The NOVAAR Free Press

35 Years of Flight
1970 to 2005

November – December 2005

Inside this Issue

NAR

Section 205

NOVAAR *Free Press*

September – October 2005

This is the official newsletter of the *Northern Virginia Association of Rocketry* (NOVAAR), Section 205 of the *National Association of Rocketry* (NAR). This newsletter is a benefit of being a member – ***You are a member, aren't you?***

Section Officers

President:.....John Hochheimer
john.hochheimer@verizon.net

Secretary:.....Trip Barber
ahbarber@alum.mit.edu

Treasurer: .....Keith Wancowicz
keith@thaicustomcrafts.com

Senior Advisor: .....Ken Brown
brown007@bellatlantic.net

Membership and Dues

To maintain the clubs launch equipment and pay for our website we collect dues. Dues are collected annually and are; $5 for members age 13 and younger, $8 for members age 14 to 18 and $10 for everyone else. A membership application can be found at many local hobby shops and on our website.

Meetings

NOVAAR holds meetings on the first and third Tuesday of the month, from 7:00 pm to 8:30 pm, at the King's Park Community Center in Springfield, VA. The most current topics to be discussed and directions to our meeting room can be found on our website.

Build Sessions

Once a month, on the third Sunday of the month from 1:00 pm to 5:00 pm, at the King's Park Community Center, the club gets together to build rockets and share construction techniques. The schedule and directions to our meeting room are on our website.

Launches

NOVAAR conducts monthly launches at *Great Meadow* which is located in The Plains, VA – approximately 50 minutes south of Washington DC on Route 66. Launches start at 9 am and run until 5 pm (10 am to 4 pm during the winter). The most current schedule and directions to *Great Meadow* can be found on our website.

There is no charge to fly at club launches (*motor sizes A to F*). However, there is a $5 charge to launch high-powered rockets (motor sizes *G to I -- the field is not large enough for bigger motors*). **AND,** you don't have to be a member to fly with us. Though, after you meet us and, realize that we don't bite – *as long as we take our medication* – ***we know you will want to join***.

If weather threatens the launch day, our website will report the status of the launch by 8:00 pm the day before.

Website

The club's website (**www.novaar.org**) is where the most current information about future club activities can be found. The site is maintained by...

Webmaster:..... Dan Winings
dwinings@adelphia.net

Newsletter

The club's newsletter is published 6 times a year or, as close to that schedule that is humanly possible for the editor to achieve. The newsletter reports on the club's activities and features articles written by club members about their endeavors within the Model Rocketry Hobby. The articles include, *but are not limited to*, topics on sport rocketry, competitive rocketry and high-powered rocketry. Send submissions to ...

Editor: ..... Frank Prekel
fjprekel@aol.com

Calendar

February 2006

SUN	MON	TUE	WED	THU	FRI	SAT
			1 Army Nurse Corps Authorized, 1901	2 Groundhog Day	3	4 NOVAAR Launch
5 Launch Back-up	6	7 NOVAAR Meeting	8	9	10	11
12 Lincolns Birthday	13	14 Valentine Day	15	16	17	18
19 NOVAAR Build	20 Presidents Day	21 NOVAAR Meeting	22 Washington Birthday	23	24	25
26	27	28 Coast Guard Reserve Birthday, 1941				

March 2006

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3 Naval Reserve Birthday, 1915	4 NOVAAR Launch
5 Launch Back-up	6	7 NOVAAR Meeting	8	9	10	11
12	13	14	15	16	17 Saint Patrick's	18
19 NOVAAR Build	20 Spring Begins	21 NOVAAR Meeting	22	23	24	25
26	27	28	29	30	31	

April 2006

SUN	MON	TUE	WED	THU	FRI	SAT
				"*April Fools*" Competition	1 NOVAAR Launch	
2 NOVAAR Launch	3	4 NOVAAR Meeting	5	6	7	8 NOVAAR Launch
9 NOVAAR Launch	10	11	12	13	14	15
16 NOVAAR Build	17 Tax Day	18 NOVAAR Meeting	19	20	21	22 Earth Day
23	24	25	26	27	28 Arbor Day	29
30						

