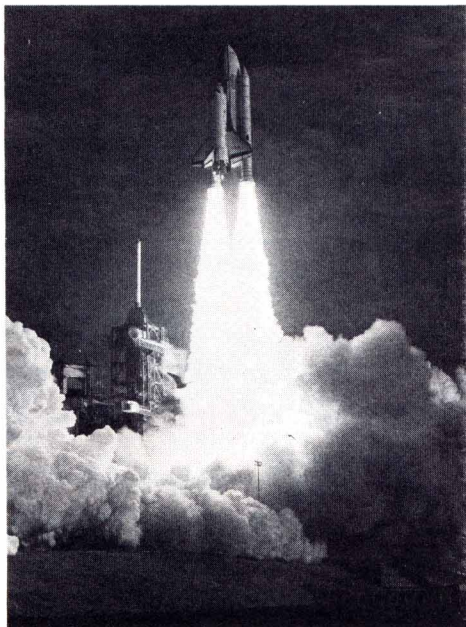


The Launch of the Columbia

by Michael A. Banks (NAR No. 30338)



Remote camera view . . . beginning of a new era!

— Photo Courtesy NASA.

April 12, 1981. Cape Canaveral, Florida. 7:00:03.983 a.m. At this instant, America re-entered the Space Age as the Space Shuttle Columbia lifted off Pad 39A. Climbing spaceward on a pillar of fire, the Columbia's launch was watched by millions around the world as she headed for a virtually flawless maiden voyage and a place in history.

Were you there? If not, you may have wondered what it was like to witness the pre-launch preparations, to share in the excitement at the launch site as the count-down progressed.

In a word, it was thrilling. And, the events surrounding the launch were almost as exciting as the launch itself. Nearly 500,000 people turned out to see the launch, and "launch fever" reached epidemic proportions. The day before the scheduled launch date of April 10, roads and beaches within 20 miles of the Cape were filled to capacity with campers, tents, and cars as viewing sites were

"staked out". Hotels in a much wider area were filled completely, and a festive atmosphere prevailed.



Magazine, newspaper, and NAR photographers ready for the launch.

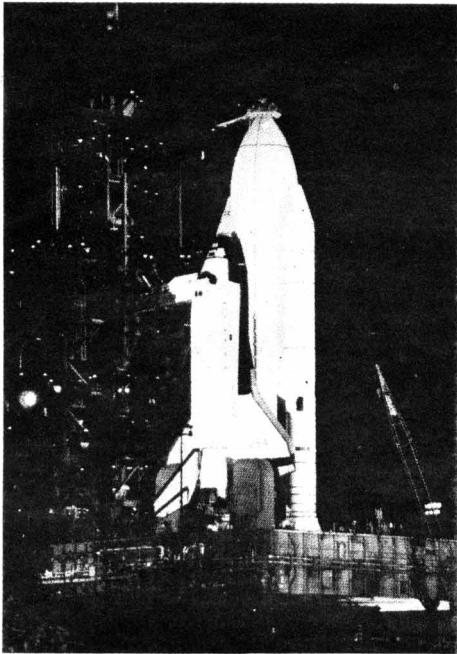
— Photo Courtesy Alan Williams.

In the press area, adjacent to the mammoth Vehicle Assembly Building, over 4000 reporters and photographers were packed into a field only 3 miles from the launch pad. Here, the activity was almost as intense as that in Mission Control as TV and Radio crews raced to set up their equipment alongside hundreds of newspaper and magazine photographers. The area somewhat resembled a carnival, with a massive tent set up as a work area, grandstands, and a forest of tripods bearing exotic camera equipment.



Astronauts Crippen and Young prepare for launch.

— Photo Courtesy NASA.



First view of the shuttle, Thursday, April 9, 1981.

— Photo Courtesy Alan Williams.

The view of the Columbia was unobstructed, across the open water of the barge turnaround area. Just offshore of the press area, a mockup of the Shuttle's cabin floated, and crews practiced water rescue with the mockup the day before the launch.

For those lucky enough to be in the press area, there was much more to do than make preparations. Special press tours took members of the media to within a quarter mile of the Columbia, as well as to the "clean room", where the Spacelab "test article" was undergoing tests. An additional highlight of the tours was the landing field just Northwest of the VAB, where the Columbia and its sister ships will land in the future. At the field was the specially modified T-38 jet trainer which shuttle pilots use to simulate landing a shuttle.

