

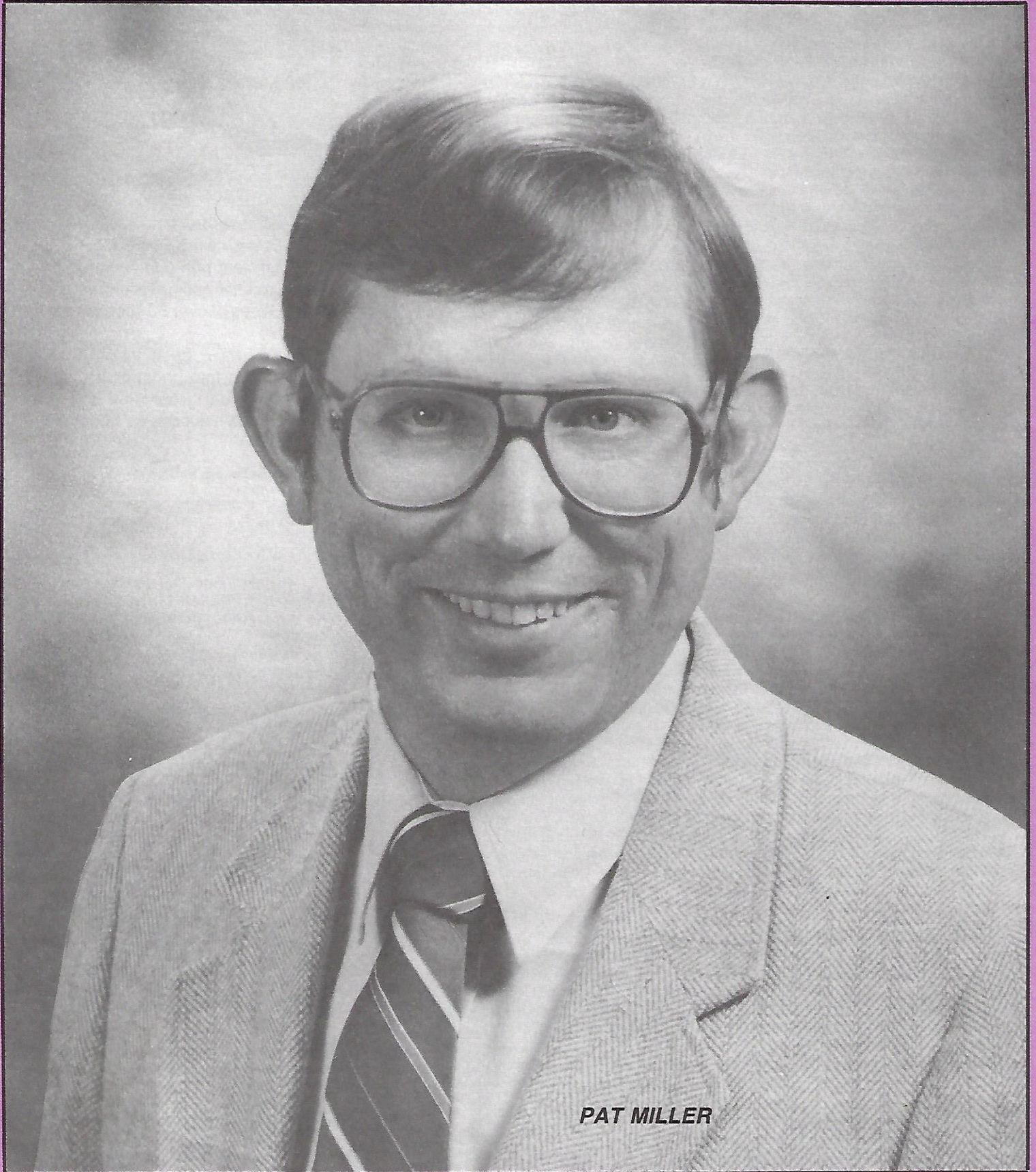


FALL
1987

MODEL ROCKET NEWS

M A G A Z I N E

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



PAT MILLER

A TRIBUTE TO PAT MILLER

By G. Harry Stine, NAR #2, Phoenix, AZ

Who is Pat Miller? Well, he's just the best President the National Association of Rocketry (NAR) has ever had (myself included in that accolade).

I first met James Patrick Miller in 1978 when a group of us got together in an Anaheim, CA hotel room during the annual trade show of the Hobby Industry Association. We were all long-time members of the NAR concerned over the relative inactivity of the organization in the 1970's after the euphoric heyday of the NASA Apollo lunar landing program. Membership was dropping. Services were declining. Estes Industries was the only surviving model rocket company doing much of anything in the marketplace. We could see our beloved organization slowly slipping into obscurity. We decided to do something about it.

Pat was a graduate student in mathematics at University of California at Los Angeles. He'd started in model rocketry back in Portales, New Mexico, his home town, in the 1960's.

When then-President of the NAR, Dr. Manning Butterworth left the United States to accept a teaching position in Wales, Pat was appointed as the new NAR President to serve out Manning's term.

Pat didn't come on like a ball of fire, although there were many pressing problems faced by the NAR in 1978. He first analyzed and reanalyzed the functions and purposes of the NAR in model rocketry and how he might organize a group of wild individuals to give much of their spare time to the NAR as working officers, trustees, and committee chairman.

Pat Miller showed he had guts when he stepped in and changed the venue and officials of NARAM-20 only months before the contest in 1979. He also restored a sense of discipline and pride in the NAR by reprimanding several of the NAR's "let-it-all-hang-out" rebellious authority-questioners, many of whom went on to become part of the NAR "establishment" they had reviled!

Pat was (and still is) a go-getter, a persistent rascal who stays on my back until I carry out what he wants me to do!

In the last nine years, Pat Miller has led the rejuvenation of the NAR. Look at some of the things that have happened during his Presidency:

MATT STEELE'S TRIBUTE TO PAT MILLER

In the past ten years the National Association of Rocketry has seen a phenomenal growth in terms of both membership and services. The individual most responsible for these improvements is J. Pat Miller, who has served as NAR president longer than anyone else.

Pat started out much like other rocketeers, flying simple rockets and gradually moving into larger, more complex rockets with electronic payloads. He also did a considerable amount of theoretical analysis of model rocket flight with his work widely

We've held an FAI World Championships at Lakehurst, New Jersey in 1980. The US Team has brought home FAI gold medals from every World Championships in Europe ever since. Now the Aeroclub of the USSR has agreed to an exchange meet with the NAR.

The Model Rocketeer magazine has become American Spacemodeling and continues to be sent to all NAR members as well as being available in hobby shops across the nation as the primo magazine of the hobby.

The NARTREK program of individual, self-paced skill improvement has been highly successful and is used as the basis for many group model rocketry programs in clubs and schools.

The NAR membership has more than doubled and will top 5,000 sometime this year. Local NAR Sections have increased in number. NAR Headquarters has been computerized.

The NAR has opened the top end of the hobby to allow members to fly model rockets of 1,500 grams maximum weight with up to 160 Newton-seconds model rocket motors. It involved more than two years of careful testing and experimentation by a select committee of top model rocketeers before all the questions regarding safety were suitably analyzed and answered. The political, administrative, legal, and bureaucratic hurdles that had to be cleared to achieve this were staggering in their number of complexity, many involving agencies of the federal government.

Today, the NAR stands as the world's largest model rocket organization offering its members a wide variety of competition, insurance, clubs, conventions, self-advancement, and educational programs. It is truly the consumer voice and watch dog of the hobby.

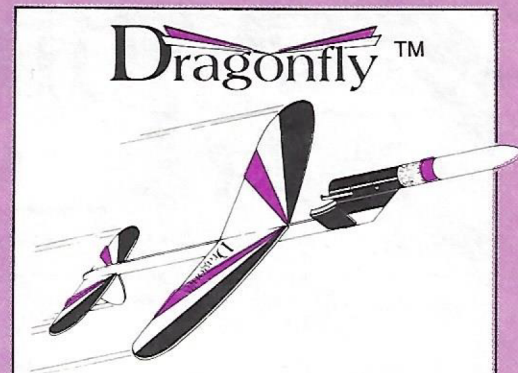
Pat has worked closely with companies such as Estes to achieve the sort of outstanding co-operation which benefits the entire hobby--manufacturers, retailers, and consumers alike.

As one of the founders of the NAR, I'm often asked the question, "Has the NAR achieved the goals set for it when it was founded in 1957?" Ten years ago, we'd achieved some of them, but we still had a long way to go. Now, thanks to the efforts of Pat Miller and the outstanding people he's organized to do this work over the last nine years, I can honestly reply, "Yes, and then some!"

published in MODEL ROCKETEER. Pat hasn't flown much in recent years, but he can still be seen with an occasional model at local NAR functions.

Pat was elected president of NAR in 1977. In a short span of years Pat has built the framework for a larger, more diverse NAR. By carefully choosing volunteers for long term projects, Pat's vision of what the NAR could be slowly evolved into today's dynamic organization.

Continued p. 12. . .



**WANT TO GET INTO
BOOST-GLIDERS?
HERE IS THE PLACE
TO START!**

- ★ US record-setting boost glider by Estes' own Bruce Carey!
- ★ Efficient pop-pod design
- ★ Excellent competition model
- ★ Glides of over 60 seconds possible
- ★ You have been thinking about getting into boost-gliders. Build this great glider now and YOU can be a successful boost-glider builder!

DRAGON FLY #0875 \$5.95

ROCKET UPDATE

By Joe Warnock, Independence, KS

"Rocket Update" is the name of the newsletter printed biweekly for members of the third grade rocket program at Lincoln Memorial Elementary School, Caney, KS. The newsletter reports on the very active rocket program for the students and for their parents.

The club members collect and sell aluminum cans for recycling. The club leader, teacher Joe Warnock, provides the computer-generated newsletter every two weeks. The money raised from selling the aluminum cans helps pay for their rockets.

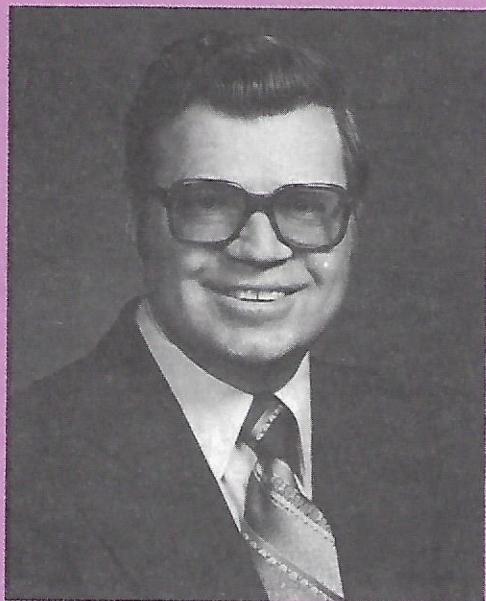
Your club might try adding these programs (fundraising through collecting and selling aluminum cans or a club newsletter) to your club's activities. These programs work!

