



T.H.O.R.

January/February 2001

VOLUME 8 NUMBER 1

T.H.O.R. - THE HEARTLAND ORGANIZATION OF ROCKETRY 2001 Events Calendar

Monthly Meeting Schedule for Winter:
Tuesday January 2nd, Tuesday February 6th, and Tuesday March 6th.

As usual, each meeting will start at 7:00 PM at the La Vista Community Center.

2001 Calendar in the Works!

- *FUN FLYING AT ALL LISTED LAUNCHES!!
- * All contest & sport launches to be held at the LaVista Sports complex.
- * Email: bruce.lee@tripoli.org
- * For Launch time and location call T.H.O.R info line (402) 896-2069, Bruce Lee at (402) 691-8420 or the launch coordinator listed.
- * For information on contest call THOR or the Launch Coordinator.
- * Prizes for events are to be announced before each event, valued at no less than \$10.00.
- * Cost to enter contest is \$1 for members and \$2 for non-members.

TRIPOLI NEBRASKA WEB PAGE
www.tripoli.org/tra_ne/nebraska.htm

THOR WEB PAGE
www.tripoli.org/tra_ne/THOR/thor.html

Space Trivia 101

Compiled by Jon W. Damme, NAR #62777

Welcome to the maiden flight of a new feature that will appear from time to time in our newsletter. A year or two ago, I was trying to remember who flew what Gemini and Apollo flights. I could name 70 to 80 percent of the crews, and most of the men who walked on the

moon, etc. But I couldn't name them all, and I had this need to know, ya know?

Have you ever tried to fall asleep at night when you can't remember something, figuring you'll just look it up the next morning, but you just lie there, tossing and turning, turning and tossing, tossing and turning some more, because you can't get it out of your mind until you find out? Yeah, I got outta the sack in the wee hours to consult some books to see whether Jim Irwin walked on the moon during Apollo 15 or 16. Anyway, only after spending 15 minutes leafing through *Moon Shot* was I able to get my answer, and go back to bed. More thoughts crept in. "So who was the command module pilot orbiting overhead while Irwin and either David Scott or John Young were driving that expensive moon-buggy around," I asked myself? "Surely that can wait until morning!" More time elapses. "Oh for crying out loud! It's no use," I silently scream as the light goes on again. Shepard and Slayton's book gets consulted again. For good measure all six crew members of missions 15 and 16 get learned, since those flights were the ones I had trouble keeping straight in my mind. Light finally goes out again, this time with *Moon Shot* on the night stand by the bed, just in case.

Well, I hope this column doesn't keep you up nights, but hopefully it will ignite (or re-kindle) some interest in the history of the space program. No, questions won't be confined to astronaut names, although that's where the column begins. (The moon race of the 60's and early 70's is my area of greatest knowledge, limited as it is.) And since two months is a long time to wait, answers to the current issue's questions will appear on another page of the same newsletter -- your choice whether to blow out accumulated cobwebs lodged in the old gray matter, or just be lazy and peek! :=)

So, if everything's A-OK with you, let's blast off on our first journey into space trivia. The first question is tough, but a real classic piece of history. Once you find out the answer, it's a great "brain teaser" to bring up at parties. It's almost guaranteed that no one will know the

answer, but a piece of history that everyone should know. Go flight!

Questions:

1. One of the most historic conversations of all time occurred on July 20, 1969. When Apollo 11 landed on the moon, Neil Armstrong reported, "Houston, Tranquility Base here. The Eagle has landed." Name the person back on earth who replied, "Roger, Tranquility. We copy you on the ground. You've got a bunch of guys about to turn blue. We're breathing again..." [Hint: He also walked on the moon during a later mission.]
2. The term "perilune" means:
 - a) The point where an earth orbiting satellite is closest to the moon.
 - b) The highest point a satellite achieves in a lunar orbit.
 - c) The lowest point a satellite achieves in a lunar orbit.
 - d) Two crazy birds.
3. Name the seven original Mercury astronauts.
4. Who was the first woman in space?
 - a) Golda Maier
 - b) Sally Ride
 - c) Valentina Tereshkova
 - d) Anna Karenina
5. Which major league baseball player flew jet fighter missions with John Glenn during the Korean War?
 - a) Ted Williams
 - b) Gil Hodges
 - c) Stan Musial
 - d) Warren Spahn

See page 7 for the answers!

Rocketman Central

By Richard Burney, Secretary and Newsletter Editor
THOR#8, NAR# 69543, TRA# 6140

Year in Review...

