

# SPECTRA

OFFICIAL  
NEWSLETTER  
OF THE ESTES  
AEROSPACE  
CLUB

Vol. 2 No. 3  
JULY/AUG. 1975



Stardate 7507.21

*Nowhere in the pages of future history can be found a greater champion of interstellar justice and exploration than the Starship Enterprise and its intrepid crew. This famous vehicle carries representatives of the United Federation of Planets on their continual five-year mission to explore strange new worlds, to seek out new civilizations, to boldly go where no man has gone before.*

The original series of mission reports was produced at Desilu Studios under the expert guidance of Gene Roddenberry and highly qualified special assistants. These covered some incidents and were brought to the public through the cooperation of NBC television. Later episodes of the series were produced at Paramount Studios. Currently a series of further adventures are being reported via animation on NBC television. The millions of loyal followers of the various adventures of the crew of the Starship Enterprise affectionately refer to themselves as "Trekkies".

Several of us here at Estes Industries have been Star Trek fans since 1966, the year of the first Star Trek episode. The idea of producing an exact scale flying model of the Starship Enterprise as a model rocket

really grabbed us. Wayne Kellner of our Research and Development Department undertook the challenge of producing a model of the Enterprise which was capable of rocket-powered flights. With the help of Bill Simon, Director of R & D; Bob Cannon, Director of the Educa-



tion Department; Richard Van Truen, a leading expert on Star Trek, now serving in the U.S. Navy; Fred Durant, Director of Astronautics for the National Air and Space Museum of the Smithsonian Insti-

(Continued on page 2)



tute; Franz Joseph Schnaubelt, engineer and designer of the "Star Trek Blueprints" produced by Ballantine Books; and others, Wayne came up with a remarkably accurate, highly detailed scale model of the Enterprise. We even took photos of the original Enterprise in the Smithsonian to secure additional scale data. Compare the two photos to see how closely the Estes model (large photo on front page) reproduces the original (shown in smaller photo at left on front page). The major design concession made was the addition of a parachute recovery probe. The original Enterprise was not designed for atmospheric operations so the center of gravity/center of pressure relationship would make it unstable in flight without the addition of the probe. The probe is detached for display of the model.



As a bonus, our R & D Department developed a remarkably detailed model of the Enterprise's arch enemy, a Klingon Battle Cruiser.

Paramount has recently announced the signing of an agreement with Gene Roddenberry, developer of Star Trek, to produce a Star Trek feature length motion picture for release to theaters across the country. It is hoped that once the film sets are recreated a number of special movies will be made for television. While you are waiting to get in line for your theater ticket, build and fly your own Starship Enterprise and Klingon Battle Cruiser! They are beautiful models and great crowd-pleasers.

Peace and long life! ☯

©1975 Paramount Pictures Corporation

## EAC Advisory Board No. 3 - Comments

This group of EAC rocketeers was asked to construct, test, and comment on our new Nike-X, Renegade, Russian Vostok, and Andromeda kits. At the time of publication we had received comments from 10 of the 20 EAC members on the Board. The only major criticism concerning any of these new models came from Tom Dearstine of Berwyn, Maryland who recommended we raise the Vostok to a Skill Level 4 model due to the challenging fin construction. All other reactions were similar to the following letters.

Dear Sirs:

*Thank you very much for selecting me as a member of the EAC Advisory Board Number 3, and allowing me to test your new "Nike-X" Kit. My experience with this fine kit was very good.*

*The building of the Nike-X was fun and easy. I was pleased to find an overlap tab on the body tube marking guide; it made marking the tube much easier. The one-piece, molded plastic nose cone saved the need for plastic cement. The size and number of fins makes it challenging for a novice rocketeer. The one-color body and large decals makes it easy to get a perfect finish.*

*I enjoyed flying the Nike-X a lot. The rocket itself looks fantastic on the launch pad and it's exceptionally stable in the air, even on windy days. Although an A8-3 engine is perfectly fine for the maiden launching of the Nike-X, I would not recommend it after that, as I feel it does not produce sufficient height. By far the best flight I had with this kit was with a C6-5. On a windy day, I feel one should either use a smaller engine or parachute. I substituted the chute I put in the Mars Lander, with a spill hole in the middle.*

*Thank you again for choosing me.*

Very truly yours,  
Tom Neuser  
Manitowoc, WI

Dear Sirs:

*I have enjoyed greatly working for you, and look forward to doing so again. I have returned a final report on your new Renegade.*

*Preflight Comments: The rocket kit is a fine one and it's design is quite good. My only comment is that it would be more convenient if the nose cone were in one piece.*

*Inflight Comments: The flight was good. Engine used: D-12-5. Although it did start to turn towards the apogee of the flight, this might have been due to westerly winds at the time. Recovery was also good.*

*I hope that I have satisfied your needs. I can not wait until you ask me to do this again.*

Sincerely,  
Craig Hilgendorf  
Fairborn, OH

Dear Sirs:

*Thank you very much for the rewarding experience of serving on your EAC Advisory Board No. 3.*

*The "Vostok" I was asked to evaluate performed flawlessly. Using a B6-4 I attained an estimated altitude of 900 feet. The recovery was excellent with perfectly timed ejection and was easily recovered about 100 yards off the launch pad.*

*I suggest you make no changes with your make-up of this kit.*

*Thank you again, and if I can ever be of any help to you in the future please let me know.*

*Thank you very much.*

Truly yours,  
Kyle Meister  
Parker, IN

TELEGRAM:

TO DANE BOLES ON COMPLETION OF ANDROMEDA MODEL AS PER SELECTION EAC ADVISORY BOARD I FIND MODEL EXCELLENT IN ALL ASPECTS ESPECIALLY ITS UNBELIEVABLY STABLE AERODYNAMIC DESIGN I RECOMMEND ALL SKILLED CRAFTSMAN TO ADD THIS MODEL TO THEIR ESTES FLEET THANK YOU AND SORRY FOR DELAY OF 4 DAYS IN REPLY

JOHN EISMANN  
BROOKLYN NY

ANDROMEDA

## SPACE SHUTTLE / UP / DATE



The shuttle craft will have rendezvous and docking capabilities, enabling it to revisit complex spacecraft such as the upcoming Large Space Telescope (LST) — an orbiting "Palomar in the Sky." Such a valuable instrument must be designed for several decades of useful life. But since no one can predict the most interesting science objectives that far in the future, manned visits will be necessary between major science assignments for updating, reprogramming, and changing equipment. The LST will be unmanned between visits.