Daylight Savings Time Begins

Air Force Reserve Birthday, 1948

Army Reserve Birthday, 1908

Administrative Professionals Day

Editor's Ramblings

Greetings – This is the last of the 2005 Issues. I have every intention to get the next issue in the next few weeks. Just imagine a Free-Press out in the same year it was written about. *Stranger things have happened.*

I have seen a few great models on the launch-rods, be it a kit or a scratch-built, a article about you experience (2-3 paragraphs say 4-5 sentences long with 2-3 pictures -- *that s all there is to writing a kit review*) would be wonderful.

When you are done just email, mail or pass it to me at a launch. See-ya on the launch field

Frank

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Did you know that the NOVAAR Hatpin can also be a Lapel Pin?

It's True!!!

And, it is available from Frank Prekel -- fjprekel@aol.com.

The NAR pin is available from NARTS (www.nar.org/narts)
The Flag Ribbon is out-of-print and no longer available.

Club News

NOVAAR email Addresses Available

Since moving the club's website move from the GeoCites server, Dan Winnings has been working to expand the capabilities and features our new dedicated slice of the internet. The latest is the availability of NOVVAR email addresses.

Accounts are available to any NOVAAR member, and the address can be accessed via standard Post Office Protocal ("POP") account or by a web-based mail program (at *www.novaar.org/webmail*). The account can even be set-up to forwarded your mail to an existing account.

For more information contact
Dan Winings at *dwinings@adelphia.net*

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Scout Launch set for May 6th at Boy Scout Camp Snyder

At the last meeting NOVAAR voted to hold another members only sport launch at the Camp Snyder Boy Scout facility on May 6. No notification will be given to the FAA so models need to weigh less than 16 oz at liftoff and contain less than 4 ounces of propellant. Hours are TBD.

Ken Allen of Performance Hobbies has said he'll be on site. This will be the Camp Snyder "Grand Opening" and will include lots of other activities. Antique and modern aircraft flyovers are expected. Skydivers are expected. So launches will be need to be suspended when these events happen.

For more information contact
Will Marchant at *kc6rol@amsat.org* .

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Competition Rocketry

"April Fools Meet" set for April 1st

The club's next open meet date has been set. Dubbed the "April Fools Meet" and has been aptly set for of all dates April 1st – is that where they got the name? *The events scheduled are …*

- B Helicopter Duration,
- 1/2A Streamer Duration (multi-round),
- 1/2A Boost-Glide, and
- A Altitude.

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RAMTEC-12 set for May 27th and 28th

The Southern Pennsylvania Area Association of Rocketry National Association of Rocketry, Section #503 has set the dates for their next RAMTEC Open Competition.

RAMTEC-12, one of the Regionals of the MADROC Championship Series is set of May 27 and 28, 2006. *The events scheduled are:*

- D Dual Egglofting Altitude,
- D Helicopter Duration,
- Rocket Glider Duration, and
- 1/4A Parachute Duration

RAMTEC-12 will be flown at Fort Indiantown Gap 829 Harrison School Road, Annville, PA 17003 -- about 30 minutes northeast of Harrisburg, PA.

The flying site is on the military reservation of the Pennsylvania National Guard. "The Gap" is an active training facility for the Pennsylvania Air and Army National Guard, and is the second most active Army aviation facility in the continental United States. The military officials at The Gap have been very supportive of our flying activities. At their suggestion, RAMTEC-12 is being held over a holiday weekend, when training activities are minimal.

Trophies will be awarded for 1st place in each event (divisions A, B, C and Team) and ribbons for 2nd thru 4th place.

The Contest Range will be open Saturday from 9am to 5pm and Sunday from 9am to 2pm. Events may be flown either day with the exception of D Dual Egg Lofting Altitude that must be flown on Saturday.

