



A DAMON COMPANY



25th
ANNIVERSARY
1983
EDITION

FLYING MODEL ROCKET CATALOG

No. 831 P \$1.00

HERE'S HOW TO USE YOUR ESTES CATALOG

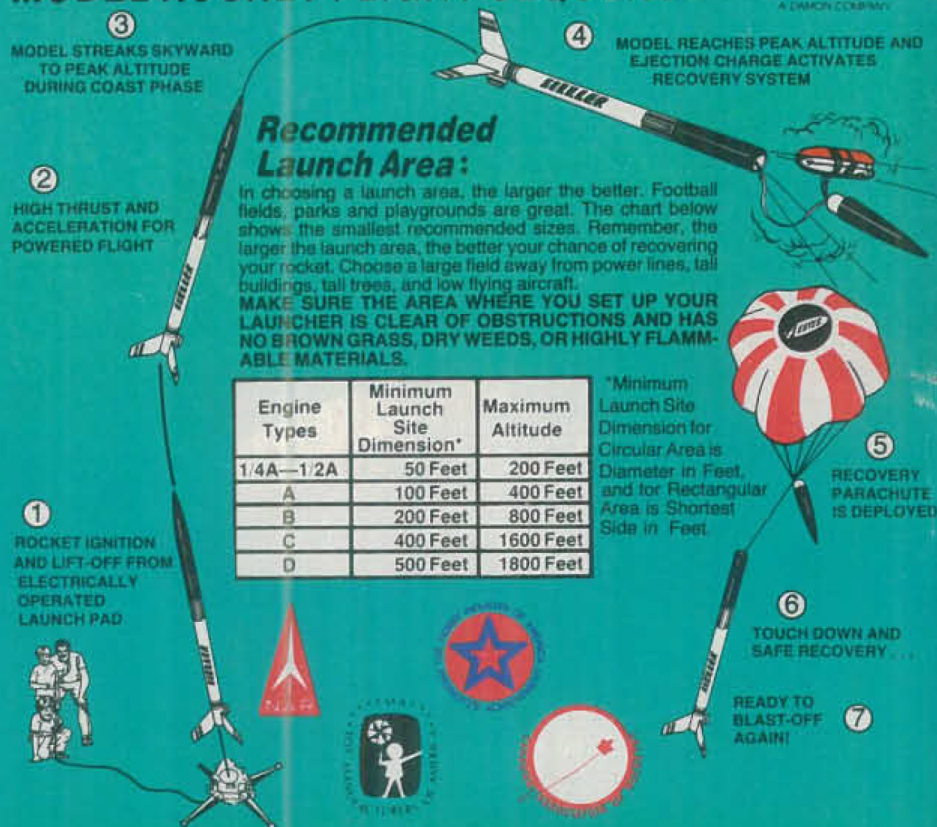
Information on each rocket kit is provided on each page of the catalog where rockets are displayed. This information includes:

- 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:

- 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.

MODEL ROCKET FLIGHT SEQUENCE

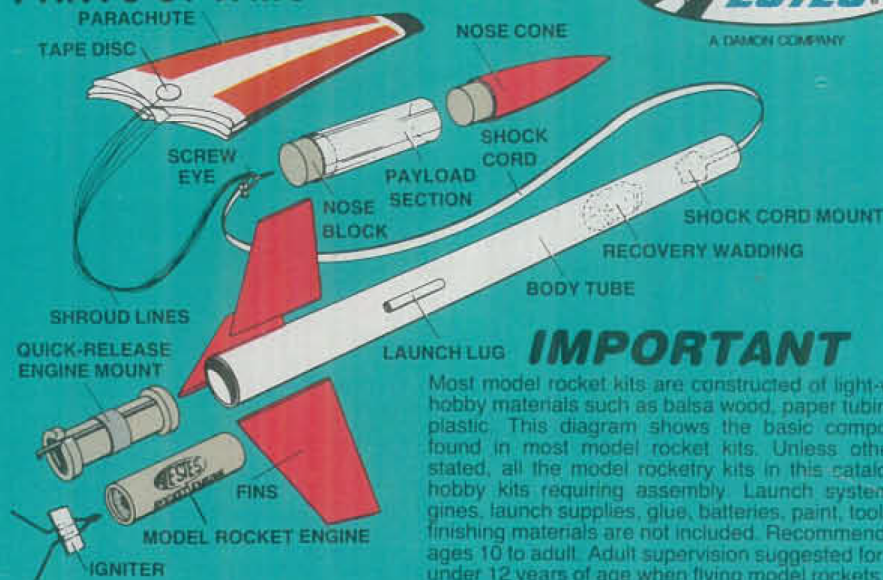


SKILL LEVELS

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.

PARTS OF A MODEL ROCKET



IMPORTANT

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

MODEL ROCKETRY IS AN INTERNATIONALLY RECOGNIZED HOBBY WITH A SAFETY RECORD OF MORE THAN 200 MILLION SUCCESSFUL MODEL ROCKET LAUNCHINGS

- Estes Model Rocket Engines Are Safety Tested And Certified By:
- U.S. National Association of Rocketry
 - Canadian Association of Rocketry
- Estes Model Rocket Engines Have Been Tested And Approved By:
- United States 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
- Model Rocketry Is Endorsed As A Safe And Rewarding Hobby By:
- United Parcel Service
 - American Insurance Association
 - International Air Transport Association
 - International Maritime Organization
 - Air Line Pilots Association
 - 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

SPORT FLIERS



ALPHA III



THE BAT

NEW



MAVERICK



DER RED MAX

CHALLENGER - 1
STARTER KIT



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 Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1256

\$4.75



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 Flt.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1362

\$4.50



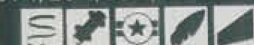
MAVERICK

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 Flt.), B4-4, B6-4, B8-5, C6-5

No. 1904

\$3.95



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 Flt.), B4-4, B6-2, B6-4, B8-5, C6-5, C6-7

No. 0651

\$7.50



Engines, launch system, glue and finishing supplies not included in rocket kits.

Avg. Ship. Wt. 10 oz.

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 N.A.R. Safety Certified model rocket engines, 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

\$11.95



SPORT FLIERS



ASTRO BEE



SIZZLER



SCAMP



ALPHA III STARTER KIT

NEW



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
\$4.25



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
\$4.50



SCAMP

SKILL LEVEL 1 Great sports flier with sleek, high performance design. Flights over 1,000 feet with "C" type engine. Length: 13.75" Dia. 0.976" Wt. 0.8 oz.

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

No. 1286
\$6.00



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
\$3.00



Engines, launch system, glue and finishing supplies not included in rocket kits.

Average shipping weight 10 oz.

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 tripod launcher with blast deflector plate and 1/8" x 36" two-piece launch rod, Solar Launch Controller and Flight Pak including three N.A.R. safety certified model rocket engines, parachute recovery wadding and Solar Igniters. (Requires 4 alkaline AA batteries for operation - not included). Ship. Wt. 3 lbs.

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

No. 1406
\$18.95



(Batteries, glue and finishing supplies - not included)

SPORT FLIERS



STILETTO

NEW



MINI SHUTTLE



DELUXE STARTER KIT



SCOUT



A DAMON COMPANY

STILETTO

SKILL LEVEL 2 Exciting scale-like surface-to-air interceptor missile with realistic military decals. Single engine super-sport performance with two-stage appearance. Length: 22.4" Dia. 0.976" Wt. 1.27 oz.

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

No. 1323

\$6.00



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

\$4.00



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 Fit.), A8-3, B4-4, B6-4, B8-5, C6-5.

No. 1201

\$2.50



Engines, launch system, glue and finishing supplies not included in rocket kits.