A docking module placed in the Shuttle's cargo bay will enable personnel to move directly from the pressurized crew compartment to the LST's pressurized instrument module. For high orbits or unmanned lunar and planetary missions, spacecraft carried in the Shuttle's bay will have propulsion units called "tugs" attached to them. After arriving in a low orbit, the tug/spacecraft combination is lifted from the bay. The shuttle then withdraws to a safe distance and the tug engine is ignited, boosting the spacecraft into an escape trajectory.

Reprinted courtesy of Popular Science, ©1974 Times Mirror Magazines, Inc., November 1974 issue from their article, "Reusable SPACE SHUTTLE..Our Biggest Bargain In Out-Of-This-World Research," By Wernher VonBraun.

VOSTOK

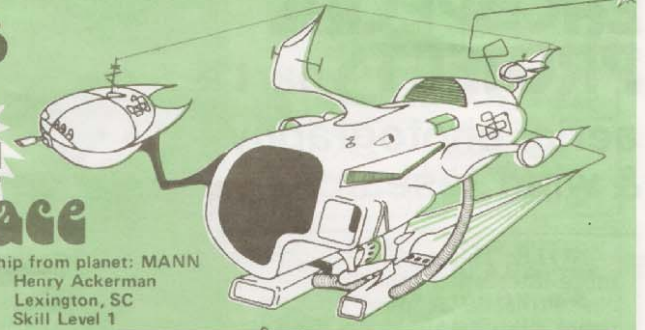


# Spaceship Contest Winners

Once again the response from our EAC Rocketeers has been overwhelming. More than 8,000 great entries have been received for the Alien Spacecraft Contest. So many excellent entries, in fact, that we have decided to have two first place winners and have tripled the number of runners-up to thirty. Fifteen runners-up and one first place entry are featured in this issue. The other first place entry and the last fifteen runners-up will be featured in the next *Spectra*. Congratulations to the first place winners who will each receive a \$75 merchandise certificate and to the runners-up who will be awarded \$15 certificates. Thanks again for your great support. 🚀

**1st place**

Starship from planet: MANN  
By: Henry Ackerman  
Lexington, SC  
Skill Level 1

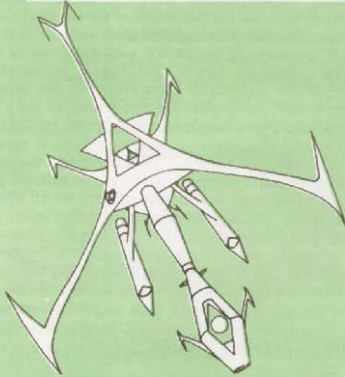


Starship comes from the planet MAAN which is an artificial planet created by an omniputer trio on Earth. MAAN occupies the sector of space that the moon is in, but in D-7 (7th dimension). There are 125 crew-members on the ship, which has a floor area of 1.973 square kilometers. Environmental control establishes an atmosphere of that approximating Earth-normal with a higher level of noble gases and trace elements. As there is no solar radiation in D-7, ionic drive is employed due to lack of solar wind. The behavior of a moving body in D-7 is such that ionic drive supplies sufficient acceleration (43 G's) for travel. Nuclear impulse (illustrated) is the main drive outside D-7. Conversion of interstellar particles to energy is the alternate source.

Traveling through dimensions and long stellar distances (up to 7.8 billion light-years in one phase) is achieved via the antenna-projector on the ship's upper surface. The antenna opens a tunnel through D-x and the ship moves to the desired coordinates. The tunnel is closed in a manner similar to collapsing a balloon.

Starship's hull consists of a metallic polymer enveloped in a field which can be turned on or off. The field warps space so that an object or energy form striking the field passes through hyper space and exits on the field's opposite wall. Weapons are not stocked, but can be made by Starship's mini-puter. Since the purpose of Starship is exploration, weapons were felt unnecessary, yet there was a need for some form of personal defense. The single offensive weapon on the ship is the 75 megawatt laser on the forward control pad.

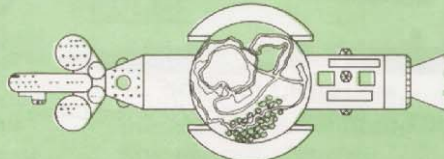
The control pads are each approximately 20 miles high and 30 miles long. The central hull, which contains power and living section, is 35.5 miles in diameter and 105 miles long. The height of the antenna-projector is nearly 45 miles. Rocket pads (lower) are 10 miles wide and 40 miles long.



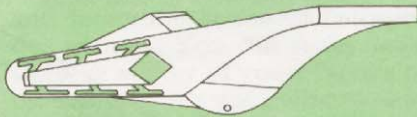
**EXPLORATION SHIP** from:  
Seventh planet of the Star SPICA  
By: Michael Imada  
Pearl City, HI  
Skill Level 1



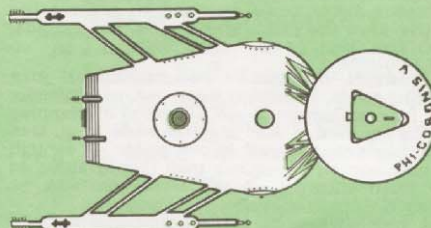
**ESSEX** from planet: ZIGS  
By: Mike Darcy  
Reseda, CA  
Skill Level 1



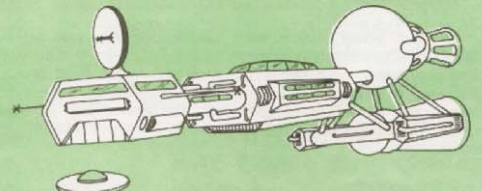
**STAR CRUISER SEQUOIA** from: EARTH  
By: Scott Kindorf  
Pleasant Hill, CA  
Skill Level 3



**Andronian** from planet: ZOOTOSE  
By: Tim Maddox  
Hanford, CA  
Skill Level 1



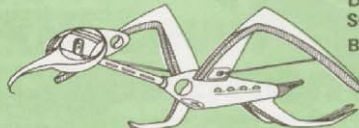
**PHI-CORONIX V** From: Planet Beta-Virgo  
By: Scott Pearce  
West Chester, PA  
Skill Level 1



