ESTES®

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1988

MODEL ROCKET NEWS

MAGAZINE

DEDICATED TO AND PUBLISHED FOR ESTES ROCKETEERS, AMERICA'S FUTURE IN SPACE

DAEDALUS PROJECT

The Smithsonian's National Air and Space Museum and the Massachusetts Institute of Technology are nearing the completion of a very ambitious project. They have set the goal of a man-powered flight duplicating the mythical flight of the Greek inventor Daedalus from the island of Crete to freedom in Greece.

The first phase of the three phase project was a feasibility study. This was successfully completed. The second phase is the design and construction of a prototype aircraft. This phase is nearing completion. The prototype man-powered aircraft has been named the **Light Eagle**. The 92-pound prototype has been successfully test flown by Glenn Tremml for 37.2 miles in 2 hours, 13 mintues, 14 seconds.

The third phase will be the actual man-powered flight from Crete to Greek mainland, a distance of 69 miles. The team hopes to accomplish this ambitious goal in April 1988.

The Daedalus Project team includes model rocketeers John Langford, Bob Parks, Jim Wilkerson, "Guppy" Youngren, and Geoff Landis. All are experienced model rocketeers who are now involved in engineering careers.

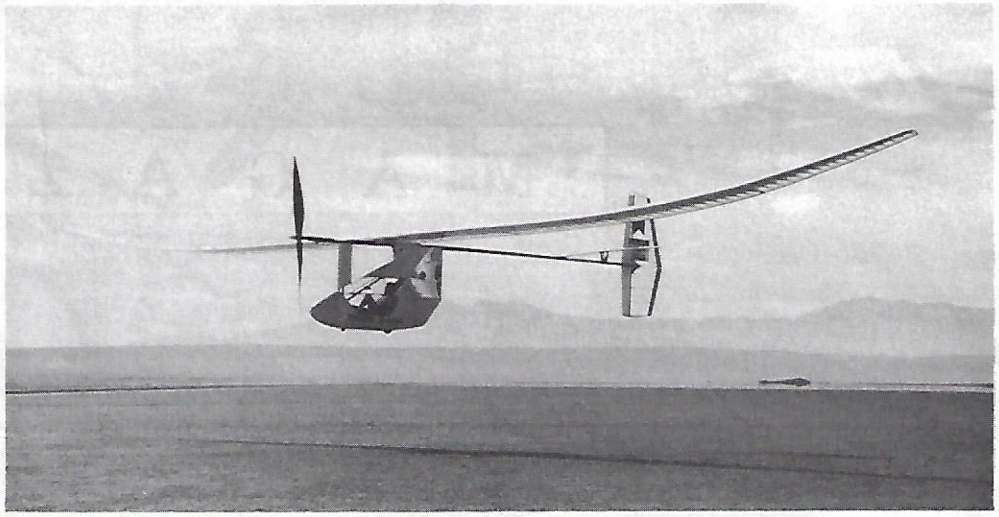
John Langford, a native of Atlanta, GA, and currently residing in Alexandria, VA is Program Manager. He is working on his Ph.D. at MIT in the Department of Aeronautics and Astronautics and is a Research Staff Member of the Institute for Defense Analyses. He was program manager for both the Crysalis and Monarch HPA (human-powered aircraft.) He has competed in three model rocket world championships.

Robert Parks, a native of Lakeland, FL, is Senior Engineer responsible for mechanical design. He is Senior Research Engineer for Lockheed Missiles and Space Company. He did his undergraduate work in aeronautics at MIT. He earned his Ph. D. at Stanford University. He was a member of the Crysalis design team and several U.S. international spacemodeling teams.

Harold "Guppy" Youngren, native of Burbank, CA is Test Pilot and Senior Aerodynamics Engineer. His undergraduate work at MIT was in aeronautics. He is currently Research Specialist, Flight Science, for Lockheed-California Company. His work involves computational fluid dynamics as applied to transport and fighter aircraft designs. He is a designer and chief test pilot for the Crysalis HPA. He has been a member of several U.S. international spacemodeling teams. In 1978 he became the first American to win an FAI gold medal in spacemodeling.

Keep your eyes on the news during April to learn about the success of the final phase of this project. I hope some of the press coverage includes information about these model rocketeers turned engineers.

If you want to do some research on this ambitious undertaking, the February 1987 issue of Popular Science contains a nice article about the project.



EASY WAY TO USE CAR BATTERY AS LAUNCH POWER SUPPLY

When my 7 year old son and I launch, we use a unique launch control system. I took the cigarette lighter adapter from a device which plugs into the cigarette lighter. I connected the power supply leads from a launch controller to the wires from this plug. Now I can use the car battery as the power supply without raising the hood of the car.

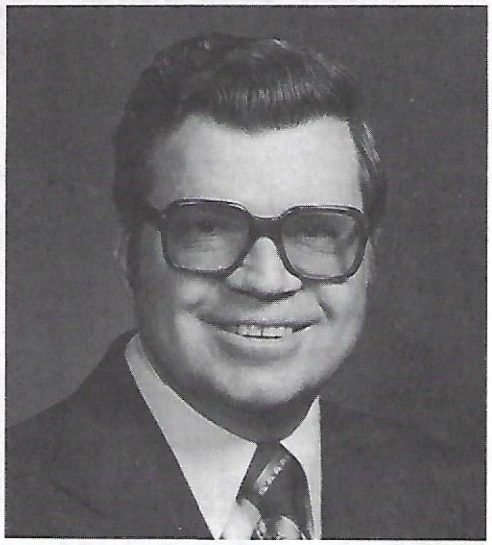
Noah Wayne and Noah Jason Lewis, New Orleans, LA

Sparky, The Flying Asparagus Head, and Rob Freeman of Corona Del Mar, CA as observed at NARAM 29. (Photo by Alan Williams).

ESTES MODEL ROCKET NEWS MAGAZINE

Bob Cannon ..... *Editor*
Mary Roberts ..... *Asst. Editor*
Charles Webb ..... *Photographer*
Kent Jodrie ..... *Graphic Design*
Claudia Smith ..... *Typesetter*

Unless otherwise stated, all the model rocketry kits advertised in this magazine are hobby kits requiring assembly. Launch system, engines, glue, and finishing supplies are not included. Recommended for ages 10 through adult. Adult supervision suggested for those under 12 years of age when flying model rockets. Prices subject to change without notice.



MESSAGES FROM LAUNCH CONTROL

We are happy to share several excellent contributions with you in this issue. The Daedalus Project (article on facing page) involved several expert model rocketeers. Greg Kennedy reports on some of the 1987 activities held at Space Center. Douglas Kirk reports on his pick of the top ten space museums in the country. This can be excellent help in planning your vacation (or your parent's vacation if you do it right) this summer.

Scale Models

Like scale models? Most rocketeers do, once they successfully build those first couple of Skill Level 1 kits.

Does Estes have scale models for you? See page 6 for a list of the many scale models Estes currently offers--all the way from Skill 2 to the great Saturn V.

Estes Space Program

I had planned to have a column about those who have already earned Achievement Awards in this issue. Then I saw the number of EAC members who have recently earned Skill Level awards. This list is found elsewhere in this issue. We will report on those who have earned ESP Achievement Awards in the Summer 1988 issue.

Three new Achievement Awards are available to ESP members. See page 8 for this announcement.

Earn the awards to demonstrate your model rocketry skills (and have some fun!) and wear the award patches with pride!

Contests

The winners of the 1987 Creature Contest are listed on pages 14-15.

We are belatedly catching up on publishing winners of recent (and not so recent) Design of the Month contests. See page 5 for the names of winners.

Have you entered the 1988 Free Plan Contest yet? The rules for this were announced on the wrapper in which your 1988 Estes catalog was mailed. If you did not receive them, or if you have lost the rules, you can get a copy of the rules by sending a business-size SASE (self-addressed, stamped envelope) to **1988 Free Plan Contest, Estes Industries, 1295 H Street, Penrose, CO 81240-0227.** Don't forget that you can enter--and maybe win!--as often as you wish in this contest.

International Reports

A copy of a new book about model rocketry written by Oliver Missbach was received just before this column was written (early December 1987). The title is Fleigende MODELL RAKETEN selbst gebaut! As the title indicates, the book was published in Germany. Among the few words which I can read are these from page 9: "...Mary Roberts (USA)...". Herr Missbach is thanking our Mary for her help with information, illustrations, and photos. Way to go, Mary!

Oscar A'zevedo, an engineering student from Portugal who attended my graduate college class/workshop on model rocketry last summer, has been active in introducing model rocketry into Portugal. Among his accomplishments is a double page article in the May 31, 1987 issue of Domingo Rlevists, a newspaper published in Portugal. The article about model rocketry was written by Luis DeBarroco with information and photos from Oscar.

Model rocketry is a truly international hobby! Read American Spacemodeling for news about international as well as national model rocketry events.

Survey

Thanks for the hundreds of responses to our survey in the Fall 1987 MRNM. We will share some of the results with you after the responses have been tabulated.

EAC CORNER

This is the last time we will be listing the Skill Level achievers for the Estes Aerospace Club. Thanks to the many thousands of you model rocketeers who joined the EAC and had fun in it. We will continue to award Skill Level achievements for the EAC for a few more months. I hope all of you will join the new Estes Space Program announced last September. The new club should provide many more benefits than the old club.

SKILL LEVEL 2 Sorry, but we just don't have space in this issue to list the additional 250 EAC members who earned their Skill Level 2 award by the time this list was compiled in late October 1987.