I can remember last December finishing up my materials for the January/February 2000 newsletter... now it's already a whole year later! Ever since I finished my schooling nearly six years ago, it seems like every year has rocketed by at an ever increasing rate. Because of all the things that have occurred during 2000, this year has gone by in a flash. If I blink, a week goes by without much notice! I can now surely appreciate what many adults have told me throughout the years about time going by faster the older you get.

And since it's the end of the year, you guessed it, it's time to take a look back at the past year! Because of the lack of a group project and that there was a general consensus that there was quite a bit of burnout from the Mercury Redstone project, the year 2000 was pretty much a mundane year. But that didn't stop some of us from doing our own big projects (example: my *Macross Plus* rocket).

Below is a brief summary of the events and activities that effected THOR and its membership this past year:

6 High Power Launches – April 14th through the 16th (Breda, IA – Fire on the Farm III), May 6th (Pickrell, NE), June 2nd through the 4th (Pickrell – Nebraska Heat III), August 5th (Pickrell), October 7th (Pickrell), and October 21st (Pickrell). The weather was definitely a mixed bag of good and bad weather. We had three high power launches at the Pickrell site (February 19th, March 18th, and August 19th) and one at Breda (November 11th) that were canned due to bad weather. Since two of the three days of Fire on the Farm III were wet and cold, some have jokingly rechristened the event Flood on the Farm! Ironically, day one reached a near record high of 80 degrees, but it was way too windy too fly!

2 Contests – Drag Race (July 16th) and Egg Lifter Duration (September 10th). Because of weather, confusion of scheduling, and/or a total lack of interest, these were the only two contests that I have record (or memory) of.

Other News – Back in February, both Tripoli Rocketry Association and the National Association of Rocketry filed a four count civil complaint against the Bureau of Alcohol, Tobacco, and Firearms because of its ever increasing attempts to regulate high power model rocket motors and the hobby in general. Though the BATF had the chance to settle out of court, they have decided to see this case through.

In August, we lost Scott Meinhardt to cancer. He was 34 years old. Scott was one of the first people to join the Tripoli Nebraska prefecture after Bruce Lee founded it in 1991. For several months back in 1997, Scott held the J altitude record (just over 10,000 feet). Right before he was diagnosed with cancer again, Scott was the insurance representative for Tripoli.

In brighter news, the beginning of 2000 saw the transfer of the newsletter editor role to me from Bruce Lee. This newsletter was originally the newsletter for the Omaha Rocket Club from 1994 to 1998. Jim Piunti was the original editor from 1994 through 1995. Bruce Lee was the editor from 1996 to the beginning of 2000. I have been the editor since the March/April issue. Though keeping the general format the same, I have made some gradual improvements to the newsletter (mainly the additions of pictures), and I hope to eventually come up with a newer format sometime during 2000.

2001: A Rocketry Odyssey...



Taken last January, these are a lot of the parts going into my Level 3 rocket. More to come!

Even though no group project has been planned for 2001 (some of us are pushing for the possibility of repairing and flying the *Nebraska Heat*...), I am getting close to finalizing my plans for my Level 3 rocket. I am hoping to fly this beast at either LDRS XX or A.I.R.Fest later this summer, but I will be taking my time to do it. I hope to present this project in great detail in either the March/April or May/June newsletter.

Since this is the last newsletter of 2000 and the 20th century, I would like to wish everyone a Happy New Year and welcome to the 21st century!

Year in Review Photo Gallery!

As part of the year in review, I decided to include some pictures from some of our rocket launches this past year. I have tried to use mostly pictures that have not been previously printed.



Though the weather sucked, Ky Michaelson had a tent full of goodies at FOTF III including the shirt that he would be selling at LDRS a few months later!



From right to left: Mike, Steven, and Nathan Howard with Mike's Level 1 rocket, a Rocketman Wahoo at Nebraska Heat III.



Jeff Barnes and Mark Uhlenkamp help Bruce Lee prep *Super Mario* for the only successful M flight at Nebraska Heat III.



Jeff Barnes and the never painted *Unpainted Arizona* (could never figure out what the *Arizona* part meant!☺)



***Unpainted Arizona* takes off on a J800.
Unfortunately for Jeff, the rocket was never found.**



**Alex Trojanowski with his 1/4A3 powered glider
(picture taken at the Drag Race contest at the La
Vista Sports Complex on July 16th).**



**Justin Hayes and his J350 powered LOC Bruiser are
ready for flight on the last day of Nebraska Heat III.**



**Liftoff of a rare LOC Esoteric at AIRFest on a cluster
of K's and L's.**



**After an uneventful flight, Justin's Bruiser landed in
the big tree by the road!!!**



**Soon after takeoff, the Esoteric tumbled to the
ground and ignited several large fires. The Argonia
Fire Department had to be called in (you can just
barely make out a few fire trucks).**



When not using my Ford Ranger for target practice, Don Rice was racking up some nice (and some not so nice) flights with his Exocet models. Here is his modified Binder Design Exocet with nitrous power.