Average shipping weight 8 oz.

DELUXE

FLYING MODEL ROCKETRY 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 model rocket engines, Solar Igniters and recovery wadding.

(Requires 4 alkaline AA batteries for operation - not included). Ship. Wt. 3 lbs.

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

No. 1407

\$24.95



SPORT FLIERS



A DAMON COMPANY

QUASAR

SKILL LEVEL 1 Dramatic, easy-to-build model for beginners. Bright white plastic nose cone and fin assembly. Metallized pre-printed mylar wrap-on decal for the body tube. No painting required! 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

\$6.25

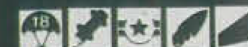


COMET

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.

No. 1368

\$5.25



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

\$3.95



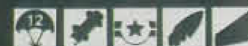
POLARIS

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

\$6.00



ALPHA

SKILL LEVEL 1 The ideal kit for your first or second rocket. Swept-fin design makes it a really great performer. Features balsa nose cone and 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

\$4.00



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

SPORT FLIERS



ICARUS

SKILL LEVEL 1 High altitude payload vehicle with see-through cargo section. Achieve flights of over 1,000 feet with lightweight payload. Simulated sounding rocket appearance with dual roll pattern decor. Length: 20.8" Dia. 0.976" Wt. 1.3 oz.

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

No. 1277

\$6.50



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 Fit.), B4-4, B6-4, B8-5, C6-5.

No. 1907

\$4.50



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 Fit.), B6-4, B8-5, C6-5.

No. 1223

\$7.50



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 streamer. Length: 15" Dia. 0.98" Wt. 1.13 oz.

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

No. 1328

\$4.50



SPRINT

SKILL LEVEL 3 Real competition design. Highest performance in its class. Up to 1,600 ft with C6-7 engine. Low drag ogive nose cone and reducer tail section. Contest winning elliptical fins, and streamer recovery. Length: 13.8" Dia. 0.976" Wt. 1.0 oz.

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

No. 1249

\$5.50



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 Fit.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1378

\$4.50



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 Fit.), A8-5, B4-4, B6-4, B8-5, C6-5, C6-7.

No. 1390

\$3.50



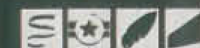
WIZARD

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 Fit.), 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 Fit.), B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.

No. 1381

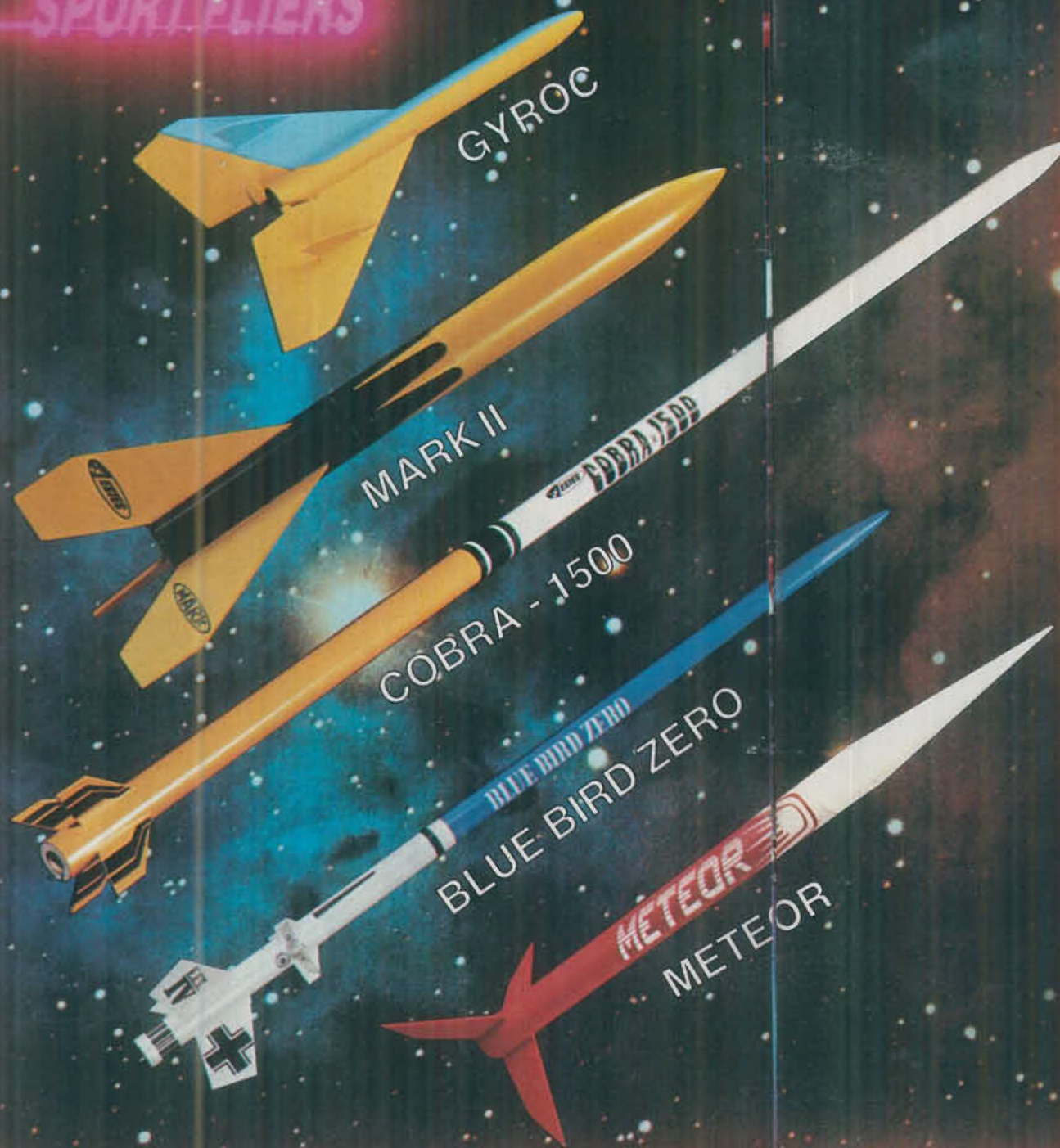
\$2.25



Engines, launch system, glue and finishing supplies not included.

Avg. Ship. Wt. 8 oz.

SPORT FLIERS



GYROC

SKILL LEVEL 3 An amazing and unique "helicopter" recovery system makes the Gyroc a must for your fleet. Lifts off with main fins in straight away position. Engine's ejection charge allows rear fin tips to snap sideways causing rotor effect and helicopter recovery. Unusual appearance and strange performance are sure to catch the interest of on-lookers. Length: 9.8" Dia. 0.736" Wt. 0.6 oz.

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

No. 1224

\$4.25



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

\$4.00



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

\$8.25



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

\$7.75



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

\$4.75



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



NEW

X-RAY

COURIER

COURIER

PATRIOT

SKY HOOK

STREAK

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 Fil.), B4-4, B6-4, B8-5, C6-5.
No. 1218
\$6.50



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 Fil.), 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 Fil.), B4-4, B6-2, B6-4, B8-5, C6-5, C6-7.
No. 0652
\$8.95



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 Fil.), A8-3, A8-5, B4-4, B4-6, B6-4, B6-6, B8-5, C6-5, C6-7.
No. 1208
\$4.00



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 Fil.), 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



ESTES STARLINER



Mini Mean Machine
MINI MEAN MACHINE



ECLIPSE

X-15
STARTER
KIT



MOSQUITO



A DAMON 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

\$4.25



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

\$5.00



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

\$4.25



MOSQUITO

SKILL LEVEL 1 The smallest of all Mini-Brutes combines fantastic performance with feather-weight recovery. Balsa and paper construction with simple spray paint decor makes for quick-and-easy assembly. 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 in rocket kits. Avg. Ship. Wt. 6 oz.



