-core-burning grain with large propellant burning area for high initial thrust with short thrust duration. "B8" type engines replace previous "B14" type engines.

NOTES:

- ① Pound-seconds (Figures shown are optimum.)
- ② Newton-seconds* (Figures shown are optimum.)
- ③ Or Single Stage Engine if used in very light rocket.

*A Newton is the measurement of force required to move one kilogram of mass one meter per second. Avg. thrust in Newtons x thrust duration = Newton-seconds. Newton-seconds ÷ by 4.45 = Pound-seconds.

MINI-ENGINE SELECTION CHART

Prod. No.	Engine Type	Prices 4 for	Total Impulse lb-sec ^①	n-sec ^②	Time Delay (±15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
SINGLE STAGE ENGINES GREEN LABEL										
1503	1/2A3-2T	\$3.00	0.28	1.25	2 sec.	2 oz.	28 oz.	0.36 sec.	0.198 5.6	0.062 1.75
1506	A3-2T	\$3.15	0.56	2.50	2 sec.	3 oz.	28 oz.	0.86 sec.	0.254 7.2	0.124 3.50
1507	A3-4T	\$3.15	0.56	2.50	4 sec.	2 oz.	28 oz.	0.86 sec.	0.268 7.6	0.124 3.50
1511	A10-3T	\$3.15	0.56	2.50	3 sec.	5 oz.	48 oz.	0.26 sec.	0.277 7.9	0.133 3.78
UPPER STAGE ENGINES^③ PURPLE OR BLUE LABEL										
1504	1/2A3-4T	\$3.00	0.28	1.25	4 sec.	1 oz.	28 oz.	0.36 sec.	0.212 6.0	0.062 1.75
1508	A3-6T	\$3.15	0.56	2.50	6 sec.	1 oz.	28 oz.	0.86 sec.	0.262 8.0	0.124 3.50
BOOSTER ENGINES RED LABEL										
1510	A10-0T	\$3.15	0.56	2.50	none	5 oz.	48 oz.	0.26 sec.	0.235 6.7	0.133 3.70

Mini-Engines are 1.75 in. long and .500 in. dia.

Ship. Wt. of each package of mini-engines is approximately 2-1/2 oz.

MIGHTY "D" ENGINES Recommended Only for Experienced Rocketeers!

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec ^①	n-sec ^②	Time Delay (±15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz. G.	Propellant Weight Oz. G.
SINGLE STAGE ENGINES GREEN LABEL										
1666	D12-3	\$4.95	4.48	20.0	3 sec.	14 oz.	9 lb.	1.70 sec.	1.49 42.2	0.879 24.93
1667	D12-5	\$4.95	4.48	20.0	5 sec.	10 oz.	9 lb.	1.70 sec.	1.52 43.1	0.879 24.93
UPPER STAGE ENGINES^③ PURPLE OR BLUE LABEL										
1668	D12-7	\$4.95	4.48	20.0	7 sec.	8 oz.	9 lb.	1.70 sec.	1.55 44.0	0.879 24.93
1669	D11-9	\$4.95	3.37	15.0	9 sec.	8 oz.	6.3 lb.	1.40 sec.	1.51 42.9	0.85 18.50
BOOSTER ENGINES RED LABEL										
1665	D12-0	\$4.95	4.48	20.0	none	14 oz.	9 lb.	1.70 sec.	1.44 40.9	0.879 24.93

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

Ship. Wt. of each package of "D" engines is approximately 6-1/2 oz.

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.

SOLAR IGNITERS: Add increased reliability at lift-off with Estes "high performance" Solar Igniters. This updated igniter is designed especially for the Solar Launch Controller (#2300), Big Foot Launch Control System (#2208) and new Power Pulse Launch Controller (#2210). 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.

No. 2301 6 for \$1.40

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. Ship. Wt. 6 oz.

No. 2274 \$1.45

BLAST-OFF FLIGHT PAK

EXCELLENT VALUE!

