



May/June 2001

VOLUME 8 NUMBER 3

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

Monthly Meeting Schedule for
Spring/Summer:

Tuesday May 1st, Tuesday June 4th, and
Tuesday July 3rd.

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

May

Event: Low Power Launch.

When: Sunday the 13th, Noon to ?

Where: LaVista Sports Complex.

Fee: Free.

Description: Low power sport flying.

For More Information:

Event: High Power Launch.

When: Saturday the 19th, 9:00 AM to 5:00 PM.

Where: Pickrell, NE.

Ceiling: TBA.

Fee: \$5.

Description: Mainly a high power event, but regular model rockets are flown, too.

For More Information: Check the rocketry hotline (402-896-2069) for any delays or cancellations if weather looks questionable. Rescheduled from the 26th.

Event: National Sport Launch.

When: Saturday the 26th through Monday the 28th.

Where: Rush Valley, UT.

Description: NAR's annual sport launch.

For more information: See the link for the NSL at www.nar.org.

June

Event: Low Power Launch.

When: Sunday the 10th, Noon to ?

Where: La Vista Sports Complex.

Fee: Free.

Description: Spot landing contest.

For More Information:

Event: Nebraska Heat IV.

When: Friday the 22nd through Sunday the 24th, 9:00 AM to 5:00 PM each day.

Where: Pickrell, NE.

Ceiling: TBA.

Fee: TBA.

Description: THOR's big annual high power rocketry get together!

For More Information: Go to the calendar at www.tripoli.org. More details of the launch will be hammered out in the next two months.

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

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



Fire on the Farm IV: Class of 2001!!!

Rocketman Central

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

Let the Flying Begin!...

After a long bitter winter, warmer weather has finally settled in and the 2001 flying season has commenced! So far to date, we have had two high power launches and one low power launch.

I unfortunately missed out on the Pickrell launch of March 31st (I was sick most of that week). I do have the rundown of the launch at the LaVista Sports Complex and a brief synopsis of Fire on the Farm IV.

LaVista Sports Complex, April 8th...

In the two days preceding the first THOR low power launch of the year, southeast Nebraska was rocked with high speed winds that did a fair amount of damage in this part of the state. Fortunately, though, much calmer conditions settled in during Saturday evening. The wind was blowing out of the southeast at about 5 to 10 MPH and the temperature probably made it to about 75... it was a very nice day! Because of the nice weather, we had a pretty good turnout.

Below are some pictures taken at the launch. All pictures are courtesy of Bruce Lee, Greg Rothman, and myself. For the entire set of pictures, check out the THOR photo page at http://www.tripoli.org/tra_ne/THOR/photos.html.



Richard Burney (me!) with his D12 powered Estes Maxi Alpha III (Richard Burney).



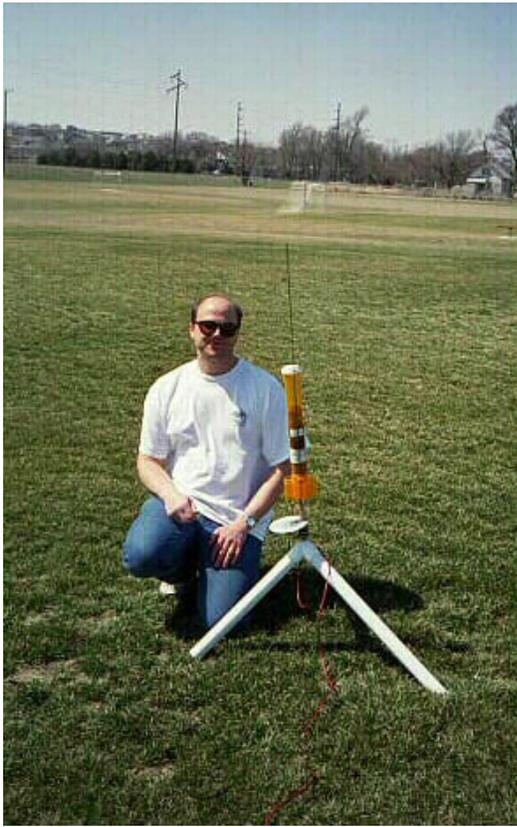
Rich's Maxi Alpha III slowly ascends (RB).