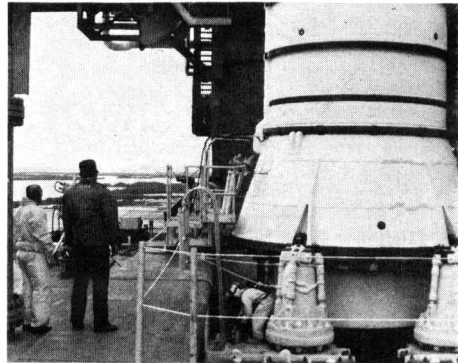


Retrieval vessel designed to recover shuttle boosters.

— Photo Courtesy NASA.

Eventually, all of the preparations were complete, and Launch Day began — quite early for most workers and observers. Enormous traffic jams began blocking roads to the Cape as early as 1:00 a.m. on Friday, and NASA officials opened the gates to those with passes 2 hours earlier than planned. This was of little help, however, as traffic backed up over 10 miles in all directions an hour before launch time.

The well-known computer problems popped up then, and for those of us at the press site, it was a matter of sitting and waiting. Loudspeakers piped in the conversations between Houston and the Cape, and we were kept well-informed as to developments. Speculation came and went and, despite everyone's hopes, the launch was scrubbed shortly after 10:00 a.m.



Shuttle workers next to base of solid rocket booster.

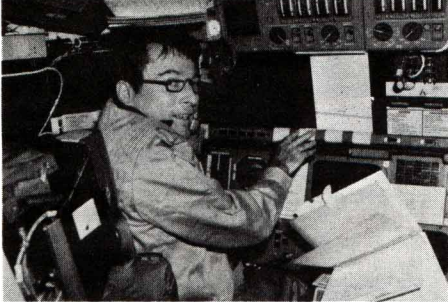
— Photo Courtesy NASA.

The waiting began again, although many of the observers — both at the Cape and in the surrounding areas — were unable to remain for what appeared to be an uncertain length of time before the computer problem was resolved.

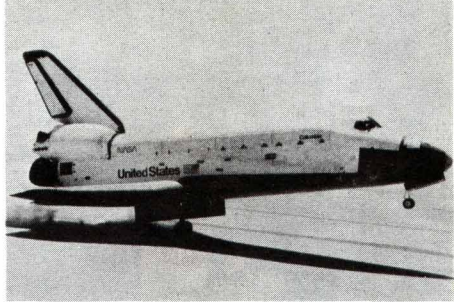
For those who stayed on, the delay was an opportunity to relax, renew acquaintances, and double-check equipment. The mood in the press area was relaxed the remainder of the day, and several VIP's, including STAR WARS creator George Lucas, Steven Spielberg, and Neil Armstrong were in evidence, providing interview material for the mostly inactive press. Quite a few model rocketeers, including G. Harry Stine, were also on hand in both professional and personal capacities.

The excitement picked up again on Saturday, as the computer problem was tracked down, rectified, and the countdown finally recycled. The Sunday morning pre-dawn hours were a repeat of the previous Friday, although on a smaller scale, since so many observers had been forced to leave by the delay.

Finally, the moment arrived. The main engines ignited, followed slightly over 2 seconds later by the solid rocket boosters, and Columbia was on her way, the combined 6.5 million pounds of thrust of her engines shaking the ground for nearly 50 miles. (In



John W. Young during the 54 hours aboard the shuttle.
 — Photo Courtesy NASA.



Successful landing, April 14, 1981.
 — Photo Courtesy NASA.

case you're wondering, in model rocketry terms, the Columbia's Main Engines combined generate a thrust equal to a "T" engine, and the SRB's each are equivalent to an "AA" engine!)

The ensuing test mission proved the Columbia in all respects, and NASA is now looking forward to a second test flight (there will be 4 altogether) in September or October.

The Columbia is currently at Kennedy Space Center for refitting, having been ferried from its landing site in California to KSC by the Shuttle Carrier Aircraft (a modified

747). In the meantime, work on the Challenger, the second space shuttle, continues, with a goal towards operational flight in 1983.

Eventually, the shuttles Discovery and Atlantis will follow the trail blazed by Columbia, also. By then, shuttle launches may well be routine. But the activities supported by space shuttles will not be routine — a new era will be under way. Mankind will be actively colonizing and industrializing space, a period which future historians will undoubtedly label "the Shuttle Era."