ESTES MODEL ROCKET NEWS MAGAZINE

Robert 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.

©Estes Industries, 1987.



MESSAGES FROM LAUNCH CONTROL ESTES SPACE PROGRAM

Estes Industries is proud to announce the new Estes Space Program. This program has been some time in development. We believe that it offers an excellent program for progressing in model rocketry skills. It is designed for you to have fun as you become a better rocketeer.

The program offers you the opportunity to earn awards as you achieve each skill. We will be announcing additional achievement awards in future months. Earn each award, and wear it with pride!

See the back cover of this issue for more information about this program. Join the Estes Space Program and add to your fun now!

SURVEY

On page 11 of this issue of MODEL ROCKET NEWS MAGAZINE is a survey. Please complete it and mail it back to us. Better yet, photocopy it, complete it on the photocopy and mail the copy back to us. This way you won't damage this issue.

Feel free to make copies of the survey for your fellow model rocketeers to complete and return to us.

We need your opinions and ideas. As computer-using people say, "We need your input". Tell us about yourself, your likes and dislikes, what you like about model rocketry, what new products you would like to see, etc. We use this data in planning new kits and other products to develop and produce.

PLEASE MAKE A COPY OF THE SURVEY ON PAGE 11, THEN COMPLETE AND RETURN THE SURVEY TO US AS SOON AS POSSIBLE. Responses received by the end of October will have the most influence in our next planning meeting.

Q. What did the launch pad say to the rocket engine?

A. I get a real blast out of you.

Contributed by Mike Fox, Bainbridge Island, WA

NEW CONTEST

Many of you like to build kits "from scratch". Sometimes you create your own designs. Other times you turn someone else's blueprint into a great rocket.

The challenge of laying out and cutting your own fins, perhaps coupling body tubes together or cutting a body tube to a specific length, and similar activities appeal to many model rocketeers. These activities require craftsmanship skills beyond those possessed by some modelers.

We have tried to publish plans in MODEL ROCKET NEWS MAGAZINE whenever possible. You haven't seen many of these "Free Plans" in recent issues. Most of the designs we receive in the "Design of the Month" contest are too elaborate to publish on one page in this magazine. Some require parts which are hard to find at your local hobby shop. Many rocketeers today seem content to build model rockets from kits. They do not appear to want to go to the extra trouble of crafting a rocket on their own.

Do you want us to start publishing free plans again? If so, indicate this on the survey on page 11.

If we publish free plans periodically, we will need your help. We are creating a new contest. Here are the rules. The rules may be changed if this proves necessary.

Design a unique new model rocket. Copies of model rocket kits or previously published (by anyone) free plans are not eligible. The model rocket must actually have been built and successfully flown. The design must be stable. A list of all of the Estes engines which have proven safe for flight must be included. The plan must call only for parts available from the current Estes catalog. The parts list must be included with the plan. The plan and all necessary instructions must be printable as one page (7 $\frac{3}{4}$ x 10 $\frac{1}{4}$ ") in Model Rocket News Magazine. The rocket may be of any Skill Level, but creating a rocket of more than Skill Level 1 under these conditions should be a real challenge! Address all entries to FREE PLAN CONTEST, Estes Industries, 1295 H St., Penrose, CO 81240. All entries become the property of Estes Industries. No entries will be returned. Winners will be selected as determined by the judges. The more accurate and detailed the entry, the better its chance of winning. Good luck!

STANDBY!

Watch for very special offer in the next issue of MODEL ROCKET NEWS MAGAZINE. So standby till next issue for the exciting news!

SCALE MODELS

Hal Ellis of Tulsa, OK is an experienced rocketeer. He has been flying our rockets for almost 20 years. He wrote asking for more scale and semi-scale kits. The current catalog lists over a dozen scale models. And we are working on more! The better scale models sell, the more likely we are to provide new ones for you. If you want more scale models, buy scale models.

PARTS LIST

Hal Ellis also requested that we go back to providing a parts list with each kit. We have streamlined the kit instructions format to make the kits easier to build, especially the Skill Level 1 kits. If you need a parts list on each instruction, let us know.

PARTS

Incidentally, if your dealer does not carry a good selection of the parts you want, you can order them directly from us. Pages 64-69 (six pages) of the current Estes catalog list the parts currently available from open stock.

FREE MRN's

Want a copy of this issue of Model Rocket News Magazine for each member of your club. Send us a mailing label addressed to you (full address and zip code) and how many copies you need. We will do our best to send them to you promptly.

Bob Cannon

MERCURY REDSTONE

FLY THE FIRST US MANNED SPACECRAFT!



- ★ The Mercury Redstone launched Alan Shepard, Jr. on May 7, 1961 for first US sub-orbital flight--302.8 miles down-range and 116.5 miles up!
- ★ Large 28.75" length and 2.04" diameter--1/35 scale
- ★ A BEAUTY!
- ★ Scale detailing includes decals for Freedom 7 Mercury capsule
- ★ Skill Level 4
- ★ Very impressive flights with Estes C5-3 engines

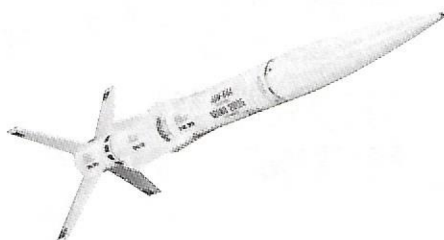
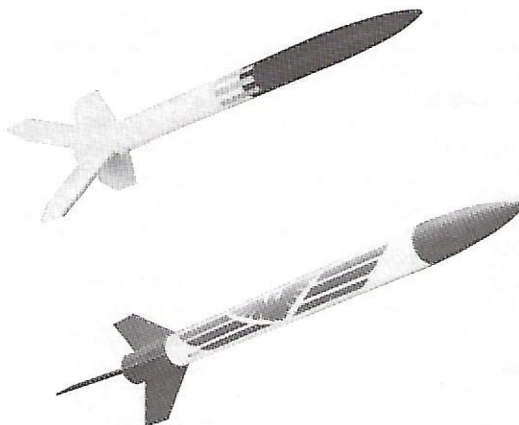
MERCURY REDSTONE
#1921 \$13.95

NEW Order NOW. Be the first to fly ROCKETS! these new rockets!

RELIANT™

- ★ Want a great flier that is also fast to build? The Reliant is the rocket for you.
- ★ Skill Level 1--To get you in the air in a hurry
- ★ 12.5" of easy to build performance
- ★ Streamer recovery to minimize chasing it after those out-of-sight flights
- ★ Exciting performance with Estes 1/2A6-2 (First Flight), A8-3, A8-5, B4-4, B6-4, B6-6, B8-5, C6-5, and C6-7 engines

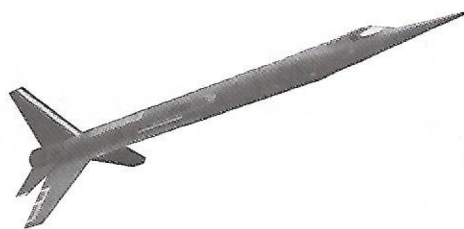
RELIANT™ #1986 . . \$2.95



SENTINEL™

- ★ Here is a great scale-looking rocket--and only Skill Level 2!
- ★ Has authentic look of air-to-air missile
- ★ Over 27 inches of high-flying rocket
- ★ Big 18" parachute for recovery
- ★ Great decals
- ★ Reliable performance every time with Estes A8-3, B4-4 (First Flight), B6-4, C6-3, and C6-5 engines

SENTINEL™ #1987 . . \$8.49



ARGOSY™

AWESOME! Here is a beauty to add to your FLEET!

- ★ The strike fighter (light-speed capability) of the IDC*
- ★ Despite its "non-aerodynamic" appearance dictated by its mission requirements, this model is capable of flights to an impressive 900'
- ★ 18.5" L...o...n...g!
- ★ Parachute recovery
- ★ Exciting blast-offs into the far reaches of space time after time with A8-3 (First Flight), B4-4, B6-4, C5-3, C6-3, and C6-5 engines
- ★ Skill Level 3
- * Intergalactic Defense Command

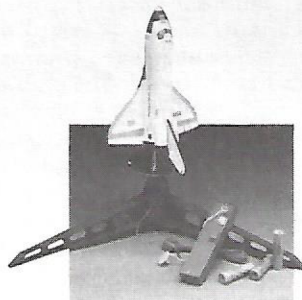
ARGOSY™ #1988 . . \$5.49

LIBERTY™

Add this red, white, and blue bird to your collection

- ★ Easy! Skill Level 1
- ★ Plastic fin unit for quick construction
- ★ Perfect recoveries every time with 12" chute
- ★ 17.5" BIG!
- ★ 1,000' Flight capability
- ★ Flies great with Estes A8-3 (First Flight), B4-4, B6-4, B8-5, C5-3, C6-5, and C6-7 engines

LIBERTY™ #1989 . . . \$4.49



SPACE SHUTTLE STARTER SET™

Upgrade your launch equipment--and get a great Space Shuttle at the same time.

- ★ Space Shuttle kit--same as our Space Shuttle Columbia #1385 (Skill Level 2) with decals for all four original Shuttles.
- ★ Porta-Pad included
- ★ Includes assembled Electron Beam™ launch controller
- ★ Complete with THREE model rocket engines

SPACE SHUTTLE STARTER SET™ #1441 \$29.95

ESTES SPACE PROGRAM™

See the back cover of this issue of MODEL ROCKET NEWS MAGAZINE for details on this important new program.

A bargain at \$7.49!

ESTES-MADE IN AMERICA

Estes Industries was founded by Vern Estes in 1957 in Denver, CO. The company rapidly outgrew the facilities available to Vern in Denver, so he and his wife, Gleda, moved the young company to Penrose, CO. Over the years Estes Industries has grown.

We take pride in the fact that model rocketry was invented in the USA (thanks to G. Harry Stine and Orville Carlisle). Estes kits are produced here in the US. Estes kits are manufactured with parts made in America. Estes makes its own engines at its plant in Penrose, CO. We are proud of the fact that you aren't contributing to the export of US money to other countries when you buy Estes products.

We have worked hard to provide you, the model rocketeer, with quality products and good service. Thanks for making and keeping Estes # 1!