The range is open for sport flying both days during operation of the contest range. All flights are subject to clearance of the Range Safety Officer. Registration fee for the competition is …

- $10.00 for A and B Division
- $15.00 for C Division
- $18.00 for Team Division.

Advanced Registration is preferred, however on-site registration and check-in will be Saturday morning at the range.

Questions?, Send E-mail to George Beever or phone 717-733-4170. Or, visit http://www.spaar.org/ramtec/.

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National Sport Launch set for May 27th and 28th in Dallas, TX

From the NSL 2006 website.

"The National Sport Launch is the highlight of the launch season for most serious sport rocketry flyers. Hosted by a different NAR chapter each year, the NSL has once again worked its' way around to the warm, friendly state of Texas.

DARS, the Dallas area Rocket Society, is proud to have been chosen to host NSL 2006. We are the oldest and largest NAR Chapter in Texas. Flying since 1972, we have been promoting rocketry throughout the Dallas-Fort Worth metroplex nonstop for over 30 years. While flying rockets is our primary activity, our presence reaches out into the community.

A significant portion of our range fees go to local charities. Our outreach program works with the Boy Scouts, TMCA and local educators to encourage the next generation to pursue their interest in science and engineering. And of course, the kids always fly free! *Events scheduled* …

The **Cochran Challenge** has one simple goal. Slam as big an engine as possible in your rocket and let her rip. The guidelines are just as simple. *Contest Rules* …

1. This event is open to any rocket kit currently produced. Sorry, no scratch builds.

2. Finished rockets must appear stock but some changes can be made for safety factors and to accommodate larger motors.

3. You must exceed the recommended engine size by at least 1 impulse range.

4. 1 size up equals 1 warp factor.

The **DARS Classic** celebrates the rockets that started the commercial hobby, and stroll down memory lane with some of the classic rockets that you may have owned or just wish you owned. This event will run in parallel with the NAR National Sport Launch McGregor, Texas on Saturday, May 27. *Contest Rules* …

1. Rockets will be grouped into 4 categories: 60's, 70's, 80's, and Open. Open will be used for post 1989 rockets and for those that can't be identified with a date of origin. Additionally the open category will be used for upscales and downscales of classics. Rockets in the decade categories will be grouped based on the first year the model was introduced to the hobby. (Example: The Estes Andromeda was introduced in 1975 and appears in the 1975 Estes catalog with the word "New" next to it. It would then be grouped with the 70's decade rockets.)

2. The contest is open to original models and clones of those originals.

3. There is no limit on the number of rockets a contestant can enter. Entering multiple rockets in each of multiple categories is allowed.

The **Dr. Pepper Challenge** is a High-Power Level 1 and above contest free for participation by NSL 2006 members. *Contest Rules* …

1. Payload will be a standard 12 oz can of Dr. Pepper supplied by the NSL Committee.

2. No foreign object may be affixed to the can, though loose padding material may be placed around the can for additional protection.

3. The can must be recovered and presented to the judge intact after your flight.

4. This is a drag race event with the winner being first over the judge's selected line.

5. Qualifying races will be held at 10, 2 and 4 on Saturday and 10 and 2 on Sunday with the finals at 4 pm on Sunday.

The **Iron Rocketeer** is a FREE event open to kids attending NSL 2006 age 12 and under. *Contest Rules* …

1. Each participant will receive a sealed bag of parts including all the elements necessary to design and build 1 rocket.

2. Registration for the Iron Rocketeer Challenge will open at 12 noon on Saturday.

3. Participation will be limited to the first 30 NSL attendees 12 or under to sign up for the event.

4. Participants may receive technical help from older attendees.

5. A Certificate of Engineering Excellence will be issued to each participant who successfully completes and flys their rocket by 3 pm on Sunday

6. Engines, glue, paint, etc are not provided by the NSL Committee and should be brought to the field by the participant.

7. All rockets become the property of the builders and may be taken home by the participants.

So, come on out and join us on Memorial Day Weekend. For more information visit http://nsl2006.org and http://www.dars.org.