Ideal Engine Assortment For The Active Rocketeer. Features 24 of The Most Popular Estes Model Rocket Engines, plus Solar Igniters and Parachute Recovery Wadding. Priced At An Excellent Savings. Includes Six Each 1/2A6-2, A8-3, B6-4, and C6-5 High Performance Model Rocket Engines, One Pkg. Parachute Recovery Wadding, and 30 Solar Igniters. Ship. Wt. 1 lb. 8 oz.



Estes Solar Igniter drying tunnel.

—photo by David Brownell



ASTRON IGNITERS:

Easy to use for reliable ignition every time. Recommended for launch systems using 6 or 12 volt car batteries or 12 volt lantern batteries. (Patent No. 3,363,559). Not recommended for Solar Launch Controller (#2300), Big Foot Launch Control System (#2208) or Power-Pulse Launch Controller (#2210). Ship. Wt. 1 oz. **No. 2225 6 for \$1.50**



No. 1672 \$16.99



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 'chute material, tape discs, and shroud lines. Ship. Wt. 2 oz.

Prod. No.	Description	Parachute Diameter	Net. Weight	Price Each
2262	PK-10	10 inches	.035 oz.	\$1.40
2264	PK-12	12 inches	.078 oz.	\$1.50
2267	PK-18	18 inches	.144 oz.	\$1.60
2271	PK-24	24 inches	.298 oz.	\$1.80

SHOCK CORD: Specify width when ordering. Ship. Wt. 1 oz. 1/8" wide: Net Wt. 0.039 oz.

No. 2276 \$.85

1/4" wide: Net Wt. 0.078 oz.

No. 2277 \$.95

Also 36" long for greater stretch on those larger birds. 1/8" wide: Net Wt. 0.078 oz.

No. 85744 \$1.00

TAPE DISCS: Fasten shroud lines to plastic parachutes or streamers with these 3/4" dia. pressure sensitive Tape Discs. In sheets of 6 discs. Ship Wt. 1 oz.

No. 2294

4 sheets of 6 \$1.45

STREAMER MATERIAL: Bright orange, flame-resistant crepe paper streamers. In 7-1/2 foot lengths, enough for two to eight streamers. Specify size when ordering. Ship. Wt. 1 oz. 1" wide: Net Wt. 0.092 oz.

No. 2341 \$2.50

2" wide: Net Wt. 0.184 oz.

No. 2343 \$2.75

SNAP SWIVELS: For quick changes and reduced tangling in your recovery systems, use these tiny 1" long snap swivels. Net Wt. 0.01 oz. Ship. Wt. for 12 swivels, 1 oz.

No. 2292 12 for \$1.90

SCREW EYES: Specify size when ordering. Ship. Wt. for 6 eyes, 1 oz.

LARGE EYE:

1" long: 0.04 oz.

No. 2280 6 for \$1.35

SMALL EYE:

3/4" long: 0.03 oz.

No. 2279 6 for \$1.25

EXTRA SMALL EYE:

5/8" long: 0.01 oz.

No. 2281 6 for \$1.10

66

TAPE STRIPS: For top strength, low bulk and low weight, fasten shroud lines with these 1/4" x 3/4" tape strips, in sheets of 12 strips. Ship. Wt. 1 oz.

No. 38412

6 sheets of 12 \$1.65

SHROUD LINES: Build reliable, durable, custom parachutes with this strong, hard surface shroud line cord. Comes in 70 yard spools. Ship. Wt. 5 oz.

No. 2340 \$1.45



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.

- All entries become the property of Estes Industries and cannot be returned.
- Employees of Estes Industries and members of their immediate families are not eligible.
- Any type of model rocketry design can be entered (rockets, boost-giders, launching or recovery devices, etc.)
- 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.
- Entries will be judged on practicality, originality, neatness, completeness, and clarity. All plans must be flight tested and proven.
- Your design entry should include a parts list and any instructions or diagrams you feel would be helpful.
- Please do not send the actual model as it cannot be returned.
- Photos of entries are greatly appreciated, but are not required.
- You may send as many entries as you like.
- New contest every month.
- All designs reaching Estes Industries during the calendar month will be entered in that month's competition. (Date of receipt, not postmark, will determine the month in which a design will be entered.)
- If two or more exceptional entries are received during any month, the judges may, at their discretion, make identical first-place awards or give additional honorable mentions.
- Designs should be sent to the Design of the Month, c/o MRN Editor, Estes Industries, Inc., Penrose, CO 81240. However, all plans sent to us which are not specifically addressed to another contest or department will be automatically placed in the Design of the Month Competition.
- Each month the designer of the winning entry will receive a certificate entitling them to \$75.00 in merchandise and an award certificate suitable for framing. Award winners will be notified by mail. **GOOD LUCK!!!**