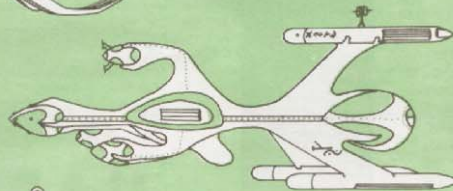
**ANDROMEDA - INTERGALACTIC EXPLORATION VESSEL** from: GALAXY ANDROMEDA  
By: Gary Landry  
Lemont, IL  
Skill Level 1



**EXPLORATION VEHICLE** from: Planet ZETA  
By: Kevin Hylton  
Detroit, MI  
Skill Level 1



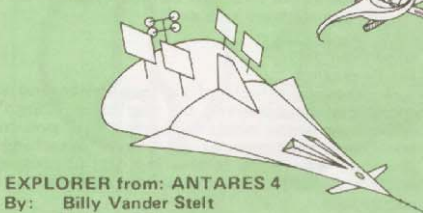
**DES FON** from: NARN IV SOLAR SYSTEM  
By: Stephen Kroll  
Boscobel, WI  
Skill Level 1



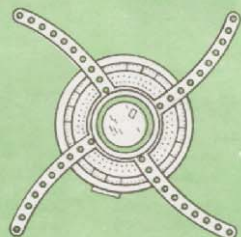
**RATH** from planet: LARN  
By: Gordon Bugg  
Gadsden, AL  
Skill Level 5



**KAMORIAN - TIME CONVERTER SCOUTSHIP** from: Distant Galaxy NGC4387 in Coma Bernices  
By: Tom Guthery IV  
Austin, TX



**EXPLORER** from: ANTARES 4  
By: Billy Vander Stelt  
Halsey, OR  
Skill Level 1



**"Erowica Tenna" Space City** from: ADHARA  
By: Mike Richter  
Colorado Springs, CO  
Skill Level 1



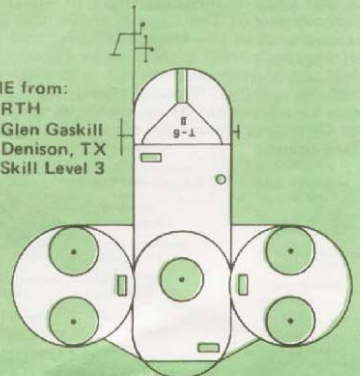
**Boranian Blue Light** from: BORANIA 18th planet from Sunstar Wolf 359  
By: Roberto Corrada  
Austin, TX



**Exploration & Transportation Vehicle** from planet: TERRA ALLUS MAJOR  
By: Stephen Angelicola  
Lyndhurst, NJ  
Skill Level 1

**DROME** from: EARTH

By: Glen Gaskill  
Denison, TX  
Skill Level 3





# EAC SPECIAL PROJECTS part 4

## aerial photography & wind research

NOTE: This article explores two more interesting areas for EAC Special Projects. A new booklet entitled, "Projects in Model Rocketry" (Cat. No. 2831) is now available for only 25¢ to EAC rocketeers (Reg. 50¢) and features all special project information in one publication.

### AERIAL PHOTOGRAPHY

Taking pictures from high in the air is exciting! If you have your own plane or can rent one, great. If not, you are somewhat restricted in your opportunities for aerial photography. Unless you happen to have a skyscraper nearby, you are pretty well out of luck. Fortunately, there is one way to get good pictures from high in the air without having to rent a plane or have a handy, neighborhood skyscraper. Launch a camera as payload on a model rocket.



**CAMROC PHOTO**  
Courtesy of  
Fred Lord  
San Diego, CA

To get good black and white photos, use a Camroc. This simple camera takes 1-1/2 inch diameter photos, one picture per flight. The film is fast and reasonably fine-grained, so good enlargements up to about eight inch diameter can be made. This is plenty for basic photo-interpretation work.



**CAMROC PHOTO (ENLARGED)**

### Aerial Photo-Interpretation

Such basic features as houses, roads, trees, schools, etc. are easily identified through photo-analysis of the prints. Careful measurements can enable you to determine how high the rocket was at the instant the picture was taken and the actual sizes of objects shown in the photo. Careful control of the launch angle, the number of stages used in the launch vehicle, and the choice of engines permit photos to be taken up to 1,000 feet or higher and permit selecting vertical or oblique photos. Taking exactly the area chosen can be somewhat of an art since winds hundreds of feet up in the air are often not the same as surface winds.



**ESTES  
CAMROC &  
CAMROC CARRIER**

### Habitat Analysis With Aerial Photos

Detailed analysis can permit some really interesting information to be secured from aerial photos. Counting the numbers of red ant colonies present in a given area can permit estimates of relative productivity for grass and weed seeds in different areas. Variations in available soil moisture or minerals often produce visible differences in vegetation.

### Aerial Movies

#### Analysis of Stage Separation

Motion pictures taken from on-board cameras really present unique views of model rocket flights. Watching the ground virtually drop away from your rocket is a thrill. Seeing the booster detach and tumble away is a not-soon-forgotten experience. The parachute deployment and recovery permit opportunities for study of the aerodynamics of parachutes (or streamers). Detailed photo-analysis of the excellent color movies taken by the Cineroc permit study of the sizes of objects on the ground, the height of the rocket at any given moment, and the acceleration the rocket is undergoing. Did you know that you can even tell what season it is from many aerial photos? If you know the date your picture was taken, you can probably tell the time of day the picture was taken by studying the photo.



**MINIATURE CINEROC**  
Developed by Gary Rosenfield Fullerton, CA

### Survey of an Area by Aerial Photography

To get continuous movies of a large area from relatively low altitudes, why not design a large boost glider around a Cineroc? The Cineroc could even be flown in a model airplane to achieve long flights at relatively low altitudes. To save film, perhaps a timer could be used to activate the shutter after the plane is at the desired altitude.

### Photo-Mapping

Construct an accurate two-dimensional map showing roads, buildings, trees, etc. of a specific area from a Camroc photo. If several overlapping photos are used, a map may be made of an area larger than that shown in one photo. If enough overlap occurs, a contour map (topographic or 3-D map) showing relative elevations may be made.

A very challenging project would be a sound Cineroc flight. The problems to produce a good movie with a quality sound track would provide interesting technical problems to solve.

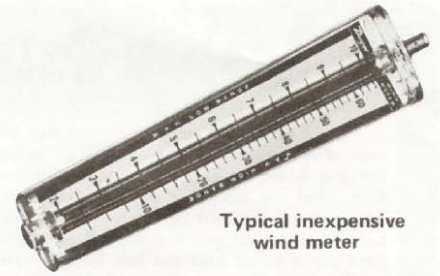


### WINDS

Winds are surprising. It is hard to appreciate the energy present in winds since we can't see them. The work they can do is fairly easy to study, however.