SKILL LEVEL 3 Robert Amour, Stow, OH; **Thomas Anderson,** Jackson, WY; **William B. Ash,** Alma, WV; **Bruce Baldwin,** Kokomo, IN; **Terry Barham,** Vandenberg AFB, CA; **William Barkhaus,** Bonduel, WI; **Dan Barral,** Shilington, PA; **Lon Allen Beale,** California City, CA; **Mike Becher,** Dolores, CO; **Kurt Bertram,** Kansas City, MO; **Clayton Blachford,** Orient, SD; **Kevin Boone,** Stevensville, MD; **Adam Boyton,** Winfield, PA; **Francis Bradley,** Darnestown, MD; **Craig Brice,** Ozark, MO; **Rodney K. Briggs,** Cheshire, MA; **Rick Broadwater,** West Newton, PA; **Craig Burnside,** Newton, NJ; **Nicholas Cepeda,** Mobile, AL; **Brian Coes,** Westbrook, CT; **David Copeland,** Melrose, MA; **Steve Crock,** Wooster, OH; **Jeff Cummings,** Windham, NH; **Sean Davis,** Chatham, NY; **Jimmy Diggs,** Wilmington, NC; **Daniel Duncan,** Veedersburg, IN; **Jerry Eipers,** Minooka, IL; **John Esposito,** Philadephia, PA; **Michael Ethridge,** Hamlet, NC; **Keith Evans,** Jonesborough, TN; **Craig Fanning,** Gales Ferry, CT; **Jay Falmer,** Mt. Brook, AL; **Jason Feinbers,** Los Angeles, CA; **David Fischer,** Owen, WI; **Scott Foy,** Cincinnati, OH; **Stewart Freeman,** Kennewick, WA; **Kevin L. Funk,** Bryn Maur, PA; **Michael Furry,** Yardley, PA; **Ivan Gevirtz,** Maplewood, NJ; **Scott Godfrey,** Nashua, NH; **Mark Goehring,** Hayward, WI; **Richard Hafer,** Montrose, CO; **Scott Hamilton,** Sandsprings, OK; **Kyle Handy,** Flint, MI; **Travis Hamlin** Belgrade, MT; **Kevin Hansen,** Ferndale, WA; **E.N. Harris,** Arroyo Grande, CA; **Jeff Harvey,** Stevensville, MD; **Doug Hatfield,** St. Louis, MO; **Jasper, L. Hausner,** Arlington Heights, IL; **Karl Hawsey,** Semmes, AL; **Robert R. Hegwood,** Germantown, OH; **Kent Hinnen,** Eureka, IL; **Mike Hofman,** Cornoa, CA; **Nathan Huser,** Lamar, CO; **Bobby Jenkins,** Cutchogye, NY; **Bob Jennings,** Springfield, NJ; **Stewart Johnston,** Grand Rapids, MI; **Steven Jones,** Latrobe, PA; **John Jurasek,** Orangeburg, NY; **Patrick Kelly,** Wallingford, VT; **Rob Kelsey,** Ontario, NY; **Nick Kessler,** Port Washington, NY; **Wayne Kindstrom,** Bakersfield, MO; **Darrell D. King,** Flint, MI; **S. Klug,** Cincinnati, OH; **Kyle Krammes,** Tremont, PA; **Justin T. Iangler,** Mt. Kisco, NY; **John Lawless,** Woodruff, WI; **Randy Lene,** Laplata, MO; **Peter M. Leonard,** Rome, NY; **Brian Loerzel,** Dickinson, ND; **Max Mawchni,** Bloomfield, MI; **Carlos A. Median,** Sugar City, CO; **Nat Merriam,** The Woodlands; **Daniel Miller,** Martinsburg, WV 2540l; **Mike Minch,** Nevada City, CA; Greg Minnich, Fort Wayne, IN; **Michael McMahon,** Haddonfield, NJ; **Peter D. Norman,** Fort Deposit, AL; **Michael Odum,** Mt. Ranch, CA; **Ray Okerman,** Sleepy Eye, MN; **Darren Orloff,** Foxboro, MA; **Jeff Oswald,** Tallmadge, OH; **Scott Patterson,** Evans, WA; **Joe Phillips,** Ingalls, IN; **Jeffrey Prater,** Hueysville, KY; **Paul M. Prencipe,** Ridgeway, KY; **John Price,** Lincoln, NE; **Jonathan Pruett,** Helena, MT; **Lance Pullis,** Ruston, LA; **Mike Rantala,** Pueblo West, CO; **Tim Reilly,** Lebanon, NJ; **Jeff Roark,** Indianapolis, IN; **Sam Rondeau,** Virogna, IL; **Ryan Royston,** Roanoke, AL; **Marcus Sanderson,** Calabosas, CA; **Bradley S. Saylor,** Martinsburg, WV; **Walley Schlesson,** Independence, WI; **Christopher T. Schmitt,** Evansville, IN; Mike Schneider, Meno Falls, WI; **Todd Schummann,** Sheboygan, WI; **Matthew Seevers,** Lincoln, NE; **Robin Shields,** Mooresville, IN; **Carleen Shreeve,** St. Johns, AZ; **Kurtis Siggard,** Sacramento, CA; **Caleb Sires,** Ringsted, IA; **Allen Smith,** Midville, GA; **John Spry,** West Bend, WI; **Harry Stephens,** Exeter, MO; **Ben Sylvester,** Cyril, OK; **Patrick Taylor,** Lacoochee, FL; **Timothy A. Taylor,** Blomington, IN; **Frank Thompson,** Lawton, MI; **Toby Till,** Houston, TX; **Carlo Tomasulo,** Northeast, MD; **Mike Tucker,** Danbury, CT; **Charles**

Continued on page 12

PRIVATE SPACE LAUNCHES

More than two year's have passed since the last Space Shuttle launch. Within a few months NASA will resume launches of the Space Shuttle. The United States has few reliable launch vehicles for orbital launches and beyond. We count heavily on near-orbital launches using the Shuttle. Satellites carried up in the Shuttle's cargo bay can be launched to higher orbits using booster engines deployed with the satellites.

The larger aerospace companies such as McDonnell Douglas, Martin Marietta, General Dynamics, etc. can build large boosters for launching heavy payloads to high orbits. These companies typically develop launch hardware for NASA and DOD (Department of Defense). Now their territory is being invaded by young, small, entrepreneurial companies.

Orbital Science, founded by three Harvard Business School graduates and a Texas oil and gas wildcatter, and headquartered in a suburb of Washington, DC has landed a contract with NASA for a new TOS (Transfer Orbit Stage) to boost satellites carried to low orbit on the Shuttle to high orbits or farther. One of the first uses of the booster they developed may be to send the Mars Observer scientific probe on its way to Mars in early 1990's.

AMROC (American Rocket Company), headquartered northwest of Los Angeles, is developing a hybrid rocket called the ILV (Industrial Launch Vehicle). This young company has developed a series of hybrid engines (fuel consists of solid polybutadiene with channels through which pass LOX (liquid oxygen). The rate of flow can be controlled by the LOX pump from off to full thrust. This system is nearly as efficient as the much more expensive and harder to control liquid hydrogen-liquid oxygen rocket engine.

Space Services Incorporated, a Houston based company, is also involved in trying to develop a launch vehicle. There are other companies involved in trying to develop their own launch vehicles. Such enterprises require a lot of expertise, ambition, money, dedication, and just plain "guts". America was developed by just such individuals and the companies they founded. Let's hope that the various governmental agencies help them, not hinder them. The United States needs such individuals to regain our lead in space exploration and in developing the Space Frontier.

Information on which this article is based was secured primarily from two articles in the Smithsonian's Air & Space magazine. The first article is "Entrepreneuers in Space" from the December 1986/January 1987 issue. The second article is The California Rocket Race from the December 1987/January 1988. These articles can be read in your school or local public library. If the magazines are not in the library's collection, they can normally be borrowed through interlibrary loan. This excellent magazine may be subscribed to for $18 per year (6 issues) from the ***National Air and Space Museum, Smithsonian Institution, Membership-Subscription Center, Box 51244, Boulder, CO 80321-1244.***

The subject of this article can be a good one for an interesting report for your class or school.

NASA SELECT

by Rick Tumlinson

The information in this article was derived from an article in Space World, February 1986. Perhaps it can be of help to your local cable TV company and/or your teacher. If you have a satellite dish antenna, you are in business!

A service which NASA makes available for Space Shuttle launches is relatively unknown. This service is called NASA Select. Perhaps the information contained in this article will be of interest to your local cable channel as well as to you and your classes.

The NASA Select program is broadcast during Shuttle missions and at selected other times on the RCA American Satcom satellite F-2R located at 72 degrees west longitude. The C-band transponder number is 13. Downlink frequency is 3960 MHz (vertical polarization).

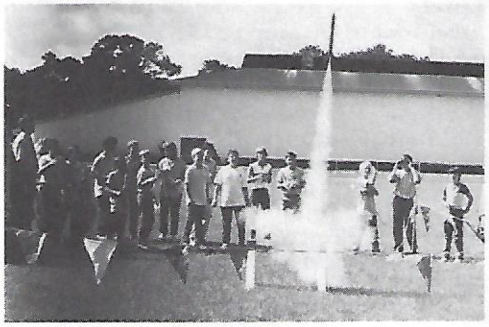
Printed copies of rough mission schedules and a fact sheet that provides a brief summary of NASA Select and the necessary aiming data can be secured by writing to:

Media Services Branch/AP3, Johnson Space Center, Houston, TX 77058.

YOUNG ASTRONAUTS AND ROCKET CLUB

By Kim Harthun, Oviedo, FL

Excitement ran high at St Luke's Lutheran School in Oviedo, FL on October 20, 1987. This was the day for the first launch of the school year for the Young Astronaut and Rocket Club. Throughout the day final preparations were made on a variety of rockets. At last the last period of the day arrived!



The club assembled in the science room. All classes of the school had been invited to view the event. Final instructions given, the club filed out to the soccer field, our launch area. The rest of the school was ready. The local newspaper sent a reporter/photographer, and the professional photo-

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DESIGN OF THE MONTH WINNERS

The Design of the Month Contest continues to be popular. Here is a list of recent (And some not so recent--Sorry about that!) winners. Keep those designs coming!

And don't forget our new 1988 Free Plan Contest. The rules for that appeared on the wrapper for the 1988 catalog. If you did not receive your 1988 catalog by mail and would like a copy of the rules, send us a business size SASE (self-addressed and stamped envelope) with your request. Send your request and the envelope to **1988 Free Plans Contest Rules, Estes Industries, 1295 H St., Penrose, CO 81240-0227.**

October 1986—Winners—Louis S. Jiardina, Marion, IL, "Starship 411";**Christopher G. Donahue,** Huntsville, AL, "Double Trouble"; **Scott LaForge,** Wichita, KS, "Saturn 1-B"; **Honorable Mentions—Dean Pilato,** Warren, MI, "Warp Wasp"; **Mike Tucker,** Danbury, CT, "USANIMAL"; **George Musitano,** Yonkers, NY, "Launch System"; **Bradley H. Needham,** New Albany, NY, "Recovery Dial "; **Douglas Rodger,** Concord, NH, "Range Box/Launch Pad"; **William Pippin,** Cocoa, FL, "Ramjet Transport"; **Brett Haynes,** Aurora, IL, "Black Phantom"; **Nathan J. Chronister,** New Paltz, NY, "Arcturus"; **Nathan J. Chronister,** New Paltz, NY, "3-Way Launch System"; **Tony Nordin,** Libby, MT;, "Bullet"; **Peter W. Kodis III,** No. Dartmouth, MA, "Trigger Fly"; **Richard Malvarose,** Santa Maria, CA, "Thunderhawk"; **Nathan J. Chronister,** New Paltz, NY, "Rocket Glider"; **Kevin Kuntz,** Otis, CO, "(Unnamed)"; **Andrew Wallace,** Masontown, PA, "Shock Cord Mount Assembly"; **John Collins,** Ft. Myers, FL, "Delta".

November 1986—Winners—Bill Smith, Navarre, OH, "Triad"; **Mark Rainey,** Hackettstown, NJ, "Gantry"; **Dean Pilato,** Warren, MI, "Delta Cygni"; **Louis S. Jiardina, Marion, IL, "Australian Shuttle"; Richard M. Jungclas/Peter Alway,** Ann Arbor, MI, "Pegboard Display Stand"; **Honorable Mentions—David P. Bartsell,** Houston, TX, "The Solar Wind"; **Nathan J. Chronister,** New Paltz, NY, "Cygnus"; **Louis J. Jiardina,** Marion, IL, "Aero-Space Liner"; **Ricky Wong,** Chicago, IL, "Field Box"; **Robbie Richardson,** Marion, IN, "(Six Rockets) Asteroid Explorer II, Supersonic Missile, 15-Minute Bird, Groove Tube 11, Exterminator, Peacemaker"; **Steve Sidare,** Camb, MA, "Red Arrow"; **Georgine Murphy,** Polk City, FL, "Determined Buzzards?, and D-Terminater", **Roland Pouliot,** Bonaire, GA, "Rocket Locator"; **Charlie Gaya,** Atlanta, GA, "Trident"; **Drew G. Gray,** Brookville, PA, "Exterminator"; **Peter W. Kodis,** No. Dartmouth, MA, "Beechcraft Starship III"; **Peter Alway,** Kalamazoo, MI,"Juno II".