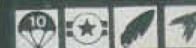
Ready-To-Launch

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.

No. 0715

\$24.95



MINI-DRUTES

MINI
MEAN
MACHINE
STARTER
KIT



Mini Mean Machine



STAR DART

NEW
MINI TRI PAK



STAR SEEKER



STING RAY



S.C.R.A.M.

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.



S.C.R.A.M.

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
\$5.00

(Engines, launch system, glue and finishing supplies not included in rocket kits.) Avg. Ship. Wt. 9 oz.



MINI MEAN MACHINE

Flying Model Rocket Starter Kit

SKILL LEVEL 1 Includes Mini Mean Machine rocket kit capable of flights over 700 feet. Power-Pulse™ Launch Controller, Porta-Pad launcher and Flight Pak including three high-performance model rocket engines, parachute recovery wadding and Solar Igniters. The ideal way to start with our highest-technology launch support equipment. Ship Wt. 1 lb.

ENGINES: 1/2A3-2T, A3-2T (1st Flt.), A10-3T
No. 1409
\$22.95

(Requires white glue, paint, finishing supplies and 6-volt Polaroid™ Pola-Pulse™ P-100 battery - not included. See page 54.)



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
 \$4.50



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.

JAVELIN & SUPER FLEA COMBO KIT

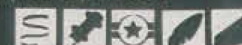
No. 0815
 \$4.75



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
 \$4.25



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
 \$4.00



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

MULTI-STAGERS



DELTA STAR



Scorpion
SCORPION



SKY-HI
SKY-HI



A DAMON COMPANY

DELTA STAR

SKILL LEVEL 2 Really sleek, super high performance two-stage payloader capable of lofting a 1 oz. payload over 1,000 feet with "C" type engines. Can be flown either single or multi-stage. Booster stage employs tumble recovery. Length: 24" Dia. 0.98" Wt. 1.13 oz.

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

No. 1322
\$7.25



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

No. 1333
\$7.00



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

No. 1365
\$5.75



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

MULTI-STAGERS



NEW

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
\$6.00



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
\$5.00



VIGILANTE

SKILL LEVEL 2 Ultra-high performance two-stage model for flights over 1,100 feet. Sleekly designed upper stage returns via 18" parachute while the booster employs tumble recovery. Length: 26.5" Dia. 1.325" Wt. 2.25 oz.

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

No. 1278
\$7.50



COMMANCHE - 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
\$6.00



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

FUTURISTIC



ORBITAL TRANSPORT



GALACTIC TAXI



ORION

FALCON COMMANDER STARTER KIT



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**
\$9.50



GALACTIC TAXI

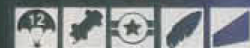
SKILL LEVEL 3 Lightweight 3 passenger planet hopping taxi. Flights to 1,000 feet with 12" parachute recovery. Ideal display model and impressive in the air. Length: 13" Dia. 0.976" Wt. 1.27 oz. **ENGINES:** A8-3 (1st Flt.), B4-4, B6-4, B8-5, C6-5. **No. 1914**
\$6.00



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**
\$6.25



Engines, launch system, glue and finishing supplies not included in rocket kits. Avg. Ship. Wt. 12 oz.

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, recovery wadding and Solar Igniters. 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**
\$12.95



ASTRO-CAM 110

ASTRO-CAM 110

ASTRO-CAM 110
STARTER KIT



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 thrill and excitement of taking incredible color photographs from hundreds of feet in the sky! Astro-Cam 110's 1/500th second shutter is activated at ejection giving you a spectacular aerial photograph just prior to parachute deployment. Special features include easy quick-assembly, high quality acrylic lens, molded plastic housing, glass first surface mirror, and high performance aerodynamic design for minimum drag and maximum altitude. Simple to operate and shoots one crisp, clear, full-color 110 photo per flight.

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

Camera not sold separately. Use Delta II or Challenger II (see page 49) 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.)

No. 1327

\$22.00



Engines, launch system, film, glue and finishing supplies not included.

ASTRO-CAM 110

AERIAL CAMERA MODEL ROCKETRY OUTFIT WITH DELTA II LAUNCH VEHICLE

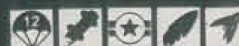
Includes: Astro-Cam 110 and Delta II launch vehicle (See above). Also included are:

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

ENGINES: B8-5, C6-5, C6-7 (1st Flt.)

No. 1410

\$39.95



Film, batteries, glue and finishing supplies are not included.

SPECIAL PUBLICATIONS TECHNICAL REPORTS

Rocket Stability - TR-1 No. 84721	..... \$ .70
Multi-Staging - TR-2 No. 84722	..... \$ .70
Altitude Tracking - TR-3 No. 84723	..... \$ .70
Rear Engine Boost Gliders - TR-4 No. 84724	..... \$ .70
Cluster Techniques - TR-6 No. 84726	..... \$ .70
Front Engine Boost Gliders - TR-7 No. 84727	..... \$ .70
Model Rocketry Study Guide - TR-8 No. 84728	..... \$ 1.20
Altitude Prediction Charts - TR-10 No. 84730	..... \$ 1.70
Aerodynamic Drag of Model Rockets - TR-11 No. 84731	..... \$ 1.70
Model Rocket Engines - TN-1 No. 84700	..... \$ .70
Model Rocket Engine Performance - TN-2 No. 84701	..... \$ .70
Elementary Mathematics of Model Rocket Flight - TN-5 No. 84704	..... \$ .70
COUNTDOWN: Mathematics and Model Rocketry No. 2855	..... \$ 1.60
Recovery Techniques - TN-6 No. 84705	..... \$ .70
ALPHA Mini Book of Model Rocketry No. 901022	..... \$ .35

Model Rocket Launch Systems No. 2811	..... \$ .70
Estes Guide For Aerospace Clubs No. 2817	..... \$ .95
Space Age Technology No. 2813	..... \$ 1.70
A "Teachers" Manual (No. 2823) is available to educators for \$1.70.	
Estes Model Rocket Contest Guide No. 2815	..... \$ .95
The Laws of Motion and Model Rocketry No. 2821	..... \$ .55
Aerospace Education and Model Rocketry No. 2816	..... \$ 1.70
(Single copies free to educators requesting it on school stationery.)	
The Alpha Book of Model Rocketry No. 2820	..... \$ .95
Industrial Arts Teachers Manual for Model Rocketry No. 2810	..... \$ 1.20
Model Rocketry Technical Manual No. 2819	..... \$ .55
Building A Wind Tunnel - TR-5 No. 84725	..... \$ .70
Is That Parachute Too Big? - TN-3 No. 84702	..... \$ .70
RECROC - Recreational Program No. 2826	..... \$ 1.45
Camp Leader's Model Rocketry Manual No. 2822	..... \$ 1.20

estes aerospace CLUB

Join more than 24,000 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 Fil.), A3-4T, A10-3T.
- 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.

No. 1447 ONLY \$6.00



BECOME A MEMBER TODAY!



