



T.H.O.R.

The Heartland Organization of Rocketry



November 2002

Volume 9 Number 6



Richard Burney and his rocket, *Macross Plus*. An AeroTech K1100 took it to an altitude of just over 2,000 feet. One of many flights at this year's Nebraska Heat V!

Fall Meeting Schedule

Tuesday October 1st and Tuesday November 5th. Each meeting will start at 7:00 PM at the La Vista Community Center.

September/October 2002 Calendar

October

Event: Low Power Launch.

When: Sunday the 13th, Noon to ?

Where: La Vista Sports Complex.

Fee: Free.

Description: Low power sport flying.

For More Information:

Event: High Power Launch.

When: Saturday the 26th, 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 (1-402-896-2069 or 1-888-546-0396) for any delays or cancellations if weather looks questionable.

November

Event: Low Power Launch.

When: Sunday the 10th, Noon to ?

Where: La Vista Sports Complex.

Fee: Free.

Description: Low power sport flying.

For More Information:

Event: High Power Launch.

When: Saturday the 16th, 9:00 AM to 5:00 PM.

Where: Carroll, IA(?).

Ceiling: TBA.

Fee: \$5.

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

For More Information: Check the rocketry hotline (1-402-896-2069 or 1-888-546-0396) for any delays or cancellations if weather looks questionable.

Nebraska Heat V Photo Gallery **Saturday August 3rd – Sunday August 4th**

By Richard Burney

With all the pictures and materials I have amassed (especially pictures!) during the summer months, I decided a few weeks ago to split the November/December newsletter into two separate issues. With the December issue, I should hopefully get caught up on recent events such as THOR's display at the Offutt Open House.

Getting back to the subject at hand, Nebraska Heat V lived up to its name. It was about 100 degrees each day with the sun glaring down on us. But the wind conditions were favorable (usually blowing from the south at about 10 mph).

Nebraska Heat V ran from Friday August 2nd through Sunday the 4th. Friday involved mainly setup and a few experimental flights. The major bulk of flights occurred Saturday and Sunday involving rockets ranging anywhere from mini-motor Estes rockets up to K motors such as the flight of *Macross Plus* as seen on the cover of this issue. On Saturday evening, a night launch was conducted with rockets flying on anything ranging from Estes motors (those black powder Estes motors are very beautiful to watch at night!) to an ultra rare Silver Streak motor (thanks, Bruce, for that flight!).

Here are some of the faces, rockets, and flights of Nebraska Heat V!



Barry Conner and his NCR SA-13 Archer. A motor cluster of four F21's and a G40 was used.



Liftoff! After the Archer cleared the pad, it took a cruise missile trajectory to the west due to an uneven ignition sequence of the motor cluster.



Nick's rocket takes to the sky on a Pro38 I285. A beautiful flight for a beautiful rocket!



Nick Stich and his tubular fin rocket.



Gotta get in a few more pictures of myself! Here I am with my PML AMRAAM 4.



Liftoff on an I357.



Liftoff on an I366 Redline. This was the Scud's second flight during Sunday.



Kevin Rich with his scale model of one of Iraq's versions of the Scud surface-to-surface missile.



A successful, dual-stage deployment landing!

Rocketeers Ready to Fly Under September Skies

By Leonard David - Senior Space Writer (posted: 02:00 pm ET 13 September 2002 at www.space.com)

In the Nevada desert, a group of amateurs are involved in a class act to reach for space.

The Civilian Space eXploration Team (CSXT) is primed to loft what is billed as the most powerful and sophisticated vehicle ever developed for an amateur rocket launch.

The home-built vehicle is slated for a sendoff later this month. If all goes well the rocket will climb some 60 nautical miles (111 kilometers) above the planet, 10 nautical miles (18.5 kilometers) higher than what is generally accepted as the edge of space.

For safety and security reasons, the Federal Aviation Administration has requested that the exact date and location not be announced until just prior to the flight.

Members of the CSXT comprise about 30 people -- from a retired Hollywood stunt man, to teachers, scientists, inventors, television engineers, ham radio enthusiasts and students, as well as true rocket scientists.

All in all, these rocketeers are looking for 10 minutes of glory under September skies.

New era...

"This is a significant, historic event in aviation history. No amateur team has ever launched a rocket into space, ever," said Jerry Larson, program manager for the CSXT. "If successful this event will mark a new era in space access and transportation," he told SPACE.com.

CSXT members have designed and built the Primera rocket. The vehicle weighs 511 pounds (232 kilograms), and is 17-feet (5.18 meters) tall. A solid-propellant motor is to push the rocket to well over five times the speed of sound in just 15 seconds.