### Wind Speeds at Different Altitudes

Measuring wind speeds with a small wind meter or anemometer is easy. The wind speed several hundred feet up in the air may not be the same as the surface wind. In fact, the wind several hundred feet up may not even be traveling in the same direction as the surface wind. Have you ever noticed cloud layers at different altitudes moving at different speeds or in different directions?



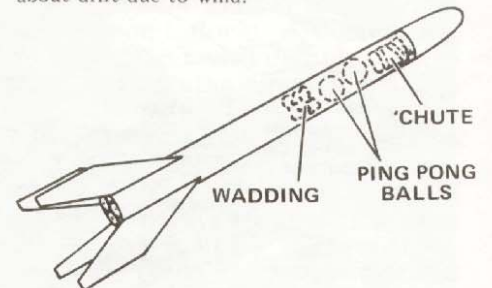
**Typical inexpensive wind meter**

### Relationship of Wind Speed to Drift Rate

Simple physical measurements for wind speed are probably easiest. One method to determine wind speed could be to determine the correlation between horizontal wind speed and rate of lateral drift of an object. Launching a rocket to a relatively low altitude (100-150 feet), measuring its apogee, then carefully determining its lateral movement from the point directly under its apogee (hopefully right over the launch pad) to touchdown will yield the vertical and horizontal movements of the model rocket. The time for descent from apogee should be accurately determined and recorded. Careful measurement of the wind speed at ground level and comparison of this with the horizontal drift speed of the rocket during descent will provide a guide for relationship between wind speed and the rocket's rate of drift, especially if the test is carefully repeated under different wind conditions. Repeating this experiment with rockets of significantly different weights or drags could yield interesting results.

### Effect of Surface Area and Weight of Falling Object and Wind Speed on Rate of Drift

Rather than using the rocket under its recovery device as the test object, perhaps several objects of the same size (ping pong balls with something inside for different weights) or of the same weight but different sizes could be used to learn facts about drift due to wind.



### Wind Patterns at Specific Altitudes

To get a better idea of drift due to winds high in the air, tracking the rocket during descent in three dimensions plus time and measuring only the part of the descent in the area of interest (as about 1000 feet to about 800 feet) can yield data to give the answers you seek.

### Wind Dispersal Air Turbulence

Interesting effects of air turbulence and wind speed can be observed by ejecting a "cargo" of talcum or some other highly visible, non-toxic, non-flammable powder at apogee. Watching the dispersal will prove interesting, but photographic records should be kept if serious research is to be conducted.

### Message Dispersal by Wind

A really unique way to learn about the dispersal effects of winds on such common objects as some seeds, etc. would be to release a series of tiny slips of paper with your name and address on them as the cargo of a model rocket. When these are ejected at apogee, the wind can carry them away, sometimes for surprising distances. Each small slip of paper should contain in addition to your name, address, and phone number, a sentence asking the finder to contact you (call or write a postcard) stating where and when the message was found. Use brightly colored paper for visibility. The paper should be light to float well in the air. The paper should be an easily degradable type so that it will soon decompose and not be an "eyesore" polluting the environment.

NEXT ISSUE: MULTI-STAGING, CLUSTERING, and EFFECTS OF DRAG.

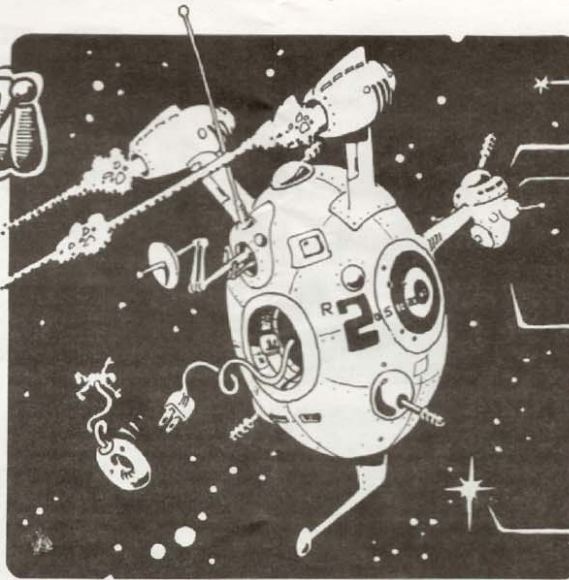


# THE ADVENTURES OF CAPTAIN QUAZI

## AND THE SPACE JANNERS

BY WAYNE KELLNER

STAR LOG Q75-01 -- CAPTAIN QUAZI'S PHOTOZMIC SPACE CRUISER IS PATROLLING BETA SECTOR 24, OR POSSIBLY GAMMA QUAD 16. THE SHIP'S ENTIRE SUPPLY OF TOILET PAPER HAS JUST BEEN JETTISONED HOPING TO DECOY HOSTILE ALIEN WARSHIPS. UNDAUNTED, OUR INTREPID COMMANDER SOMEHOW MANAGES TO FLUSH HIMSELF OVERBOARD FROM THE ONLY WORKING LAVATORY --- ✨



ZET: GOOD MORNING CREW, THIS IS FTT: YOUR ZET: CAPTAIN SPEAKING . . . .

WHADYA MEAN, NO LAUNDRY TILL FRIDAY

WHAT'S AN ALIEN?

WHO IS CAPTAIN SPEAKING?

LETS SEE . . . RED BUTTON DECELERATES AND THE GREEN, NO, MUST BE THE WHITE ONE, OR WAS

HEY, WHO SMEARED LICORICE ON MY VIEWSCREEN

MAYBE ITS A WELCOME WAGON

© STARGATE STUDIOS

## OUTA-THIS-WORLD Comic Strip Contest

Remember the great outer space comic strips like "Buck Rodgers" and "Flash Gordon"? Now it's your turn to create your own famous outa-this-world comic strip, complete with courageous heroes, dastardly villains, fantastic spaceships and incredible journeys to mysterious planets. You can really let that creative ability of yours "space out" on this one. It's your chance to send us the weirdest most far-out comic strip you can dream up.

First place will receive a \$75.00 merchandise certificate and the first 15 runners-up will be awarded \$15.00 certificates. The winning entry plus several of the runners-up will be featured in a future issue of the EAC Spectra.