Devin and Vicki Rich walk some of the rockets out to the field (Bruce Lee).



Kevin Rich and family. From l to r: Devin, Kevin and Vicki (RB).



Kevin Trojanowski with his *Medical Missile* which is made out of a bunch of prescription medicine bottles... wonder if his HMO or PPO paid for the flight?©(RB)



THOR members watch as another rocket completes another flight. (Greg Rothman)



Greg and Erin Rothman with their *Junker* rocket (RB).



Medical Missile takes off on a prescription of a mighty D12, just what the doctor ordered! (RB)



Arley Davis and future LCO/grandson Jacob. (RB)



Jon Damme preps an Estes Mini Marz Lander. (BL)

Fire on the Farm IV, April 20th-22nd...

Though far from perfect, this year's Fire on the Farm was a vast improvement over last year. Ironically, the day that would be the best day of the event would naturally be the day where the least amount of flying would be done... experimental flying day. Besides 5 experimental motor flights done by various flyers, Fred Gruis static burned 3 L's and 1 M. An awesome display of rocket power! These motors would be the most powerful motors BURNED at FOTF IV (note I said BURNED and not FLOWN☺).

Because of a system of severe thunderstorms that trekked across eastern Nebraska/western Iowa during Friday night, the second day started off VERY windy. Because of the high morning winds gusting at over 30 MPH, flying was held off until about noon when the winds finally settled to a much more reasonable 10 to 20 MPH. During the next 5 hours or so, a total of 81 flights were ripped off ranging from as low as the Quest micro motors to the only K motor of the event (a K550 flown by me☺). The banquet and raffle that evening were held once again at the Carroll chapter of the Knights of Columbus.

Just like day 3 last year, Sunday turned out to be a washout. Early morning rain, a very low cloud ceiling, and the threat of even more bad weather throughout the day brought FOTF IV to a once again premature ending. We can only hope and pray that next year's FOTF will come close in meeting the sheer amount of flights flown at the first two FOTF's..

I will present the pictures of FOTF IV in the next newsletter along with the more detailed FOTF IV article. If you are interested in seeing all the pictures that Greg Rothman and myself took, check out the Tripoli Nebraska photo page at http://www.tripoli.org/tra_ne/Photo_pages.html.

All Your Rockets Are Belong To Us!...

Before I close, I would like to welcome aboard the batch of new members which would include Greg Rothman (who is a friend of one of my coworkers) and Milke Tolfa (a physics teacher from Roncalli who happened to stumble upon our auction back in March).

In the next newsletter I should have the complete Fire on the Farm IV article along with more pictures taken at the event. There may be the possibility of pictures from Nebraska Heat showing up! Hope everyone has a safe, fun summer!

Space Trivia 102

Compiled by Jon Damme

Questions:

1. What was the dog's name that the Soviets launched into space during the late 1950's?

a) Wahgoosh	d) Thor
b) Skean	e) Muttnik
c) Laika	f) Kanineovich

2. Match these astronauts up with their "nicknames".

<u>Astronauts</u>	<u>Nicknames</u>
Pete Conrad	Gus
Jim Lovell	Buzz
Tom Stafford	Tweety
Edwin Aldrin, Jr.	Shaky
Virgil Grissom	Mumbles

3. In January 1995, a civilian rocket was launched with a scientific payload designed to study a phenomenon of the upper atmosphere. For a few minutes, the Russian radar operators mistakenly thought that the rocket might be a nuclear tipped missile. Boris Yeltsen was notified and opened his "nuclear briefcase." When it became apparent that the missile was not heading for Russia, the immediate crisis went away. From what northern country was the rocket launched, and what phenomenon was it designed to study?

4. Name as many of the 12 men who walked on the moon during the twentieth century as you can. Score yourself as follows, based on how many you get right:

(0 - 2)	Terrible - May your next rocket lawndart, serves you right!
(3 - 4)	Poor - May your epoxy fillets develop bubbles.
(5 - 7)	Good - Have a nice day.
(8 - 9)	Excellent - Take a bow, and have a spectacular flight.
(10 - 12)	Outstanding- Punch your ticket for a ride on the shuttle!

5. What agency was NASA's predecessor? (i.e.) What was NASA's previous name, before there

ever was a National Aeronautics and Space Administration?