My Maxi Alpha III takes off on a D12-3 at the October 21st launch at Pickrell.

Model Rockets

From *Air and Space Magazine* (courtesy of Bruce Lee)

Vern Estes is a quiet, soft-spoken man. Close to 70, he still has the all-American looks of a farmboy and a modest "Aw, shucks" personality. However, thanks to the work he did in the 1960s while the space race between the United States and the Soviet Union was unfolding, millions of model rockets have flown without a reported single fatality or serious injury. Through the company he founded in 1961, Estes Industries, a majority of these rockets have borne his name. Last May Estes came to the National Air and Space Museum to appraise the Museum's large collection of model rockets and recount for curators how the Space Age hobby got off the ground.

After the space era began with the 1957 launch of the Soviet satellite Sputnik, many a boy tried his hand at launching homebuilt rockets. In the book *The Rocket Boys*, the author, Homer Hickam, writes of his and his friends' attempts to launch rockets from fields near his home in West Virginia. (See [The Big Creek Missile Agency](#)) Many of the materials needed for these experiments could be bought through ads in the back of hobbyist magazines. Because of their explosive nature, however, such materials are exceedingly dangerous.

Through his association with rocketry, Hickam eventually became a NASA engineer, but his story's happy ending has a darker side. The American Rocket Society estimated that as many as one in six amateur rocket experiments in the 1950s and '60s resulted in a fatality or serious injury. Because such unsafe experiments were being conducted by young people, the ARS referred to it as the "American Youth Rocketry Problem." Solving it was no easy matter, though. Simply loading match heads into a carbon dioxide cartridge can result in a device capable of launching a rocket hundreds of feet into the air. Just as easily, it could also produce a pipe bomb with deadly consequences. What was needed was a safe, commercial product that would allow inquisitive young people to safely experiment with rocketry.

The solution was devised by a shoe salesman named Orville Carlisle, who was also an amateur inventor experienced in pyrotechnics. Carlisle devised the Rock-A-Chute, a rocket propelled by a small engine. At peak altitude, the engine fired a small explosive charge that pushed a parachute out of the rocket body. The Rock-A-Chute then returned slowly to the ground, where it could be fitted with another engine to fly again. To market his product, Carlisle approached science fiction writer G. Harry Stine. Together with several investors, Stine and Carlisle started Model Missiles, Incorporated in Denver, Colorado, in 1957.

The products sold by Model Missiles were beautifully designed and instantly popular. The demand was so great the company could not keep up with the orders. In particular, the rocket engines, built by a contractor, were slow to ship and extremely unreliable. Stine needed a new supplier, and the Estes family fireworks business was the first one listed in the 1959 Denver phone book. When Stine called them, they pointed him to their young son Vern, who quickly envisioned the hardware necessary to produce a reliable model rocket engine. To save money, he scoured junkyards for parts, and in a short time he had completed "Mabel," a machine capable of manufacturing an engine every five and a half seconds. That was even faster than Model Missiles could sell them, so to unload the surplus, Estes and his family placed an add in *Mechanix Illustrated*. The response was overwhelming.

Several bad decisions later forced Model Missiles out of business, but the demand for model rockets did not go away. To fill the void, Estes began to design his own, beginning with the Astron Scout, which was small enough to fit into the mailing tubes he used to

ship his model rocket engines. Estes sent the first Scout kit to his friend, G. Harry Stine, who quickly built and flew it.

After Model Missiles shut down, Stine founded the National Association of Rocketry. Under his leadership, the NAR worked with state legislatures to improve rocket safety while promoting the value of commercial products such as Vern Estes'. Stine also saw the historical value of the culture of model rocketry. He collected everything he could, and in 1973 he donated dozens of boxes of model rocket material to the Smithsonian Institution, including original drawings, correspondence, catalogs, kits, and models. It took curators over 20 years to go through it all. With the passage of time and the death of Stine in 1997, the full significance of some items had been lost. Estes was the ideal person to help us at the Museum understand the history of some of these artifacts.