### RULES:

1. You may enter as many times as you like.
2. Employees of Estes Industries or members of their immediate families are not eligible.
3. All entries become the property of Estes Industries and cannot be returned.
4. Previous entry in other EAC contests is NOT required.
5. Entries can be either serious or funny and may consist of one comic strip panel like Captain Quazi featured on this page or up to three or four panels like the comic strips you see in the newspapers. All entries must reflect an outer space theme of some type and may take place at any time, past, present, or future. Be sure your entry includes a title and all the illustrations and copy neces-

- sary to be reprinted by itself. Entries may depict a complete story or simply one episode in an apparent series of adventures. Your name as the creator should be featured in a "byline" at the beginning or end of the comic strip.
6. Entries will be judged for general creativity, effectiveness of content, quality of graphics, and originality of subject matter.
7. Deadline for receipt of entries is midnight October 1, 1975.
8. Decision of the judges is final.
9. Be sure to include your name, age, address, city, state, and zip code with each entry. Also, be sure to include your EAC Skill Level.
10. Mail entries to:

Estes Industries  
EAC Comic Strip Contest  
Penrose, Colorado 81240

GOOD LUCK ☘



## Skill Level Achievement Roll

In recognition of their model rocketry accomplishments we have listed the names of EAC members who have achieved our highest and second highest skill levels since the publication of our last EAC Spectra Newsletter. Congratulations to these Skill Level 4 Advanced Rocketeers and Skill Level 5 Expert Rocketeers. Unfortunately, space requirements will not permit us to continue listing the achievement roll for all EAC members in each issue of Spectra. For information on skill level advancement write: EAC Headquarters, c/o Estes Industries, Penrose, CO 81240.

### EXPERT ROCKETEER Skill Level 5

Randy Boardway Capac, MI  
Mark Brooks Ewing, VA  
Wilson Burgess Warren, MI  
Marc Cairguc Ft. Lauderdale, FL  
Mitchell Christian Salisbury, MD  
Dino Clarizio Arcadia, CA  
Darrel De Marco Waite hill, OH  
Thomas Elaysky North Canton, OH  
Mark Farmer Willits, CA

Larry Fugate Eureka, IL  
David Glatt Washington, DC  
Bill Horsford Marcellus, NY  
Greg Hutt Sepulveda, CA  
Mario Jones Mission Viejo, CA  
Ted Keney Bartlett, OH  
Jim Koewler Evansville, IN  
Peter Levine Orangeburg, NY  
Adham Loutei Oakland, CA  
Scott Arthur Nelson Hacienda Heights, CA

Donald Pelletier Bangor, ME  
Jeff Redington Jackson, NJ  
David Reed Selinsgrove, PA  
Dave Rumpel Clayton, IN  
Bruce Allen Shartzler Ottawa, OH  
Nicholas A. Stivers Tacoma, WA  
John Strisowes Orinda, CA  
Tom Vogt Hopewell Jct., NY  
Mark Volpe Stow, OH  
Jim Wolberg Glencoe, IL

### ADVANCED ROCKETEER Skill Level 4

Gregory Aicus Phoenix, AZ  
Dave Anderson Manati, PR  
K. Peter Anderson Colorado Springs, CO  
Raymond Arellano San Jose, CA  
Richard Baize Southgate, MI  
Edward Beck Fort Wayne, IN  
Dan Beckham Colorado Springs, CO  
Tom Becklund West Fargo, ND  
Larry Bezold Overland, MO

Jeff Bloemaker Brownsville, PA  
Ricky Bolen Sardin, OH  
Gregory J. Bowler Westport, CT  
Mike Boyd Janesville, WI  
Ron Brandt Smithtown, NY  
Robert M. Britton Albuquerque, NM  
David Cohen Brooklyn, NY  
Joe Custillo Bullwin, MO  
Brian Dallas Hampden, MA  
Brian Daly N. Babylon, NY

Jeff Daub Streamwood, IL  
John Dietzen Chattanooga, TN  
David Dimitriadou Fremont, CA  
Mark Dinunno Brockton, MA  
Kevin M. Dull Manassas, VA  
Edward Dziadzio Westfield, MA  
Donald Early Hummelstown, PA  
Arthur Eng Aloha, OR  
Garry Fasnacht Demar, PA  
Fauno San Francisco, CA

John Forsmark Fenton, MI  
Wade Fortune Stanhope, IA  
Larry Frankowski Capac, MI  
Carl L. French APO New York, NY  
Mike Frey Hillsdale, IL  
Steve Gardner Anniston, AL  
Bill Garlinger Highland Heights, KY  
Terry Gordon Owings, Mills, MD  
Simon Griffiths Raleigh, NC  
John D. Grimm Cleveland, OH  
Dean Gundry Salt Lake City, UT  
Donald Haywood, JR Laplace, LA  
Charles Hein San Francisco, CA  
Tim Hennessy Newark, OH  
David Herrick Montgomery, AL  
David Hirsch West Hartford, CT  
Jeffy Holcomb Livonia, MI  
Mike Hood Nashville, TN

Brian Hooks Bayport, NY  
Tim Hunt Princeton, NJ  
Steve Jewkes Los Gatos, CA  
Brian Johnson Conneaut Lake, PA  
Ted Johnston Mantecca, CA  
John Keller Bloomfield, MI  
Lane Keyser Pottstown, PA  
Will Kirchner Chicago, IL  
Sheldon Klein Philadelphia, PA  
Charley Kneifel Pittsburgh, PA  
Dennis Koenig Perryville, MO  
Mark Krebs Wheat Ridge, CO  
Tom Kreuzer Canby, MN  
Kraig Krist Falls Church, VA  
David Kuhn San Antonio, TX  
Patrick Lattimer Wausau, WI  
Keith Looney Meriden, CT  
David Lowe Dallas, TX

Ed Mansell North Versailles, PA  
Merle Mansell North Versailles, PA  
Gary Marr Cortland, OH  
Gordon Meyer Roy, UT  
Tom Moore Potomac, MD  
Ian McMullan Olds, Alberta, Canada  
Jeffrey Negus Voorheesville, NY  
Jim Poland Cedar Rapids, IA  
James Parker Philadelphia, PA  
George Pasek Calgary Alberta, Canada  
Jeff Patton Washington, OH  
Richard Rauschenberg Monongahela, PA  
Kent Reichmann Salt Lake City, UT  
Jim Renne Atherton, CA  
Peter Jay Rubin Jericho, NY  
John Ruck Elgin, IL  
Ron Ruthkowski Baltimore, MD  
Bill Sagatias Altoona, PA