B

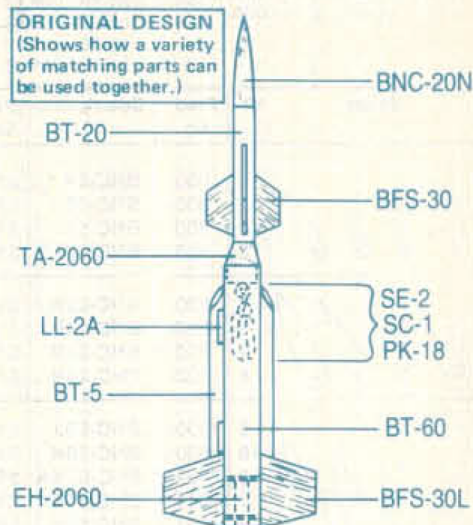


Build Your Own Design With Estes Quality Model Rocket Parts

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 (in Inches)	Weight in Oz. Net.	Major Use
3164	BFS-20	3 for \$1.35	1/16x3x9	130 4	High Performance
3166	BFS-20L	3 for \$1.55	1/16x3x12	173 6	High Performance
3168	BFS-30	3 for \$1.40	3/32x3x9	150 4	Sport Models
3170	BFS-30L	3 for \$1.60	3/32x3x12	200 6	Sport Models
3172	BFS-40	3 for \$1.45	1/8x3x9	200 4	Cluster Rockets
3174	BFS-40L	3 for \$1.60	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	\$1.30	18"	0.515"	0.541"	0.013"	.219	11
Spiral-Wound Paper Tube, for competition and sport models.								
3072	BT-20	\$1.50	18"	0.710"	0.736"	0.013"	.288	11
Spiral-Wound Paper Tube, for sport and high performance payload models.								
3073	BT-50	\$1.50	18"	0.950"	0.976"	0.013"	.378	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3074	BT-55	\$1.75	18"	1.283"	1.325"	0.021"	.672	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3075	BT-60	\$1.85	18"	1.595"	1.637"	0.021"	.960	11
Spiral-Wound Paper Tube, for monster models and tail rings.								
3076	BT-70	\$2.30	17.5"	2.175"	2.217"	0.021"	1.300	14
Spiral-Wound Paper Tube, for giant-scale models.								
30438	BT-101	\$3.05	16.5"	3.896"	3.938"	0.021"	1.974	16

Engine Blocks

Prod. No.	Description	Price 3for	Outside Dia.	Inside Dia.	Length	Fits	Weight in Oz. Net.	Ship.
3131	EB-20A	\$1.15	.708"	.65"	1/4"	BT-20	.009	1

C

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	\$1.30	3/4"	0.541"	1/4"	0.013 oz.	1 oz.
	2	8000	BNC-5E	\$1.30	1-3/8"	0.541"	1/4"	0.020 oz.	1 oz.
	3	8001	BNC-5S	\$1.30	1-1/2"	0.541"	1/4"	0.016 oz.	1 oz.
	4	8003	BNC-5W	\$1.50	2-7/8"	0.541"	1/4"	0.039 oz.	2 oz.
	5	8004	BNC-20A	\$1.20	13/16"	0.736"	1/4"	0.03 oz.	1 oz.
	6	8005	BNC-20B	\$1.40	1-11/16"	0.736"	5/16"	0.05 oz.	1 oz.
	7	8007	BNC-20R	\$1.50	2-3/4"	0.736"	3/8"	0.07 oz.	2 oz.
	8	8022	PNC-20N	\$1.60	2-3/4"	0.736"	1/2"	0.12 oz.	2 oz.
	9	8008	BNC-50J	\$1.50	1-3/8"	0.976"	1/2"	0.08 oz.	4 oz.
	10	8009	BNC-50K	\$1.65	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	10	71028	PNC-50KA	\$1.40	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	11	8010	BNC-50X	\$1.75	3-1/4"	0.976"	1/2"	0.15 oz.	4 oz.
	12	8011	BNC-50Y	\$2.00	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
	12	71009	PNC-50Y	\$1.80	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
	13	8012	BNC-55AA	\$1.90	3-1/8"	1.325"	1/2"	0.15 oz.	4 oz.
	14	8014	BNC-55F	\$2.20	3-7/8"	1.325"	1/2"	0.19 oz.	4 oz.
	15	8023	PNC-55AC	\$2.30	5-3/8"	1.325"	3/8"	0.32 oz.	6 oz.
	16	71075	PNC-55AO	\$2.35	5"	1.325"	3/4"	0.43 oz.	4 oz.
	17	8024	PNC-60MS	\$2.00	3-1/8"	1.637"	5/8"	0.39 oz.	4 oz.
	18	8021	PNC-60AH	\$3.20	6-5/8"	1.637"	7/8"	1.00 oz.	6 oz.
	19	8019	BNC-70AJ	\$3.55	4-1/4"	2.217"	1"	0.85 oz.	6 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	\$1.45	BT-50	0.1	5
	3151	EH-2055	\$1.45	BT-55	0.14	5
	3152	EH-2060	\$1.45	BT-60	0.17	5
For Series IV Engines—D type 0.945" x 2.75"	3155	EM-5063	\$1.75	Saturn V	0.4	5
For T Series Mini-Engines .5" x 1.75"	3153	EM-520	\$1.40	BT-20	0.09	5
Special Purpose Quick-Change Conversion Mount—From Series IV Engines to Series I & II Engines	3154	EM-2050	\$1.50	BT-50	0.19	5

D

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	\$1.40	BT-5 to BT-20	1.75"	0.75"	0.04	1
8032	TA-550	\$1.50	BT-5 to BT-50	2.2"	1.0"	0.06	4
8041	TA-2050	\$1.30	BT-20 to BT-50	3.0"	2.0"	0.15	4
8033	TA-2055	\$1.60	BT-20 to BT-55	2.5"	1.5"	0.22	4
8034	TA-2060	\$2.30	BT-20 to BT-60	3.0"	2.0"	0.20	4
8035	TA-5055	\$2.30	BT-50 to BT-55	2.0"	1.0"	0.60	4
8036	TA-5060	\$2.70	BT-50 to BT-60	3.0"	2.0"	0.23	4
8038	TA-5560	\$2.80	BT-55 to BT-60	2.2"	1.0"	0.25	4
8039	TA-6070	\$2.60	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	\$.90	0.513"	0.455"	3/4"	BT-5	.020 oz.
3051	JT-20C	\$.90	0.708"	0.650"	3/4"	BT-20	.027 oz.
3052	JT-50C	\$.90	0.949"	0.920"	1"	BT-50	.051 oz.
3053	JT-55C	\$.90	1.28"	1.25"	1.3"	BT-55	.088 oz.
3054	JT-60C	\$.90	1.59"	1.55"	1-1/2"	BT-60	.124 oz.
3055	JT-70A	\$1.30	2.175"	2.115"	1-1/4"	BT-70	.140 oz.

Nose Blocks

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

Prod. No.	Description	Price Each	Outside Diameter	Length	Fits	Weight in Oz.	
					Net	Ship.	
70152	NB-20	\$1.05	0.710"	3/4"	BT-20	.014	1
70158	NB-50	\$1.15	0.950"	1"	BT-50	.040	4
70162	NB-55	\$1.15	1.283"	1-1/4"	BT-55	.115	4
70164	NB-60	\$1.30	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 \$1.40**

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 \$1.70**

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 \$1.45**
 2-3/8" long
No. 2322 **10 for \$1.60**
MAXI-ROD LAUNCH LUG: 2" long, fits 3/16" diameter launch rod.
No. 2328 **4 for \$1.30**

Dowels

DOWELS: Extra-strong, lightweight seasoned maple dowels. Ship. Wt. 5 oz.
 1/8" x 18"
No. 32056 **8 for \$1.15**
 1/12" x 12"
No. 32058 **8 for \$1.15**

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 \$1.70**
 For Mini-Engines, Ship. Wt. 1 oz.
No. 3142 **3 for \$1.45**

Paper Adapters

RA-2050 RINGS: 20 rings for centering and mounting BT-20 in BT-50. Ship. Wt. 2 oz.
No. 3110 **20 for \$1.30**