December 1986—Winners—Paul Geremia, Meriden, CT, "Extending Rocket"; **William Wolf,** Middletown, NJ, "G.A.V.-Galactic Attach Vehicle"; **B.J. Lawson,** Lakeland, FL, "X-20 Devastator"; **Stuart Lodge,** Bath, County of Avon, United Kingdom, "Briston Aerojet SKUA"; **Gary Leggett,** Waller, TX, "Screamin Double D'Mon"; **Honorable Mentions—Louis J. Jiardina,** Marion, IL, "Russian SST"; **Brian McKinnon,** Camdon, AR, "Omega"; **Lyle Darrah,** Granby, CO, "Rocket Display Stand"; **Joseph G. Vecchitto,** Wallingford, CT, "Quick Fall Para-Recovery System"; **Chris Miner,** Las Vegas, NV, "CM-972"/ **Peter W. Kodis,** No. Dartmouth, MA, "Soviet RPG".

January 1987—Winners—Peter W. Kodis, No. Dartmouth, MA, "P5A Sea-Skate Stealth ASW"; **Louis Jiardina,** Marion, IL, "USAF Attack Shuttle"; **Honorable Mentions—David Schroers,** Schofield, WI, "Meteor Interceptor"; **Damon Curtis,** Oxon Hill, MD, "Shadow ISV"; **Nathan J. Chronister,** New Paltz, NY, "Peacock" and "Delta 2"; **Mike J. Ripley,** Coon Rapids, MN, "GTD-21 Drone".

February 1987—Winners—Peter W. Kodis, No. Dartmouth, MA, "X-16B Hyper Soar"; **Marc Moose Lavigne,** Redondo Beach, CA, "A Frame Rocket Launch Pad"; **Rick Boyette,** West Palm Beach, FL, "Polaris A-1"; **Louis Jiardina,** Marion, IL, "T.W.A. Shuttle"; **Honorable Mentions—Louis Jiardina,** Marion, IL, "USAF Space Plans"; **Richard Crane,** Mesquite, TX, "Banannafin"; **Jerry Hutchins,** Rock Island, IL "Unnamed 2 stage rocket"; **David M. Baum,** Allentown, PA, "Orion"; **Paul Brunciak,** Clifton, NJ, "Heat-Seeker"; **Mark Rainey,** Hackettstown, NJ, "Real? or Not?"; **David M. Baum,** Allentown, PA, "Litagator"; **David Wakelee,** Hamburg, NY, "Hector"; **Dean Pilato,** Warren, MI, "Gantry Rocket Launcher"; **Eric Hirsch,** Storrs, CT, "Zenith"; **Brian Marble,** Riverside, CA, "Pathfinder"; **Chris Reed,** Buffalo, IL, "Wind Charger"; **Kevin Thomas,** Holliston, MA, "Sun Seeker".

March 1987—Winners—Keith Wiedemann, Morrison, CO, "Explorer"; **Dean Pilato,** Warren, MI, "Spin-Off Rocket"; **Chris Glahn,** Alvaton, KY, "Master"; **Peter Kodis III,** No. Dartmouth, MI, "Jarvis Medium Launch Vehicle"; **Dean Pilato,** Warren, MI, "Vasabond-V Rocket"; **Paul Rohrbaugh,** Boardman, OH, "F1-4 Rocket-Jet"; **Tony Williams,** Jasper, AL, "V-Max"; **Honorable Mentions—Bill Constantino,** Cynthiana, KY, "The Tritus"; **Sam Meeker,** N. Henderson, IL, "Leader Parachute"; **Anthony Williams,** Jasper, "Alpha Headroom"; **Nathan Chronister,** New Paltz, NY, "Gyros 2"; **Matthew Bergeron,** Manheim, PA, "Skystreamer"; **Brad Needham,** New Albany, IN, "The Flying Wing"; **Jason R,. Sullivan,** Norwell, MA, "Temujin"; **David Mulholland,** Littleton, CO, "The Silver Streak"; **Louis Jiardina,** Marion, IL, "Alien Interceptor; **James M. Riggle,** St. Johns, MI, "Hexad"; **Louis Jiardina,** Marion, IL, "Nomad"; **David M. Baum,** Allentown, PA, "The Derringer".

April 1987—Winners—David M. Baum, Allentown, PA, "The Solar Sailor"; **Peter W. Kodis,** No. Dartmouth, MA, "SPZ-57 Space Stuka"; **Jason Wroblewski,** Bitely, MI, "Bumble Bee"; **Honorable Mentions—Greg McCoy,** Sauk Centre, MN; "The Flash"; **Matthew Bergeron,** Manheim, PA, "Skyfox"; **Louis Jiardina,** Marion, IL, "Anti-Tank Rocket"; **Brad Needham,** New Albany, IN, "Solstys II"; **Louis Jiardina,** Marion, IL, "The Sunbird"; **Dean Pilato,** Warren, MI, "Almalthea".

May 1987—Winners—Kevin Dommer, Lansing, IL "Launching Device"; **Joe Birren,** Elkgrove, IL, "Sky Glide"; **Honorable Mentions—Louis Jiardina,** Marion, IL, "Exeter Light Transport"; **David M. Baum,** Allentown, PA, "Aerodart"; **Rob Williamson,** Blue Springs, MO, "Mini Sprint"; **Matthew Bergeron,** Manheim, PA, "Arrowliner"; **Matthew Bergeson,** Manheim, PA, "Skyfire"; **Jack L. Campbell,** Columbia, MO, "Federation Starship".

June 1987—Winners—Donald Leet, Ipswich, MA, "Disc-Snap & Shroud Line Assembly"; **Melissa Francis,** Hinsdale, IL, "W.O.W."; **Dean Pilato,** Warren, MI, "Rescue Shuttle"; **Steve Barile,** Las Vegas, NV, "Liberation"; **Wendy Jiardina,** Marion, IL, "Starburst"; **Mike Rivers Jr.,** Carthage, NY, "Unnamed"; **Paul A. Dayton,** Pittsfield, MA, "Unnamed"; **Curt Cummins,** Hinsdale, IL, "The Alpha".

July 1987—Winners—Jeff Hartkopf, Schofield, WI, "Thor Delta"; **Ross Winston,** Warsaw, NY, "Interstellar Crusader"; **Peter Alway,** Portage, MI,"Three-Ring Rocket"; **Jona B. VanWinkle,** Granville, OH, "Silver Bullet"; **Andy Gnidziejko,** Alna, NE, "Omni 5 Electric Launcher"; **Dan Hoar,** Poynette, WI, "The Searcher"; **Ross Winston,** Warsaw, NY, "The Kestrel"; **Brad Berger,** Oregon, OH, "Star's and Stripe's"; **Jeremy P. Drews,** St. Paul, MN, "Lightning Bolt"; **Louis J. Jiardina,** Marion, IL,, "Space Torpedo"; **Louis J. Jiardina,** Marion, Il, "F-16XL"; **David S. Litteral,** Sussex, NJ, "The Galactic Cruiser".

August 1987—Winners—Nathan Chronister, New Paltz, NY, "Jam-I"; **Stephen Layden,** Glastonbury, CT, "Crossbow"; **Kenneth Campion,** Pritchett, CO, "Unnamed"; **Martin Thiokol,** Portland, OR, "Wolfbat"; **Dean Pilato,** Warren, MI, "Kitbash"; **Doug Zupan,** Deer Park, TX, "X.L.R.8 Firebird"; **Lee Olyniec,** Scottsboro, AL, "Egg Fin-1"; **Jamie Quigley,** Monteno, IL, "The Zinger II".

September 1987—Winners—Dean Pilato, Warren, MI, "The Binary"; **Alan Pope,** Woodruff, SC, "Nighthawk"; **Moose Lavigne,** Redondo Beach, CA, "Digiroc"; **Tom Griffin,** Owatonna, MN, "TELE-Rocket"; **Honorable Mentions—Robert Alway,** Portage, MI, "Prominence MB"; **Peter Kodis,** No. Dartmouth, MA, "Johnny Quest"; **Scott Thompson,** Smoot, WV, "Nike-Ajax"; **Nate Chronister,** New Paltz, NY, "Slider-30"; **Eric Brightman,** Newton, NH, "Stepp"; **Susan Riley,** E. Peoria, IL, "Rattler"; **Louis Jiardina,** Marion, IL, "Bazooka Round"; **Gregory Solof,** Holbrook, NY, "Sky Raider"; **Christopher Reed,** Buffalo, IL, "Sky Hawk-2"; **Jason Thomas,** Portland, ME, "'Sky Clip'"; **David Wakelee,** Hamburg, NY, "Bender".

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MODEL ROCKET SUMMER AT THE SPACE CENTER

by Gregory P. Kennedy, NAR #12874, Executive Director, Space Center. All photos including front cover by Larry Lucier, Space Center Staff photographer.

This past summer was filled with model rocketry at the Space Center in Alamogordo, New Mexico. The Space Center consists of the International Space Hall of Fame (ISHF), Clyde W. Tombaugh Space Theater, John P. Stapp Air and Space Park, and Shuttle Camp 2001. Rockets have long been a relatively common sight around Alamogordo. This southern New Mexico city is on the eastern edge of White Sands Missile Range. However, there were more rocket flights than ever over Alamogordo this past year.

The Space Center has a commitment to hands-on learning, and model rockets fit right in to our programs. The ISHF has four floors of exhibits devoted to the past, present, and future of space exploration. Displays include a walk-through Space Station module, a walk on Mars, space suits, meteorites, satellites, and rocket engines. The Tombaugh Space Theater has a Spitz 512 planetarium instrument and an Omnimax projector. The Stapp Air and Space Park contains Little Joe II, Aerobee 150, Nike Cajun, and Lance rockets. At all our exhibitions, model rocketeers are welcome to take photographs and make measurements.

During the summer, Shuttle Camp 2001 is in session. This program has three levels, Mercury, Gemini, and Apollo, for grades 3-4, 5-6, and 7-9. Each Shuttle Camp participant built and flew a model rocket during their week-long session. In addition, participants visited such nearby sites as White Sands Missile Range, Sunspot Observatory, and Holloman Air Force Base. The Apollo II class witnessed a Nike Black Brant 5 rocket firing at White Sands and toured the blockhouse and launch tower after the flight. Another class watched Space Shuttle pilots practice approaches in the Shuttle Training Aircraft at White Sands Space Harbor. Two classes simulated assembling a Space Station by building a box-shaped truss underwater at the New Mexico School for the Visually Handicapped swimming pool. Their pool was also used in 1957 for some of the very first underwater weightless research.