SPECIAL PUBLICATIONS & TECHNICAL REPORTS

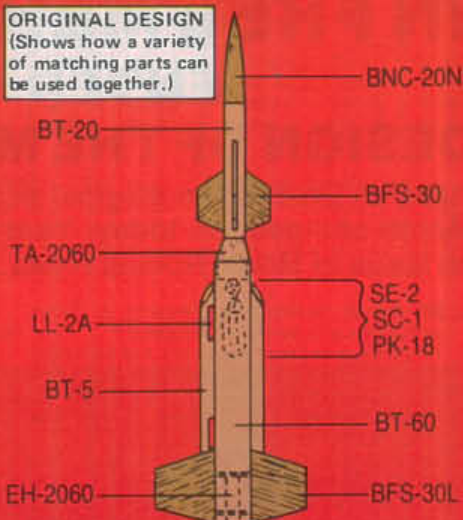
Rocket Stability - TR-1 No. 84721	\$.70	Model Rocket Launch Systems No. 2811	\$.70
Multi-Staging - TR-2 No. 84722	\$.70	Estes Guide For Aerospace Clubs No. 2817	\$.95
Altitude Tracking - TR-3 No. 84723	\$.70	Space Age Technology No. 2813	\$1.70
Rear Engine Boost Gliders - TR-4 No. 84724	\$.70	A "Teacher's" Manual (No. 2823) is available to educators for \$1.70.	
Cluster Techniques - TR-6 No. 84726	\$.70	Estes Model Rocket Contest Guide No. 2815	\$.95
Front Engine Boost Gliders - TR-7 No. 84727	\$.70	The Laws of Motion and Model Rocketry No. 2821	\$.55
Model Rocketry Study Guide - TR-8 No. 84728	\$1.20	Aerospace Education and Model Rocketry No. 2816	\$1.70
Altitude Prediction Charts - TR-10 No. 84730	\$1.70	(Single copies free to educators requesting it on school stationery.)	
Aerodynamic Drag of Model Rockets - TR-11 No. 84731	\$1.70	The Alpha Book of Model Rocketry No. 2820	\$.95
Model Rocket Engines - TN-1 No. 84700	\$.70	Industrial Arts Teachers Manual for Model Rocketry No. 2810	\$1.20
Model Rocket Engine Performance - TN-2 No. 84701	\$.70	Model Rocketry Technical Manual No. 2819	\$.55
Elementary Mathematics of Model Rocket Flight - TN-5 No. 84704	\$.70	Building A Wind Tunnel - TR-5 No. 84725	\$.70
COUNTDOWN: Mathematics and Model Rocketry No. 2855	\$1.50	Is That Parachute Too Big? - TN-3 No. 84702	\$.70
Recovery Techniques - TN-6 No. 84705	\$.70	RECROC - Recreational Program No. 2826	\$1.45
ALPHA Mini Book of Model Rocketry No. 901022	\$.35	Camp Leader's Model Rocketry Manual No. 2822	\$1.20

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 #5055 centering ring (AR-5055) will center a BT-50 within a BT-55. By using balsa or paper adapters almost any combination of parts can be joined together. For ordering, be sure to use both the product number and the series description number (name).

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



MODEL ROCKET PARTS

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.