R/C Fly-in Scheduled for the July 8th Launch

The July 8th Sport Launch will feature a fun-fly session for Radio-Controlled Rocket/Boost Gliders.

Don't have a R/C Rocket/Boost Glider? Bring your non-R/C boost and rocket gliders. And, help fill the air with free-flying objects. *Lets fly to Impress!!*

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NARAM-48 set for July 29th to August 4th

The dates and location for NARAM-48 have been set. It will be July 29th to August 4th in Phoenix (Rainbow Valley) AZ. This year's event is sponsored by Superstition Spacemodeling Society, (NAR Section 506). *The events scheduled are:*

- Random Duration,
- 1/4A Parachute Duration (Multi Round),
- B Boost Glide (Multi Round),
- B Egg-loft Duration,
- F Altitude,
- B Helicopter Duration,
- 1/2A Streamer Duration,
- Scale,
- Science Fiction & Future Scale, and
- R & D.

Also planned RC Rocket Glider Championships, Imagination Celebration, Banquet at the Challenger Space Center, and more!

Point-of-Contact is Matt Steele (at 480-540-7456 or manofsteele@rocketryonline.com). More Information at: http://www.naram.org *or* http://www.sssrocketry.org/.

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Try your hand at a Provisional Competition Event on September 23rd

The September 23rd Sport launch will feature a competition using a provisional event rules for "C Payload-Carrying Boost Glide". Yep, that is a "C" Boost Glider carrying a payload (an egg or weight) and see who can stay aloft the longest.

There are no points for this competition just the challenge. If enough people get to like the event then it may become a sanctioned event in the future. *The rules are …*

Scope -- Cargo Boost Glider Duration Competition comprises eight events open to any model rocket, one portion of which carries a payload, as defined below, in stable, gliding flight supported by aerodynamic lifting surfaces which sustain that portion aloft. The entry may separate into multiple pieces; only the load-carrying, gliding portion is timed. This event is open both to models with rigid lifting surfaces and those with flexible lifting surfaces. The object in this competition is to achieve the largest product of payload carried and flight duration.

Payload Specifications and Scoring -- The gliding portion of an entry must carry at least one standard NAR payload. The contest director shall select between two methods of scoring:

a. One flight load: The score for each flight of an entry shall be the duration in seconds multiplied by the total number of standard payloads carried on that flight. Each flight by a competitor may be made with a different model and may carry a different amount of payload (except in the case of multi-round, where only two models may be used for three flights).

b. Two flight load: The score for each flight of an entry shall be the duration in seconds multiplied by the total number of standard payloads carried over two flights. The two flights must be made by the same model, but different amounts of payload may be carried on each flight. There is no multi-round version of this scoring system.

The standard NAR model rocket payload is a non-metallic cylinder containing fine sand, with a mass of no less than 28.0 grams. This cylinder shall be 19.1 millimeters (+/-0.5 millimeter) in diameter, and 70 millimeters (+/- 10.0 millimeters) in length. The payload may be permanently sealed to prevent the loss of the sand. No holes may be drilled into it, no changes made in its shape, and no other material may be affixed to it.

Payload Carriage -- The standard NAR model rocket payload or payloads carried in a model shall not separate from the model in flight, and shall be removable from the model.

Disqualifications -- Any entry whose total weight at liftoff exceeds the manufacturer's recommended maximum lift weight for the motor or motor combination used shall be disqualified.
An entry that descends with parachute and/or streamer recovery device(s) permanently attached to the gliding portion of the model shall be disqualified. However, other portions of an entry may deploy parachutes and/or streamers for recovery purposes.

If the gliding portion accidentally rips a streamer being used to recover another portion of the entry and the streamer becomes attached to the gliding portion, the entry may be qualified depending on the RSO ruling that the entry still glided and was not disqualified for other reasons.