Attention Rocketeers:



Now that you are an active rocketeer we would like to recommend membership in the National Association of Rocketry.

As an NAR member you will be able to compete in officially sanctioned local, state, national, and even international model rocketry meets. Your rockets and designs will become eligible to set national and international records and most important, you will be kept informed of happenings in model rocketry available now too!

Also as a NAR member you will receive a monthly copy of Model Rocketeer, a magazine published as a service by the NAR for its members. It contains news of upcoming model rocketry and space events, manufacturer news, modroc tips, designs and plans, news of the NAR, its members, and other people in the aerospace field. Also, it contains editorials, humor and rocket history.

For more information and a membership application write: NAR Headquarters, Dept. E-10, P.O. Box 725, New Providence, NJ 07974.

JOIN TODAY!

Help Us Publish The Model Rocket News

Got any good ideas, cartoons, technical articles, or contributions? Then why not submit them to us for possible publication? Our constant aim is to make MRN a better, more interesting magazine and yours may be just the contribution we need.

Illustrations of ideas for the Idea Box and cartoons should be drawn in ink and no smaller than 4 inches by 4 inches. Technical articles and contributions should be well written and photos accompanying the articles should be packed between cardboard sheets to avoid damage.

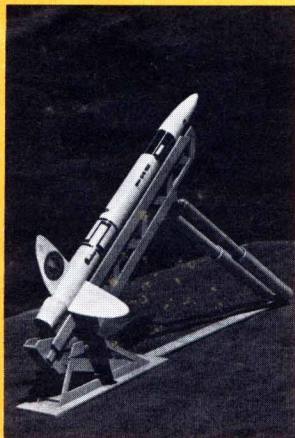
All contributions become the property of Estes Industries and cannot be returned. Address all material to: MRN Editor, Estes Industries, Penrose, CO 81240.

Should your article, idea or cartoon be used in MRN, we'll reward your efforts and talents with an Estes Merchandise Certificate, the amount of which will be determined by the MRN editorial staff.

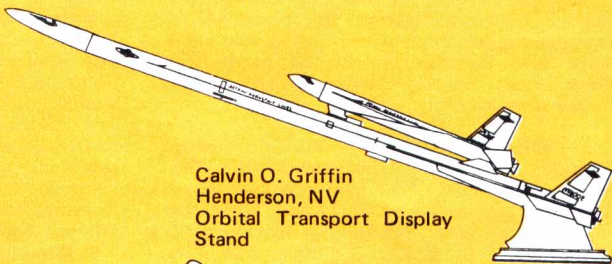
Hope to hear from you soon!

Display Stand Contest Winners

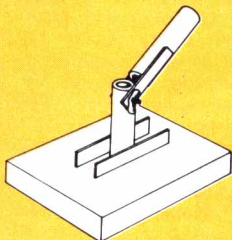
We are pleased to announce the results of the Estes Display Stand Contest. The twenty rocketeers listed below will each receive \$25.00 in free Estes Merchandise. Congratulations to them for their original ideas on ways to display model rockets!



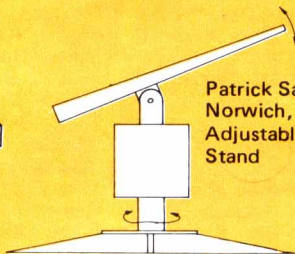
Alan Sekelsky
Croton-on-Hudson, NY
Elevating Hydraulic Missile
Launcher