Q. What did the rocket say to the ejection charge?

A. You are a real gas.

Contributed by Mike Fox, Bainbridge Island, WA

Q. At a launch pad, why does a launch rod stand next to the rocket?

A. It doesn't know how to sit.

Q. Why do rocket engines whistle when they fire?

A. They don't know the words.

Contributed by Mike Tucker, Danbury, CT

CAMPOREE



Photo by Lucinda Perlee, Indian Harbor Beach, FL

One of the attendees at the North American Camporee for the Seventh Day Adventist Church's Pathfinders Clubs readies his rocket for launch. This Camporee was attended by 18,000 at Camp Hale, Colorado. The Rocket Honor booth featured an exhibit of the Estes Alpha in all its stages of construction. Model rockets were launched twice daily. The rocket launches drew a crowd of 3,000 during the July-August 1985 Camporee.

C.D. "ROCKET MAN" HAYES

Sgt. C.D. Hayes, Memphis, TN

Sgt. C.D. Hayes of Memphis, TN is a dedicated model rocketeer. In less than a year he has given demos at Knight Road School and Sheffield School, put on a display at the Hickory-Ridge Mall, was judged for a plastic model contest, gave a lecture to a Cub Scout pack at a neighborhood church, used his display to help a teacher kick-off a Science Fair, put on a display at the Memphis Model Mart at the Cook Convention Center, presented his display at the McFarland Community Center, and who knows what else. He also had an article on display stands published in AMERICAN SPACEMODELING.



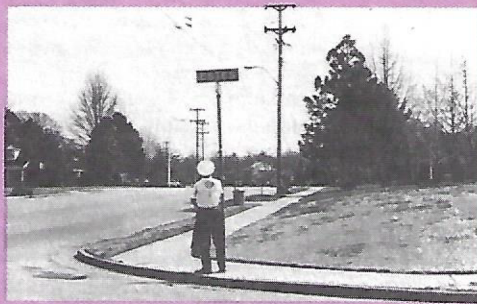
He has built over 58 Estes kits.

Here is a quotation from one of his letters: "I built an educational display type project to let kids who don't know about our hobby know that there is something to get into besides trouble and drugs. I don't sell anything. It is sorta like religion--when you find something that makes you happy, you just want to share it."

In this same time period he was selected as Marine of the Year. The Commanding General of the Fourth Marine Aircraft Wing presented him with a Marine NCO's sword. He wrote "I wonder what the general would have thought if he knew that underneath those Dress Blues I had on a rocket t-shirt?"



Marine of the Year



C.D. "Rocket Man" Hayes on Estes Street

HOW TO CLEAN A BLAST DEFLECTOR

By Jason Haynes, Scottsboro, AL

If you are like most rocketeers, you more often than not have encountered the problem of a rusty blast deflector plate. Cleaning that ugly, rust-covered blast deflector involves a simple procedure.

The first step (and the most difficult) is to get the rust off. I do this by sanding the rust off with an air compressor-powered sander. If one of these is not available to you, a sanding block does just as well. If neither of these methods "floats your boat", you may try some other method.

Now that your deflector is nice and shiny, you need to protect it from rust. Spray a generous coat of WD-40 or other rust protectant/lubricant onto the deflector. Let the deflector sit for 3 to 5 minutes, then wipe off the excess liquid from the deflector. Now flip the deflector over and repeat the spray-wait-wipe procedure. The deflector should now look and feel smooth.

For extra rust protection, place the deflector plate in an ordinary sandwich bag or other plastic bag. A plastic zip-lock sandwich bag is especially useful. Before a launch spray a light coat of rust protectant onto the deflector plate.

Clean-up after launch is extremely simple. Just wipe off the residue with an old rag. Keep the deflector stored in the plastic bag when not in use. ((Editor--It is extremely important that the blast plate be clean before storage. The engine residue is hygroscopic (attracts water). The water and air promote rust.))

That's all there is to it!

JOKES

Knock-knock.
Who's there?
Jupiter.
Jupiter who?
Jupiter fly in my soup?

Contributed by Jeff Lake, Ft. Madison, IA

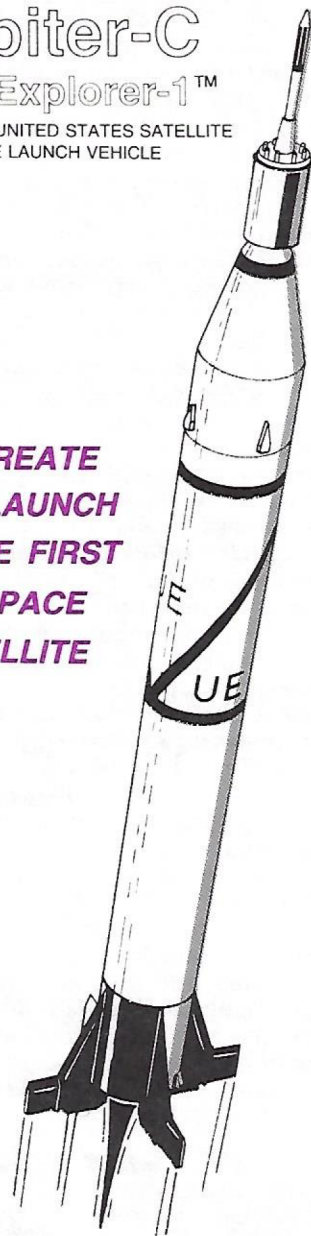
Martian to gas pump: "Take your finger out of your ear and listen to me!"

Contributed by Shawn Loughary, Beardstown, IL

Jupiter-C and Explorer-1™

THE FIRST UNITED STATES SATELLITE
AND SPACE LAUNCH VEHICLE

RECREATE
THE LAUNCH
OF THE FIRST
US SPACE
SATELLITE



- ★ 1/35 Scale model of first US satellite launch vehicle and Explorer 1 satellite
- ★ Explorer-1 satellite model included (remove for launch)
- ★ Famous launch vehicle was designed, built, and flown by the Army Ballistic Missile Agency under the direction of Dr. Wernher von Braun.
- ★ Build this beauty and add it to your collection. Skill Level 4, but worth the effort! Plastic parts, die-cut balsa fins, and quick-release engine mount make construction and flight easier. Large two-color decal for authentic scale appearance. You may never launch it (It is 24.5" of scale beauty.), but it flies well and recovers gently with 18" chute for those days you want to give yourself a real treat.
- ★ Relive that great flight of January 31, 1958 with your own Jupiter-C. Why not put on a public launch of this famous rocket with your Jupiter-C on January 31, 1988--the 30th anniversary?
- ★ Flies great with Este C5-3 engines

JUPITER-C™ #1976 . . . \$12.49

HIGH TECH FROM ESTES

Estes introduced the world's first aerial model rocketry camera, the Camroc™ in 1965. This camera took sharp pictures in black and white on special round film disks. In 1979 Estes introduced the current state-of-the-art aerial camera, the AstroCam 110™. The AstroCam takes excellent photos in full-color from high in the sky. Easy to obtain color negative 110 film is used. The negatives are sharp enough to make decent 8 x 10" color prints. Not bad for the tiny negative!

For several years Estes Industries produced and sold the amazing Transroc™. This tiny radio transmitter could send a homing signal receivable for about a mile which could be used to find your rocket in unfavorable terrain. The powerful device could also be modified to send back information on air temperatures, light intensities, or other information by true radio telemetry. We dropped this device when the FCC rules changed.

The Space Shuttle #1284 is a beautiful scale model of the US Space Shuttle. This 1/162 scale model not only looks great, it flies well. The orbiter detaches at apogee and glides back on its own, just like the real thing. Estes Industries was proud to have our Space Shuttle flying well before NASA's. OK, so theirs has a few hundred thousand more parts!

I could go on about such products as the Dragon Fly™ record-setting boost glider, the Crusader Swing-Wing™ glider, the small but reliable Electron Beam™ Launch Controller, and other great Estes products, but I think you get the point. Estes Industries has always been a pioneer in developing new products for model rocketeers, and we plan to continue to lead the field.

THE ROCKETEER, A TRUE FABLE?

By Tom Grady, Norwalk, CA

There was once a little boy who wanted to be an astronaut. So his Mom and Dad bought him a rocket, a launch pad, some engines, some wadding, and some igniters.

After the boy put his rocket together, he begged to go launch his first rocket. His Mom and Dad said "OK. Let's go to that old closed-down school."

"Before we go, what is the wadding for?" asked the boy. "Why, it's for protecting the parachute," said the Dad. Then the boy asked, "What is the parachute for?" His mother answered "It is to bring the rocket down safely. Have you read the book?" The boy shook his head. "Well, before we can launch your rocket you have to read the whole book. "The little boy walked slowly into his bedroom.

A few hours later he came running out and yelled "I'm ready. Let's go!" So they all jumped into the car and went to the closed school. They were so excited that they left some things at home. His Dad had to go back and get them. When he was back, the boy set it up.

Before he put the key in he mumbled "Did I fold the parachute right? Did I put the wadding in? Is the engine too powerful?"

OLD CATALOGS-- A TRIP BACK TO THE PAST

By Art Nestor, Zelenople, PA

In 1966, at age 13, I was very much interested in science fiction, space travel, and the NASA moon landing race. I had space toys and comic books and always watched "Lost in Space" on TV. So it was not a surprise in 1966 that I became an Estes model rocketeer after seeing one of their catalogs at school. My first model flown was an Estes Astron Sprite™.

Since I collected comic books, I also began saving Estes catalogs. Every year I put one away. Now I have an Estes catalog from every year since 1966, plus a recently acquired 1964 one. I have some editions many old rocketeers don't even know existed. Some years, the Estes catalog was printed twice with different covers and new rockets available, as 1971 and 1978.

If you are keeping a catalog collection, please take note of the following steps to keep them looking nice. Most modern paper is made of unstable ingredients that are slowly breaking down. Even just sitting on a shelf, they are self-destructing.

Here are some ways to make them last longer.

1. Store them in a cool, dark, dry place. Not in the cellar, but in as cool a room as possible. Heat and ultraviolet light (as from the sun) speed up the chemical reactions in paper, releasing sulfuric acid.

2. Store them in an upright position. Placing them flat, on top of each other, will crease the spine, causing the pages to come loose.

3. Do not use regular cardboard boxes without special protection. Cardboard breaks down faster and will affect the catalogs.

4. Each catalog should be in its own envelope made of MYLAR, not plastic bags of any sort. Digest size MYLAR envelopes are available at local comic book shops and by mail order.

5. The ultimate method is to get the oldest catalogs totally sealed in a mylar envelope containing an inert gas such as nitrogen.

Occasionally I look at the old catalogs. It is a lot of fun to see old rockets and covers. My favorite is the dual Orbital Transport, followed by the SR-71 cover.

The Rocketeer Cont'd. . .