This past year, the program lasted six weeks. Certainly one of the highlights of each weekly session had to be the model rocket launches. Camp participants built Alpha III's, Comets, Echos, and other Estes kits.

Alamogordo was also the site for "Camp Enchantment", a week-long program for children with cancer. There were 50 participants, and the Space Center conducted a model rocket program for the campers. With a great deal of help from personnel from the Alamogordo Department of Public Safety, United New Mexico Bank, and Space Center, the rockets were finished and launched as part of an evening program that included an after-hours tour of the ISHF.

Each July, the City Promotion Board and the Space Center co-sponsor the "Flight Fest", a free national model rocket contest. Contest events for 1987 include A-engine Parachute Duration, B-engine Streamer Duration, Semi-scale, and Best Looking. This year, there were 61 contestants from as far away as New York and Florida. The "Old Rocketeer", Mr. G. Harry Stine (NAR #2), also attended and helped judge. On the second day of the weekend event, Mr. Stine flew a replica of the Carlisle Mark II Rock-A-Chute, the grandfather of today's model rockets. After the highly successful flight and a mile or so walk (by Mr. Stine and the author) to recover the model through seemingly endless cactus plants and half a dozen arroyos, the Mark II was donated to the ISHF. Each contestant received a Flight Fest patch and T-shirt just for entering. Savings bonds, model rocket kits, plaques, and jackets were awarded as prizes. For 1988, we plan to add an additional age division, and at least one more event to the contest.

We ended our summer of model rocketry at the Space Center with a special launch by the New Mexico Legislative Education Study Committee. This committee consists of 15 State Representatives and Senators. During August, they were in Alamogordo reviewing area schools and programs. One of their stops was the Space Center, where they received a briefing on our educational programs, especially Shuttle Camp 2001. As a finale to the presentation, each Legislator received a pre-assembled Estes Alpha and an engine. They then went outside and launched their rockets. This helped them better understand our hands-on approach to learning about space exploration (and have some fun, too).

Actually, the extent of the model rocket programs offered at the Space Center is only natural considering that there are several active rocketeers on the staff. These programs became a series of opportunities to combine business with pleasure.

For more information on the Space Center, Shuttle Camp 2001, or the Flight Fest, write to us at P.O. Box 533, Alamogordo, New Mexico, 88311-0533.

MRNM CONTRIBUTIONS NEEDED

Send us YOUR news. Write a letter with suggestions and ideas. Tell us what you want to see in Model Rocket News Magazine. We can't answer all of them, but we will read them. We will use some of them in MRNM.

We like your Idea Box tips. Share that great idea!

Articles--technical, humorous or simply reports on your model rocketry activities--are welcome.

Cartoons are always welcome. If you can, please draw them in ink or soft pencil on plain white paper. Your cartoon stands a much better chance of use if we don't have to redraw it before we can print it.

Jokes and riddles about rocketry are welcome. Our supply of good jokes and riddles is very low now. Send in those riddles and jokes now!

Yes, we will give preference to contributions by ESP™ members. But we won't exclude your contribution if you are not yet an ESP™ member.

Put each separate contribution on a separate sheet of paper. Please put your name and complete address on each thing you send in.

Thanks!

FUTURE ASTRONAUT TRAINING PROGRAM

The Kansas Cosmosphere and Space Center of Hutchinson, KS has announced dates for its seven weekly Future Astronaut Training Program sessions for 1988. The weekly sessions begin on May 29. The fifth and last Level 1 camp begins on July 10. The two level II (Advanced) Camps begin on July 17 and July 31.

The Level I camp activities include: Day One--Space Survival. Training centers around the difficulties of surviving in the space environment. Actual life-support equipment such as space suits are studied and handled.

Day Two--Rocket and Space Flight. Candidates study actual rocket engines and different rocket fuels and their power. Each individual will construct and launch his/her own model rocket.

Day Three--Focus is on NASA's Space Shuttle Program. Intensive study of the Shuttle's capabilities is included. A complete space food meal is eaten. Students participate in a live teleconference with a real astronaut.

Day Four--Intensive preparation in all phases of Mission Control and Flight Crew activities.

Day Five--Launch! Each team will launch, carry out, and land their own simulated Shuttle flight.

The Advanced Camp includes two full days at the Johnson Space Center. Briefings by and a visit with an astronaut will be included. The Advanced Camp is open only to students who have completed the Level I camp.

For more information, write to KCSC, c/o FATP, 1100 N. Plum, Hutchinson, KS 67501.

WIND

by Darren Budd, Glenwood, IA

I have found a few ways to help you decide if it is too windy to launch or if you should postpone till a later date.

Always start by finding the wind direction. This is important information. If it is very windy and you don't angle your rocket into the wind, your rocket may drift across the country during recovery. The easiest way to find wind direction is to drop some leaves or grass and see which direction it blows. Aim the launch rod in the OPPOSITE direction to the wind's movement. Do not angle it too much. An angle of between 5 and 10 degrees is usually enough.

The speed of the wind also makes a difference in deciding whether you should launch or not. Many people just glance at the tops of trees to estimate the wind speed. This works, after a fashion, but keep in mind that rockets usually go much higher than tree top height.

Remember that those sleek rockets with streamers will come down faster than bigger rockets with 18 inch parachutes. Also, remember that you need a larger recovery area on windier days.

FREE ROCKET

CHOOSE ONE OF THESE GREAT ROCKET KITS FREE!

DESIGNER'S SPECIAL™

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Send in your order for merchandise totaling $100 or more and receive a FREE Designer's Special™.

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$11.60 Value **#7628**

Send in your order for merchandise totaling $50 or more and receive FREE two packages of D12-5 engines (a total of six D engines).

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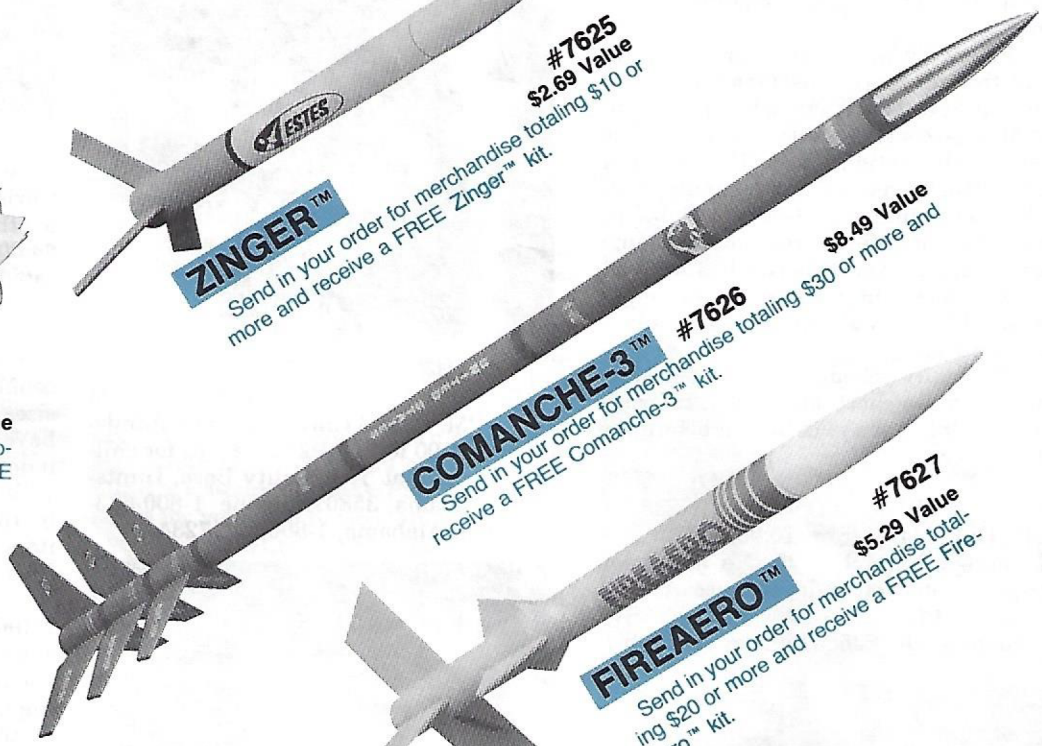

COMANCHE-3™

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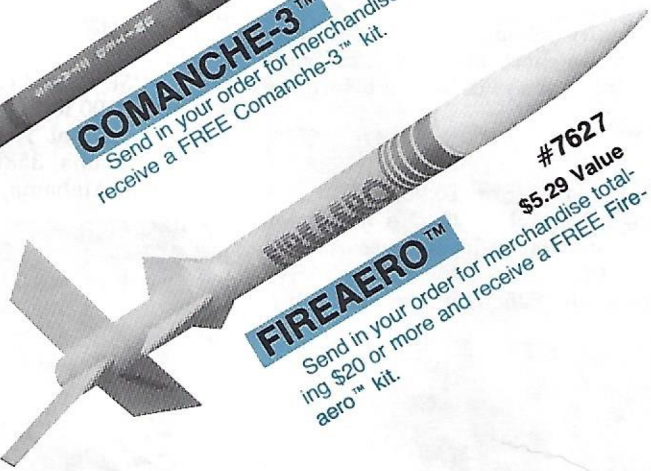
Send in your order for merchandise totaling $30 or more and receive a FREE Comanche-3™ kit.



FIREAERO™

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$5.29 Value

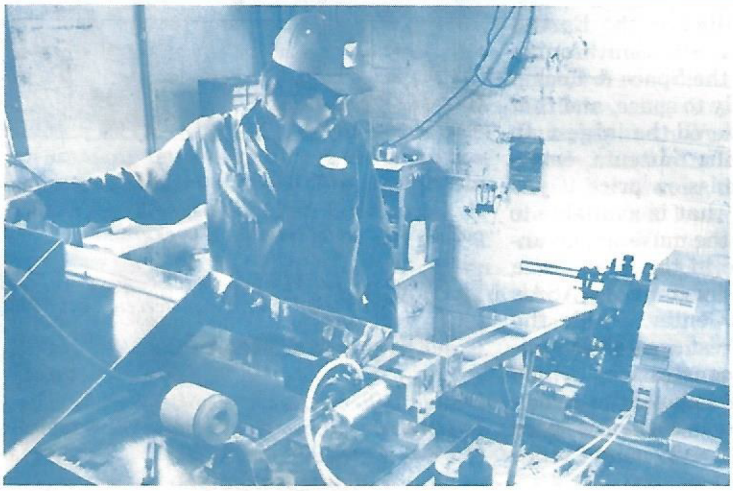
Send in your order for merchandise totaling $20 or more and receive a FREE Fireaero™ kit.