Scott Seaman Washington Court House, OH  
Timmy Simpson Richmond, VA  
Linden Sims Columbus, OH  
Joe Sorrentino Lee, MA  
Rich Steed Granges, UT  
Tim Stenjet Stronach, MI  
Shelton O. Stewart Ferriday, LA  
Kevin Stickle Wanamaker, IN  
Michael Sturgeon Marathon, FL  
Mark Sutherland Beaver Falls, PA  
Jimmie Lee Taylor Lawson, MO  
Stan Taylor Palm Bay, FL  
Scott Thompson Dundas, VA  
Steve Thompson Chesterfield, MO  
Michael Trzesniosk Philadelphia, PA  
Robert Weaver Dallas, TX  
Eric White Livonia, MI  
Bruce Williams Huntington Beach, CA



**ATTENTION EAC ROCKETEERS**

EAC HQ wants you to share your ideas, projects, experiences, and suggestions with your fellow EAC members. Our desire is to make the EAC Newsletter an exciting and valuable publication for EAC rocketeers. Your assistance is needed to make this newsletter the main vehicle for communication between EAC members and chapters.

Send us your contributions for plans, tech articles, cartoons, anecdotes, club news, and other interesting items. If you send us photos, please make sure that you pack them between cardboard sheets so that they won't get creased in the mail. All contributions become the property of the Estes Aerospace Club and cannot be returned. Address all material to: EAC Newsletter Editor, c/o Estes Industries, Penrose, Colorado 81240.

Should your article or photos be used in the EAC Newsletter, we'll reward your efforts and talent with an Estes merchandise certificate, the amount which will be determined by the EAC HQ editorial staff.

Hope to hear from you soon!

**LUNARtoon** Pam Daley  
Phoenix, AZ



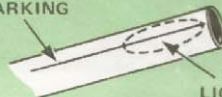
**EAC lunartoon**  
F. Richard Hollingsworth Newport News, VA



**eac tech tip**

**FIN PLACEMENT MARKING**

Donald Hornbeck  
Perry, MI



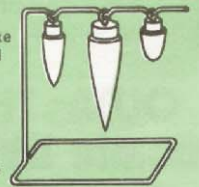
**SAND THIS AREA LIGHTLY WITH FINE SANDPAPER.**

To make fins stay on better lightly sand the area where the fins will be glued on with fine sandpaper to remove the glossy film from the body tube. This provides a better surface for the glue to adhere to.

**eac tech tip**

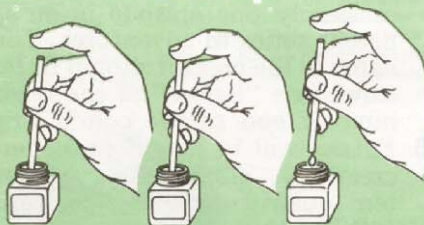
Bill Karle  
Midland, MI

For a handy way of hanging up a nose cone while it dries you can take a coat hanger, cut it, and form it into the shape shown. Be sure to make the arm high enough so that the nose cones don't touch the bottom. You can also spray them while on this hanger!



**eac tech tip**

Peter Loher  
Fabius, NY



Ever spill dope thinner all over? Stick the end of a 3" length of launch lug in the thinner bottle. Put your finger over the other end. Hold this with your finger still in place over the dope bottle that needs thinning. Release your finger. No spilling!

**EAC ADVISORY BOARD NO. 4**

With the introduction of each new Estes product a special group of EAC Rocketeers are selected to review it. They are sent a sample of the actual product and are asked to test it and comment directly to Estes engineers. Our fourth group of EAC Advisory Board members, listed below, are currently evaluating our new STAR TREK STARSHIP ENTERPRISE and KLINGON BATTLE CRUISER kits.

Suggestions for new product ideas are always welcome from all EAC Rocketeers.

**SKILL LEVEL 2**

- Kent Jackson  
Topeka, KS
- Michale Howard  
Houston, TX
- Jerome Choate  
Boring, OR
- Donald Haase  
Baton Rouge, LA
- Keith Peterie  
Washington, MO
- SKILL LEVEL 3**
- Ron Stoll  
Salt Lake City, UT
- Bobby Landrach  
Columbia, SC
- Jim Mault  
Almsted Falls, OH
- Ben Baldanza  
Rome, NY
- Bill Allen  
Waverly, NE

**SKILL LEVEL 4**

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Highland Heights, KY
- Gregory Alcus  
Phoenix, AZ
- John Ruck  
Elgin, IL
- Tom Becklund  
West Fargo, ND
- David Hirsch  
West Hartford, CT
- SKILL LEVEL 5**
- David Reed  
Selinsgrove, PA
- Mario Jones  
Mission Viejo, CA
- David Glatt  
Washington, DC
- Donald Pelletier  
Bangor, ME
- Marc Cairgue  
Ft. Lauderdale, FL

**STAR TREK**  
FLYING MODEL ROCKETS

AT LAST,  
FLYING SCALE MODELS  
OF TELEVISION'S  
MOST FAMOUS  
SPACECRAFT.