Will the igniter ignite?" Then he slid the key in and placed his thumb on the launch button. He was just about sweating. He mumbled "Was all that work for nothing? Will the rocket crash?" He pushed the button, and the rocket took off. The parachute came out. It was a perfect flight.

The little boy is now a big man and an official rocketeer. He owns 50 rockets. But he repeats the same questions every time he launches a rocket.

Q. What does an astronaut put in a sandwich?

A. Launchin' meat.

Contributed by Kevin Perryman, Latham, IL

OLDEST ESTES CATALOGS QUIZ

By Art Nestor, Zelenople, PA

Here is a catalog quiz, just for fun. Match the catalog cover and the year it was published. Answers are on page 10.

- | | |
|----------|--|
| 1. 1962 | A Starship Nova |
| 2. 1963 | B Scissor-Wing Transport |
| 3. 1964 | C Space Shuttle |
| 4. 1965 | D Cobra |
| 5. 1966 | E SR-71 Blackbird |
| 6. 1967 | F Saturn V |
| 7. 1968 | G Star Wars |
| 8. 1969 | H Saturn 1B |
| 9. 1970 | I Star Trek |
| 10. 1971 | J Galactic Pirates |
| 11. 1972 | K Orbital Transport |
| 12. 1973 | L Electron Beam Controller |
| 13. 1974 | M Mars Snooper |
| 14. 1975 | N Stealth Fighter |
| 15. 1976 | O Saturn 1B |
| 16. 1977 | P Yellow Demo Launch |
| 17. 1978 | Q Starlab |
| 18. 1979 | R First Catalog, Hand-Sewn by Mrs. Estes |
| 19. 1980 | S Mars Snooper |
| 20. 1981 | T Countdown |
| 21. 1982 | U AstroCam |
| 22. 1983 | V 25th Anniversary |
| 23. 1984 | W Interceptor or Flying Mini-Brutes |
| 24. 1985 | X Space Plane |
| 25. 1986 | Y PolaPulse Controller |

Ranger™

MAKE THIS YOUR
FIRST HIGH POWER
ROCKET!

Roar off the pad
with D12-5 engines!



- D-POWER!
Capable of flights to over 1,200 feet
- Large--A big 25" long, 1.324" diameter
- Parachute recovery to bring this big bird back for its next mission
- Only Skill Level 2, yet D-POWERED.

RANGER™ #1924 \$5.95

THANKS!

By Robert Sheppard, North Wilkesboro, NC

When I was in second grade a bunch of boys that looked like they were in the sixth grade put on a show. They launched two or three rockets. I was totally fascinated with this. From then on I knew what I wanted to be when I grew up--an astronaut.

But I knew that I would have to wait till I was older. I never mentioned my fascination with the rockets until the summer after the sixth grade. I saved over half of my spending money from the beach, from mowing yards, and from running errands for my grandmother. Then I purchased my first rocket, the X-15 Starter Kit at K & K Toys, Asheville, NC.

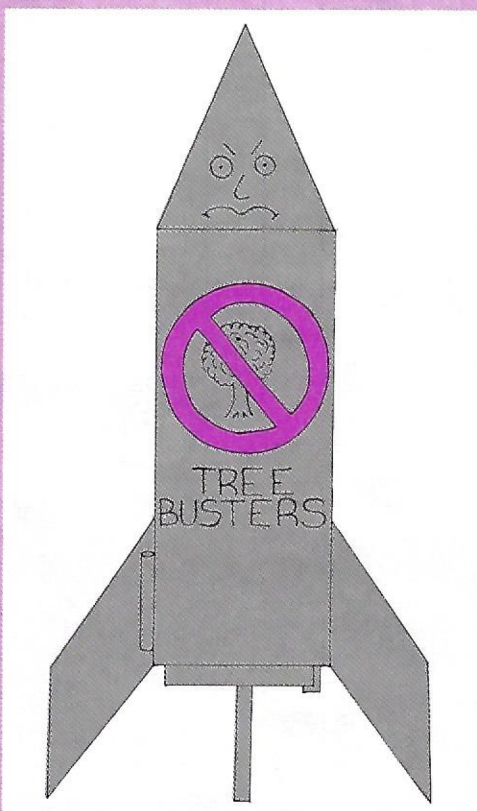
In four years things have changed. Now I want to be a computer programmer, but I still love rockets.

+ +

The following is quoted from the transmittal letter for the above article. "This is a true story. Now I am in the 7th grade at Woodward Junior High School...Thank you, boys who put on the rocket show at Lake Junaluska School in Waynesville, NC".

MODEL ROCKETRY FOR HISTORY REPORT

Eric C. Anderson of West Des Moines, IA has discovered an unusual use for model rocketry. He did a report for history class about the Space Age. He used the Estes ASM 130 and Mercury Redstone as models for his report. He made an A+. Way to go, Eric!



Contributed by Tim Boor, Steelville, IL

FLY ONE OF THE MOST BEAUTIFUL "BIRDS" IN MODEL ROCKETRY--THE ESTES SR-71 BLACKBIRD™

The SR-71 was developed in the famous "Skunk Works".

★ The SR-71 is one of the most advanced aircraft in the world.

Capable of flying at more than 2,000 miles per hour. Can cruise at over 80,000 feet (over 15 miles).

Made almost entirely of titanium.

- ★ Superior reconnaissance aircraft
- ★ Fantastic model!
- ★ 19" of scale beauty
- ★ Only Skill Level 3, but looks Skill Level 4
- ★ It flies with B4-2 (First Flight), B6-2, B6-4, B8-5, or C6-5 engines

SR-71 BLACKBIRD™

#1942 \$11.79



COMPUTER-ASSISTED MODEL ROCKETRY

If you have not yet purchased the Estes computer software, what are you waiting for? If you are unsure about these products, ask a friend who has them. You will find out how great they are.

The products offer an entertaining, totally painless way to learn the fundamentals of model rocketry and rocketry in general. These programs were developed using the experience of Bob Cannon, our Manager, of Educational Services, and Mike Dorffler, our resident computer whiz. These programs tell you the whys and hows of model rocketry and full-scale rocketry in a way you will enjoy. Color graphics (Dynamite on a color monitor!), well-written text, and user interaction with the computer help you to understand rocketry.

After you have had fun using these programs and have become an expert on rocketry, use the knowledge gained to plan your own model rocketry projects!

"IN SEARCH OF SPACE: Introduction To Model Rocketry" Tells you all about model rocketry. One double-sided disk.

IN SEARCH OF SPACE #9025 \$24.95

"FLIGHT": Aerodynamics of Model Rocketry" is about airplanes, kites, and rockets. It explains drag, the forces of all flying objects, center of gravity/center of pressure, and stability. TWO double-sided disks.

FLIGHT #9026 \$44.95

"PHYSICS of Model Rocketry" is a new product for more advanced rocketeers. With it you can understand action-reaction, inertia, momentum, acceleration and energy, staging, and satellites. It even has a special Tech Tip™ program on how to calculate the G forces on your model rocket! One double-sided disk.

PHYSICS OF MODEL ROCKETRY #9027 \$24.95

Every club library should have a set of these programs. Encourage your science teacher to purchase a set for your school. You can become the rocketry expert in your area with these programs!

Programs are authored by Bob Cannon and Mike Dorffler ©Copyright Estes Industries 1986.

Graphics created with **BLAZING PADDLES** by Baudville.

Animation created with **TAKE 1** by Baudville.

Apple is the registered trademark of Apple Computer, Inc.

Do you have an Apple? Does your school have an Apple? Can you get your hands on an Apple? If you can answer "yes" to any of these, we have just what you need to become a real expert on rocketry! Estes now has **THREE** products for the Apple II series (with 64K of memory) of computers. These excellent new products let you learn as much as you want, when you want, and at your own speed, about most of the theoretical and practical aspects of rocketry and model rocketry. And have FUN while doing it!



STORING MODEL ROCKETS AND SUPPLIES

By Tony Ruggeri, Maple Glen, PA

I am an active model rocketeer with a sizable collection of rockets, spare parts, and supplies. Where can I put it all? I have come up with a few ways to save space.

ROCKETS Since rockets are the main bulk and most important factor in any rocketeer's collection, they usually have first priority. They take up the most space. If you have large shelves, small rockets can be stood on the shelf. Large ones that don't have much fin area can be laid on their sides. Large rockets can sometimes be stood up on the floor next to each other. Rockets can also be hung from the ceiling with fine, strong string or fishing line. Watch your head!

RECOVERY SYSTEMS It isn't good for parachutes or streamers to be kept in body tubes for long periods of time. They get wrinkled. The easiest way I have found to keep them is to hang them up somewhere. If you keep them in an area with pipes, you can hang them from the pipes.

Coathangers can also be used for storage. If you attach your parachutes to snap swivels, simply clip them to the bottom of the coat hanger. Otherwise, bend a paper clip so that a loop of wire goes around the hanger securely and leave a length of wire sticking out just below the bottom wire of the coat hanger. Slip the shroud lines onto the protruding wire and let them hang for easy storage.

LAUNCH PADS Simply take launch pads apart and stack them on a shelf or any out of the way place. Controllers can easily be stored in your supply or range box. Many rocketeers store the launch pad, disassembled, in the range box.

ENGINES, IGNITERS, WADDING, FIRST AID KIT, AND SPARE PARTS The best place to keep these "little things" is to use some kind of box. If you have a large, compartmented range box, you have the ideal place for storage. If your range box is not that big, consider buying one that is. Or you can use regular boxes. Or old train cases or similar boxes with small straps attached to the back and to which you can attach things. Small parts which are detachable from scale models, such as fake nozzles used only for display, can also be stored with your other small supplies.

DISCONTINUED KITS

Elsewhere in this issue is an article about C.D. "Rocket Man" Hayes of Memphis, TN and his many MR activities. At the displays he set up and manned he answered many questions about model rocketry from present and prospective rocketeers.

One of the questions he asked was why the Cineroc™ and the Maxi-Brutes™ were

continued. He received some very attractive offers for the ones he offered for trade. He asked me why we don't reoffer these kits.

Answering this question can be a long story. To keep it brief, the Cineroc™ was discontinued when the special motor it used was discontinued without notice by the supplier. We redesigned the movie camera to use the next best motor, but the costs to retrofit to handle the new motor were very high. The cost for the new motor would be higher, also. We decided that the new camera would be too expensive based on prior sales of the original camera. We decided that rereleasing a new version of the camera just would not be practical because of the higher price tag which would be necessary for the new version. We can sell only what the consumer will buy.

The reason we dropped the Maxi-Brutes™ was that sales of them went down to the point that they were not selling well enough to justify continuing to offer them. Each year we offer a variety of new kits. We very carefully observe sales of these new products, as well as of our existing products. New kits offered are based on what is selling plus our best new ideas. Some of the new kits are successful, and some aren't. Guess what happens to the kits that don't sell!