Prod. No.	Description	Price	Dimensions (Inches)	Weight in Oz. Net.	Ship.	Major Use
3164	BFS-20	3 for \$1.50	1/16x3x9	.130	4	High Performance
3166	BFS-20L	3 for \$1.75	1/16x3x12	.173	6	High Performance
3168	BFS-30	3 for \$1.55	3/32x3x9	.150	4	Sport Models
3170	BFS-30L	3 for \$1.80	3/32x3x12	.200	6	Sport Models
3172	BFS-40	3 for \$1.60	1/8x3x9	.200	4	Cluster Rockets
3174	BFS-40L	3 for \$1.80	1/8x3x12	.265	6	Glider Wings

Body Tubes



Prod. No.	Description	Price Each	Length	Inside Diameter	Outside Diameter	Wall Thickness	Weight in Oz. Net.	Ship.
Spiral-Wound Paper Tube, for nose sections and strap-on payloads.								
3070	BT-5	\$1.45	18"	0.515"	0.541"	0.013"	.219	11
Spiral-Wound Paper Tube, for competition and sport models.								
3072	BT-20	\$1.65	18"	0.710"	0.736"	0.013"	.288	11
Spiral-Wound Paper Tube, for sport and high performance payload models.								
3073	BT-50	\$1.65	18"	0.950"	0.976"	0.013"	.378	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3074	BT-55	\$1.95	18"	1.283"	1.325"	0.021"	.672	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3075	BT-60	\$2.05	18"	1.595"	1.637"	0.021"	.960	11
Spiral-Wound Paper Tube, for monster models and tail rings.								
3076	BT-70	\$2.55	17.5"	2.175"	2.217"	0.021"	1.300	14
30433	BT-80KD	\$2.35	14.2"	2.560"	2.600"	0.021"	.637	11
Spiral-Wound Paper Tube, for giant-scale models.								
30438	BT-101	\$3.40	16.5"	3.896"	3.938"	0.021"	1.974	16

Engine Blocks

Prod. No.	Description	Price 3 for	Outside Dia.	Inside Dia.	Length	Fits	Weight in Oz. Net.	Ship.
3131	EB-20A	\$1.30	.708"	.65"	1/4"	BT-20	.009	1

Nose Cones

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

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



Shape	No.	Prod. No.	Description	Price Each	Dimensions			Average Weight	Ship. Wt.
					1	2	3		
	1	8002	BNC-5V	\$1.45	3/4"	0.541"	1/4"	0.013 oz.	1 oz.
	2	8000	BNC-5E	\$1.45	1-3/8"	0.541"	1/4"	0.020 oz.	1 oz.
	3	8001	BNC-5S	\$1.45	1-1/2"	0.541"	1/4"	0.016 oz.	1 oz.
	4	8003	BNC-5W	\$1.65	2-7/8"	0.541"	1/4"	0.039 oz.	2 oz.
	5	8004	BNC-20A	\$1.35	13/16"	0.736"	1/4"	0.03 oz.	1 oz.
	6	8005	BNC-20B	\$1.55	1-11/16"	0.736"	5/16"	0.05 oz.	1 oz.
	7	8007	BNC-20R	\$1.65	2-3/4"	0.736"	3/8"	0.07 oz.	2 oz.
	8	8022	PNC-20N	\$1.80	2-3/4"	0.736"	1/2"	0.12 oz.	2 oz.
	9	8008	BNC-50J	\$1.65	1-3/8"	0.976"	1/2"	0.08 oz.	4 oz.
	10	8009	BNC-50K	\$1.85	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	10	71028	PNC-50KA	\$1.55	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	11	8010	BNC-50X	\$1.95	3-1/4"	0.976"	1/2"	0.15 oz.	4 oz.
	12	8011	BNC-50Y	\$2.20	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
	12	71009	PNC-50Y	\$2.00	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
	13	8014	BNC-55F	\$2.45	3-7/8"	1.325"	1/2"	0.19 oz.	4 oz.
	14	8023	PNC-55AC	\$2.55	5-3/8"	1.325"	3/8"	0.32 oz.	6 oz.
	15	71075	PNC-55AO	\$2.60	5"	1.325"	3/4"	0.43 oz.	4 oz.
	16	8024	PNC-60MS	\$2.20	3-1/8"	1.637"	5/8"	0.39 oz.	4 oz.
	17	8021	PNC-60AH	\$3.20	6-5/8"	1.637"	7/8"	1.00 oz.	6 oz.
	18	8019	BNC-70AJ	\$3.55	4-1/4"	2.217"	1"	0.85 oz.	6 oz.
	19	71035	PNC-80K	\$3.35	8-1/8"	2.555"	1-5/8"	1.68 oz.	8 oz.