RA-2055 RINGS: 10 rings for centering and mounting BT-20 in BT-55. Ship. Wt. 2 oz.
No. 3111 **10 for \$1.35**

RA-2060 RINGS: 10 rings for centering and mounting BT-20 in BT-60. Ship. Wt. 2 oz.
No. 3113 **10 for \$1.40**

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 **\$1.50**



A DAMON COMPANY

E

Hobby and Sport Kites

Skylinks™ Kite Systems

SINCE 1922
hi-flier
A DAMON COMPANY

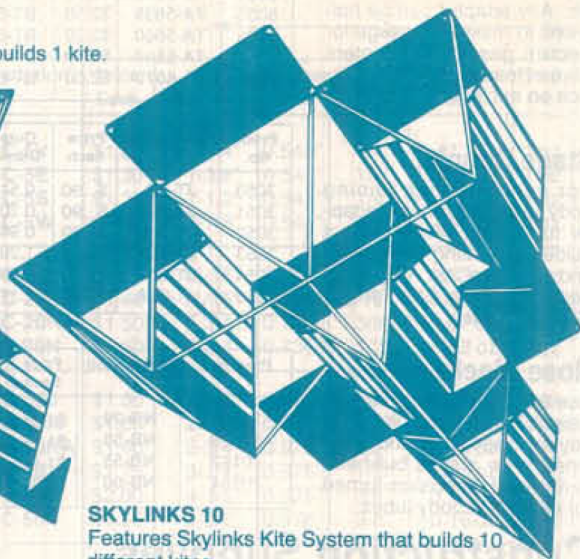
Construct several versions of the same kite.

SKYLINKS I

Features Skylinks Kite System that builds 1 kite.

Ship. Wt. 12 oz.

No. 5013....\$5.99



SKYLINKS 10

Features Skylinks Kite System that builds 10 different kites.

Ship. Wt. 1 lb., 4 oz.

No. 5015....\$29.99

SKYLINKS 4

Features Skylinks Kite System that builds 4 different kites.

Ship. Wt. 1 lb.

No. 5014....\$14.99

Hi-Flier offers you the choice of building several versions of hobby and sport kites from the same kit. Skylinks Kite Systems give you all the necessary parts to build train kites, tandem kites, even dual line controllable stunt kites that loop and dive.

Use the order form in this catalog or see your local Hi-Flier retailer for these exciting kite products.

JALBERT® PARAFOIL

Super High Performance
Aerodynamic Nylon Kite.

This Parafoil kite was designed by noted kite inventor Domina Jalbert for the recovery of space vehicles. This kite is ready to fly when you open the carton. No assembly required. The parafoil will fly in almost any breeze effortlessly. Colorful, water-proof nylon construction. Tails included.



PARAFOIL KITE

Ship. Wt. 1 lb.

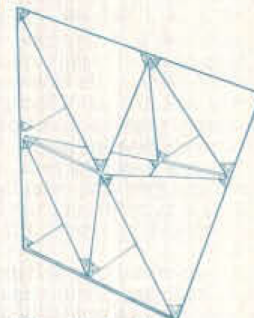
No. 5020....\$14.99

F

HOBBY AND SPORT KITES

SINCE 1922
hi-flier
A DAMON COMPANY

Alexander Graham Bell TETRAKITES™



TETRAKITE

Features TetraKite with 4 sails.

Ship. Wt. 14 oz.

No. 5016....\$9.99

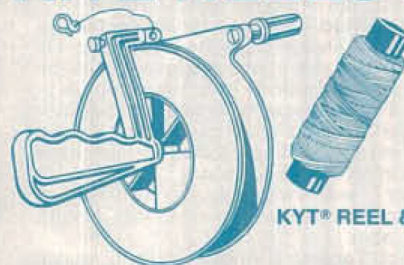
SUPERTETRAKITE

Features SuperTetraKite with 16 sails, 4 kites in 1 package.

No. 5017....\$34.99

The basic design of the TetraKite was developed by Alexander Graham Bell, inventor of the telephone. Hi-Flier's precision engineered TetraKites are constructed of waterproof polyester sail material. Design versatility allows you to create your own giant kite by combining four TetraKites to form a 16-sail SuperTetraKite.

KITE REELS AND CORD



Kyt® Reel & Cord

Revolutionary Kyt® Reel made of rugged polystyrene, features free spinning cord feed with blocking device and easy-winding fishing reel retrieve. Easy Snap-Lok™ assembly. Three hundred feet of standard weight cord included.

KYT® REEL & CORD Ship. Wt. 8 oz.

No. 5030....\$4.99

CORD WINDER & CORD

New, heavy-duty plastic cord winder with pistol grip handle for easy control. Grid reinforced for added strength. Notched cord stop. Three hundred feet of standard weight cord included.



CORD WINDER & CORD Ship. Wt. 8 oz.

No. 3100....\$1.00

HIGH TEST KITE CORD

30 lb. High Test Kite Cord

Ship. Wt. 6 oz.

No. 3500....\$1.99



Thirty pound High Test 500 foot Hi-Lon® kite cord is light in weight yet extremely strong. Holds the biggest kites in heavy winds. Recommended for all Hi-Flier Hobby and Sport kites.

G

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-gliders, 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, too.
- 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!!!**

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 _____

H

"WIN YOUR WEIGHT IN ROCKETS" SWEEPSTAKES

25th
ANNIVERSARY
1983



A DAMON COMPANY

1st PRIZE:

Win Your Weight In Estes Model Rocketry Products.

2nd PRIZE: Win 2/3rds Your Weight In Estes Model Rocketry Products.

3rd PRIZE: Win 1/3rd Your Weight In Estes Model Rocketry Products.

25 - 4th PLACE PRIZES: Win an AstroCam 110 Aerial Camera with Delta II Launch Vehicle.

100 - 5th PLACE PRIZES: Win a \$10.00 Gift Certificate for Estes Model Rocketry Products.



RULES:

- No purchase is required to enter.
- You may enter as many times as you like.
- Winners will be chosen entirely at random.
- Winners will be required to submit proof of weight.
- Employees of Estes Industries and members of their immediate families are not eligible.
- Entries must be postmarked before midnight, June 30, 1983.
- Contest drawing for winners will be held on July 15, 1983. Winners will be notified by mail and will be published in a future issue of Model Rocket News.
- 1st, 2nd and 3rd place prizes will consist of a selection of Estes model rocketry products.
- All names and addresses received on Sweepstakes Entry Forms may be used for mailing list solicitations.
- This Sweepstakes is void where prohibited by law.
- All entries should be mailed to: **Estes Industries**

To enter Just Fill-out and mail
sweepstakes entry form below...

Estes Industries
25th Anniversary Sweepstakes
P.O. Box 227
Penrose, CO 81240



"WIN YOUR WEIGHT IN ROCKETS" SWEEPSTAKES ENTRY FORM

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: () _____ WEIGHT IN LBS.: _____

All Entries Must Be Postmarked Before Midnight June 30, 1983.
No Purchase Is Required To Enter. Void Where Prohibited By Law.

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
\$5.25



ASTEROID EXPLORER

SKILL LEVEL 2 Geological data gathering probe of the 1990'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
\$5.00



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
\$8.00



NOVA SCOUT SHIP

SKILL LEVEL 2 Scout ship of the awesome Star Ship Nova intergalactic explorer (see page 37). 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
\$5.00



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
\$5.50



FALCON COMMANDER

SKILL LEVEL 1 Futuristic forward swept-wing spacecraft. 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
\$5.25



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

FUTURISTIC



NASA PEGASUS



STAR SHIP NOVA



HYPERION

STARFIGHTER COMBO KIT



TORELLIAN INVADER



ORION STARFIGHTER

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

\$6.50



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

\$7.50



HYPERION

SKILL LEVEL 3 Exotic, new deep-space cruiser of the 22nd Century, with unique ring-tail design. Dramatic flights over 900 feet and gentle recoveries via huge 18" parachute. Length: 23.4" Dia: 0.976" Wt: 1.76 oz.