What we offer is determined by you, the rocketeer. Meeting your needs and desires to the best of our ability is our business. What you buy today determines what we offer tomorrow.

WIND SPEED & DIRECTION--A SIMPLE SOLUTION

By Richard Curtis Posner, Clifton, NJ

Every model rocketeer has had the experience of being out at the range and ready to launch but just waiting for the wind to die down. How can you tell when is the right time to launch? This article reveals a technique I have successfully used.

Every time you build an Estes kit with a parachute, save the material surrounding the parachute. (See Figure 1.)

Cut six strips from the saved plastic material. (See Figure 2.) The length and width of each strip will depend on which size parachute you made (12", 18", 24").

If you do not have a spare one, order an Estes 1/8" diameter, two-piece launch rod (#2243). This comes with a safety cap, which you will need.

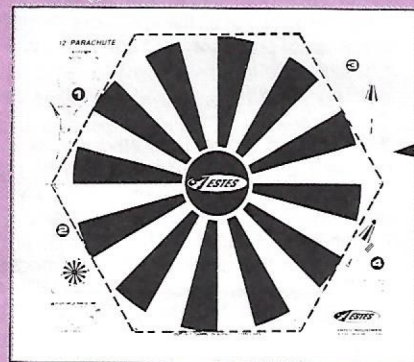
Lay all of the plastic strips down, stacked on top of each other, and evened up on one side. Poke a small hole through all of them at one end. Run a string or fishing line through the hole and through the hole in the safety cap. Leave a little slack in this line, and tie a knot in it. Put a drop of the appropriate glue on the knot to secure it. (See Figure 3.)

Take this device with you when you go to the range. Put the rod in the ground a few inches. Grinding one end round before you go to the range makes the rod easier to insert in the ground.

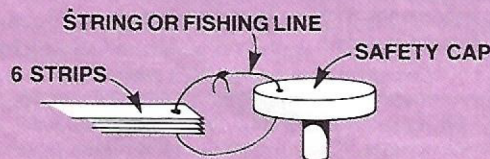
Place the safety cap with the plastic strip on top of this rod. Do not push the cap on tightly. This lets you determine which direction the wind is blowing. Carefully ob-

serve the plastic strips. How nearly horizontal they are held lets you determine the approximate wind speed. You will have to experiment to determine what wind speed produces what angle on the streamers. If the wind carries the strips and cap right off the rod, it is time to pack up and go home.

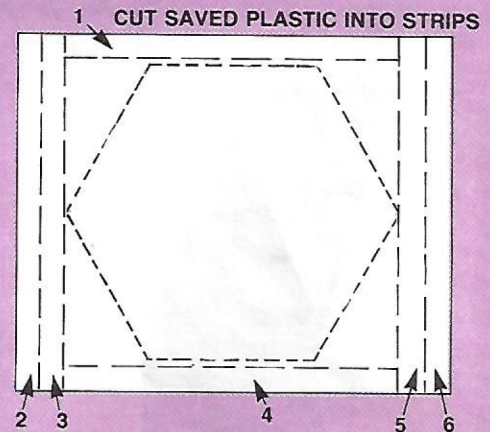
Don't forget that winds at high altitude may be significantly different from the wind at ground level which you are measuring.



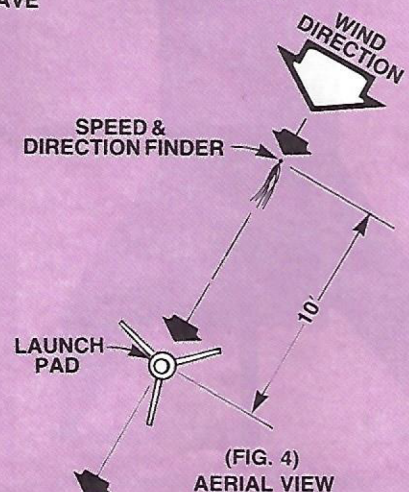
(FIG. 1)



(FIG. 3)



(FIG. 2)



(FIG. 4)
AERIAL VIEW

FREE ROCKET CHOOSE ONE OF THESE GREAT ROCKET KITS FREE!



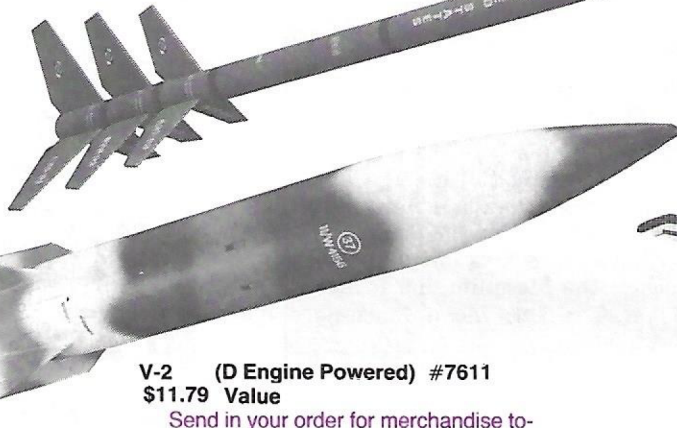
**ASTRO-CAM™ 110
AERIAL CAMERA WITH DELTA II
LAUNCH VEHICLE #7612**
\$30.49 Value

Send in your order for merchandise totaling \$100 or more and receive a FREE AstroCam 110.



HAWKEYE #7608 \$2.69 Value

Send in your order for merchandise totaling \$10 or more and receive a FREE Hawkeye.



V-2 (D Engine Powered) #7611
\$11.79 Value

Send in your order for merchandise totaling \$50 or more and receive FREE V-2 (D Engine Powered)

COMANCHE-3 #7609 \$8.49 Value

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

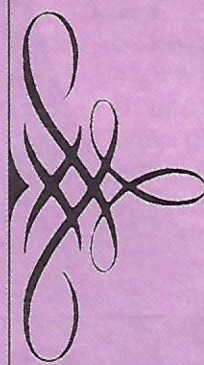


MINI-SHUTTLE #7610 \$5.29 Value

Send in your order for merchandise totaling \$20 or more and receive a FREE Mini-Shuttle.

LIMIT-ONE FREE ROCKET KIT PER ORDER

These special free offers are available only for orders received by May 30, 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, 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.

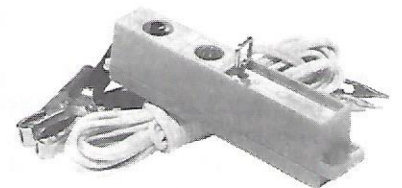


PEARL RIVER SEMINAR

The Pearl River Vulture Squadron and their sponsor, Richard Nelson, hosted their 16th annual Model Rocket Seminar at the Pearl River Middle School. This event occurred on April 3rd and 4th in Pearl River, NY. Over 225 model rocket enthusiasts from around the country attended.

Bob Cannon, editor of MODEL ROCKET NEWS MAGAZINE: Mary

Roberts, assistant editor; and Joe DiStefano, Vice-President of Sales and Marketing are shown holding the plaque presented to Estes Industries in appreciation of their annual support of this long-running seminar. Thanks, Vulture Squadron members! We hope that you will present us with another plaque on the occasion of your 30th Seminar.



THE IDEAL LAUNCH CONTROLLER FOR CLUB OR CLASS LAUNCHES.

- . Heavy-duty launch controller
- . Suitable for 6 or 12 volt power supplies
- . Great for club launches or other heavy-duty uses where you will be doing a lot of launching
- . Can be used with auto battery. No need to remove battery from car.
- . Essential for cluster-powered launches
- . Full-featured--safety switch with key, launch button, continuity light, heavy-duty battery clips, and 18 feet of heavy-duty launch cable plus futuristic hand-held launch controller.

ASTRON LAUNCH CONTROLLER™
#2212 \$11.79

LAUNCH PAD SAFETY

James Petrarca of West Caldwell, NJ wrote with a concern about safety. He noticed the photo inside the front cover of the 1987 Estes catalog and a photo from a MODEL ROCKET NEWS MAGAZINE. In the photos it appeared that the individuals launching were less than 15 feet from the launch pad. Often an effect called foreshortening makes everyone appear closer to the launch pad than they really are. This effect is observable if you are shooting from the range area towards the pad with those launching shown behind the pad. This optical effect is made greater if you are using a telephoto lens.

Speaking of safety, have you learned the NEW NAR/HIA Model Rocketry Safety Code which went into effect on January 1, 1987? You might like to test yourself using the safety code test found on page 15 of this issue.

HOW I GOT STARTED IN MODEL ROCKETRY

By Todd Foss, Reedsburg, WI

I got started in model rocketry when I went to summer school in 1984. Everyone in the class got to make the Astron Scout.

Other kids who had built model rockets before were allowed to build two-stagers and payloaders. When we were through building our rockets, we launched them.

SECOND GENERATION

By Wayne Lowich, South Plainfield, NJ

I was a model rocketeer from the mid 60's to the early 70's. I came from the old school of model rocketry. Like making two cuts in the body tube to attach the shock cord. No plastic nose cones. Engines sent three in a blue tube. I still have my old launch pad and controller. Even some old engines like the 1/2A6-2S and 1/2A6-0S.

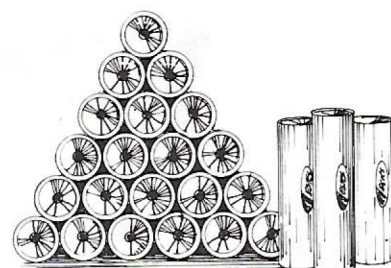
This past Christmas I bought my son the Advanced Target Drone. We had great fun building it together. Matthew was amazed at how fast and high his rocket went at our first launch. It brought back the love for model rocketry that I thought I had lost many years back. It also gives us time together. This is very important. We're not just father and son--we're friends.

TELL ESTES

We need information. Yes, we read your letters. We appreciate your kind words. Your suggestions and criticisms are carefully considered.

We analyze the types of kits you purchase. This gives us guidance in selecting the types of kits to develop for next year's new releases. The types of rockets which are popular change. We need your input about the types of new rockets you want.

Now we need information on several specific things. Please carefully read and answer the questions on the survey on the facing page. Return the questionnaire to us as soon as you have completed it. There is a place for comments if you have something else to tell us.



BLAST-OFF FLIGHT PAK™

A BARGAIN!
SAVE NEARLY \$10!

FLY NOW. . .AND AGAIN. . .AND AGAIN!