As the doors were removed from storage cabinets at the Museum's Paul E. Garber preservation facility, both the brightly colored rockets and the look on Estes' face lit up the room. There in front of him were artifacts he had not seen in years. One of the first rockets he identified was the original Astron Scout sent to Stine. It was not as well built as many of the other rockets, and it had obviously seen a number of flights. Still, it is the kit that launched Estes Industries 40 years ago. "An original Astron Orbital Transport," Estes exclaimed as he picked up an unbuilt kit. "Two dollars and fifty cents. Sold!"

The Museum's collection also comprises model rocket artifacts from all over the world. "These Czechoslovakian engines never worked," said Estes. "They always blew up." "So our German scientists were better than their German scientists?" someone joked.

Estes became particularly excited when he found the original Schutz-Estes Boost Glider, which he designed with a former employee. Marketed as the Astron Space Plane, it was the first device to successfully lift off as a rocket and return as an airplane, presaging NASA's space shuttle. In the same drawer were two Astron Space Planes, one in pieces. An accompanying note explained that these were prototypes. Evidently a test with a larger engine had caused the one to fall apart. Estes smiled and said, "That's my handwriting." At Stine's request, Estes had sent the rockets to his friend decades ago. The note was unsigned, and without Estes' help it would have remained a mystery to Museum staff. Thanks to Estes' visit, we now have a better appreciation of the importance of the Smithsonian's model rocket collection.

--Robert A. Craddock, a geologist at the Museum's Center for Earth and Planetary Studies, is writing a book on the history of American model rocketry.

Museum Hours

The National Air and Space Museum is open from 10 a.m. to 5:30 p.m. The Museum is open every day except December 25. General admission is free. Except where

noted, no tickets or reservations are required. To find out more, call Smithsonian Information at (202) 357-2700; TTY (202) 357-1729.

Museum Location

The National Air and Space Museum is located on the National Mall at 7th Street and Independence Avenue SW, Washington, D.C., just west of the U.S. Capitol. The closest Metro stations are L'Enfant Plaza and Smithsonian. The Museum is currently undergoing renovation; some galleries will be closed temporarily. For detailed information on gallery closings, visit the NASM Web site at: www.nasm.edu/nasm/NASMexh.html

Food

Visitors to the National Air and Space Museum can dine at either the Flight Line Cafeteria or the Wright Place, a restaurant that offers table service to small groups. For special arrangements and group information, call (202) 371-8750.

Tours

Free docent-led tours are given daily and depart from the Tour Desk, South Lobby, Gallery 108. Audio tours describing the NASM collections are available in English, French, Spanish, German, and Japanese. The audio tour kiosk is located near the Information Desk in the South Lobby. Headset fees range from \$4.50 to \$5.

THOR Meeting Minutes: November/December

Compiled by Richard Burney, Secretary (Nov.) and Bruce Lee, President (Dec.)

THOR Meeting Minutes 11/7/00

Attendance: Keegan Elkins, Greg Crocket, Laura Elkins, Dennis Gilbert, Jon Damme, Larry Drake, Bruce Lee, Arley Davis, Kevin Rich, Devin Rich, Tyson Christiansen, Eric Nafito, Ken Nafito, and Doug Dedan.

Before meeting officially starts, Bruce shows part of the new Rocketman LDRS XIX tape.

Meeting starts at 19:30.

Bruce discusses the upcoming issue of *High Power Rocketry* (Titan II feature inside with another big fold out poster) and the new Tripoli member ship directory.

Jon Damme reports that Eclipse Components in Colorado is going out of business. Jon has brought in samples of some of their tubes in the past (*Editor's note: if I recall correctly, these tubes though for low power use*

and made of regular cardboard, but was impregnated with epoxy for extra strength).

Rich shows the new Aerotech product catalog for 2001 (courtesy John Carroll), new issue of *Extreme Rocketry* magazine, and the newest edition of the BATF's explosive's law book (the orange book).

High power launch at Breda, IA on Saturday. Chance of rain with a high in the 40's predicted (*Editor's note: the actual high was in the 30's at best and with a very good chance of snow later forecasted, the last high power launch of the year was canned*).

Arley does a demo for recreating plastic parts by making a rubber mold of the part. (*Editor's note: Jay Chladek did the same demo over three-and-a-half years ago*).

Another space shot failed recently. A Huntsville team fired a rocket from a balloon launcher at 68,000 feet up and out at sea. Rocket ended up hanging up in it's launcher. Bruce says the CSXT's follow up flight will be attempted in the near future.

Sport launch at La Vista soccer park on November 26th.

Christmas party at Larry Drake's house at 7:00.