- a) ASO -- American Space Organization
- b) NSA -- National Space Agency
- c) NACA -- National Advisory Committee for Aeronautics
- d) USRG -- Upper Stratospheric Research Group

6. What was the name of the world's first intercontinental ballistic missile (ICBM) and who was it's chief designer? HINT: It was not the V-2.

See page 7 for the answers!

Contest Rules for 2001

by Richard Burney

These are the general rules for the four planned contests this year. Any other specifications or rules will be left for that contest's judge to decide.

WHERE: LaVista Sports Complex south of 66th and Harrison.

WHEN: Spot Landing – June 10th, Streamer Duration – July 8th, 1/4A Parachute Duration – August 12th, Egg Lofter Parachute Duration – September 9th. Sign up between 12:00 noon and 1:00. Rain date(s) will be set if required.

ENTRY FEE: \$1.00 per contest. \$2.00 for nonmembers.

Construction

Streamer Duration: Contestants may use any scratch built design or kit of their choice as long as it is a BT-50 diameter rocket (ie. the Estes Alpha). All components (ie. airframe, nose, motor, etc.) will remain together for the entire duration of flight. Streamer recovery will be utilized.

Egg Lofter Duration: Contestants may use any scratch built design or kit of their choice. I believe in the past, we have used either Grade A or Grade B hens eggs. All components will remain together for the entire duration of flight. Parachute recovery will be used (unless you want a mess...☺).

1/4A Parachute Duration: Contestants may use any scratch built design or kit of their choice. All components will remain together for the entire duration of flight. One or more parachutes may be used.

Spot Landing: Contestants may use any rocket and recovery system of their choice. All components will remain together for the entire duration of flight.

Motor Requirements

Streamer: A class impulse (2.5 Newtons) or less.

Egg Lofter: C class impulse (10 Newtons) or less.

1/4A Parachute: 1/4A class impulse (0.625 Newtons).

Spot Landing: D class impulse (20 Newtons) or less.

Flight Requirements (Streamer, Egg Lofter, and Parachute.)

1. Three flights will be required. Each contestant may have a backup rocket in case their original entry is too damaged or lost.
2. Each flight will be timed from moment of takeoff to touchdown. Timing will stop if the rocket lands in a tree, lands on a building, or simply disappears from sight.
3. At least one timer will be used.
4. All three flights will be averaged. For each flight that is disqualified or not flown, a "0" time will be averaged in. Grounds for a disqualified flight would include a cato or if a part of the rocket (such as the motor or nose cone) comes down separately.
5. Contestant with the highest average will be declared the winner.

Flight Requirements (Spot Landing)

1. Contestants will attempt to land 1 rocket as near to a premarked spot as possible. Contestant's rocket who is closest to the spot wins.
2. If part of the rocket separates or a cato happens, a retry will be allowed if contestant so desires.

Prizes

1. Prizes will be determined at a meeting before each contest.
2. If enough prizes are available, a prize will be given to the runner-up(s).

75th Anniversary of Goddard's Liquid-Fuel Rocket Flight

Courtesy of Dan Cramer

GODDARD SPACE FLIGHT CENTER, Md. (AFPN) -- The roar of Discovery's main engines March 8 not only marked astronauts once again venturing into space but also trumpeted a salute to the man whose vision made such a journey possible.

Seventy-five years ago, March 16, 1926, Dr. Robert H. Goddard successfully launched the first liquid-fueled rocket. Milton Lehman's book about the life of Robert Goddard, "This High Man," notes that his flight of the first liquid-fueled rocket has been called "a feat as epochal in history as that of the Wright brothers at Kitty Hawk."

"That flight became the underpinning of everything that we are able to do in space today, and which we take for granted," said William Townsend, deputy director of the NASA facility named after the rocket pioneer, the Goddard Space Flight Center. "Doctor Goddard was a true visionary, having already visualized flight in outer space by the time he was 21 (in 1903). He was also persistent, since it took him until 1926 to achieve the monumental accomplishment embodied in that first flight some 75 years ago."

"Many people date the beginning of the space age from the launch of Sputnik 1 on October 4, 1957," said Chief Historian Dr. Roger Launius at NASA Headquarters in Washington. "One could also say that it really began when Robert Goddard successfully launched the first liquid-fueled rocket. Liquid-fueled rockets are what makes it possible to reach the high frontier of space, and Goddard recognized before virtually anyone else that developing that technology was critical to exploring (space)."