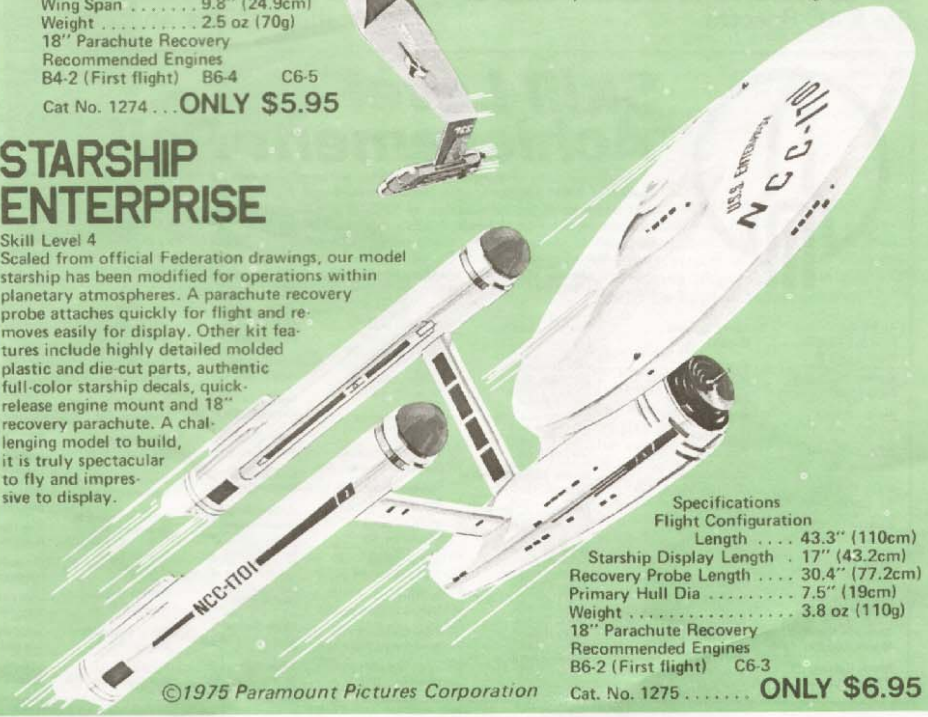
**KLINGON BATTLE CRUISER**

**Skill Level 4**  
Your Star Trek collection won't be complete without this flying scale model of the Enterprise's chief adversary, the Klingon Battle Cruiser. Accurately detailed, our flying scale cruiser has been modified to permit atmospheric operations. Kit includes accurately detailed molded plastic and die-cut parts, Klingon warship insignia, quick-release engine mount and colorful orange and white canopy 'chute. A really terrific display model, our Klingon replica has excellent performance for sensational flights.

- Specifications**  
 Length . . . . . 15.5" (39.4cm)  
 Wing Span . . . . . 9.8" (24.9cm)  
 Weight . . . . . 2.5 oz (70g)  
 18" Parachute Recovery  
 Recommended Engines  
 B4-2 (First flight) B6-4 C6-5  
 Cat No. 1274 . . . . . **ONLY \$5.95**

**STARSHIP ENTERPRISE**

**Skill Level 4**  
Scaled from official Federation drawings, our model starship has been modified for operations within planetary atmospheres. A parachute recovery probe attaches quickly for flight and removes easily for display. Other kit features include highly detailed molded plastic and die-cut parts, authentic full-color starship decals, quick-release engine mount and 18" recovery parachute. A challenging model to build, it is truly spectacular to fly and impressive to display.



- Specifications**  
**Flight Configuration**  
 Length . . . . . 43.3" (110cm)  
 Starship Display Length . . . . . 17" (43.2cm)  
 Recovery Probe Length . . . . . 30.4" (77.2cm)  
 Primary Hull Dia . . . . . 7.5" (19cm)  
 Weight . . . . . 3.8 oz (110g)  
 18" Parachute Recovery  
 Recommended Engines  
 B6-2 (First flight) C6-3  
 Cat. No. 1275 . . . . . **ONLY \$6.95**



# exclusive EAC offers

(NOTE: ALL THESE EAC SPECIAL OFFERS expire December 1, 1975 unless otherwise indicated or when supplies are exhausted. Offers good only with EAC SPECTRA Order Form, Page 8. Substitutions will be made when necessary. Engines, launch system, and glue are not included with any kit.)

## High-Performance 'D' Engine Special

Purchase any one of these high performing "D" powered birds and save \$1.00 per tube on your D12-7 engines. (Limit three tubes per customer.)

### R-20 DEMON (Skill Level 2)

- Super-performing payload carrier
- Sounding rocket appearance
- Easy-trak foil press-on decal for accurate in-flight tracking
- BIG 18" recovery chute
- Die-cut fins

Cat. No. 1258  
Only \$4.95

### GOBLIN (Skill Level 3)

- Incredibly high flights
- Dramatic streamer recovery
- Die-cut fins
- Far-out decals

Cat. No. 1255  
Only \$3.50

### CHEROKEE-D (Skill Level 2)

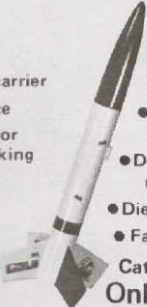
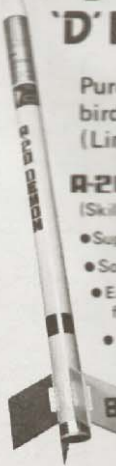
- High-performance design
- Terrific sport model
- 18" parachute recovery
- Die-cut fins

Cat. No. 1247  
Only \$3.95

### renegade (Skill Level 2)

- Ultra-high performance "D" bird
- Really spectacular flights
- Almost 3 feet tall
- Giant 18" parachute

Cat. No. 1271  
Only \$3.95



## LIGHTNIN' BUG ESTES LAND ROCKET

A real four wheel bomb featuring "VW Funny Car" design with simulated "chute pouch and far-out decals. Easy to build and fun to race. Engineered for action and performance, attain scale speeds over 700 m.p.h. (Actual speeds over 35 m.p.h.). Powered by safe ColdPower propellant. Features light-weight, vacuum-formed body, T-wing



Regular \$3.95  
NOW ONLY \$2.95

airfoil, high performance design, mag wheels, and racing slicks. Plus colorful decals, built-in guide lugs, and re-useable XR-100 ColdPower rocket engine. (ColdPower Propellant not included.) 11.4" long, (28.96 cm.). Ship Wt. 15 oz. Cat. No. 4002

Hurry! Supplies Are Limited!!!!

Substitutions Will Be Made When Necessary - Offer Expires 12-1-'75.

## Designers Decal Assortment

Perfect for decorating your original designs

One dozen sheets of decals

Includes checkerboard roll patterns, stripes, numbers, letters, kit names, and Goony-Cals in a variety of colors

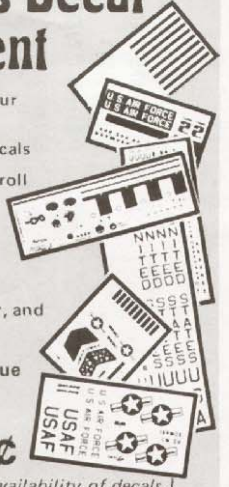
Some are water transfer, and others are stick-on

More than a \$3.50 value

Cat. No. 1467

ONLY 99¢

(Assortments vary with availability of decals.)



## MYSTERY PARTS PACKAGE

Guaranteed to include body tubes, nose cones, ring sets, tube adapters, stage couplers, nose blocks and balsa in a variety of shapes and sizes. All parts are usable, but exact contents will vary with availability of materials.

Excellent for constructing those original designs and far-out plans.

More than a \$20 value featuring 70 to 80 mystery items.