Some one-and-a-half minutes later, Primera is to nose itself into space. The vehicle is chock-full of sensors and other gear, including global positioning system satellite antennas and receivers, transmitters, color camera, data recorders and event-timing computers. Live color video will be transmitted from the rocket throughout its flight.

During atmosphere re-entry, the rocket will separate into two sections. Two specially designed parachutes will bring the components safely down to Earth. The desert landing zone will be approximately 25 miles (40 kilometers) downrange. Total flight time of the rocket is on the order of 10 minutes.

The FAA and the Bureau of Land Management have given a go-for-launch thumb's up to the CSXT. The U.S. government has officially approved a window of five launch days to get Primera off the ground.

Sole possession...

"For over 40 years space has been the sole possession of governments and big corporations funded by governments," Larson said. As a result, access to space is extremely expensive and limited to a small percentage of the population, he said.

"With an amateur team reaching space it marks the beginning of civilian and amateur space access and will open the eyes of the world and many inventors and visionaries to the endless possibilities. The result will ultimately be significantly cheaper access to space," Larson said.

The CSXT group proudly points out that it has built a space launch vehicle for about one-tenth the cost of what the government would spend to purchase the same vehicle.

Along with the hoped for record-setting flight, the team members are also ready to fire up a predic

Looking back to the 1950's, CSXT's Larson said that the kit airplane was introduced, making air travel financially possible for many people -- a fact still alive and well today.

"I think someday we will see a similar trend for space vehicles, at least that is our dream. The first step in all of this is of course proving it can be done by simply reaching space," Larson said.

Rocky road...

Roaring off on the road to space hasn't been easy.

For the past two years the group has been actively pursuing the Primera as their next generation launch vehicle. Its design is borne from past successes and failures since 1995.

A SpaceShot 2000 rocket was flown in September of that year, a flight contributing significantly to Primera's design.

SpaceShot 2000 failed to reach space after encountering a wind shear at high altitude, tearing off one of the rocket's fins. That flight ended when the vehicle broke up in spectacular fashion.

"The failure turned the tide for us. We took a long hard look at every system from our launch vehicle to our ground systems. We redesigned everything. We are determined not to fail again," Larson said.

A June attempt to launch Primera into space was scrubbed, primarily due to high winds. A stand storm ragged through the group's launch control facility. For the last few months, wind damaged equipment was repaired and new systems were developed to increase the chances for a SpaceShot 2002 rocket liftoff this month.

"This is it. All systems are green. We have our fingers crossed for calm winds and clear skies so we can take our 'Shot' at making history," Larson said.

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THOR on the Super Information Highway!

TRIPOLI NEBRASKA WEB PAGE

www.tripoli.org/tra_ne/nebraska.htm

THOR WEB PAGE

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

What is THOR?

The Heartland Organization of Rocketry (THOR) is both an officially sanctioned prefecture of the Tripoli Rocketry Association (Tripoli Nebraska #46) and is an officially sanctioned Section (#562) of the National Association of Rocketry. THOR conducts low through high power model rocket activities through out the year. THOR strictly adheres to the safety guidelines that have been established by the NAR and Tripoli.

When and where does THOR meet?

Meetings are usually held the first Tuesday of the month at 7:00 PM (different days or times will be announced in advance) at the **La Vista Community Center at 8116 Parkview St., La Vista, NE** (turn east at the Sinclair Gas Station on 84th St. and go a block east). Visitors are welcome to attend.

For additional information...

For club launch times, launch locations, or for those with additional questions call THOR at (402) 896-2069 or 1-888-546-0396 (there is a voice mail option at the end of the message). Interested parties may also write their inquiries to the address to the right and are also welcome to contact any of THOR's officers.

THOR Membership Application

Personal Information

Name: _____

Address: _____

City: _____

State: _____ Zip Code: _____

Phone Number: _____

E-mail: _____

Hobby Information

How long have you been in model rocketry: _____

Do you belong to a national rocketry organization (enter your number to the applicable organization):

NAR# _____ TRA# _____ NERO# _____

Are you certified for high power rocketry (check mark your applicable TRA or NAR Certification Level):

Level 1 _____ Level 2 _____ Level 3 _____

Membership Rates

½ year memberships will divide by 2 and add \$1. Write your check payable to "The Heartland Organization of Rocketry" or "THOR". Mail it to the below address or pay at the next meeting.

Family Membership - \$36

Senior Membership- 18 and over - \$24

Junior Membership - Under 18 - \$12

Correspondence Membership - \$10

(Members over 50 miles from Omaha)

Newsletter Only (6 issues a year) - \$6

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

Signature: _____

Dated: _____

The Heartland Organization of Rocketry
6211 South 141st St.
Omaha, NE 68137

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