- ★ LOTS of engines!
- ★ 24 high performance Estes engines
- ★ PLUS 30 igniters
- ★ PLUS recovery wadding
- ★ SIX each of 1/2A6-2, A8-3, B6-4, and C6-5 Estes engines
- ★ Get in plenty of flying NOW before winter arrives!

BLAST-OFF FLIGHT PAK™ #1672 . \$18.95

Model Rocketry's First

Space Shuttle

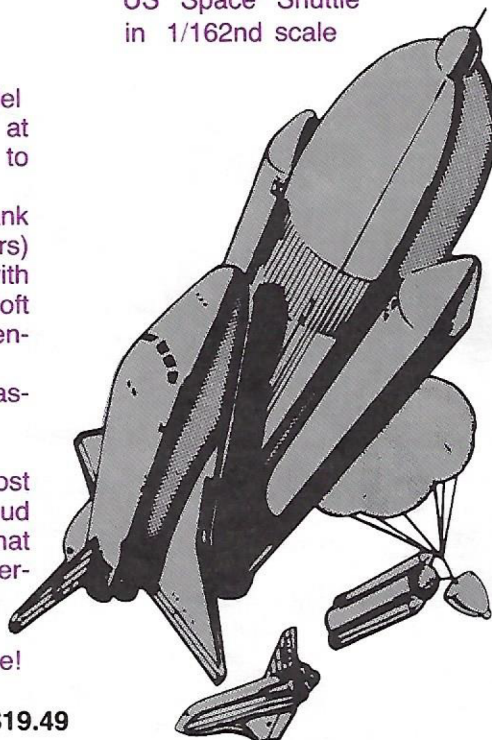
Soon NASA will resume scheduled missions into space with its shuttles.

FLY YOUR SHUTTLE NOW!
Keep the Shuttle Spirit Alive.

US Space Shuttle
in 1/162nd scale

- ★ Beautiful
- ★ Also flies remarkably well
- ★ Very detailed Skill Level 4 model
- ★ Orbiter actually detaches at apogee and glides back to Earth
- ★ Launch vehicle (External Tank and dual Solid Rocket Boosters) with stabilizer fins for launch with Orbiter on board is powered aloft by one Estes C5-3 or C6-3 engine.
- ★ Recovery of launch vehicle assembly via 18" parachute
- ★ Incredible detailing!
- ★ Many have been built, and most have been flown. (Some proud owners are so proud of it that they immediately retired it to permanent display in a place of honor in their fleet!)
- ★ Skill Level 4, and worth the time!

SPACE SHUTTLE #1284 . \$19.49



ANSWERS TO OLD ESTES CATALOGS QUIZ

- | | |
|--|-------|
| 1. R | |
| 2. X | |
| 3. D | |
| 4. M or S | |
| 5. M or S, Same catalog for 1965 and 1966! | |
| 6. H or O | 16. Q |
| 7. H or O | 17. G |
| 8. F | 18. U |
| 9. K | 19. J |
| 10. W | 20. A |
| 11. T | 21. Y |
| 12. P | 22. V |
| 13. B | 23. N |
| 14. I | 24. E |
| 15. C | 25. L |

SURVEY, September 1987

Suggestion--Don't write on this page. Photocopy this page and write your answers on the copy. If you can, do us a big favor--make several extra copies and give them to your friends. This will be specially helpful if they are not on our mailing list. We need to know what you, our customers, want.

Mail the completed questionnaires to the following address. It is OK to send several questionnaires in one envelope.

September 1987 Customer Survey
Estes Industries
1295 H Street
Penrose, CO 81240

Please complete this survey and return it to us today.

YOUR COMMENTS ABOUT MODEL ROCKET NEWS MAGAZINE

1. I usually read these parts of each issue:

- A "Idea Box"
- B "Messages From Launch Control"
- C Ads
- D Riddles F Free Plans
- E Cartoons G Technical articles

My favorite tech articles of the last year.

H Feature articles

My favorite feature (longer) articles from past year:

I Other articles

My favorite "other" articles from recent issues:

J I would like to see articles on:

2. I can do a good job building kits through Skill Level _____

- One Two Three Four

3. I have been in model rocketry for _____ years.

4. I have built _____ model rocket kits.

5. My age is _____ years old.

6. I usually launch model rockets about _____ times per month.

7. I usually

- Fly every model rocket I build several times
- Fly only the sport models I build but keep the Skill Level 4 models for show only
- Other _____

8. My model rocketry purchases are usually made

- At local hobby stores At local toy stores

By mail order from Estes Industries

By mail order from another company

Who: _____

Elsewhere

Where _____

9. Who else in your family is involved in model rocketry

- Father Mother Older brother
- Younger brother Older sister Younger sister
- Son Daughter

10. I am a member of the following clubs:

- National Association of Rocketry
- Boy Scouts of America
- Young Astronauts Program Estes Aerospace Club
- 4-H Civil Air Partol ROTC

Other _____

11. I would like to see Estes produce more of these types of rockets:

- Sport models, single stage
- Multi-stage sport models
- Scale models
- Skill Level 1 models
- Skill Level 2 models
- Skill Level 3 models
- Skill Level 4 models
- Futuristic models
- High tech products (aerial cameras, etc.)
- D-engine models
- Mini-engine models
- Rereleases of "classic" Estes kits
- More powerful engines
- Other _____

12. I have a computer at home which I can use:

- Apple
- Commodore
- IBM
- Other _____
- None

13. My hobbies are:

14. Each month I spend about this much on:

Model rocketry \$ _____

Other hobbies \$ _____

Movies \$ _____

Records and tapes \$ _____

Books \$ _____

15. I have read the following:

- ALPHA BOOK OF MODEL ROCKETRY
- MODEL ROCKETRY TECHNICAL MANUAL
- LAWS OF MOTION AND MODEL ROCKETRY
- GUIDE FOR AEROSPACE CLUBS
- THE ROCKET BOOK
- HANDBOOK OF MODEL ROCKETRY
- ALTITUDE PREDICTION CHARTS
- AERODYNAMIC DRAG OF MODEL ROCKETS

16. Comments (add another page, if necessary) _____

Please type or write clearly.

My Name _____

Street Address _____

City, State, Zip _____

If you are not on our mailing list, would you like to be on it?

Normally an individual does not go on our mailing list unless he or she makes a purchase. However, we will be happy to add you to the mailing list if you will complete and return this questionnaire by December 31, 1987. Just answer the questions, provide your name and address, and check the special box. Thanks!

Please add me to your mailing list.

FATHER-DAUGHTER DEMO TEAM

By Art Nestor and Candance Nestor, Zelienople, PA

Not only is model rocketry a great father-son hobby, but it is also great for fathers and daughters. Recently, I conducted a model rocket lecture and demonstration launch at a nearby library, promoted by the local hobby shop. I was assisted by my daughter, Candance, age 12. Catalogs and materials left over were used in a demo launch by Candie in one of her sixth grade classes the following week. Here is a report on both demos.

I am Art Nestor, age 33, and have been involved in model rocketry since 1966. My recent demo launch had over 40 persons in attendance. It was for kids in 3rd through 6th grade, but about 12 parents also came. I started at 10:00 am Saturday with a 45 minute lecture at Cranberry Community Library in Mars, PA. Two dozen Estes model rockets were on display. I covered all the basics of model rocketry including the National Association of Rocketry.

After the lecture, the group was shown a NASA filmstrip on space flight while Candace and I set up for the rocket launch.

In the actual demo launch we flew Big Bertha, Fireaero, Mini-Shuttle, Maxi-Alpha, Alpha III, Condor, Comet, Sizzler, and Flying Saucer. The Condor and Flying Saucer were the favorites. I flew the Fireaero with C6-5 and expected to lose it because our launch field was not large. I finally did lose it on its third flight. The Maxi-Alpha landed on the library roof, and we had to get a ladder to recover it. The Condor mini-glider circled around and landed at the launch pad on its first flight, nearly hitting me!

At noon we were all done, and everyone was given an Estes catalog and brochure, a NAR flier, and a hobby shop coupon for 10% off. We also gave away a new Halley's Tail rocket in a special drawing.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

My name is Candie Nestor. I'm 12 years old and in the sixth grade. I did a demo speech on how to launch rockets. It was a great turnout (28 students). The kids and my teacher, Mr. John Cashdollar, of Evans City were very interested. Some of the kids wanted to know where to get the equipment and some wanted to join the NAR.

There were 25 total points possible, and I got a 23. This was an "A"!

First, I showed them the equipment needed for launching. Then I showed them the steps. I brought in a launch pad, igniters, launch controller, the Alpha, and engines. I showed them how the rockets are launched. I put the key in and pushed the launch button. The result was ignition, as usual.

Also, I said that "If you ever need a sport or wanted a hobby, become a model rocketeer." This was part of my introduction.

MORE TRIBUTES TO PAT MILLER

I've been acquainted with Pat Miller since 1973. He is a dear friend. I've found him to be reliable, helpful, and hard-working. He truly has the best interests of the NAR at heart and gives his all for the members and the hobby. Pat, thank you for your interest in model rocketry.

Mary Roberts, Associate Editor of *Model Rocket News Magazine*, and Marketing Administrator, Estes Industries.

Matt Steele's Tribute to Pat Miller. . .

Pat worked with many key people at Estes to implement a "kit stuffer" program. The Estes kit stuffer program provides everyone who purchases an Estes kit with a small brochure about the NAR. This cooperation between NAR and Estes has allowed the NAR to reach many more rocketeers than in the past. The NAR membership growth shows that the program works.

Pat has also worked hard with the aerospace industry to get it involved in NAR activities. Pat's efforts have led to such companies as Morton Thiokol, TRW, United Technologies, Martin Marietta, and Aerojet General to donate the huge trophies that are given to the nation's best rocketeers at NARAMs.

The NAR has doubled its membership and is approaching an all time high as a result of Pat's efforts. AMERICAN SPACE-MODELING now sports a glossy color cover and enjoys its widest circulation ever. Pat has made it his goal to provide the average rocketeer with an organization that is second to none, has worked hard towards that goal, and has succeeded!

Pat may only get to fly model rockets occasionally, but he is responsible for much of the fun thousands of other rocketeers get when they fly.

My acquaintance with Pat Miller does not extend back as far as Harry's, but my feelings toward Pat are no less positive. Pat and I have cooperated on several projects over the years, and his help and leadership have always been outstanding whether the project was academic, personal, or for the NAR. Pat has rebuilt the NAR into a superior organization serving the real and anticipated needs of a fantastic variety of rocketeers. You have done exceedingly well, Pat.

Bob Cannon, Editor *Model Rocket News Magazine*, and Manager of Educational Services, Estes Industries.