Classes -- his competition is divided into classes based on the permissible total impulse of the motor(s). The following classes of Cargo Boost Glider Duration Competition are established:

Motor Class	Weighting Factor	Multi-Round Maximum
1/2A	??	90 sec
A	??	120 sec
B	??	180 sec
C	??	240 sec
D	??	270 sec
E	??	300 sec
F	??	300 sec
G	??	300 sec

For information about NAR Provisional events visit: http://nar.org/pinkbook/18_provisional.html *and* http://www.novaar.org/xxrules.htm.

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November Sport Launch

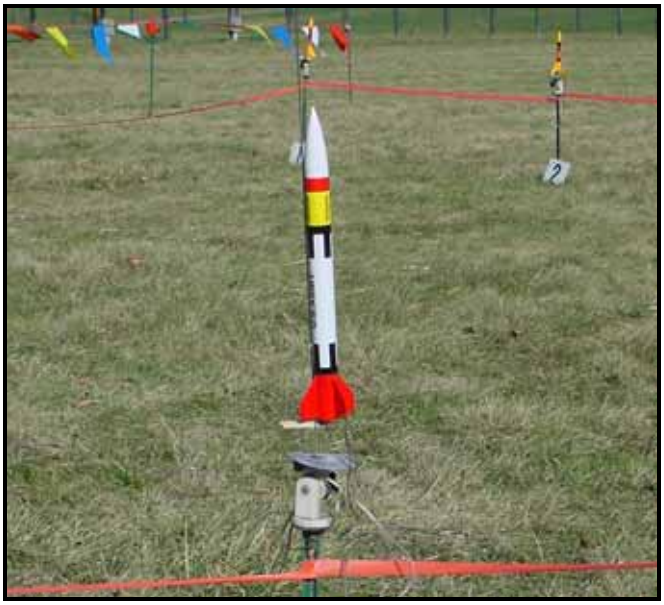
Scheduled for the November Sport Launch, on November 19th, was a club competition launch, a Scout group, a YMCA group and the first TARC teams of theseason were anticipated.

What was not anticipated that they would bring several hundred of their friends. To saw we had a busy launch day would be an understatment and the pictures of the parking area and the queue at the range head does not do the wonderful turenout we had justise.

The club is clearly doing its part to promote the hobby.

December Sport Launch

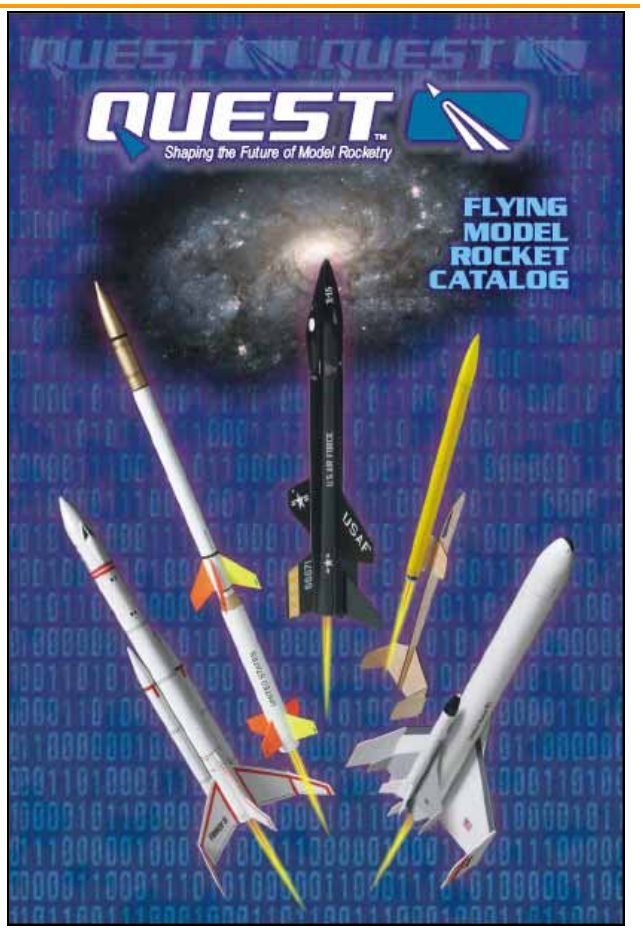
The December Sport Launch, on December 3rd, was a bit less busy than the November launch. It was windy and cold, we were joined on the field by several TARC teams and the a NASA SLI team.