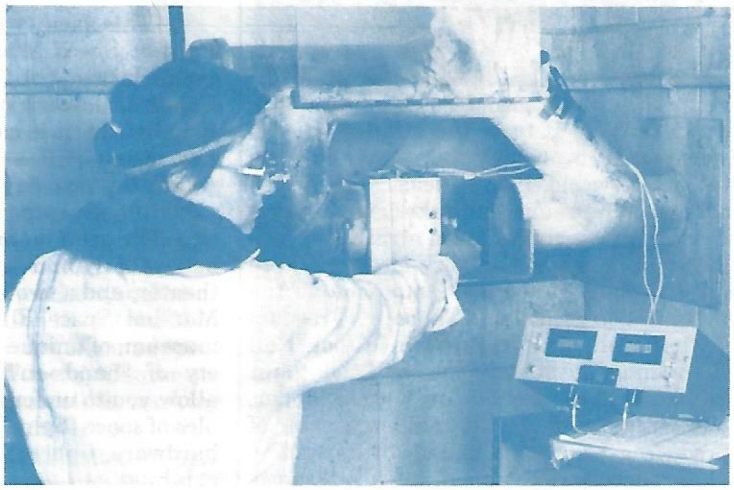
Important: If you do not list your free kit, you will not receive it.

LIMIT-ONE FREE ROCKET KIT PER ORDER

These special free offers are available only for orders received by December 31, 1988. Orders must be accompanied by full payment (check, money order, Master Card, or Visa charge). Order qualification for a free kit is based on amount of merchandise ordered. If you qualify for one of these free rocket kits (or special free engines offer), just list the name and special kit number from this page as the last item on your order. List "Free" in the column for total price. These special offers may not be used with other special offers, bonus coupons, or discount.

ESTES ENGINE MANUFACTURING DEPARTMENT





One of the keys to safe model rocketry is safe, reliable model rocket engines. Estes has always led the field in this area, and continues to do so.

Not only are our engines well-engineered, our production machines are the best. We use top-quality, American-made components. And we use well-trained, qualified people to run the machines. It takes good people to make good products.

The first picture shows Jeff Livingood operating the machine which prints the information on the engine casing. The other photo shows Dottie Murdock loading one of the hundreds of engines she tests each day into a static thrust test stand. The number of engines we "use up" each day in just testing to make certain that our high quality control standards are maintained would keep the average rocketeer supplied for life!

TEN GREAT SPACE PLACES TO VISIT

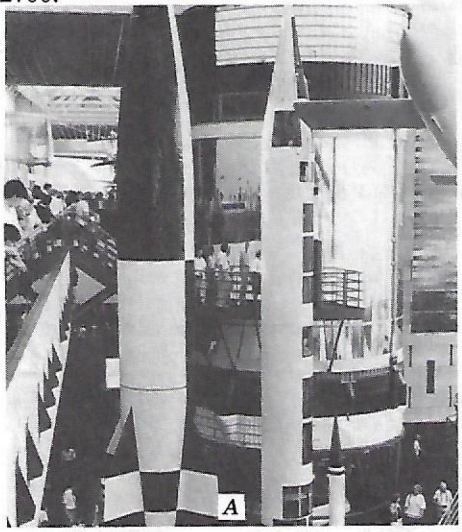
By Douglas Kirk, Canyon Lake, TX

If you're in the mood to visit a space museum this summer, chances are there is a great one within vacation distance of your home.

Following are what I consider to be ten of the top space museums and visitor centers in the country. In selecting the top five, it was easy to subjectively say that these are the nation's best. The next five were a little bit harder to rate, and it could be that you'll like some better than others as I did, but for different reasons. All things considered, however, America has some really fine space museums, and if you enjoy rocketry, I know you'll enjoy visiting any of these facilities.

The daily schedules and admissions may change, so check for current information on each one you plan to visit before you go there.

1. NATIONAL AIR AND SPACE MUSEUM, SMITHSONIAN INSTITUTION. Open daily from 10:00 AM to 5:30 PM., except December 25. No admission charge. Located on Independence Avenue betweeen 4th and 7th Streets, SW, Washington, DC 20560. Phone: (202) 357-2700.



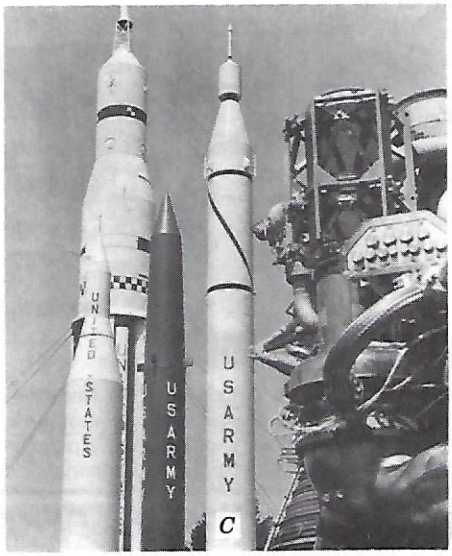
A

This is the grand daddy of them all, and I consider it to be the number one top space museum in the country and possibly the entire world. Plan at least a day to see the whole museum, and take your camera, because the spacecraft and airplanes you'll see are the original history-makers. There are too many to list here, but some of the highlights include Alan Shepard's Freedom 7, the Apollo 11 Capsule which took Neil Armstrong to the moon, and the giant Skylab 4. There are rockets, a lunar lander, and a full-size F-1 rocket engine capable of producing 1.6 million pounds of thrust.

There is even an exhibit which shows some of the early model rockets developed by Estes. If you really like seeing and reading historical exhibits on space exploration, it might be wise to plan to spend two days at this national treasure. It took me three days to get through it, and I'm planning to go back!

B

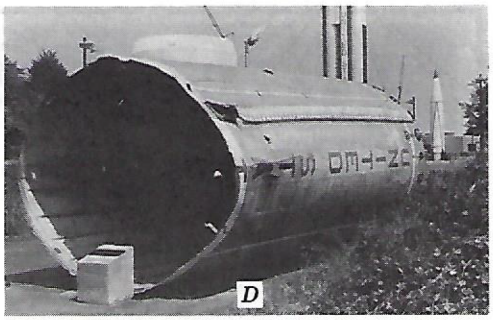
2. THE ALABAMA SPACE & ROCKET CENTER. Open daily, 9:00 AM to 5:00 PM. Closed Christmas Day. Admission is $11.00 for adults and $5.75 for children. Located at Tranquility Base, Huntsville, Alabama 35807. Phone 1-800-633-7280 or in Alabama, 1-800-572-7234.



C

This facility is billed as the Earth's Largest Space Museum. The Smithsonian seems larger, but then the Space & Rocket Center is devoted strictly to space, and that may be why it is considered the largest. In any event, it is a terrific museum, easily worth the one day admission price if you take full advantage of what is available to you. The price includes the museum, an unbelievable 70mm movie in the Spacedome theater, and a two-hour bus tour of NASA's Marshal Space Flight Center. Inside the museum, of unique interest are a wide variety of "hands-on" demonstrations which allow you to understand some of the principles of space flight. There is authentic space hardware, photo histories, and other exhibits.

Outside is a big collection of rockets, including a giant Saturn V moon rocket, a full-size space shuttle orbiter mock-up, and many smaller rockets. The educational qualities of this museum are tops. In fact, the museum is located adjacent to the U.S. Space Camp.

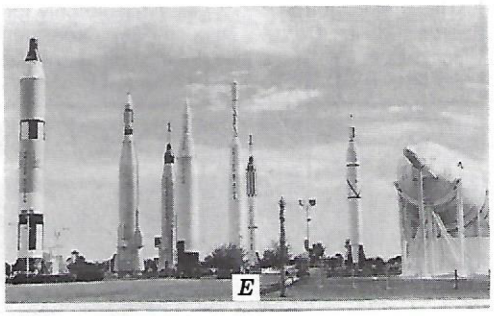


D

3. SPACEPORT USA. (KENNEDY SPACE CENTER). Open daily except Christmas, 8:00 AM until dusk. No charge for the museum, though the bus tour costs $4.00 for adults and $1.25 for children. Located at Kennedy Space Center, Florida, 32899. Phone: (305) 452-2121.

Spaceport's Rocket Garden has one of the best collections of full-size rockets in the country, allowing the visitor to compare the sizes and construction of the missiles that have been used to put man in space. The indoor museum is a little skimpy, compared with the outdoor works, but that is rectified by the two-hour bus tour which allows visitors to see the launch pads where NASA fires its rockets.

The enormous Vehicle Assembly Building, jokingly called the largest one-story building in the world, was built tall enough to house a 363 foot Saturn V--standing up! Outside, there is a Saturn V laying on the ground, just so you don't forget how big it really is. The bus tour also takes you past the two Space Shuttle launch pads, and you'll get to see the incredible crawlers which are used to roll the spaceships from the Assembly Building to the pad. The tour of Spaceport is an exciting one and will take a day to complete.



E

Photo Credits

A. German V-2, Navy Viking, Army's WAC Corporal. Mock-up of Skylab in background.

B. Astronaut Ed White's historic space walk is depicted with the Gemini 4 spacecraft returned to Earth in 1965.

C. Army Redstone (dark, center) was modified to create Jupiter-C rocket (right) which launched Explorer, first U.S. satellite into orbit. Saturn 1B in background.

D. This part of a Titan booster fell back to Earth after launching a Gemini spacecraft into orbit. V-2 and Saturn 1B in background.

E. Kennedy Space Center's missile park. Gemini-Titan V, Mercury-Atlas, Mercury-Redstone, and Saturn 1B are among those shown.

4. LYNDON B. JOHNSON SPACE CENTER. Open 9:00 AM to 4:00 PM daily, except December 25. No charge for admission. Located on NASA Road 1, Houston, Texas 77058. Phone: (713) 483-4241.

Home of manned space activity and mission control, Johnson Space Center is one of the prettiest NASA facilities. Tours of buildings open to visitors are self-guided, so there is plenty of time to see and photograph space hardware. Outside is a very nice rocket park, containing just three rockets, but arranged so that you can appreciate the size difference between the tiny Mercury-Redstone and the huge Saturn V.

The main Visitor Center contains actual space hardware, along with photo exhibits which outline America's manned space effort. In other buildings (which are subject to close without notice since they are actual working facilities), you can see a Space Shuttle Orbiter Trainer, lunar samples, a full-size Skylab trainer, and there are guided tours of Mission Control. Plan a day for this one, and have lunch at the cafeteria where sometimes you can catch a glimpse of an astronaut on break from training.

5. SPACE CENTER. (INTERNATIONAL SPACE HALL OF FAME, TOMBAUGH SPACE THEATER, PLANETARIUM). Open 9:00 AM to 6:00 PM, except Christmas. Admission for adults/children $2.00/$1.50 Space Hall; $3.50/$2.50 Theater. Located off Scenic Drive, 511 Tenth Street, Alamogordo, NM 88310. Phone: 1-800-545-4021 or in state (505) 437-2840.

Space Center is a collection of three space facilities, located in the beautiful hills of New Mexico, not far from the famous White Sands and Roswell, where modern rocketry began. The International Space Hall of Fame will highlight your tour, where you can learn about the people who have made important contributions to space flight. The museum has some hardware, but it is primarily devoted to honoring people, with pictures and biographies.

Outdoors is a Little Joe II rocket, first used at White Sands to test the Apollo spacecraft escape tower. The Sonic Wind rocket sled is also present, which was used in early research at nearby Holloman Air Force Base. The Tombaugh Theater contains a 40 foot wrap-around screen to lend an amazing sense of reality to the space presentation. Plan to spend the day in the warm, dry air of New Mexico.