Engine Mounts

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

Engine Type	Prod. No.	Description	Price	Fits	Net Weight Oz.	Ship. Wt. Oz.
For Series I & II Engines—A, B, & C type 0.69" x 2.75"	3150	EH-2050	\$1.60	BT-50	0.1	5
	3151	EH-2055	\$1.60	BT-55	0.14	5
	3152	EH-2060	\$1.60	BT-60	0.17	5
For Series IV Engines—D type 0.945" x 2.75"	3155	EM-5063	\$1.95	Saturn V	0.4	5
For T Series Mini-Engines .5" x 1.75"	3153	EM-520	\$1.55	BT-20	0.09	5
Special Purpose Quick-Change Conversion Mount—From Series IV Engines to Series I & II Engines	3154	EM-2050	\$1.65	BT-50	0.19	5



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.

Prod. No.	Description	Price Each	Mates Tubes	Length	Taper Length	Weight in Oz. Net.	Ship.
8031	TA-520	\$1.55	BT-5 to BT-20	1.75"	0.75"	0.04	1
8032	TA-550	\$1.65	BT-5 to BT-50	2.2"	1.0"	0.06	4
8041	TA-2050	\$1.45	BT-20 to BT-50	3.0"	2.0"	0.15	4
8033	TA-2055	\$1.80	BT-20 to BT-55	2.5"	1.5"	0.22	4
8034	TA-2060	\$2.55	BT-20 to BT-60	3.0"	2.0"	0.20	4
8035	TA-5055	\$2.55	BT-50 to BT-55	2.0"	1.0"	0.60	4
8036	TA-5060	\$3.00	BT-50 to BT-60	3.0"	2.0"	0.23	4
8038	TA-5560	\$3.10	BT-55 to BT-60	2.2"	1.0"	0.25	4
8039	TA-6070	\$2.90	BT-60 to BT-70	2.7"	1.5"	0.65	4

Stage Coupler

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

Prod. No.	Description	Price Each	Outside Diameter	Inside Diameter	Length	Fits	Average Weight
3050	JT-5C	\$1.00	0.513"	0.455"	3/4"	BT-5	.020 oz.
3051	JT-20C	\$1.00	0.708"	0.650"	3/4"	BT-20	.027 oz.
3052	JT-50C	\$1.00	0.949"	0.920"	1"	BT-50	.051 oz.
3053	JT-55C	\$1.00	1.28"	1.25"	1.3"	BT-55	.088 oz.
3054	JT-60C	\$1.00	1.59"	1.55"	1-1/2"	BT-60	.124 oz.
3055	JT-70A	\$1.45	2.175"	2.115"	1-1/4"	BT-70	.140 oz.

Nose Blocks

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

Prod. No.	Description	Price Each	Outside Diameter	Length	Fits	Weight in Oz. Net.	Ship.
70152	NB-20	\$1.15	0.710"	3/4"	BT-20	.014	1
70158	NB-50	\$1.30	0.950"	1"	BT-50	.040	4
70162	NB-55	\$1.30	1.283"	1-1/4"	BT-55	.115	4
70164	NB-60	\$1.45	1.595"	1-1/2"	BT-60	.190	4

CONSTRUCTION SUPPLIES

Centering Rings

AR-5055 CENTERING RINGS: For centering a BT-50 body tube within a BT-55. Extra strong for "D" engine mounts. Weight 0.062 oz. each. Ship. Wt. 2 oz.

No. 3102 **4 for \$1.55**

AR-2050 CENTERING RINGS: For centering a BT-20 body tube within a BT-50. Greater strength makes for use with high thrust engines. Weight per pair 0.285 oz. Ship. Wt. 2 oz.

No. 3100 **10 for \$1.90**

Launch Lugs

LAUNCH LUGS: Super-strength laminated launch lugs feature mylar plastic core for durability, paper outer layer for easy gluing. Inside diameter 5/32" fits 1/8" launch rod. Ship. Wt. 1 oz.