Sport Rocketry

New Catalogs …

An Adobe Acrobat file of the ***2006 Estes Catalog*** is available at *http://www.estesrockets.com/catalog_2006.pdf.*



An Adobe Acrobat file of the ***2006 Quest Catalog*** is available at *http://www.questaerospace.com/downloads/Quest_Catalog_2006.pdf*.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2006

Product Catalog

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Version 2006 - 1 Retail

An Adobe Acrobat file of the ***2006 Suncoast Catalog*** is available at *http://www.sunward1.com/retailcatalog.pdf*.

General Rocketry

The Redstone Family

From "Sport Scale Redstone Plans",
NAR Technical Service (NARTS) booklet SP6

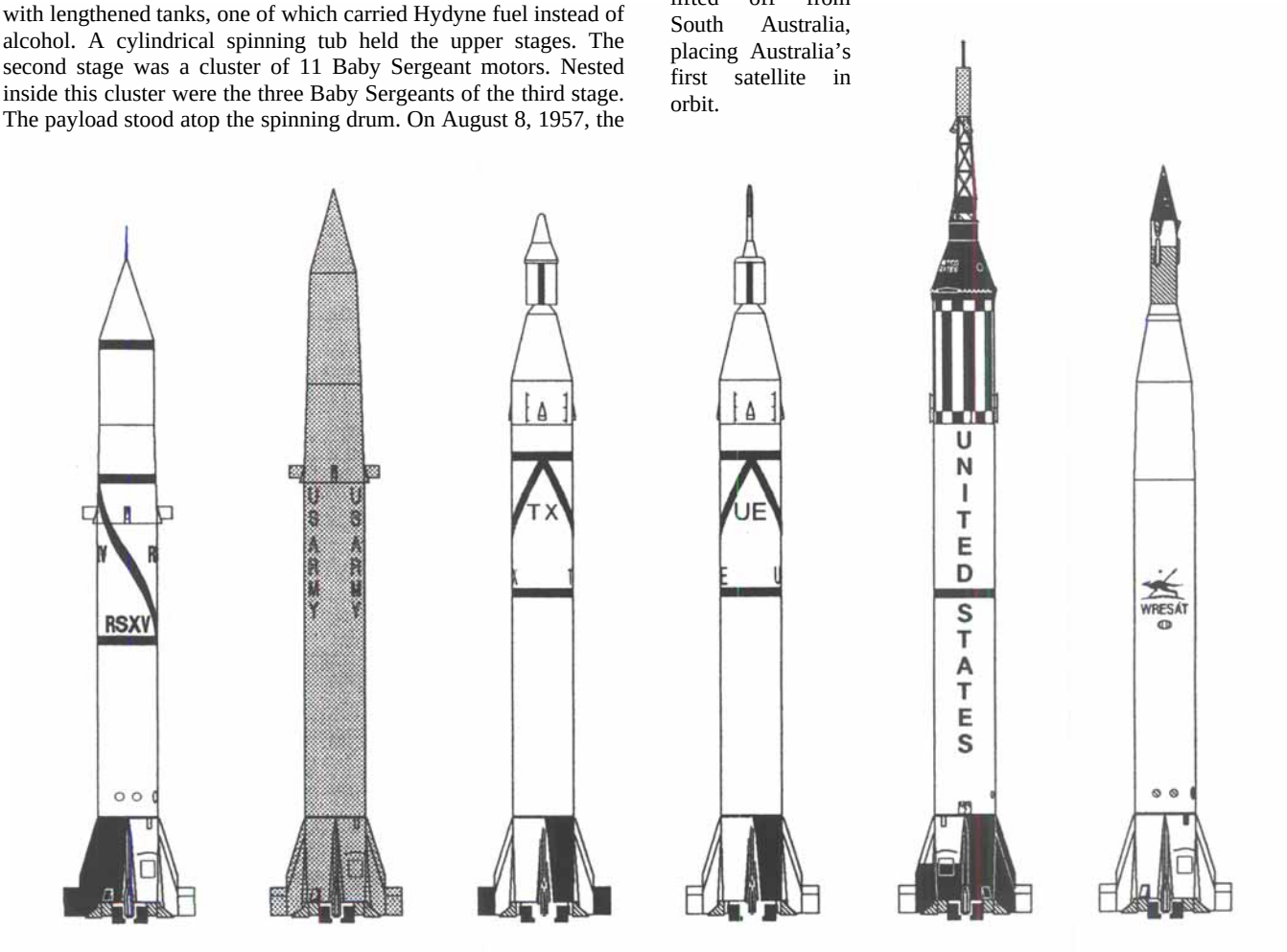
The U S Army created the Redstone missile to lob a 4 megaton hydrogen bomb 180 nautical miles (288 km). The Redstone project grew from the Hermes C-I, conceived 1946. The first Soviet nuclear explosion in 1949 and the start of the Korean War triggered work on the Redstone missile on May 1, 1951. The Army Ballistic Missile Agency, staffed by Wernher von Braun's German V-2 team, as well as workers from General Electric's Hermes program, created the Redstone. Like the V-2, the Redstone burned alcohol with liquid oxygen, and used a combination of engine exhaust steering vanes and aerodynamic surfaces for control. Unlike the V-2, the Redstone featured a separable warhead section with its own steering system. The Redstone first flew in August of 1953 and was based in West Germany beginning in 1958. The first Redstones were 63-foot tall development vehicles, which eventually became the Block I Tactical Redstone. The 69-foot Block II Tactical Redstone first flew in August of 1959. By the end of 1964 the solid-fueled Pershing replaced the Redstone.