6. NASA'S NATIONAL SPACE TECHNOLOGY LABORATORIES. Open Daily 9:00 AM to 5:00 PM. There is no admission charge. Located on the East Pearl River, Bay Saint Louis, Mississippi 39529. Phone: (601) 688-2370.

NASA's National Space Technology Laboratories (NSTL) is a collection of research efforts. Of primary interest to rocketeers are the engine test stands which are located on the facility. On these massive concrete and steel stands, rocket engines are tested for perfomance during research and development.

Visitors can view the facility from a 90 foot "Space Tower" built for rocket pioneer Wernher Von Braun, who developed the Redstone and Saturn boosters. When he first saw the NSTL property, it is said that he insisted upon the constuction of the tower, because, he reasoned, no one wanted to watch rocket engines being fired while standing in a swamp! It is because of that that NSTL logos boast "From Swamp To Space" and depict an alligator riding a rocket engine. Schedule a half day for this tour.

7. GODDARD SPACE FLIGHT CENTER. Open Wednesday through Sunday, 10:00 AM to 4:00 PM. No admission charge. Located in Greenbelt, MD 20771. Phone: (301) 344-8981.

Goddard Space Flight Center is the communication link to many of the spacecraft in orbit. Goddard scientists are deeply involved in research in the space/Earth sciences. Goddard is responsible for automated, unmanned spacecraft and sounding rocket experiments. The Visitor Center is a small one, but it contains some nice artifacts and photographs. Outdoors are a couple of full-size sounding rockets. Plan about three hours for your trip to Goddard.

8. LANGLEY RESEARCH CENTER. Open Monday through Saturday 8:30 AM to 4:30 PM and Sunday Noon to 4:30 PM. Closed New Years, Easter, Thanksgiving, and Christmas. There is no admission charge. Located at Langley Research Center Mail Stop 480, Hampton, Virginia 23665. Phone (804) 865-2855.

Langley Research Center is responsible for research and development of advanced concepts and technology for future aircraft and spacecraft systems. Langley sent NASA's Viking Project to Mars. The Visitor's Center is not large, but it does contain a very good collection of scale models of rockets, airplanes, and satellites. Plan three hours to study them all.

9. WALLOPS FLIGHT FACILITY. Open Thursday through Monday. 10:00 AM to 4:00 PM. Closed Thanksgiving, Christmas, and New Years. No admission charge. Located on Wallops Island, VA 23337. Phone: (804) 824-3411.

For model rocketeers, Wallops FLight Facility is one of the more interesting NASA facilities, since many sounding rockets are launched from Wallops each year. Unfortunately, these launches are typically not open to public viewing, though there are monthly model rocket launches by the local rocket club. The Visitor's Center is a small one, with static displays and photographs. Outside are several sounding rockets, including a Little Joe which was used to test the Mercury capsule prior to the first Manned space flight. Visible from the Visitor's Center are several large radar and satellite tracking towers. Schedule three hours for your visit.

10. ROSWELL MUSEUM AND ART CENTER. Open Monday through Saturday 9:00 AM to 5:00 PM and Sunday 1:00 PM to 5:00 PM. There is no charge. Located 100 West 11th, Roswell, New Mexico 88201. Phone (505) 622-5811.

Continued on page 12

Don't ask! Bob Kaplow of IL, Connie Pursley of TX, Mary Roberts of Estes. Hand reportedly belongs to Sam Baxter of TX. Memorable (?) moment captured at NARAM 29.
Photo by Alan Williams, Bowie, MD.

Ten Great Space Places...

Outside the Roswell Museum in the quaint little town of Roswell, New Mexico, stands one of Robert Goddard's original launch towers which was used for his early rocket studies in the 1930's. Converted from a Sears windmill tower, the structure was used to guide the world's first liquid propellant rockets. Inside the museum is housed the largest collection of Goddard rockets and artifacts on public display. There is also a full-size mock-up of Goddard's shop, which contains his original tools. The museum is not a large place, but as you realize that the equipment displayed was created by the first man ever to build the rockets that eventually evolved into today's earth orbital capability, it is hard not to appreciate the grand accomplishments of Dr. Robert Goddard.

OTHER PLACES TO VISIT

I have not personally visited the following museums, but each has space exhibits of interest to rocketeers:

DRYDEN FLIGHT RESEARCH FACILITY: Open Monday through Friday, 8:00 AM to 3:30 PM. No admission charge. Located at Edwards Air Force Base, California 95323. Phone (805) 258-3311.

LEWIS RESEARCH CENTER: Open 9:00 AM to 4:00 PM Monday through Friday; 10:00 AM to 3:00 PM Saturday; 1:00 PM to 5:00 PM Sunday. No admission charge. Located at Cleveland, Ohio 44135. Phone: (216) 267-1187.

When you have the opportunity to visit museums which honor the efforts man has made to conquer space, you should take advantage of it. We live in a unique time in the history of the world.

Though space exploration is but a few decades old, it won't be long before the early days are gone forever. By seeing the hardware, the photos, and the films available in space museums, you will develop a sense of closeness with the men and women of our time who have done so much toward the ultimate exploration of the world's last frontier.

AUTHOR'S NOTE: If you've visited rocket or space museums that are not on this list, please send the names and addresses to the author in care of Morton Falls Publishing Company. If you would like additional information about any of the museums in the list of top ten, a limited number of brochures are available through the author--please send a stamped, legal-size, self-addressed envelope and request information about the particular facility of your interest. Brochures provided by these museums will be mailed while supplies last.

ABOUT THE AUTHOR. Douglas Kirk has been flying model rockets since 1967. He's logged 300 flights. Kirk has just published Yearning To Understand: Why Our Quest To Live In Space Must Never End, available from Morton Falls Publishing Company for $6.95. Rt. 9 Box 810-S, Canyon Lake, Texas 78133-5122.

Young Astronauts. . .

grapher we had arranged for had his equipment ready to make a movie of the launch.

The Countdown went forward...and the first rocket went up! Before the smoke had cleared 31 more rockets had been launched and recovered. The club returned to the science room to view the launches as captured by the camera. This was fun. The tape has been duplicated and all members may now borrow it and show it off to their friends at home.

We received a pleasant surprise the next morning when we found that our club had made the front page of the "Local and State" section of Orlando's daily newspaper!

Our club is now in its seventh year and has 26 members. We launch about twice a month, usually with thirty rockets fired at each launch.

EAC Corner...

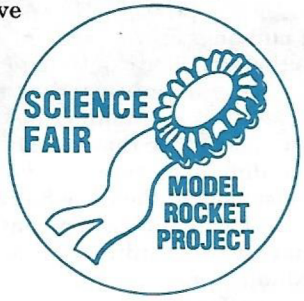
Turner; Greenbrae, CA; Jared Twiggs, Spokane, WA; **Sheri Walter,** Beavercreek, OH; **Ray Wasky,** Kettering, OH; **Jason Watson,** Lake City, GA; **Matt Weed,** Reston, VA; **Todd Leiner,** Kettering, OH; **Scott Williams,** Marietta, OH; **David Wilson,** Silver Spring, MD; **William C. Wilson,** Rock Hill, SC; **Eric Yoch,** Naperville, IL; **Gary Zeigler,** Oaklawn, IL; **Mark Zabriski,** Paramus, NJ.

The following individuals qualified as Master Modelers for earning their Skill Level Four award. **SKILL LEVEL 4 Thomas Anderson,** Jackson, WY; **Matthew Bergeron,** Manheim, PA; **Adam Boyton,** Winfield, PA; **Tyson Braneis,** Palmer, AK; **Kenneth P. Carrico,** Orlando, FL; **Joseph Conley,** Montgomery, NY; **David Copeland,** Melrose, MA; **Jeffery Davidson,** Lumberton, MS; **Stewart E. Freeman,** Kennewich, WA; **Rusty Gersch,** Lakewood, CO; **Thomas J. Goudreau,** Yuma, AZ; **Robert R. Hegwood,** Germantown, OH; **Mike Hofman,** Corona, CA; **David Huang,** Grand Rapids, MI; **Joe Jendrysik,** Chicopee, MA; **Tim Miller,** Nazareth, PA; **Greg Minnich,** Ft. Wayne, IN; **David Mulholland,** Littleton, CO; **Graham McGehee,** Cumming, GA; **Jason Reid Purtiman,** Moundsville, WV; **Rollie Pierson,** Joliet, IL; **Greg Pijar,** Pine Grove, PA; **Robin Shields,** Mooresville, IN; **Patrick Taylor,** Lacoochee, FL; **Jared Twiggs,** Spokane, WA; **Sheri Walter,** Beavercreek, OH; **Ray Wasky,** Kettering, OH; **Steven Williams,** Ft. Worth, TX; **Ross Winston,** Warsaw, NY. Congratulations to all of these fine rocketeers for their accomplishments.

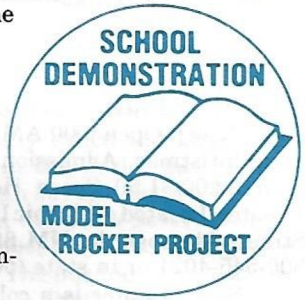
SKILL LEVEL 5 Special congratulations to these individuals. They are really qualified expert model rocketeers. "You can't hardly get this award any more!"
Kenneth P. Carrico, Orlando, FL; **Robert R. Hegwood,** Germantown, OH; **Mike Hofman,** Corona, CA; **David Huang,** Grand Rapids, MI; **Victor King,** Ann Arbor, MI; **"Dr. Bob" Kruetz,** Point Pleasant, NJ; **Greg Pijar,** Pine Grove, PA; **Tom Roberts,** Salt Lake City, UT; **Derek Staha,** Gravette, AR; **Jason Sullivan,** Norwell, MA.

ESTES SPACE PROGRAM™ NEWS

We will carry a list of those who have earned ESP™ Achievement Awards in the Summer 1988 Model Rocket News Magazine. Watch for it! Your name will be on it if you have earned ESP™ Achievement Awards by the time our next issue is written.



We are pleased to announce that three new awards are now available for Estes Space Program™ members. The SCIENCE FAIR award *#2866* is available to ESP™ members who send us proof of their use of Estes model rockets in a school Science Fair project, an official ESP™ Seal from your membership packet, their full name and address and phone number and birthdate, and a $2 check or money order to the official ESP™ address found on your ESP™ Official Information Sheet.



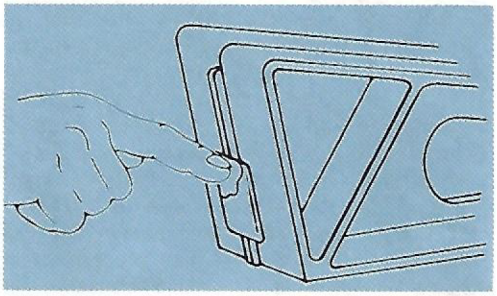
The new SCHOOL DEMONSTRATION award *#2867* is available to ESP™ members who give a demonstration about Estes model rocketry to one or more classes at their school or another school. All of the NAR/HIA Safety Code rules must be followed. Send us a report on the demonstration giving full details and provide the official ESP™ Seal, information, and $2 as described above for the Science Fair award.