Calvin O. Griffin
Henderson, NV
Orbital Transport Display
Stand



Brian Evans
Kensington, OH
Tilt-A-Stand



Patrick Santos
Norwich, CT
Adjustable Launch
Stand

Name & Address Name of Display Stand

Darrin Morrow
Harrisburg, PA Mobile Missile Stand

Shawn Higgins
Dawsonville, GA The Hanger Display Stand

Arthur Nestor
Zelienople, PA Wall Rack Display

Craig Brown
Salem, IN Display Mobile

Alexander Pucciariello
Roscoe, NY Underground Missile Silo

Robert M. Garret
Atlanta, GA Display & Launch Stand

Renny P. James
Kirk, CO Astroid Space Station

Mark Parsons
Huntington, WV Mystery X

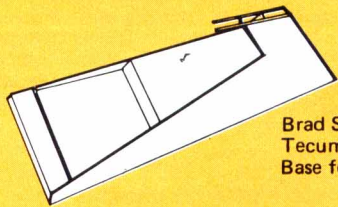
Randy Pavlica
Temple, TX GANTRY

Roban Bieber
Kansas City, MO Horizontal Rocket Stand

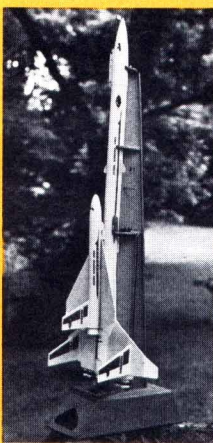
Chris Hoffman
Xenia, OH Rotating Launch Pad
Display Stand

George Leonberger
Cookeville, TX Cradle Stand

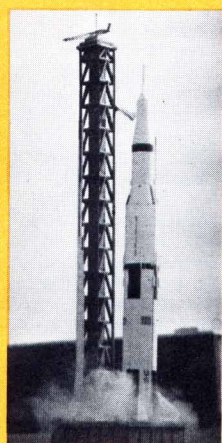
Todd Pillard
Haxtun, CO Expandable Stand



Brad Smith
Tecumseh, MI
Base for Rockets



Gordon Bugg
Gadsden, AL
Gantry Pad/Large,
Display Stand No. 5



Mark Rainey
Hackettstown, NJ
Saturn V Launch

DESIGN OF THE MONTH WINNERS

Congratulations to another fine group of Estes Rocketeers for their outstanding DOM entries. First place winners will receive \$75.00 merchandise certificates and honorable mentions will be awarded \$10.00 certificates. Keep those entries coming, maybe you'll be our next winner!

DECEMBER 1979 —Winners: Michael Kempel, Katy, TX (Experimental III). Bill Patton, Ligonier, IN (Corkscrew). Milton Matteson, Minneapolis, MN (Tartar). Honorable Mentions: John Slaubaugh, Kokomo, IN (Mini-Fly). L. Szereny, Boyds, MO (The Cruiser). Marc Ferrari, Austin, TX (Atom Smasher). Dave Novak, Greenfield, WI (Orbitron). Mike Stidham, Bellevue, KY (Star-cruiser Atlantis). Chris Donahue, Northport, AL (Vorpel Falcon U.E.V.E.). Raymond Castro, Chicago, IL (Body Tube Marginer).

JANUARY 1980 —Winners: Randy & Ross Wilson, N. Mankato, MN (Quadrefoil). William Pastel, Jamaica, NY (The G.S.F. Model Rocketry Launch Center). Remo Ottone Jr., Salinas, CA (C.S.C. Starliner). Honorable Mentions: Dee Shappell, Longview, TX (Solid State Launch Controller). David Miller, East Hampton, MA (Theta X-29). Max Mosser, Pembroke, GA (No Name). Duane Couch, Coquille, OR (Red Baron). Jon Miller, Bunce-ton, MO (Gamma X-5). Cahrls Demirjian, Fayetteville, NY (Sky Hawk). Bob Covington, St. Louis, MO (Pneumatic I).

FEBRUARY 1980 — Winners: Steve Stenman, Alpena, MI (Falcon). Geoffry Albert, Boulder, CO (TRS-6). Dan Clemens & Jeff Lurbrick, Summerville, OR (ASL). Thomas Barnes, Gahana, OH (P.O. Box 1). Tom McCallister, Dotham, AL (Velum). Honorable Mentions: Scott Silverman, E. Brunswick, NJ (X Celebration). Randy Redmon, Chagrin Falls, OH (Delta). Steven D. Wayner, Bellevue, WA (Tritan). Christopher Hirst, The Netherlands (The Flying Dutchman Launch System). Thomas Payne Jr., Tappan, NY (The Original). Jeff Leonard, Waukee, IA (Deltoid). John A. Giannetti, Sykesville, MD (Cerberus 1). Theodore Dombrowski, Detroit, MI (Windtunnel). Douglas Ashcraft, St. Louis, MO (Lance). Mike Pisano, Cleveland, OH (Guideline). Brad Roberts, Orchard Lake, MI (Charger).