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

No. 1383

\$6.00



STARFIGHTER COMBO KIT

SKILL LEVEL 3

TORELLIAN INVADER

Galactic invader and primary attack fighter from the Torellian Empire. Capable of deploying Zarchronian space mines and launching photon torpedoes. Length: 20" Dia: 0.976" Wt: 1.291 oz.

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



ORION STARFIGHTER

Perimeter defense starfighter for the Orion cluster. Outfitted with white plasma energy shield and Estegon crystal engines for star-streak acceleration. Length: 20.25" Dia: 0.976" Wt: 1.115 oz.

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



ORION STARFIGHTER & TORELLIAN INVADER COMBINATION KIT

No. 1343

\$11.00

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



VINDICATOR

NEW

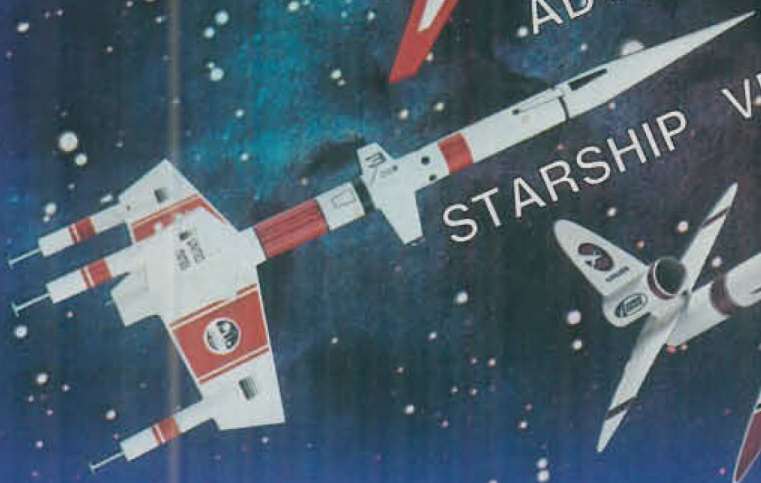


U.S.S.F. FIREFLASH



ADVANCED TARGET DRONE

NEW



STARSHIP VEGA



SCISSOR-WING TRANSPORT

VINDICATOR

SKILL LEVEL 3 Sleek interplanetary interceptor with futuristically detailed nose cone. A really sharp display model with startight 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
\$7.50



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 gatling 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
\$6.50



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
\$6.00



STARSHIP VEGA

SKILL LEVEL 3 Exotic planetary exploration vehicle featuring simulated landing shocks. A great performer with impressive lift-off and recovery. Science fiction styling gives this bird a real spaceship look. Length: 19.5" Dia. 0.976" Wt. 1.88 oz.

ENGINES: A8-3, B4-2, B4-4, B6-2, B6-4 (1st Fit.), B8-5, C6-5, C6-7.
No. 1320
\$8.75



SCISSOR-WING TRANSPORT

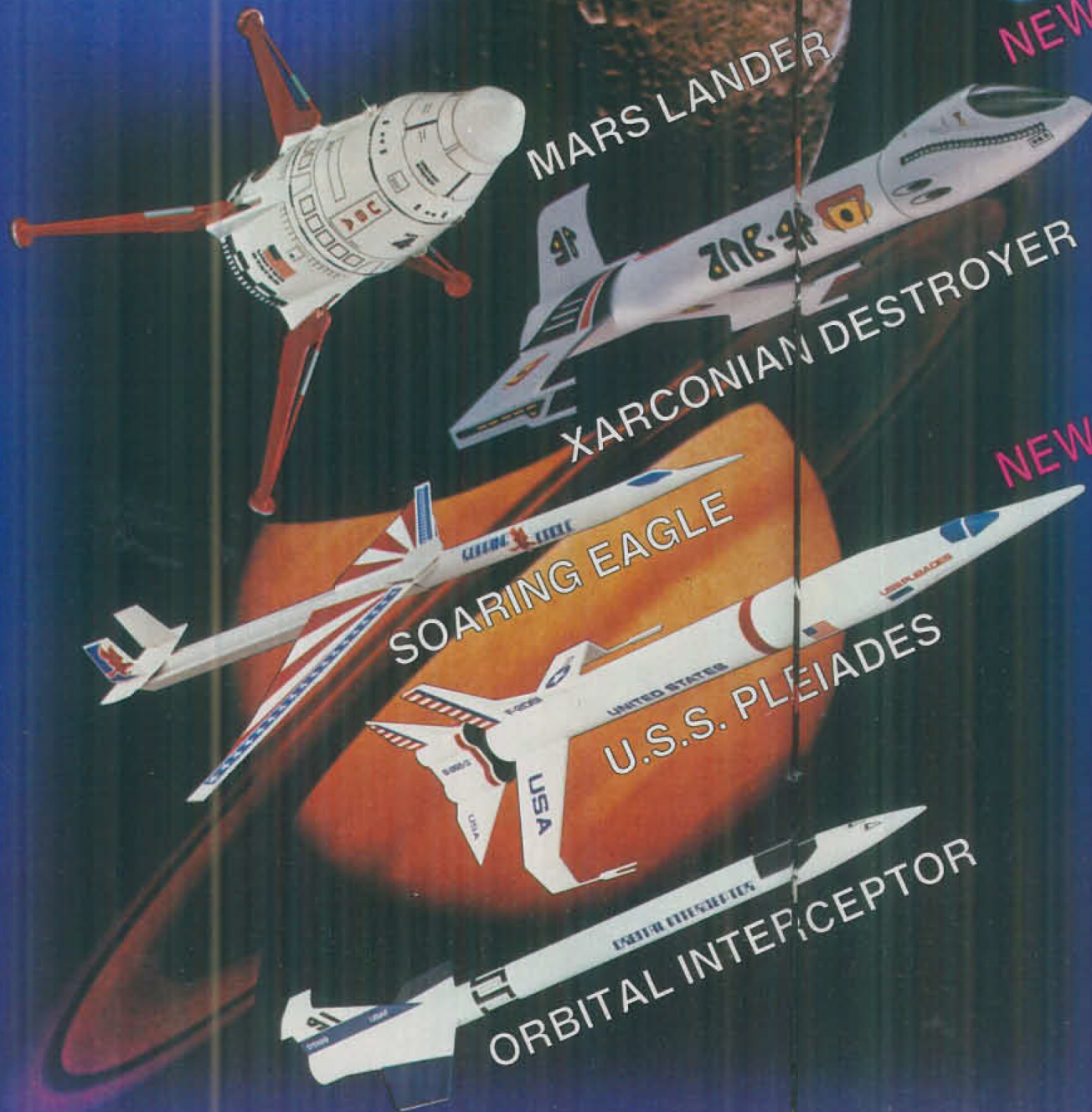
SKILL LEVEL 3 This exciting bird introduces the revolutionary new Scissor Wing concept. Features super SST styling and high flight reliability. Capable of glide times of more than 60 seconds. Internal ejection power pod features vertical stabilizer fins. Comes ready-to-assemble with die-cut parts and 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
\$10.00



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

FUTURISTIC



MARS LANDER

NEW

XARCONIAN DESTROYER

NEW

SOARING EAGLE

U.S.S. PLEIADES

ORBITAL INTERCEPTOR

MARS LANDER

SKILL LEVEL 5 Displays futuristic concept for a planetary exploration and landing vehicle. Spring-loaded landing gear simulates realistic upright touch-down. Big 18" bright orange and white canopy chute makes for a really great recovery sequence. Includes highly detailed body panels and colorful scale-like decals. Height: 12" Dia: 3.8" Landing Gear Span 13.2" Wt. 3.0 oz. Ship. Wt. 16 oz.