ESTES SHIPPING DEPT

The expert shippers in our Shipping Department send hundreds of orders daily. These ladies carefully select the products required for filling each order from the supplies in each shipping booth and put these items in a special tray. Each tray goes to a packer who double-checks to make sure that you will receive exactly what you ordered, then selects the appropriate size of box or boxes and packs your materials in it. Then the box is sealed, your address label applied, and the appropriate postage or UPS meter tape attached to speed the order on its way to you.

Diana White, department manager (shown on right), answers question from Nettie McCracken, shipping clerk.

They routinely ship orders all over the US and to other countries around the world. They are the final step in our speeding your order on its way to you. It's a big job, but someone has to do it. And they do it very well!



IDEA BOX

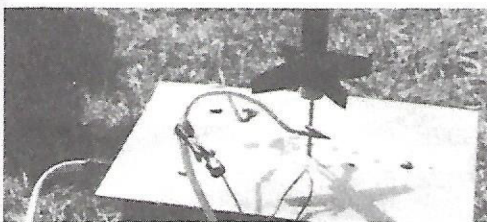
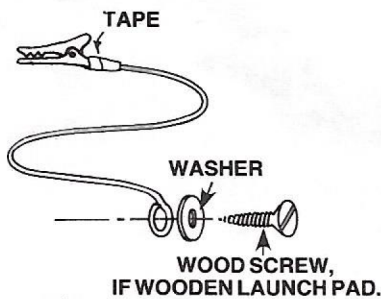
A reliable method of transporting and storing your model rockets is to carry them in an old suitcase or similar container. Buy or salvage some styrofoam. Cut it to fit inside your container. Then carefully carve out spaces to fit the rockets you will be carrying. Plan carefully! Try arranging the rockets in different positions before doing any cutting to determine the most efficient as well as safest arrangement.

Use a second piece of styrofoam to place over the rockets to hold them. Carve out the proper shapes to let this piece fit properly when the lid of the suitcase or other container is closed. Place your name, address, and phone number on the outside of the suitcase and inside the suitcase.

(Editor—I have been using a similar system, but using inexpensive foam such as used for mattresses for campers, for several years. This system works extremely well. My display models have been hand-carried, carried in the trunk of a car, carried as baggage on airplanes, and shipped by truck, bus, and air using this system. They survived very well. The biggest problem I have encountered was caused by not making the carved out sections quite large enough.)

Contributed by Johnny Diggs, Wilmington, NC

One method of minimizing the pull on the igniter from the micro-clips is to make a device to hold the lead wires and micro-clips. Use heavy wire to make a simple device as illustrated. Secure this device to your launch pad. Place the lead wires from your launch control system, with plenty of slack, in the jaws of the alligator clip.



Michael Simpson, Philadelphia, PA

Want to speed up the drying of glue on your model? Try using a hand-held hair dryer. Set it on low or medium heat. Hold the fin in position and use the dryer to decrease the amount of time it takes for the glue to dry. Hold the dryer four or five inches, or more, depending on the type of dryer you use, away from the model. Allow three to five minutes for the glue to dry. Let the model sit a few minutes before applying the next fin. This method is NOT for use in drying paint.

Contributed by Kurt Bertram, Kansas City, MO

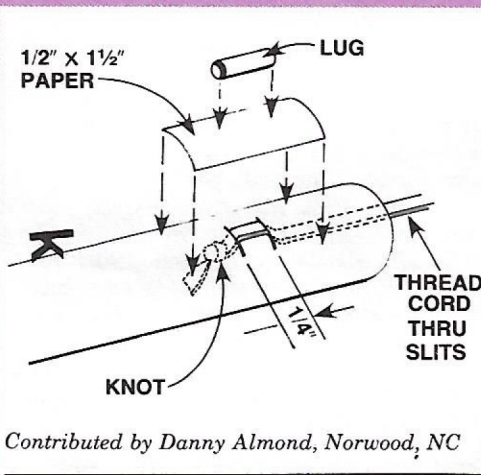
Want a shock cord mount which causes minimum loss of internal space in those narrower body tubes and yet does not look unsightly? Try using a variation of the old "slits through the body tube" technique to anchor the shock cord.

Make two slits in the body tube 1/4" apart and far enough back to easily clear the shoulder of the nose cone.

Insert the shock cord through the slits, starting with the knotted end coming out of the lower slit (knot on inside). Thread top end of shock cord back into body tube at nose cone end.

Glue fillet over the shock cord and slits. Then cut a 1/2 x 1 1/2" piece of paper and glue it neatly into place on top of the shock cord and slits on the outside. Glue 1/2 of the launch lug in the center of this paper and directly in line with the other half of the launch lug.

Finish rocket in usual manner.

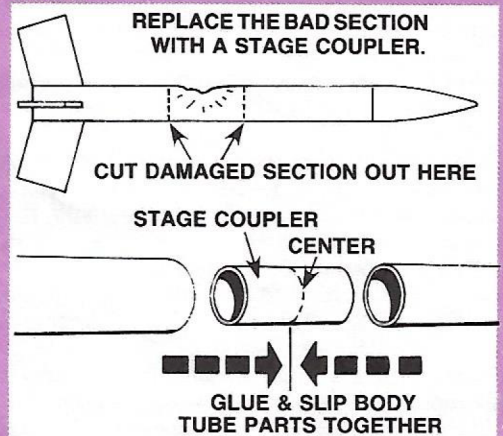


Contributed by Danny Almond, Norwood, NC

Want to add a little excitement to your recoveries? Try making miniature 6" parachutes from a cleaner's garmet bag or a similar piece of thin, light-weight plastic. Attach the shroud lines from this parachute to the shock cord where the streamer is attached. This adds a nice visual touch to your recovery system. It also slows the rate at which your streamer models descend. (Think twice before using these mini-chutes on a windy day!)

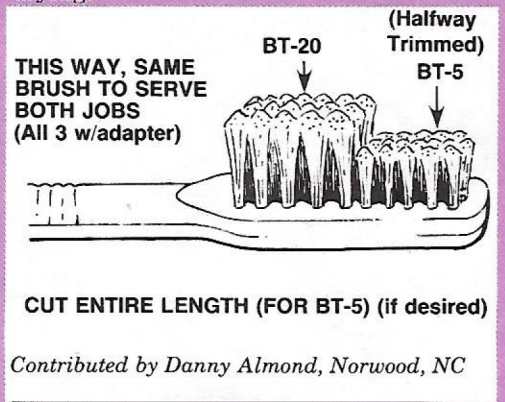
Contributed by Matt Dingler, Fenton, MI

To repair crumpled body tube, carefully cut out the damaged section and attach the two cut ends neatly together using a stage coupler. Always perform the string test for stability (with engine in place) on the repaired model before flight. If necessary for stable flight, add clay or other weight to the nose cone, then retest. Continue adjusting until the repaired model is stable.



Contributed by Craig Peron, Verona, NY

Ever need a good holder when painting your rocket? An old toothbrush fits a BT-20 nicely. The bristles can be trimmed to fit a BT-5. If you use the type of toothbrush with a hole in the handle, you can hang your rocket from it while the paint is drying.



Contributed by Danny Almond, Norwood, NC

When painting your rockets and using masking tape to mask off one color, it is helpful to stick the tape to glass a few times before using it. This reduces its adhesion slightly so that you aren't likely to pull off the first color of paint when you remove the tape after applying the second color and letting it dry.

Contributed by Louis J. Jiardina, Marion, IL

FIFTH HUNTSVILLE AREA MODEL ROCKET CONTEST A ROARING SUCCESS

By Wayne McCain, President, HARA, NAR Section 403, Huntsville, AL

The fifth Huntsville Area Rocket Contest was a soaring success on Sunday afternoon, October 5, 1986. Over 200 contestants and spectators watched as upwards of 150 competition and demo flights were launched from the four-pad complex.

The weather in Huntsville was pleasant with high broken and scattered clouds and thus little effect for the competition. The highest recorded altitude was 2,000 feet, although several models that reached additional heights were "lost" in those clouds!

The Alabama-Mississippi Section of American Institute of Aeronautics (AIAA) sponsored the event. NAR Section 403, the Huntsville Area Rocketry Association (HARA) hosted. The local aerospace community including the Army Missile Command (MICOM) and Strategic Defence Command (ASDC), NASA Marshall Space Flight Center (MSFC), Martin Marietta, Coleman Research, and Morton Thiokol participated. The official contest staff, headed by Wayne McCain of Morton Thiokol's Aerospace Group, consisted of over 40 volunteers from these organizations and others.

Martin Marietta, AIAA, Coleman Research, Morton Thiokol Management Club, and the Morton Thiokol Huntsville Office were among companies and organizations making contributions to help offset contest expenses.

Distinguished judges at the event included Messrs. Troy Street (ASDC), John Thirkill (VP and General Manager of Morton Thiokol Huntsville Division), Bob Tibbs (Martin Marietta), David Godbout (Manager, WZDX Channel 54 TV), Dave Dooling (ESSEX Corporation), and Konrad Dannenberg (retired, former member of Von Braun's original rocket team, now Alabama Space and Rocket Center consultant). Doctors Bill McCorkle and Bob Morgan served from MICOM.

It is interesting to note that Konrad Dannenberg participated in judging a model of the German V-2 rocket (Scale event) on which he worked as propulsion engineer at the Peenemunde facility prior to coming to the US with the Von Braun team.

Fred Herrmann of NASA/MSFC was instrumental in developing computer software for contest score keeping.

Additional companies represented were Teledyne Brown Engineering, Lockheed Corporation, Rockwell, and SCI.

The contest was held at Huntsville's old airport which is centrally located in the city. Three official contest launch pads were utilized (a fourth one was used for demo flights) and controlled by the launch control center (LCC). Separation of the pads allowed simultaneous setup and launch from different pads. Each launch pad was serviced by safety and prelaunch officers who helped contestants prepare models for launch. A

PA system located at the LCC was used to provide countdown information and announcements to onlookers. All of the equipment was designed and built by HARA members and/or is owned by the club. ((Editor--Speaking of class Misfire Alley systems!))

A contingent of well known modelers were on hand to provide many exciting demo flights. George Gassaway and Randy Kelling (Birmingham) along with Matt Steele, Vince Huegele, and Wayne Hendricks from Huntsville provided several real crowd-pleasers. A large scale Saturn V, a boost-glider Shuttle, and a giant Alpha roared skyward with others. Lee Olyniec from Scottsboro, AL brought along a significant number of participants from that area.

Chuck Hall displayed his research rocket which contains a microprocessor, sensors, and some guidance controls. Hall's model was used in conjunction with his Master's thesis at Ohio State and provided a very interesting topic for discussions during the afternoon. He has recently moved to Huntsville and is working at the Army's MICOM.