Cat. No. 1468  
Special EAC Price  
Only \$2.95

## FIRE-CAT "Reconnaissance Drone"

Available Only to EAC Rocketeers

Limited Run Edition—This Kit Will Not Be Made Again—Order Today—Supplies Are Limited.



From the drawing boards of the not-too-distant future comes the FireCat, a remote-piloted, reconnaissance drone. Launched from high altitude bomber aircraft or "zero launched" with strap-on solid propellant booster from mobile ground platform, it can perform a variety of surveillance and intelligence missions.

Scale version of this authentic vehicle-of-the-future features military decal, two-color decals, die-cut balsa fins, quick-change engine mount, 12" parachute recovery, and scramjet appearance.

Cat. No. 0821 Reg. \$2.75  
NOW Only \$2.00 Save 75¢

(Offer good only with EAC Newsletter Order Form. Offer expires 12-1-'75 or when supply is exhausted. Hurry! Supplies are limited.)

# BONUS KITS

Your choice only 50¢ with \$6.00 order.

### Aero-Hi (Skill Level 1)

- Scale-Like Sounding Rocket Vehicle
- Realistic Decal
- High Performance Design

REGULAR \$1.75

### FALCON (Skill Level 3)

- Boost Glider
- Sky-High Performance
- Beautiful Climb

Glide Times Up To 1 1/2 Minutes and Longer  
REGULAR \$1.75

My order is over \$6.00 I have enclosed an additional 50¢

Please send me: (Check one)  
 AERO-HI (# 0817) OR  
 FALCON (# 1213)

Your choice only 75¢ with \$9.00 order.

### apogee II (Skill Level 3)

- Two-Stage Payload Vehicle
- Tumbling Booster
- See-Through Payload
- Ultra High Performance

REGULAR \$2.75

### AEROBEE 300 (Skill Level 3)

- 1/15th Scale Sounding Rocket
- Authentic Decals
- Terrific Performance
- Balsa Detailing

REGULAR \$2.75

My order is over \$9.00 I have enclosed an additional 75¢.

Please send me: (Check one)  
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OR  
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- Exotic Space Shuttle Styling
- Designed For Near-Space Exploration
- Transport Ship Plus Gliding Re-Entry Vehicle

REGULAR \$4.95

### SANDHAWK (Skill Level 2)

- "D" Engine Powered
- Sounding Rocket Vehicle
- Over 30" Tall
- Ultra-Detailed Plastic Fins And Payload Section

REGULAR \$3.95

My order is over \$12.00 I have enclosed an additional \$1.00

Please send me: (Check one)  
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 SANDHAWK (# 1251)

NOTE: "Bonus Kit" offers good only with this order form. Limit one "Kit" per order. Substitutions will be made when necessary. Offers Expire 12-1-'75





# ESTES AEROSPACE CLUB ORDER FORM

A SUBSIDIARY OF DAMON  
**ESTES INDUSTRIES**  
PENROSE, COLO. 81240

DATE: \_\_\_\_\_ Age \_\_\_\_\_  
TYPE OR PRINT PLAINLY IN INK  
 UPS is available in my area. Dept. EAC-L

Quan.	Cat. No.	Product Description	Unit Price	Total
1	#1447	EAC Membership Kit \$2.00		
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

Is this your first order?  Yes  No  
Was you last order more than one year ago?  Yes  No

For Office Use Only  
Amt. Recd.  
Checked By  
No. Labels  
No. Pkgs.  
P  
N/F

(If additional space is needed use a separate sheet of paper.)

### POSTAGE/PRIORITY MAIL

All retail orders are shipped postpaid in U.S. by regular land mail, UPS, or by the customer's choice of carrier which may require additional postage. For extra rapid delivery, you may request Priority Mail (Air Mail) service. Total up the shipping weights on the items you are ordering, then find the amount to allow for extra postage on the chart. When your order is processed you will be charged only for the difference between regular parcel post and priority mail—any excess will be refunded.

WEIGHT (UP TO BUT NOT OVER) Allow	10oz. to 1 lb.	2 lbs.	3 lbs.	4 lbs.	5 lbs.
6 lbs.	\$3.73	\$4.33	\$4.93	\$5.53	

For orders 9 ounces or less, send 9¢ per ounce.

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Full payment must accompany all orders. Please send all remittances by either check or money order.

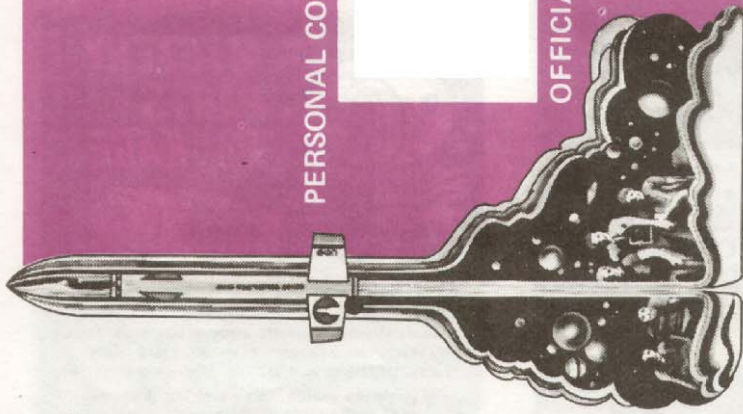
We do not ship orders C. O. D.

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Balance Due Estes Industries From Previous Order	
Priority Postage (if Desired) / State Sales Tax 3% (Colo. Residents Only)	
<b>TOTAL ENCLOSED</b>	

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## NOW MORE THAN 65,000 MEMBERS EAC NEWSLETTER

The EAC Newsletter is published by Estes Industries, Penrose, Colorado. This publication is written for members of the Estes Aerospace Club to promote safe youth rocketry, distribute current technical information, and make model rocketry more enjoyable and educational. Current issues of this Newsletter are distributed free of charge as a service to all active EAC members.

Vernon Estes.....Publisher  
Dane Boles.....Editor

Bob Cannon.....Director of Publications  
Charles Webb.....Photographer

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## HAVE YOU STARTED AN EAC CHAPTER YET?

- Special EAC Chapter Membership is available to existing rocket clubs or to EAC members wishing to join together to form a local chapter of the Estes Aerospace Club. Chapter Wall Certificate, Tech Report Collection, Guide for Aerospace Clubs, EAC Contest kit, and Launch System Booklet are just a few of the many benefits. Request an application for chapter membership from: EAC HQ, c/o Estes Industries, Penrose, Colorado 81240.

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