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

No. 1243

\$15.00



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 Fit.), B4-2, B4-4, B6-2, B6-4, B8-5, C5-3, C6-3, C6-5

No. 1903

\$6.50



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 Fit.), B6-2, B8-5, C5-3, C6-3

No. 1373

\$7.75



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 Fit.), B6-4, B8-5, C6-5

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

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

No. 1910

\$6.50



ORBITAL INTERCEPTOR

SKILL LEVEL 2 Exotic short range interceptor designed for orbital patrol and larger starship escort. Spectacular flights over 1,200 feet. Length: 17" Dia: 0.976" Wt. 1.5 oz.

ENGINES: 1/2A6-2, A8-3 (1st Fit.), B4-4, B6-4, B8-5, C5-3, C6-5, C6-7

No. 1359

\$5.00



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



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
\$7.75



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
\$15.00



Engines, launch system, glue and finishing supplies not included in rocket kits. Avg. Ship. Wt. 11 oz.

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 above #1385), 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. ENGINES: A8-3 (1st Fit.), B4-4, B6-4, B8-5, C6-5.

Ship. Wt. 1 lb.
No. 1433
\$21.95



Requires 6 volt Polaroid # Pola-Pulse™ P-100 battery, white glue, plastic cement, paint and finishing supplies not included.



SPACE SHUTTLE
COLUMBIA

SPACE SHUTTLE
COLUMBIA
STARTER KIT

Newly Re-Designed

SPACE
SHUTTLE

SCALE MODELS



HONEST JOHN

SKILL LEVEL 3 1/9th scale model of the famous U.S. Army surface-to-surface, supersonic ballistic missile, one of the mainstays of the Army's atomic weapons capability. This highly detailed model uses a single "D" engine for power and comes with pre-shaped, accurately scaled fins and molded plastic nose cone. Spectacular recovery with giant, dual 24" orange and white canopy chutes. Great for demonstrations and perfect as an impressive display model. A 3/16" launch rod is recommended for best lift-off results. Length: 37" Dia. 2.6" Wt. 14 oz.
ENGINE: D12-3
No. 1269
\$32.95



1/100th Scale

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. Ship. Wt. 3 lbs. 5 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
\$39.95



PERSHING -1A

SKILL LEVEL 3 This Maxi-Brute is a true scale model of the U.S. Army's surface-to-surface ballistic missile deployed with NATO units in Europe. Our 1/10 scale model is "D" engine powered with three color decals, pre-shaped fins, and dual 24" parachute recovery. A 3/16" launch rod should be used for best lift-off results. Length: 41" Dia. 3.938" Wt. 11.5 oz.
ENGINE: D12-3
No. 1268
\$32.95



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
\$11.00



Engines, launch system, glue and finishing supplies not included. Avg. Ship. Wt. 32 oz.

SCALE MODELS



CRUISE MISSILE

NEW



SEA DART



NIKE-X

NEW



SANDPIPER



SAM-4



A DAMON COMPANY

BOEING A.L.C.M.

CRUISE MISSILE

SKILL LEVEL 4 Designed to be launched from a large aircraft like the Lockheed C-5-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 Fit.), B6-4, B8-5, C6-5.

No. 1336

\$11.00



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 Fit.), B4-4, B6-4, C6-5.

No. 1901

\$6.00



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 Fit.), B4-4, B6-4, B8-5, C6-5.

No. 1270

\$7.50



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 Fit.), B4-4, B6-4, B8-5, C6-5.

No. 1389

\$5.50



SAM-4

SKILL LEVEL 2 Scale-like surface-to-air missile with two-stage appearance. Excellent flights to 900 feet. Length: 18.2" Dia. 0.976" Wt. 1.1 oz.

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

No. 1357

\$5.50



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

D-POWERED



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
\$15.00



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
\$5.75



CHEROKEE-D

SKILL LEVEL 2 Sleek and powerful "D" engine rocket that will practically sail out-of-sight. Big 18" chute brings it down safely flight-after-flight. A really beautiful model for your first "D" powered kit. Length: 21.6" Dia: 1.325" Wt: 2.75 oz.

ENGINES: D11-9, D12-5 (1st Fit), D12-7.
No. 1247
\$7.00



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 33). 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
\$8.25



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

D-POWERED

NEW

SCRAMBLER: 2

SCRAMBLER: 2

MEAN MACHINE

MEAN MACHINE

COLOSSUS

COLOSSUS

MAXI STREAK



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
\$6.95



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
\$11.50



COLOSSUS

SKILL LEVEL 2 Huge addition to our Maxi-Brute fleet. Over 4 feet long with big plastic nose cone and press-fit plastic fin unit. Quick and easy-to-assemble. Really spectacular "D" powered flights with slow realistic lift-off. No painting required! Uses 3/16" launch rod. Length: 51.25" Dia. 2.6" Wt. 9.52 oz.
ENGINE: D12-3
No. 1326
\$24.00



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 Fit.)
No. 1387
\$4.75



Engines, launch system, glue and finishing supplies not included. Avg. Ship. Wt. 15 oz.

D-POWERED



SKY RAIDER

SKILL LEVEL 2 Flights up to 1,500 feet are possible with this big "D" engine powered payloader. Great sports model with large payload section. Length: 32.75" Dia. 1.325" Wt. 2.39 oz.

ENGINES: D12-5, D12-7 (1st Flt.), C6-5 (with EM-2050 adapter not included. See page D).

No. 1290
\$7.50



SEA STRIKE "D"

SKILL LEVEL 3 Scale-like ship-to-air missile with two-stage super "D" engine power. High performance design for incredible 1,800 foot flights. Realistic military appearance. Features tumble recovery booster and 12" parachute recovery for the upper stage. Length 31" Dia. 1.34" Wt. 3.35 oz.

ENGINES: Single Stage: D11-9, D12-5 (1st Flt.), D12-7.
Upper Stage: D11-9, D12-7.
Booster Stage: D12-0.

No. 1332
\$8.75



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 Flt.), D12-7.

No. 1379
\$7.00



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
\$11.00



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

Photos pages 8, 9, 52 & 53 courtesy Lick Observatory.

All other background photos courtesy NASA.

Special effects photography by Charles Webb

POWER-PULSE™ LAUNCH CONTROLLER



Slim line, futuristically designed launch controller uses revolutionary new 6 volt, Polaroid® Polapulse™ P100 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.)

This launch controller of tomorrow features state-of-the-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

Only
\$9.95



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

Only \$3.25 ea.



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

ONLY \$9.50

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).

NEWLY
Re-designed



Big Foot™

"Designed
for the
Big Ones!"