MARCH 1980 — Winners: Paul Graham, Monroeville, PA (Noah's Arc). Eirik Andersen, Isle, MN (Interplanetary Invader). Eric White, Cumberland, MD (Shebah 3). Cory Swanson, Duluth, MN (The Defiant). Kemmon Gull, San Antonio, TX (Compu-ta-Launch). Steve Buhrow, Chippewa Falls, Page 28

WI (Simple Launch Control). Honorable Mentions: Warren Block, Chadron, NE (Re-chargeable Launch System). Mark Grebe, York, NE (Cylindrus 7). Aian K. Erickson, Auburn MA (Launch Pad). Joseph B. VanLoon Jr. Colorado City, CO (MK1 Control). Richard J. VonDaggenhausen, Byron, MI (Inter-Galactical). Jeff Kwaitkowski, Nanticoke, PA (The Argonaut). David Swanton, Menasha, WI (Aristide). Chuck Matz, Orland Park, IL (IPB II Hawkeye). Doug Ellen, Grand Rapids, MI (Falstaff Two). Daniel Lawrenz, Manitowoc, WI (Red Baron). Chris McCord, Mt. Pleasant, TX (Starblazer). Kevin Houser, Lincolnton, NC (Atom Smasher). Greg Lewis, North Liberty, IA (The Thunderbolt). Stephen Dobro, Sharon, MA (Gemini 7). John Buckner, Kannapolis, NC (The Sting). Kirk Wille, Corvallis, OR (Tiberius-One). Mark Potts, Williamsfield, IL (Collapsar I). James Surrey, Arlington, VA (Skylark).

APRIL 1980 — Winners: Michael V. Broder, White Plains, NY (Gnat). Lance Jones, Winnipeg, Manitoba (White Dragon). David Kocherhans, Provo, UT (Starship Torilios II). David Miller, East Hampton, MA (Rocket Launch System Delta). John Gillio III, San Jose, CA (Saturn III). John Moser, Bethel Park, PA (Starhawk). Jim Monteith, Jackson, MO (Tomahawk). Honorable Mentions: Kirk Darbe, De Ridder, LA (Gammatron III Attack Fighter). Theodore Dombrowski, Detroit, MI (XL-III-A-Garros). Ken Wolfe, Oberlin, OH (Mary Lou Multiple Launch System). Robert Szostak, Northbrook, IL (Safety Launch System). Andy Hay, Missis-sauga, Ontario (The Skydemon). Herb Johnson, North English, IA (HI FURY). Bill Echterling, Arvada, CO (The Hourglass). Donald J. Svita, Melrose Park, IL (Rad Waste Shuttle).

MAY 1980 — Winners: Eric Bowles, Nagoya, Japan (Three Stage "229 OMI-CRON"). Hays Falconburg, McClave, CO (Circlypse). Eric Falconburg, McClave, CO (Multi Pad Launcher). Doug Perilli, Weston, MA (Blue Devil 7). Paul Blase, Wilmett, IL (Skywing Orbital Lab). Honorable Mentions: James M. Petro, Gary, IN (Sun Chaser). Ken Dailey, Sedona, AZ (Electra). Bruce D. Morrison, Smithville, OH (No Name). Kurt Hof-gard, Boulder, CO (Creature). James Brown, Farmington, NM (Pegasus). Jeff Benton, Kooskia, ID (S-28 Hustler). Joe Kenny, West-field, NY (Horizon). Ernie Hofer, Owatonna, MN (Antipus). Jeff Ritter, Vancouver, WA (Solar Launch System). David Bethke, Grays-lake, IL (Proteus). Neftali S. Rivera, Anasco, Puerto Rico (Yaguin-2). Tim Zgonena, River-woods, IL (Tri-Jen). Eric King, Westlake Village, CA (The Striker).

SKYLARK

SKILL LEVEL 2

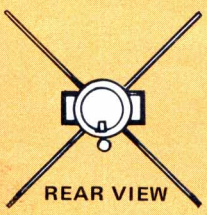
WINNER MARCH 1980
 DESIGN OF THE MONTH CONTEST
 BY JAMES SURREY, Arlington, VA