1-1/4" long
No. 2321 **12 for \$1.60**

2-3/8" long
No. 2322 **10 for \$1.80**

MAXI-ROD LAUNCH LUG: 2" long, fits 3/16" diameter launch rod.

No. 2328 **4 for \$1.45**

Dowels

DOWELS: Extra-strong, lightweight seasoned maple dowels. Ship. Wt. 5 oz.

1/8" x 18"
No. 32056 **8 for \$1.30**

1/12" x 12"
No. 32058 **8 for \$1.30**

70

Engine Holders

ENGINE HOLDER: Flat spring steel design gives easy installation and low drag. Recommended for sport and demonstration models.

For Regular and "D" engines. Ship. Wt. 1 oz.

No. 3140 **3 for \$1.90**

For Mini-Engines, Ship. Wt. 1 oz.

No. 3142 **3 for \$1.60**

Paper Adapters

RA-2050 RINGS: 20 rings for centering and mounting BT-20 in BT-50. Ship. Wt. 2 oz.

No. 3110 **20 for \$1.45**

RA-2055 RINGS: 10 rings for centering and mounting BT-20 in BT-55. Ship. Wt. 2 oz.

No. 3111 **10 for \$1.50**

RA-2060 RINGS: 10 rings for centering and mounting BT-20 in BT-60. Ship. Wt. 2 oz.

No. 3113 **10 for \$1.55**

MULTI-PURPOSE SET: Includes a total of 20 rings for positioning BT-5 in BT-20; BT-5, BT-20, BT-30 in BT-50; and BT-5, BT-20 and BT-50 in BT-60. Also three universal tapered shrouds and instructions. Ship. Wt. 2 oz.

No. 8030 **\$1.65**



A DAMON COMPANY



FULL ONE YEAR WARRANTY



Your Estes product is warranted against defects in materials or workmanship for one year from the date of the original purchase. Any Estes product which, because of a manufacturing mistake, malfunctions or proves to be defective within the one-year warranty period will be repaired or replaced, at Estes' option and at no charge to you, provided it is returned to Estes with proof of purchase. This warranty does not cover incidental or consequential damage including injury or damage to persons or property caused by the use, abuse, misuse, failure to comply with operating instructions

or improper storage of the warranted product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For repair or replacement under this warranty, please return the defective part of your Estes product with proof of purchase to **Estes Industries, Customer Service Department, Penrose, Colorado 81240.**