Goddard's 10-foot long rocket used gasoline and liquid oxygen for its flight. While his creation weighed only 10 1/2 pounds, including fuel, and flew just over 40 feet in altitude, it utilized the same basic technology that would later allow the 6-million-pound Saturn V rocket to carry men 239,000 miles to the moon. Besides the space shuttle, most unmanned rockets that deliver spacecraft and satellites to Earth's orbit or to the paths of their interplanetary expeditions use a liquid propulsion system. The successful use of a liquid-fuel propulsion system was one of Goddard's many significant achievements. During his lifetime, he designed, built and launched 35 rockets of increasing sophistication. Goddard improved his sounding rockets' designs, developing turbo-pump systems; gyro-stabilization; aerodynamic and jet-deflector flight controls; automatic sequencing launch systems; flight trajectory tracking and recording devices; gimbal-mounted clustered rocket motors; and parachute recovery systems.

"Today the Goddard Space Flight Center continues to be driven in its pursuit of excellence by the inspiration of Doctor Goddard, perhaps best represented by Doctor Goddard's famous words, 'The dream of yesterday is the hope of today and the reality of tomorrow.' The women and men here at Goddard are proud to be bringing reality to his vision of exploration and discovery," Townsend said. (Courtesy of NASA News Service)

THOR Meeting Minutes: March/April

Compiled by Richard Burney, Secretary

THOR Meeting Minutes 3/6/01

Attendance: Greg Rothman, Erin Rothman, Jason Burton, Richard Burney, Jeff Moon, Kevin Trojanowski, Doug Deden, Tobe Wood, Devin Rich, Kevin Rich, Tyson Christiansen, Ken Nafito, Eric Nafito, Jon Damme, Tom Henry, Brian Luedke, Candy Davis, Arley Davis, Dale Miller, Rob Skiba, Bruce Lee, Mike Tolfa, Doug Holverson, Alex Pares, Dave Pares, Larry Drake, Dennis Gilbert, Tom Long, and Kathy McGinnis.

Definitely a large turnout (30 members/guests)! As usual, a great opportunity for members to get rid of their unwanted rocketry stuff and to pick up other's unwanted rocketry stuff! Part of the items up for auction included some of Scott Meinhardt's rocket motors, kits, and construction supplies. I didn't get jotted down the number of items or the amount spent that he spent, but Jeff Moon was probably the most prolific buyer. ☺

A special thanks to Rob Skiba for once again running the auction and for helping making it a fun time!

THOR Meeting Minutes 4/3/01

Attendance: Richard Burney, Doug Holverson, Kevin Trojanowski, Tobe Wood, Mike Tolfa, Matt Bogard, Arley Davis, Jacob Davis, Candy Davis, Mark Scott, Jeff Moon, Jon Damme, Erin Rothman, Greg Rothman, Alex Pares, Allyson, Pares, Dave Pares, Kathy McGinnis, Devin Rich, and Kevin Rich.

Meeting starts at 19:10.

A November issue of *Forbes* magazine covered the recent Balls launch this past September.

Bruce shows how he repaired a broken plastic fin on his Aerotech Mirage. First he reattached the fin using CA (Super Glue) and then applied a layer of fiberglass on both sides.

Rich passes around the latest issue of *Extreme Rocketry* (April 2000 issue which features Ky Michaelson).

Members of THOR congratulate Alex Pares on winning first place in the Nebraska Jr. Academy of Science for his ion engine project (*Editor's note: Alex had previously won the junior division grand prize at the 19th annual Metropolitan Science and Engineering Fair.*).

Jon Damme presents the March 30th issue of the *LaVista View* which has an interview with John Carroll inside about the soccer field that THOR and RC aircraft flyers use. Jon is currently reading *The Coalwood Way* which is Homer Hickam's follow up to *Rocket Boys* (which was made into the movie *October Sky*). Jon is also reading *Flight* by Chris Kraft who was NASA's first flight director. Jon also passed around a copy of *Technology Review* which is published by MIT. Jon also demonstrated how

some Easter egg shells can be used on some body tubes and by using various body tubes you can make a usable nose cone.