MODEL ROCKET LAUNCH CONTROL SYSTEM

The Estes Big Foot launch control system is capable of launching all Estes models including Maxi-Brutes. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot-print" for maximum launch pad stability. Includes blast deflector plate, 1/8" x 36" two-piece launch rod, 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

\$22.95

Page 55

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-ordered. 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
\$11.00

MODEL ROCKETRY'S MOST ADVANCED LAUNCH SYSTEM

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 ONLY \$9.50

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 \$2.25

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 \$.90

3/16" DIA. MAXI-ROD: Perfect for launching Maxi-Brute kits and other large rockets. Fits Porta-Pad Tripod (#2217) and Big Foot Launch Pad (#2208). Two-piece construction 36" long, light-weight aluminum launch rod. Collapsible for easy storage. Includes Safety Cap & Key. Ship. Wt. 12 oz.
No. 2244 \$3.50

MICRO-CLIPS: Equip your launcher with the best. Spring-loaded solid steel clips connect lead wires to igniters. Easy-to-clean and highly conductive with flat contact surfaces. Only 1.1 inches long. Attach to leads with or without solder. Ship. Wt. 1 oz.
No. 2247 2 for \$.95

LAUNCH ROD SAFETY CAP WITH UNIVERSAL SAFETY KEY



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 \$.85

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 \$1.60

BATTERY CLIPS: Hook-up to car batteries. Heavy-duty clips connect to terminals up to 1" in dia. With insulators. Ship. Wt. 5 oz.
No. 2245 2 for \$1.50

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 \$7.50

PREDICTED ALTITUDE COMPUTER

The Estes Pocket Size Altitude Computer enables any rocketeer to predict his model rocket's altitude in a matter of seconds. Just move the center slide in a simple procedure for fast, accurate results. Three color calculator comes complete with instructions. Ship. Wt. 3 oz.
No. 9015 \$2.25

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
\$2.25



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 \$5.00

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
	Parachute	1 Design Idea Sheet
	1 PK-10	1 Mini Alpha Book of Model Rocketry
	2 PK-12	
	2 BFS-30	
	1 PK-18	
	1 BFS-40	
	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

\$24.95



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 \$8.25

Designer's Special

Ideal parts assortment for the creative rocketeer. Develop your own R & 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	8 Screw Eyes
Nose Cones	Miscellaneous
1 BNC-5E	3 Engine Blocks (EB-20A)
1 BNC-6S	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-2050)
1 PNC-50Y	1 Nose Block (NB-20)
1 PNC-55AC	1 Nose Block (NB-50)
1 PNC-60L	1 Stage Coupler (JT-50C)
	1 Stage Coupler (JT-55C)
	1 Balsa Adapter (TA-2050A)
	1 Multi-Purpose Paper Adapter Set (TA-1)
Fin Material	
2 BFS-20	12 Launch Lugs (2-3/8" long)
2 BFS-30	1 Alpha Book of Model Rocketry
2 BFS-40	
Parachutes	
1 PK-10	1 Fin Pattern Sheet No. 2
2 PK-12	1 Fin Pattern Sheet No. 3
1 PK-18	
1 PK-24	

No. 1463 \$19.95



Model Rocket Engines



★Reliability-Proven In Over 200 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.

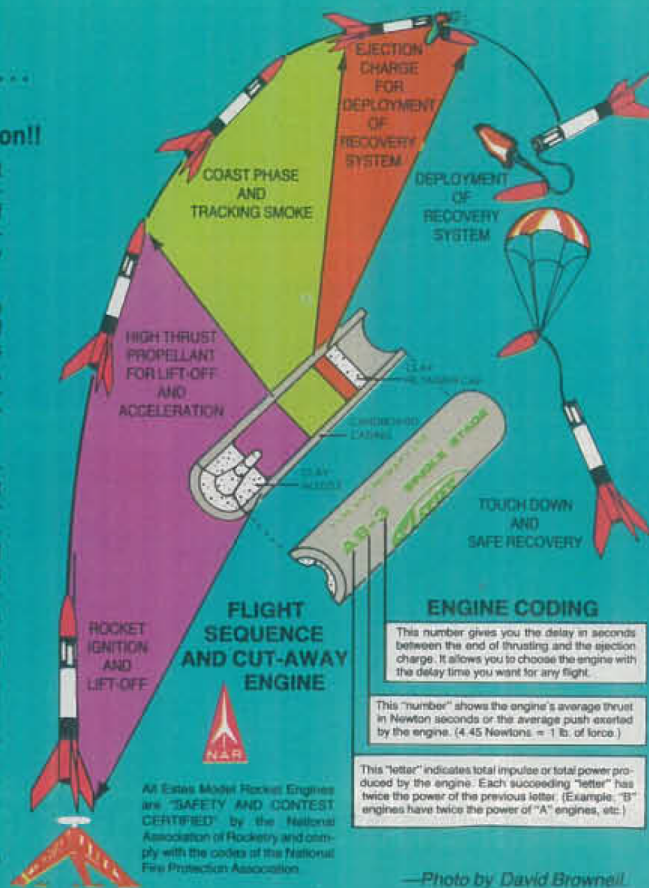
Today's modern rocket engine is the result of over 25 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines for his use.

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

Reliability-proven in over 200 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. Here, an Estes employee static tests an engine for overall performance and safety in the advanced, Estes engine testing facility.

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



—Photo by David Brownell.



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	1/2A8-4	\$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	6 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 maximum)
- ② Newton-seconds (Figures shown are maximum)
- ③ Or Single Stage Engine if used in very light rocket.

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	0.26 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	0.26 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.	0.282 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 \$1.25

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 \$1.35

Estes Solar Igniter drying tunnel.
—photo by David Brownell



SOLAR IGNITER



ASTRON IGNITER

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 \$1.30

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.



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.	\$1.25
2264	PK-12	12 inches	.078 oz.	\$1.35
2267	PK-18	18 inches	.144 oz.	\$1.45
2271	PK-24	24 inches	.298 oz.	\$1.65

SHOCK CORD: Specify width when ordering. Ship. Wt. 1 oz., 1/8" wide: Net Wt. 0.039 oz. No. 2276 \$.75
1/4" wide: Net Wt. 0.078 oz. No. 2277 \$.85
Also 36" long for greater stretch on those larger birds, 1/8" wide: Net Wt. 0.078 oz. No. 85744 \$.90

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 \$1.30

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 6 for \$2.25
2" wide: Net Wt. 0.184 oz. No. 2343 6 for \$2.50

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 \$1.70

SCREW EYES: Specify size when ordering. Ship. Wt. for 6 eyes, 1 oz. **LARGE EYE:** 1" long: 0.04 oz. No. 2280 6 for \$1.20
SMALL EYE: 3/4" long: 0.03 oz. No. 2279 6 for \$1.10
EXTRA SMALL EYE: 5/8" long: 0.01 oz. No. 2281 6 for \$1.00

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 \$1.50

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 \$1.30

—photo by David Brownell



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SINCE 1922



A DAMON COMPANY
Hi-Flier Manufacturing Co., Inc.,
Box 280, Penrose, CO 81240—(303) 372-3080. Manufacturing plastic and paper kits, cord, reels, gliders and sport kites.

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A DAMON COMPANY
Arrow Industries, Inc.
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(312) 927-2000 Manufacturing craft kits,
wood dollhouse kits, X-mas ornaments,
ball clocks, gumball banks, novelty banks,
"Magic Rocks" and "Wheelo".

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SIZZLER

Flying Model Rocketry

Starter Kit

SKILL LEVEL 1

Includes the new 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, 1/8" x 36" two-piece launch rod, adjustable swivel mount to compensate for wind direction which is adaptable to either 1/8" or 3/16" launch rods, and has legs which remove easily for compact storage. (Uses 4 alkaline type "D" cell batteries - not included.)

NEW

Flight Pak includes three NAR safety certified model rocket engines, parachute recovery wadding and Solar Igniters.
Ship. Wt.: 2 lbs.
ENGINES: A8-3 (1st Flt.), B4-4, B6-4, C6-5.

(Requires 4 alkaline type "D" cell batteries, glue and finishing supplies - not included.)



No. 1432

\$18.95



A DAMON
COMPANY

ESTES INDUSTRIES PENROSE, CO 81240 USA

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