PRODUCT INDEX

Adapters	70	Design Contest	67	Micro-Clips	60	Sizzler Starter Kit	5
Add-On Rod	60	Designer's Special	62	Mini-Mean Machine Kit	27	Skill Level Chart	2
Advanced Target Drone	43	Dowels	31	Mini-Shuttle Kit	17	Skybolt Kit	55
Aero-Fin Kit	15	Eclipse Kit	27	Mosquito Kit	27	Sky Hook Kit	33
Airborne Surveillance Missile Kit	31	Emergency Repair Kit	68	MX Missile Kit	53	Snap Swivels	25
A.L.C.M. Cruise Missile Kit	53	Engine Blocks	68	NASA Pegasus Kit	41	Soaring Eagle Kit	66
Alpha Kit	17	Engine Holders	70	Nike X Kit	53	Solar Igniters	45
Alpha III Kit	19	Engines, Rocket	64 & 65	Noise Blocks	70	Solar Launch Controller	59
Alpha III Starter Kit	7	Estes Aerospace Club	10	Noise Cones	69	Space Shuttle Kit	51
AlliTrak	61	Estes Starliner Kit	27	Orbital Transort Kit	37	Space Shuttle Columbia Kit	51
Altitude Computer	35	Excort Kit	41	Orion Attack Craft Kit	37	Space Shuttle Columbia Outfit	9
Apache-2 Kit	35	Falcon Commander Kit	39	Parachute Kits	66	Space Station Aquarius Kit	39
Aries S.S.T. Kit	41	Falcon Commander Starter Kit	9	Phantom Kit	25	Spartan Kit	31
A.S.P. Kit	31	Fin Alignment Guide	62	Phoenix Kit	49	Spin Fin Kit	13
Asteroid Explorer Kit	39	Fin Stock	68	Polaris Kit	37	Stage Couplers	70
AstroBee Kit	13	Firecat Kit	17	Polaroid P-100 Battery	58	Star Dart Kit	29
AstroCarn 110 Kit	11	Futuristic Parts Assortment	62	Ports-Pad	59	Star Seeker Kit	29
Astron Igniters	65	Galactic Taxi Kit	60	Power-Pulse Launch Controller	58	Starship Excalibur Kit	43
Astron Launcher	58	Harpoon Kit	13	Publications	67	Starship Nova Kit	41
Bat Kit, The	17	Hercules Kit	33	Quasar Kit	65	Star Speeder Kit	39
Battery Clips	60	Honest John Kit	49	Recovery Wadding	19	Stealth Kit	37
Beta Kit	31	Javelin Kit	31	Red Max Kit	17	Stealth Outfit	77
Big Bertha Kit	21	Kadet Kit	21	Safety Code	4	Stinger Kit	19
Big Foot Launcher	60	Launch Lugs	70	Sandpiper Kit	53	Sling Ray Kit	29
Big Yank Kit	27	Launch Rods	60	Saturn V Kit	49	Stream Kit	25
Blast Deflector Plate	60	Launch Rod Safety Cap	60	Scissor-Wing Transport Kit	43	Streamer Material	66
Blast-Off Flight Pak	65	Centering Rings	70	Scorpion Kit	33	Super Flite Kit	31
Blue Bird Zero Kit	23	Challenger II Kit	7	Scorpius Kit	39	Tape Discs & Strips	66
Body Tubes	68	Challenger II Kit	55	Scout Kit	23	Technical Reports	67
		Cobra 1500 Kit	23	S.C.F.A.M. Kit	29	Titan II Kit	47
		Comanche-3 Kit	35	Scrambler: 2 Kit	57	U.S.S.F. Fireflash Kit	43
		Comet Kit	19	Screw Eyes	66	U.S.S. Pleiades Kit	35
		Cougar Kit	13	Sea Dart Kit	53	V-2 Kit	46
		Courier Kit	25	Shock Cord	66	Vindicator Kit	43
		Cyclone Kit	21	Shroud Line	66	W-X-Y-Z	
				Sizzler Kit	13	Wasp Kit	57
						Wizard Kit	15
						X-15 Starter Kit	7
						X-16 Kit	41
						X-Ray Kit	25
						Yankee Kit	15
						Zinger Kit	21

Background photos courtesy Lick Observatory and NASA.

Special effects photography by Charles Webb.

OTHER DAMON COMPANIES:

SINCE 1922



Hi-Flier Manufacturing Co. Inc., Box 280, Penrose, CO 81240—(303) 372-3080. Plastic and Paper Kites, Character Licensed Kites, Box Kites, Wing Flappers, Kite Cord and Winders, Gliders, Plastic Posters, Children's Playmats, Halloween and Christmas Hang-Ups.

Arrow Industries, Inc., 900 W. 45th Street, Chicago, IL 60609—(312) 927-2000. Toys, Novelties, Gumball Banks, Clocks, Dollhouses, Christmas Ornaments and Hobby Crafts.

STEALTH

ELITE MODEL ROCKETRY OUTFIT

NEW!

SKILL LEVEL 3 This "Elite" outfit for the experienced model builder features the futuristic Stealth fighter (see Page 37) capable of flights to 900 feet. Also included is the high-technology Power-Pulse™ Launch Controller, Porta-Pad Launch Pad with blast deflector and 1/8" x 36" launch rod, plus three NAR safety-certified model rocket engines, recovery wadding and Solar Igniters. "The Modelers' Choice" to update your model rocketry fleet.

ENGINES:

A8-3, B4-4 (1st Flt.),

B6-4, C5-3, C6-3,

C6-5.

Ship. Wt. 2 lbs.

No. 1436 \$24.95



(Requires 6 volt Polaroid®
Pola-Pulse™ P-100 battery,
white glue, plastic
cement, contact
cement, paint and
finishing supplies -
Not Included.)

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PN 2862