The new ESTES AEROSPACE CLUB award *#2868* is available to ESP™ members who send us proof of your membership in the Estes Aerospace Club™. Follow the rules as described for receiving the other two awards described here. This award is a special recognition for you experienced rocketeers who have helped our hobby of model rocketry grow. As a "thank you" to the many thousands who joined the EAC™, properly qualified applications for this award received before December 31, 1988 will be accepted for only $1.

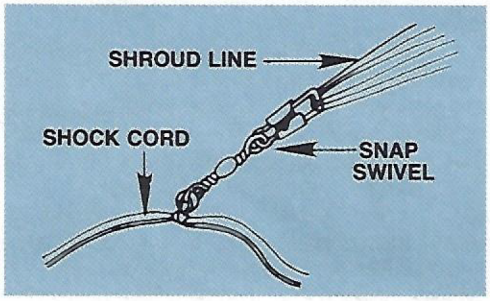
Wear your Estes Space Program™ patch and Achievement Awards with pride!

See the Summer 1988 issue of Model Rocket News Magazine for more news about the Estes Space Program™.

IDEA BOX



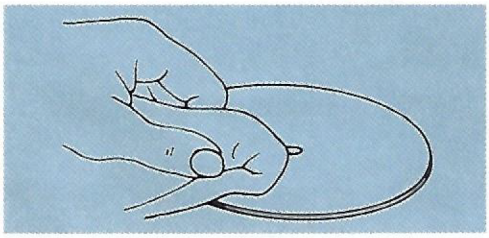
To make the legs on your Porta-Pad slide on and off more easily, smear a very small amount of Vaseline or similar substance on the part of the leg which sockets into the hub.
Submitted by Mike Dranchak, West Bath, ME



To be able to switch parachutes and streamers quickly, attach a snap swivel to the shock cord. Attach the appropriate parachute or streamer to the snap swivel just before launch. This lets you change 'chutes or between a 'chute and a streamer.

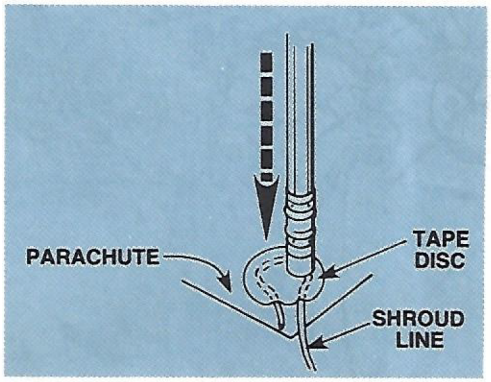
The snap swivel also often minimizes tangling of the shroud lines.
Submitted by Peter Wagner, Acton, MA

After you finish launching for the day, clean your blast deflector plate with warm water and a paper towel. Dry it thoroughly.
Submitted by Todd Foss, Reedsburg, WI

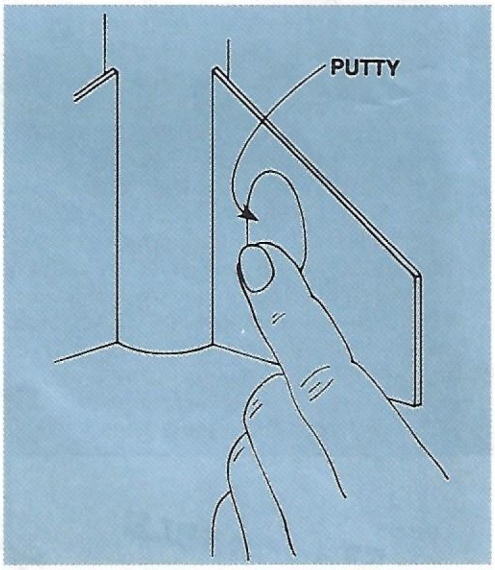


To keep your blast deflector plate from rusting, wipe the plate off with a little paint thinner after each launch session. (Editor--A little lubricating oil can be used, also.)
Submitted by Christopher Laprise, Fall River, MA

Have a problem with the tape discs on your parachute coming off? Put a tiny drop of super glue on the tape disk with the looped shroud line end in place, then attach it to the parachute as usual. Be very careful to avoid getting any of the super glue on yourself.
Submitted by Brian Wells, Sanford, FL



To have fewer problems with shroud lines detaching from your parachute, after the parachute has been completely assembled, place the parachute upside-down on a hard, flat surface. Press FIRMLY against the disks with the eraser to a pencil. Do this until you can see the parachute material clinging completely to the tape discs.
Submitted by Christopher Laprise, Fall River, MA



Dings and dents in balsa fins can be repaired. Apply a dab of body putty, plastic wood, or similar material to the immediate area of the damage. After it has started to harden, shape it roughly to the desired shape with a sharp modeling knife.

After it has totally hardened, sand the hardened putty with fine sandpaper. Be careful not to damage the softer balsa around the putty. Then repaint the fin carefully.
Submitted by Brandon Butler, Wapello, IA

To make your own "body putty", mix one tablespoon of baking soda with white glue and stir thoroughly. Apply a little at a time.
Submitted by Terry Baldwin, Marion, WI

To avoid fin breakage on large, heavy rockets, tie a long string from a fin to the recovery system. Pack the recovery system in the rocket in the usual way. Leave the shock cord attached to the nose cone. The string should be tightly against the rocket when the nose cone is in place. This will help the rocket land fins-up.

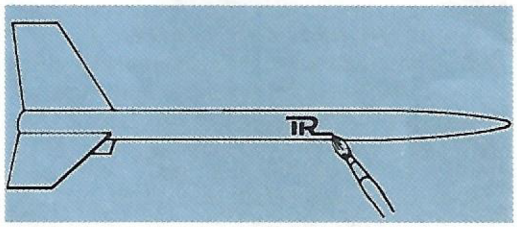
Tie a bright streamer to your safety cap to make it more visible for added safety.

When building a new rocket, save the plastic bag in which the kit came. The bag can be used to protect the rocket later, hold small parts, act as a surface on which to apply glue to protect the table, etc.

To protect your rockets and supplies, keep them away from siblings, pets, etc.
Submitted by Kenneth Wang, Rancho Palos Verdes, CA

Do not throw away your extra balsa wood. Save it in case you need to use it in making fin repairs after a prang.
Submitted by Bob Hackenberg, Coroapolis, PA

Start saving copies of MRNM, technical reports, instructions, etc. Punch holes in them and put them in a three-ring binder. If the binder has pockets, you can keep spare decals and order forms in the pockets. This keeps useful information always at your fingertips.
Submitted by Paul Strasma, Macomb, IL



Design your own insignia. Paint it on all of your rockets to designate your "fleet".
Submitted by M. Tucker, Danbury, CT

Design of the Month Winners...

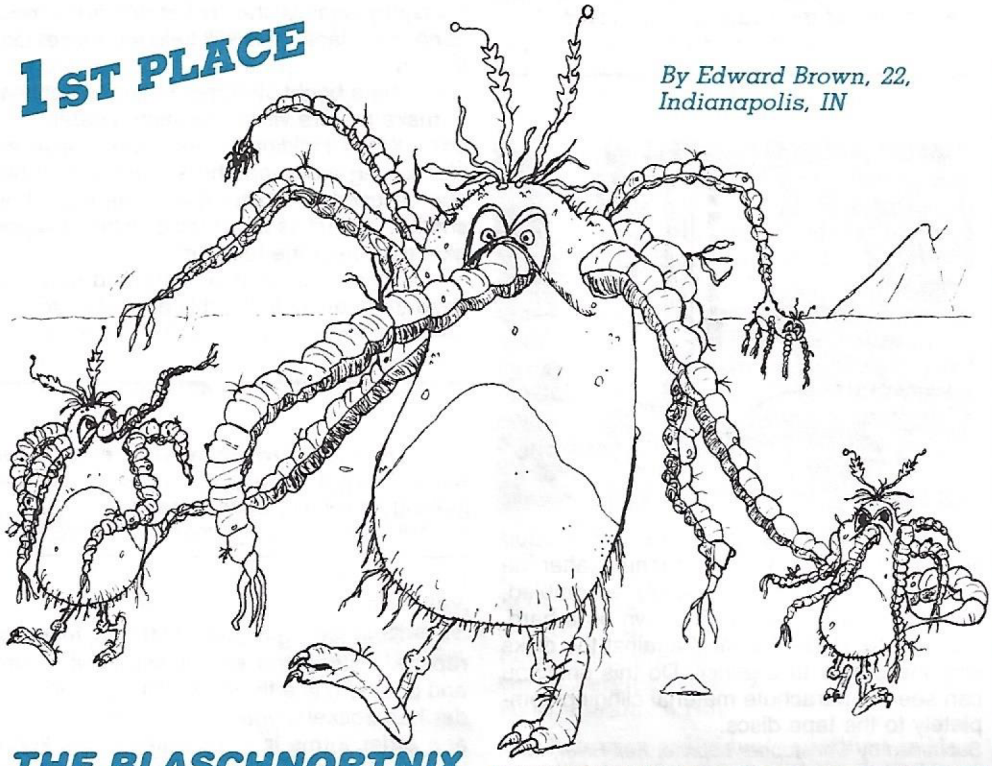
October 1987—Winners—Mark Rainey, Hackettstown, NJ, "Delta Rocket"; **Dean Pilato,** Warren, MI, "Ariane IV"; **Larry Shenosky,** St. Louis, MO, "The Yellowbird"; **James Quigley,** Manteno, IL, "Location Tracking Device"; **Honorable Mentions—Robert Alway,** Portage, MI, "Finless Wonder"; **Louis Jiardina,** Marion, IL, "The Blue Star"; **Nate Chronister,** New Paltz, NY, "Atlas Centaur"; **M. Giessen,** Springfield, OR, "Viper 1"; **Jonathan Lloyd,** Granville, OH, "Fireball".

November 1987—Winners—Vince Huegele, Huntsville, AL, "Maxi-Pad"; **Philip Williams,** St. Bruno, Quebec, Canada, "Enforcer"; **Honorable Mentions—James Quigley,** Manteno, IL, "Warhawk"; **Dwight Pritchett,** Clarkes Beach, Newfoundland, Canada, "Nova II Freighter"; **Scott Hamilton,** Mannford, OK, "Champion".

1987 Alien Creature

1ST PLACE

By Edward Brown, 22, Indianapolis, IN



THE BLASCHNORTNIX

The Blaschnortnix is a solitary species of animal that lives in a region located just north of the equator of the planet Drexel-2M. The climate of this region is dry for most of the year, with a three month rainy season in the spring. Food and water can, therefore, become scarce.

The Blaschnortnix have acquired various adaptions that help them survive in their barren habitat. The strong tentacles of the Blaschnortnix have a hollow tube running thru the center and serve as eating and breathing apparatus as well as "arms". The animal can dig its tentacles deep into the ground to reach water flowing beneath the surface.