PARTS LIST

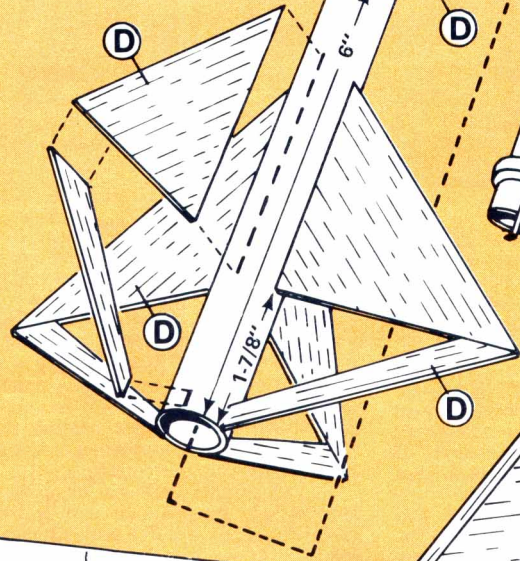
- A 1 Engine Mount (EM-2050). 3154
- B 1 Body Tube (BT-50).....3073
- C 1 Nose Cone (BNC-50Y)... 8011
- D 2 Fin Stock (BFS-30L)... 3170
- E 1 Launch Lug..... 2322
- F 1 Screw Eye..... 2279
- G 1 Shock Cord..... 2276
- H 1 Parachute (PK-12)..... 2264

ADDITIONAL MATERIALS

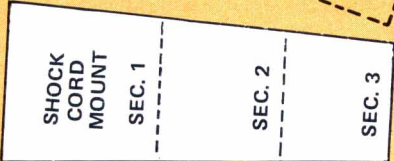
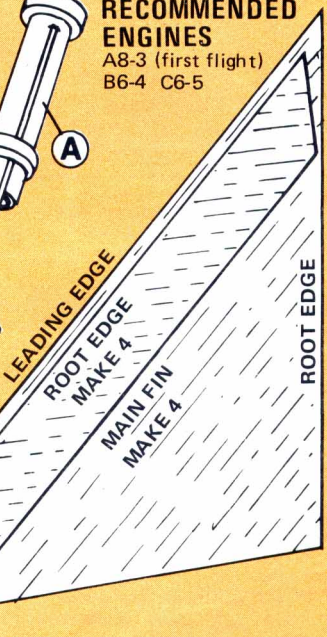
White glue, sanding sealer, spray paint, sandpaper, hobby knife, ruler, and a sharp pencil.



GLUE LAUNCH LUG 7" FROM BOTTOM



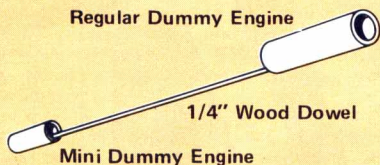
RECOMMENDED ENGINES
 A8-3 (first flight)
 B6-4 C6-5



The Idea Box

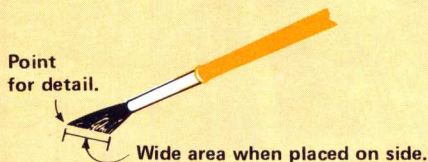
To make a rocket holder, glue a 1/4" wood dowel to the inside of a dummy engine. If desired, you may put a mini-dummy engine on the other end.

By: John Nickel, St. Joseph, MI.



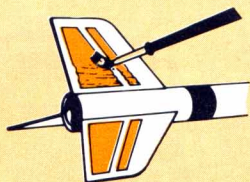
When you first buy a small paint brush, cut off the end of the bristles diagonally. This gives a point for detail and a wider area for covering a large surface.

By: Dave Dobson, Gays Mills, WI.



When putting on decals use wet clean paint brush to smooth out wrinkles and wipe away glue.

By: Raymond Lopez, Las Vegas, NV.



Stump Your Teacher Quiz

Q. What is meant by laminar flow?
A. Laminar flow means that air is flowing smoothly over the surface of the model rocket. When something causes the smooth flow to be interrupted, tiny waves or eddies are set up. This uneven sort of flow is called turbulent flow.

Q. How far will a golf ball fall in four seconds?
A. To answer this, you need to know the formula for calculating the distance traveled by a falling body. This equation is: $s = \frac{1}{2} g t^2$

s = distance
 g = acceleration due to gravity - 32 ft./sec.²
 t = time

To solve the problem, substitute actual values in the equation and solve.

$$\begin{aligned} s &= \frac{1}{2} (32 \text{ ft./sec.}^2) (4 \text{ sec.}^2) \\ &= \frac{1}{2} (32 \text{ ft./sec.}^2) (16 \text{ sec.}^2) \\ &= (16 \text{ ft./sec.}^2) (16 \text{ sec.}^2) \\ &= 256 \text{ ft.} \end{aligned}$$

Assuming that you are measuring the distance fallen in the first four seconds and that you are dropping the ball from near the surface of the Earth.