Officer nominations (election at December 5th meeting):

President – Bruce Lee

Vice President – Arley Davis

Treasurer – Larry Drake

Secretary – Richard Burney

TRA Prefect – Mark Uhlenkamp

NAR Section Leader – Arley Davis

(Editor's note: since none of the positions were contested, only Arley becoming THOR vice president was the only change in the political makeup of THOR... at least we didn't have to worry about recounts, pregnant or dimpled CHAD's, or anything else like that!).

Treasurer's report: \$50 from October 7th launch. \$40 was sent to THOR. \$140 was made from October 21st launch. Porta potty charge is up to \$70 (for Pickrell launches). Currently \$140 left in the bank.

THOR to consider add in yellow pages and mpvie theater advertisements.

Offutt Open House and SAC Museum are possible events to have a booth for the club.

Meeting adjourned at 21:00.

THOR Meeting Minutes 12/5/00

Attendance: Bruce Lee, Jon Damme, Larry Drake, Kevin Trojanowski, Arley Davis and Kathy McGinnis.

Meeting Starts at 19:15.

We set up a preliminary calendar of events for 2001. Low power launches to be held the 2nd Sunday and High Power events on the 4th Saturday. We don't have a date for the Fire on the Farm launch at this time.

We discussed the election. There were no new candidates and there was no mail in or electronic ballots. There was only 1 person running for each position. Bruce Lee for president, Arley Davis for Vice President, Rich Burney for Secretary (and Tripoli Secretary – *Editor's note: you mean for our prefect?*), Larry Drake for Treasurer, Mark Uhlenkamp for Tripoli Prefect and Arley Davis for NAR section leader. We had a single vote to accept the candidates as listed. Motion passes unanimously.

We discussed having postcard notification for renewals. They will start going out for January.

We discussed getting THOR logo items again, T-Shirts and Hats. Everyone agrees it is a good idea.

We discussed doing advertising on the slide shows between movies at the theater, Larry will investigate.

Reminder, Ky's Super Bowl party. All are invited.

Jon Damme did a show and tell on a 3 foot long clear plastic storage container with lid. Very handy for those oversized items.

Meeting adjourned at 21:15.

Answers: Space Trivia 101

1. Charles Duke was CapCom (Capsule Communicator) in Houston when Apollo 11 landed on the moon. Duke later walked on the moon himself, during the Apollo 16 mission.
2. (c) Perilune is the lowest point in an orbit (closest to the surface) achieved by a spacecraft circling the moon.
3. Alan Shepard, Virgil I. (Gus) Grissom, John Glenn, Scott Carpenter, Wally Schirra, Gordon Cooper, Deke Slayton.
4. (c) Valentina Tereshkova was launched into space by the Soviet Union during June 1963, aboard Vostok VI.
5. (a) Ted Williams

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NAR SECTION 562 Leader

Arley Davis

The Heartland Organization of Rocketry ("THOR") is an officially sanctioned section, #562, of the National Association of Rocketry (NAR).

Tripoli Nebraska #46 is an official Prefecture of the Tripoli Rocketry Association, Inc.

If you are interested in joining The Heartland Organization of Rocketry (T.H.O.R.) simply fill out an application and mail it to:

T.H.O.R.
6211 South 141 St.
Omaha, NE 68137

Meetings are held the first Tuesday of each month, 7:00PM at the LaVista Community Center at 8116 Parkview St, La Vista NE (turn east at the Sinclair Gas Station on 84th St.). Visitors are welcome to attend. For club launch time, launch location or general information call The Heartland Organization of Rocketry at 402-896-2069. THOR strictly follows the safety guidelines set for by the National Association of Rocketry and Tripoli Rocketry Association, Inc.

For more information call The Heartland Organization of Rocketry at (402) 896-2069 and leave a voice mail that will be returned in a few days.

T.H.O.R Membership Application

Personal information

Name: _____

Address: _____

City: _____

State: _____ Zip Code: _____

Phone Number: _____

Email Address: _____

Hobby information

How long have you been involved in Rocketry? _____

Are you a member of a national Rocketry Organization:
NAR# _____ TRA# _____ NERO# _____

Rates (1/2 year memberships divide by 2 and add \$1)

Family membership - \$36

Senior (18 and up) - \$24

Junior (under 18) - \$12

Correspondence - \$10

(people over 50 miles from Omaha)

Newsletter only - \$6

(6 issues per year)

**Membership in The Heartland
Organization of Rocketry is open to
all interested parties.**

I agree to comply with the THOR policies as pertains to the safety guidelines set forth by the NAR and Tripoli. Failure to do so is grounds for expulsion.

Signature _____

Dated: _____