The Blaschnortnix's diet consists mainly of vegetation which they slurp in thru their tentacles. However, they are also capable of burying themselves almost up to their eyes to extract water and nutrients directly from the soil thru small, rootlike appendages that hang from the lower part of their bodies. Water and food (in the form of starch) are stored up in their fat, potato-shaped bodies during the rainy season to help them survive thru extended droughts.

The most unusual feature of the Blaschnortnix is its method of reproduction. There are no different sexes among the animals. Instead, they reproduce by budding. During the annual rainy season, when food and water are abundant, young Blaschnortnix begin to form at the tips of the adult animal's tentacles. Usually only 4 "buddings" are produced at one time, although a brood of 5 or even 6 is not uncommon. The offspring dangle by their posteriors until they grow heavy enough for their weight to lower them to the ground. They then begin walking on their own legs.

The offspring remain attached to their parent until they're large enough to fend for themselves in the barren region in which they live. During the seven months or so that it takes for a young Blaschnortnix to mature and detach, it benefits from the protection and care of the adult. The parent provides its offspring with nutrients and water thru the tentacle by which they're attached. The young learn by observation how and where to find food and water in their often harsh environment, as well as many other tricks of survival they'll need to use when they detach and begin life on their own.

The adult Blaschnortnix is a large animal (approximately 8 feet tall) and possesses powerful tentacles. These two factors are sufficient to deter the numerous predatory species of the region from attacking either the adult or its attached offspring.

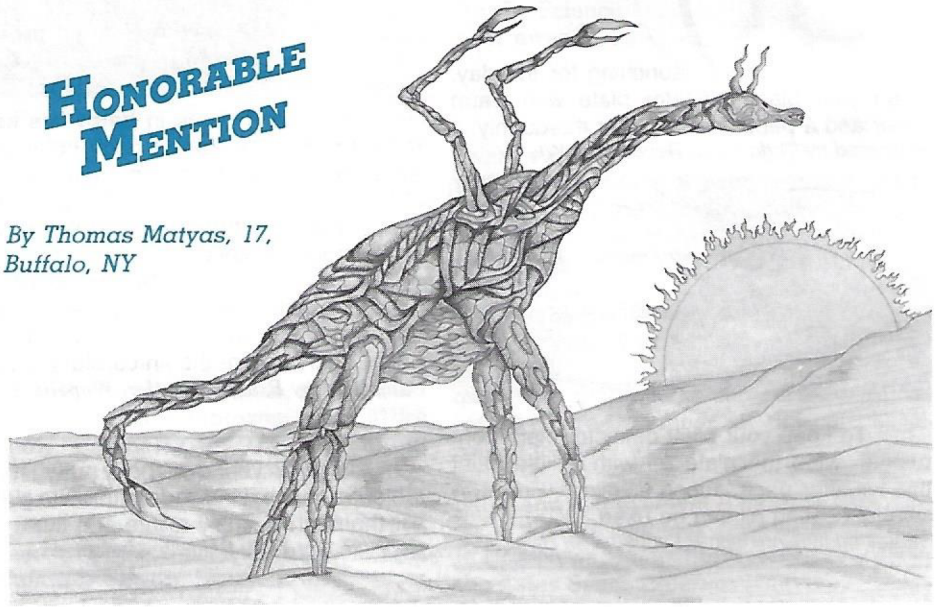
About seven months after budding, the young Blaschnortnix has attained a height of over 5 feet and is ready for a life as an independent animal. The parent's tentacle gradually pinches off at the tip and detaches from the offspring. The tentacle becomes fully functional again for the adult within a few days. The newly independent youth generally travels with its parent for a few weeks after detachment before setting off to begin its independent life. Within a few short months, the rainy season comes again, and the young Blaschnortnix will begin to sprout "budlings" of its own.

THE DESERT NOMAD

...The Nomad employs sound waves, much like a bat's Sonar, to locate reservoirs of water deep beneath the hot sand. Once a suitable water source is found, hormones stimulate the growth of thick, fleshy roots from the bottoms of the Nomad's feet and downwards to the water supply. Then the creature, firmly rooted in place, draws up water as well as microscopic, plankton-like organisms living in the water for nourishment. The Nomads may lock their leg joints and stand in a single spot for many years. When the water supply finally gives out, the Nomad's roots fall away and it trudges on to find a new source of nourishment. It stores food and water in its soft, greyish underbelly for use while traveling. A network of thick veins covering its hard outer shell circulates water in order to cool the creature...

HONORABLE MENTION

By Thomas Matyas, 17, Buffalo, NY



Contest

HONORABLE MENTION

RESCELLIAN

By John P. Jurasek, 26, and Joe Bohmer, 23, Orangeburg, NY

SPACE SHUTTLE LAUNCHES SCHEDULED TO RESUME IN JUNE 1988

The Space Shuttle Orbiter Discovery is scheduled for launch on June 2, 1988. This will be the first shuttle launch in over two years. Among the mission objectives are deployment of the second of NASA's TDRS (Tracking and Data Relay Satellites) and flight-testing of the modifications in hardware and procedures brought about since the Challenger tragedy.

The current schedule for NASA launches during 1988 calls for the launch of Atlantis on September 8 for a DOD (Department of Defense) satellite and the launch of Columbia on December 1 for another DOD launch.

NASA will also have seven ELV (Expendable Launch Vehicle) launches during 1988. The schedule for 1989 calls for eight shuttle missions and five ELVs. The 1990 schedule calls for eight shuttle missions and eight ELVs. The long-awaited launch of the 2.4 meter Hubble Space Telescope should occur on June 1, 1989 aboard Discovery. The Galileo orbiter-and-probe of Jupiter is scheduled for launch aboard Discovery on October 9, 1989. The Magellan Venus-orbiting radar mapper should be launched on April 27, 1989 aboard Atlantis.

After the Challenger accident of January 28, 1986, the Delta and Ariane also experienced problems. It is great that soon we will be getting back into space launches. The future is ours to shape!

ALIEN CREATURE CONTEST WINNERS

Thanks to you for the over 2,000 entries in this contest! This contest was extremely hard to judge. The judges found it extremely difficult to settle on the winners because of the many excellent entries.

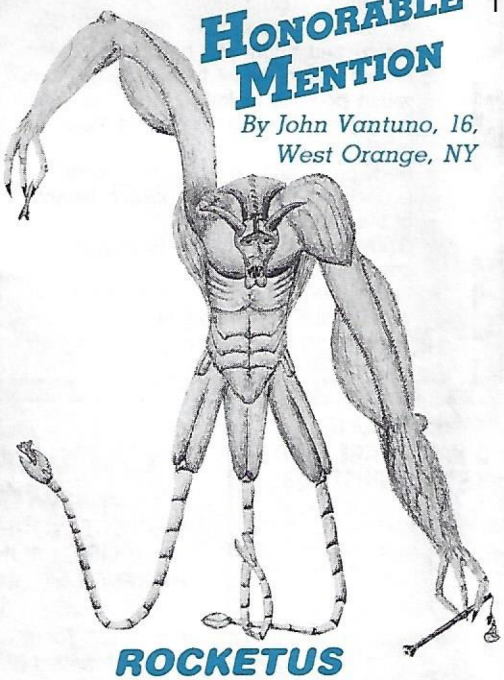
The winners are listed on this page, but some of the winners drawings and descriptions are not listed here. We are saving them for later publication.

The **Winner** was **Edward Brown** of Indianapolis, IN for his "Blaschnortnix". He received $200 grand prize.

Special Honorable Mention awards of $100 each went to **John Vantuno** of West Orange, NJ for his "Rocketus Eatem-Upus" and **Scott Doss** of Rockdale, TX for his "Curly Cole".

Honorable Mention awards of $75 each went to **Jimmy Arnold** of Romney;, WV for his "Reeble"; **Alex Aubin** of St. Thomas, Virgin Islands for his "Hobil Halfling"; **Kenneth Bailey** of Abington, MA for his "Flammedragon"; **Joe Bohmer** and **John J. Jurasek** of Orangeburg, NJ for their "Rescellian"; **Craig Fanning** of Gales Ferry, CT for his "Jacklon the Lobat"; **Nathan Horstman** of Ottawa, OH for his "Vonotar"; **David A. Huang** of Grand Rapids, MI for his "Duvvell"; **Thomas Matyas** of Buffalo, NY for his "The Desert Nomad"; **W. Miller** of Phoenix, AZ for his "Drak"; **Jason Shiroff** of Denver, CO for his "Allie Bapien"; **Edward J. Waughtel** of Paradise, PA for his "Dinosaur People"; **Ross Winston** of Warsaw, NY for his "Scarabaeus"; and **Paul E. Wooderson** of Independence, MO for his "Upolotroase".

Congratulations to all of you who entered for the high quality of your entries. Special congratulations to you winners! You did exceedingly well with some hard competition.



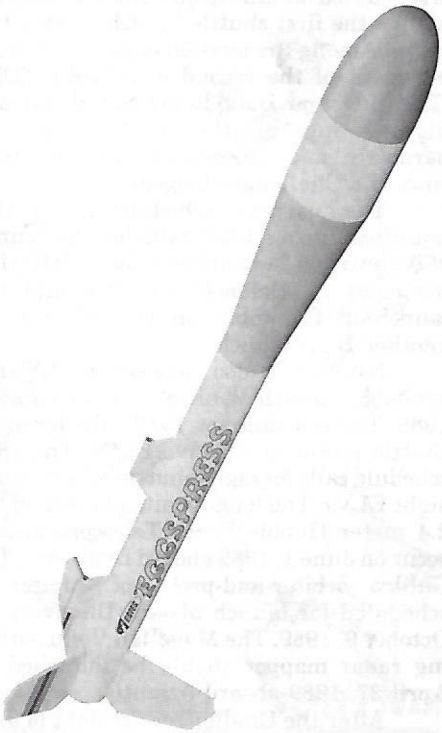
HONORABLE MENTION

By John Vantuno, 16, West Orange, NY

ROCKETUS EATEM-UPUS

EGGSPRESS™

PROVE YOU CAN MASTER THE UPLIFTING CHALLENGE--BLAST OFF AN EGG TO MAX ALTITUDE AND RECOVER IT--WITHOUT BREAKING IT!



- ★ You asked for it, and now you have it again--an egglofter from Estes, and even better than before!
- ★ A real challenge for the best rocketeer. Launch a raw egg (You pick the size--pigeon, banty, small, medium, or, it you can handle it, LARGE!) to a specified altitude (You pick how high.) without breaking or scrambling it.
- ★ Great for demonstrations
- ★ Perfect for contests
- ★ Streamlined, high-efficiency egg lofter is 21½ inches long.
- ★ Egg-raising flights with Estes C5-3 engines only. For flight without the egg, fly it even higher with Estes B4-2 (First Flight), B6-2, B8-5, C6-5.

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- ★ Body of rocket returns via 12″ 'chute.
- ★ Launch this Skill Level 2 rocket to heights of over 800 feet.
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  Kit for the Skill Level 2 Space Shuttle™ kit
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  You furnish the white glue, plastic cement, paint, finishing supplies, 4 AA alkaline batteries, and the time for construction.
- ★ Be sure to buy Estes engines if you plan on a heavy-duty launch schedule: A8-3, (First Flight), B4-4, B6-4, B8-5, C6-5

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