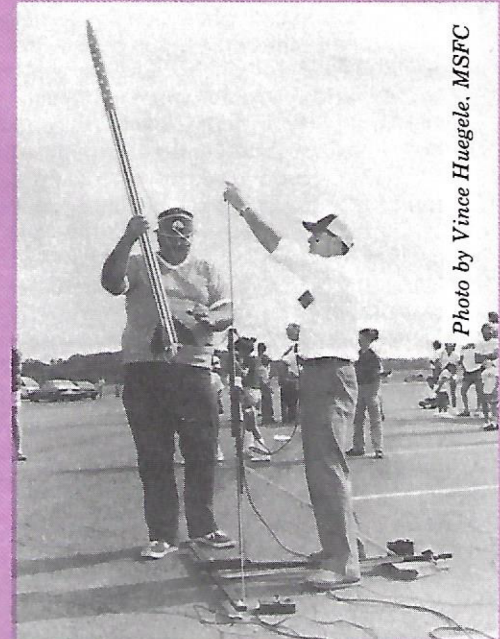
The Champion Rocketeer Award was won by Darryl Granger of Huntsville who accumulated the most points out of the Maximum Altitude, Duration, Scale, and Craftsmanship events. Other winners were Jason Haynes, John McCain, Dana McCain, Brent Goode, Shawn Campbell, Lee Olniec, Mathias Sias, Kristopher Williams, Bill Pine, Jennifer Smith, Markus Halbritter, and Eheren Biglari.

Winning models included a D-Region Tomahawk, Maxi-Streak, Phoenix, SR-71 Blackbird, Crusader Swing-Wing, and Stealth, among others. It was evident that many long hours of work and loving toil preceded the contest.

The Huntsville Area Rocket Contest will once again become an annual AIAA Alabama-Mississippi Section affair.

All-in-all, everyone seemed to have a glorious afternoon! By the way, the success is totally attributable to the support and hard work by all the sponsoring organizations and supporting volunteers. Many thanks to everyone!

(Editor--While we seldom carry articles about MR contests, we felt that this article provides a good report of how excellent a contest can be. The original report was much longer, but this article should provide some excellent ideas you may implement for your club's next contest.)



George Gassaway, left, and Randy Kelling prepare George's giant size "Alpha" model for launch at the demo pad.



Wayne McCain, right and wife Dana announce and hand out prizes at the culmination of Huntsville Model Rocket Contest.

Here is what you need to fly the rockets in this issue.

| No. | Item | Price |
|------|-----------------------|---------|
| 1593 | 1/2A6-2 engines | \$ 3.00 |
| 1598 | A8-3 engines | 3.15 |
| 1601 | B4-2 engines | 3.15 |
| 1606 | B6-4 engines | 3.15 |
| 1617 | C5-3 engines | 3.40 |
| 1614 | C6-5 engines | 3.40 |
| 1666 | D12-3 engines | 5.80 |
| 1667 | D12-5 engines | 5.80 |
| 1672 | Blast-Off Flight Pak™ | 18.95 |

| | | |
|------|----------------------------|-------|
| 2301 | Igniters | 1.69 |
| 2274 | Recovery Wadding | 1.69 |
| 1441 | Space Shuttle Starter Set™ | 29.95 |

Other great products to become an Expert Rocketeer

| | | |
|------|---------------------------------|-------|
| 9025 | IN SEARCH OF SPACE | 24.95 |
| 9026 | FLIGHT (two double-sided disks) | 44.95 |
| 9027 | PHYSICS OF MODEL ROCKETRY | 24.95 |

TEST ON NEW SAFETY CODE

The new NAR/HIA Model Rocketry Safety Code went into effect on January 1, 1987. By now you have it memorized, right?

Test your recall of the new rules by taking the test below. No fair rereading the Safety Code before taking the test!

1. I will launch my model rockets only when the wind is less than _____ miles per hour.
2. I will launch my model rockets with the launch rod pointed within _____ degrees of vertical.
3. The launch system I use to launch my model rockets will be _____ operated.
4. Only _____ recovery wadding will be used in my rockets.
5. I will begin my launch sequence with an audible _____ -second countdown.
6. If my model rocket becomes entangled in a power line or other dangerous place, I will _____.
7. Only _____ igniters will be used to ignite my rocket engine.
8. I will check the stability of each of my model rockets before their _____ flights except when launching models of already proven stability.
9. I will use only pre-loaded, factory-made, _____ certified model rocket engines in the manner recommended by the manufacturer.
10. My model rocket will weigh no more than _____ grams (or _____ ounces) at lift-off.

Check your answers with the NAR/HIA Model Rocketry Safety Code found on page 28 of the 1987 Estes Flying Model Rocket Catalog.

What is the passing grade? One hundred! Model rocketry has established and maintained an excellent safety record in over 300,000,000 model rocket launches. Let us each one continue to do our best to keep this excellent safety record.

AWARD WINNERS



Photo by Barrie Collins. Reprinted with permission from the New Haven (CT) REGISTER of October 23, 1986.

John Evanson and John Tessitore of Bethany Community School in New Haven, CT proudly display the merchandise certificate they won from Estes Industries. The rocket (shown in photo) designed by these 11-year-olds in the gifted and talented program was successfully launched.

They received local publicity as a result of their award. Nice going, fellows!

JOKES

- Q. Why is Saturn like a bell?
A. It has a certain ring about it.
- Q. Why is the moon like a house?
A. It has beams.
Contributed by Kevin Little, Latham, IL
- Q. What is an astronaut's favorite meal?
A. Launch.
Contributed by Shikhor Mukerji, Newark, DE

Two Martians landed by a corner traffic light.

"I saw her first," said one.
"So what?," the other Martian replied. "I'm the one she winked at!"

Contributed by Frank Black, Holt, FL

DON'T THROW THEM AWAY!

By Jesse P. Waggoner, Bridgeport, WV

What do you do with all of those ancient rockets in your fleet? You know, the ones that have been flown to death, or are slightly damaged or missing a few parts or are simply too ugly to make a public appearance on the local rocket range. Well, there is one absolute rule to always remember: **DON'T THROW THEM AWAY!**

There are several ways to put these aging beauties to good use. First, you can **REBUILD** them. This may be something simple such as replacing a launch lug, making new fins or replacing that nose cone that blew away when the shock cord broke. However, sometimes a major redesign is in order. One of my early rocket mishaps occurred when I attempted to fly an Astron Scrambler (circa 1970) which I inherited from my older brothers. It was a three-engine cluster model. However, on launch day only one engine ignited because I miswired the igniters. The result was my Scrambler™ along with a payload of fresh egg plastered all over the outfield of a local baseball field. I was able to salvage enough parts (along with a few from a designer's special) to rebuild a "Scrambler B" which has flown over fifteen successful missions.

I also remember a friend who had an Estes Mars Lander™ which acquired a broken landing gear during one of our joint flight sessions. One day I missed that model sitting on his shelf. When I asked what happened, he said that he had thrown it away. I could have cried! It would have been a challenge to rebuild that one, and I would have loved to have had the chance.

A second thing you can do is **RECYCLE** those antiques. On any golden oldie can be found a number of parts that can be removed and used on future designs. You can reuse body tubes, metal engine holders, balsa sections, nose cones, and screw eyes. I have even recycled old parachutes that have been melted or torn around the edges. This is done by carefully cutting around the edges, attaching new shroud lines, and using the now smaller parachute on smaller models. In fact, almost every part of a model rocket can be recycled and put back to use. Use your imagination.

Now for those who are sentimental and couldn't bear the thought of hacking up those priceless pieces of history, then it is best just to **REMEMBER** them. You can do this by doing what NASA does with its old equipment—ship it off to a museum. Now if you don't have a local museum that is interested in used model rockets, start your own. Pack them away in a special storage box and let that be your museum. Then, from time to time get those rockets out and set up a special display and remember the old times. Remember, no matter how many sleek new Estes rockets you have sitting on your shelf or soaring into the air, every once in a while take a trip down memory lane and remember those old workhorses of your fleet. But whatever you do, **DON'T THROW THEM AWAY.**

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*Not available to non-members

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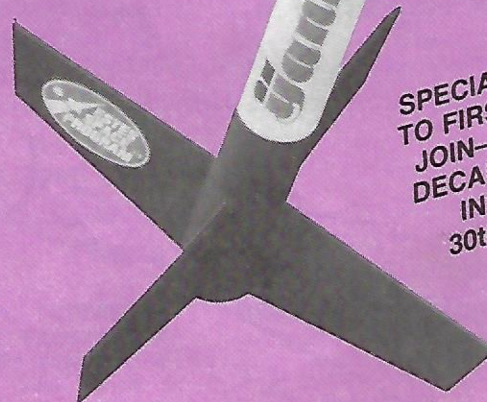
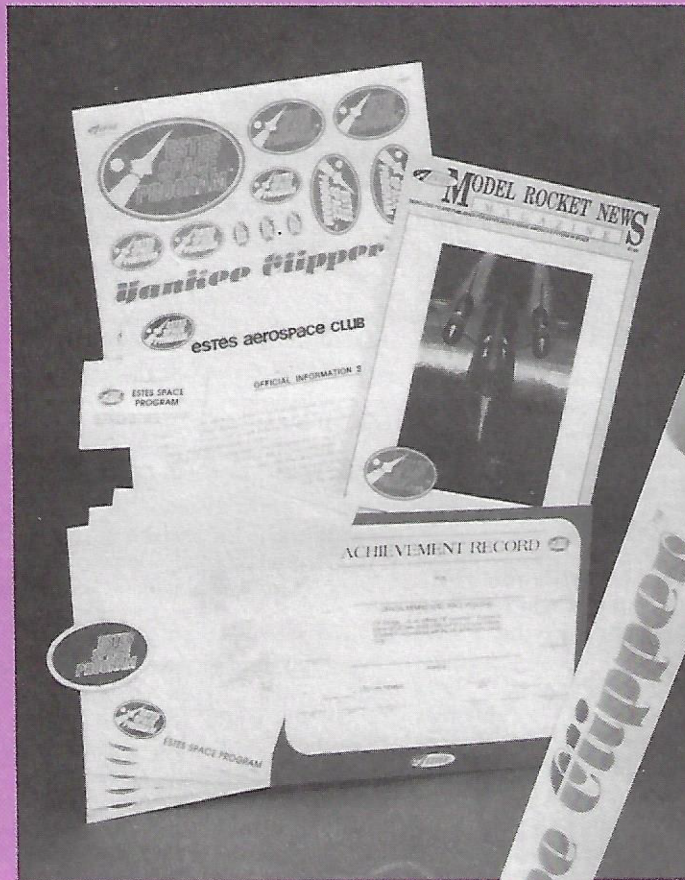
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