MRN



and Free Goodies.. For You!!

Model Rocket News is now published three to four times a year. We will, whenever possible, mail your MRN to you with our seasonal mailings in addition to including it with return mail-orders, as long as our supplies last, as an exclusive service to our mail-order customers.

To receive our seasonal mailings you must be an active Estes mail-order customer which requires you to have placed an order for Estes merchandise within the past four months.

Additional Bonuses . . . All orders received on even numbered months, (February, April, June, etc.), will be returned with a "free" plan to help increase your Estes

fleet. These new plans feature a variety of designs from single-stage sport models to far-out exotic rockets you will be proud to display. All "free" plans can be constructed from the Estes hi-performance parts and accessories listed in our catalog.

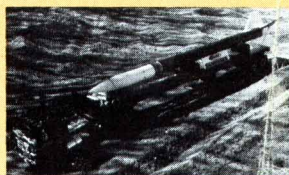
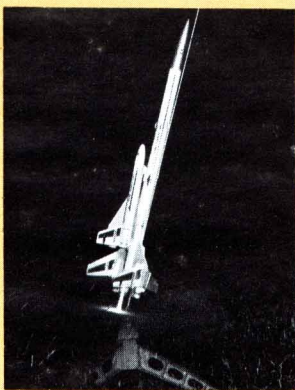
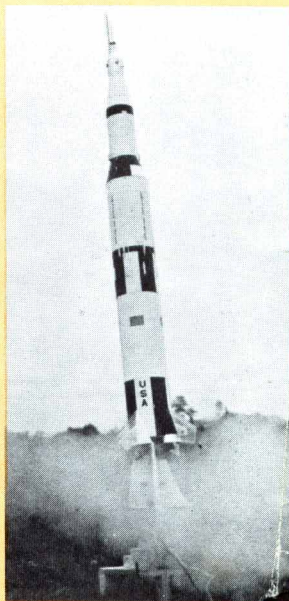
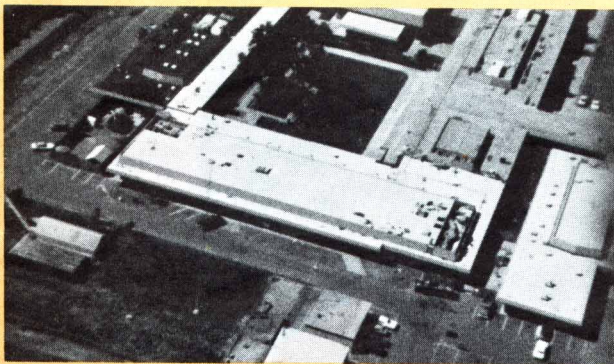
All orders received on odd numbered months will be returned with a free iron-on decal for your t-shirt, windbreaker or range jacket. These iron-ons feature a variety of super-neat designs. You iron it on right at home to any surface containing 50% or more polyester.

Remember . . . these items are available only with return mail-orders!!!!



PHOTO CONTEST

\$500.00 in free Estes Merchandise to be awarded to the 20 best entries. Here's your chance to win \$25.00 worth of Estes rocket supplies and equipment while displaying your skills in model rocketry photography. To enter simply follow the rules listed below:



RULES:

1. Photographs, slides, or AstroCam 110 photos are acceptable. All entries must deal with some aspect of model rocketry. Please do not send movie films or negatives.
2. You may enter as many times as you like.
3. Employees of Estes Industries or members of their immediate families are not eligible.
4. All entries become the property of Estes Industries. We will return entries if requested and a self-addressed, stamped return envelope of the proper size is included.
5. Pack entries carefully - use cardboard for added protection. Entries should be marked "Photos enclosed". Note: Estes cannot accept responsibility for lost or damaged entries.
6. Entries will be judged for visual impact, composition, and originality of rocketry subject matter.
7. A \$25.00 Merchandise Certificate will be awarded to the best 20 entries. Decisions of the judges are final.
8. Winners will be announced in a future issue of Model Rocket News.
9. Be sure to include your name, age, address, city, state and zip code with each entry. Please include your Skill Level if you are an EAC member.
10. Mail entries to:
Estes Industries
"Photo Contest"
Penrose, CO 81240
11. Deadline for receipt of entries is midnight December 1, 1981.

GOOD LUCK!