The Redstone gained fame when it was adapted for space, beginning with the Jupiter C (named for its support role in the Jupiter missile program). The first stage was a Redstone missile with lengthened tanks, one of which carried Hydyne fuel instead of alcohol. A cylindrical spinning tub held the upper stages. The second stage was a cluster of 11 Baby Sergeant motors. Nested inside this cluster were the three Baby Sergeants of the third stage. The payload stood atop the spinning drum. On August 8, 1957, the third Jupiter C carried a 1/3 scale Jupiter nose on a successful high-speed reentry.

In October of 1957, the launch of Sputnik and slow progress on the Vanguard project combined to persuade the Eisenhower administration approve the use of the Jupiter C in a satellite project. To reach orbit, the Jupiter C needed a fourth stage consisting of a single Baby Sergeant. On January 31, 1958, the 4-stage Juno I launched Explorer 1, the first US satellite, into orbit. Of six Juno l's launched, three reached orbit.

At the end of the 1950's, the newly-formed NASA selected the Redstone to boost its first manned Mercury flights. The Mercury-Redstone required the extended tanks of the Jupiter-C version, but used the original alcohol fuel. On May 5, 1961 a Redstone carried Alan Sheppard into space aboard the Freedom 7 spacecraft for a 15 minute flight. The second and last manned Redstone carried Gus Grissom into space on July 21, 1961.

The Sparta rocket was created as a part of a long series of reentry test rockets flown at Woomera, Australia in a joint British-Australian-American program. The first stage of the Sparta missile was the Redstone. TRW manufactured the two solid-fueled upper stages of the Sparta vehicle. Nine Spartas flew reentry missions in 1966 and 1967. The tenth was a spare. The Americans at Woomera suggested it might be used to launch an Australian satellite. In early 1967, the Australian and American governments approved the joint project. Australia built the satellite, called Wresat, and ran the launch facilities. On November 29, 1967, the last Redstone lifted off from South Australia, placing Australia's first satellite in orbit.



Developmental Redstone | **Block 2 Tactical Redstone** | **Jupiter C** | **Juno 1** | **Mercury - Redstone** | **Sparta**