Congratulations to Jeff Moon (using a PML Bull Puppy) and Kevin Rich for certifying Level 1 at the high power launch at Pickrell on March 31st.

Night launch will be in consideration for the Nebraska Heat launch in June.

Yunker's at Crossroads mall is holding a baby contest – go and vote for Jacob Davis!☺

Arley shows his finished Estes Scrambler, his repaired LOC Norad, and his finished Estes Shadow... all nice rockets! Also shows various motor retention hardware (T nuts) and shock cord material you can use for mid and high power kits.

Treasurer's report – the auction netted in \$760.90; \$657.50 from Scott's stuff and \$103.40 from commissions.

May and November high power launches have been moved a week back from their previous dates.

Arley will make a list of contests to be considered for running this year. The list will be provided at the May meeting.

Fire on the Farm IV – postcards with information pertaining to the launch have been sent. The waiver will once again be 5,500 feet MSL due to the Air Force's use of the air space. I-SOAR will be sponsoring trophies for various categories (ie. Most Energetic Disassembly). Launch might get moved from Breda to the Pickrell, NE field if the farmer plants early. (*Editor's note: when all was said and done, we were able to keep FOTF IV at the Breda field*). Scott's 54mm motor casing set will be the main raffle item along with some of Scott's other rocket belongings. (*Editor's note: other raffle items provided by Mike Collins, Ky Michaelson (Rocketman Enterprises), Ross Dunton (Magnun), and Mike Kirkpatrick (FOTF IV t-shirts).*)

Discuss rental fees for using THOR's club radio trackers. Motion is made by Jeff Moon to put into consideration the following amounts: \$10 for members, \$15 for non members along with a \$50 deposit. Motion passed.

Junkyard Wars poll – the Sky Rockets episode of the show (starring THOR's own Bruce Lee!) is up for vote on TLC's website for reairing on Sunday, April 15th. Bruce has sent an email out to as many THOR and Tripoli members that he could to let them know about the vote. (*Editor's note: when the voting came to an end, Sky Rockets placed second guaranteeing it to be shown with the other two top picks*).

Ky Michaelson will be flying the new CSXT design later this year. (*Editor's note: the same weekend of FOTF IV, Ky made his announcement to the press about the new CSXT attempt*).

Meeting adjourned at 21:53.

Answers: Space Trivia 102

1. (c) Laika was launched into space aboard Sputnik 2. As for the possible answers of Wahgoosh, Skean, and Thor, they were dogs owned by Charles and Anne Lindbergh. "Muttnik" was a nickname the press gave to the satellite, since it did actually contain a dog. As for Kanineovich, well...
2. Astronaut nicknames: Pete "Tweety" Conrad, Jim "Shaky" Lovell, Tom "Mumbles" Stafford, and, of course, Edwin "Buzz" Aldrin, Jr., and Virgil I. "Gus" Grissom.
3. The rocket was launched from Norway, with a probe designed to study the northern lights. The international community had been notified well in advance of the impending launch, but the message mistakenly did not get up the chain to the Russian radar operators. This breakdown in communication brought the world, for a few moments, to the brink of an accidental nuclear exchange. *For more information on this event, please refer to the November 1997 issue of "Scientific American" magazine.*
4. The twelve men who walked on the moon during Project Apollo are listed below. For each flight, the mission commander's name appears first, followed by the lunar module pilot.

Apollo 11: Neil Armstrong, Edwin "Buzz" Aldrin
Apollo 12: Charles "Pete" Conrad, Alan Bean
Apollo 14: Alan Shepard, Ed Mitchell
Apollo 15: David Scott, Jim Irwin
Apollo 16: John Young, Charles Duke
Apollo 17: Eugene Cernan, Harrison Schmidt
5. The National Aeronautics and Space Administration (NASA), was created out of the National Advisory Committee for Aeronautics (NACA), which operated out of Langley Field. *See the book Flight, by Chris Kraft, page 65.*
6. The world's first ICBM was the R-7 designed by Sergei Korolev, and nicknamed "Semyorka". *Source: Korolev -- How One Man Masterminded the Soviet Drive to Beat America to the Moon, by James Harford, 1997, John Wiley & Sons, Inc. New York. Page 91.*

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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: _____