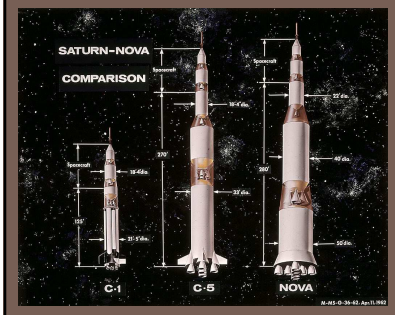


WSGC 2010 COLLEGIATE ROCKET DESIGN COMPETITION

05-NOV-2009

Welcome Teams

- Teams competing in 2010
  - 11 Engineering
  - 5 Non-engineering
  - **16 Total**

Welcome Teams

- WSGC Affiliate Schools with entries:
  - College of the Menomonee Nation
  - Lawrence University
  - Marquette University
  - Milwaukee School of Engineering
  - Ripon
  - UW-Madison
  - UW-Sheboygan

Business Items

- What you need to know
- Budget

Supplied by WSGC to Teams

- $1000 - for use by team towards
  - Rocket parts
  - Travel related to competition
- Rocket Motor Casing

At Launch Day

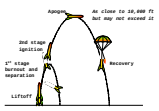
- 1 Rocket Motor Load of Fuel
- Flight Data Recorder

Timetable

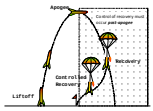
Activity	Date
Kickoff Meeting	05-Nov-2009
Budget and Demo Flight Deadline	08-Jan-2010
Design Meeting – Motor casing distribution	21-Jan-2010
Interim Progress Report	18-Feb-2010
Q&A Meeting – *voluntary*	18-Feb-2010
Safety Review Meeting	26-Mar-2010
Design Reports Due to WSGC	16-Apr-2010
Design Presentations	30-Apr-2010
Launch	01-May-2010
Post Flight Performance Report	2 weeks after launch
Final Reimbursement Requests	2 weeks after launch

Dates are subject to change or may be rescheduled due to weather or other factors.

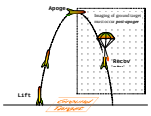
Previous Competions



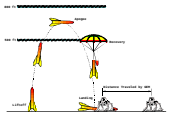
2005 2-Stage Rocket



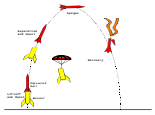
2006 Controlled Recovery



2007 Target Imaging

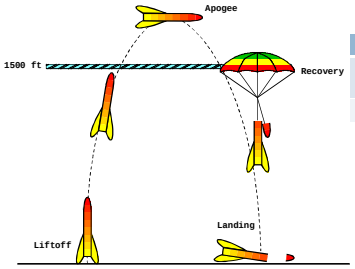


2008 **G**round **E**xcursion **M**odule



2009 Boosted Dart

2010 Competition



Constraints	
Rocket Motor	K-1100
Min. Alt	1500 ft.

Heavy Lift

Safety Reviews

- 2 Safety Reviews are Required
  - 1st Review – approx 1 month before launch
    - Rockets will be examined in the current state of construction
    - All "pre-qualified"[1] components must be identified
    - All non pre-qualified components will require an engineering analysis to verify their structural safety

[1] A component will be considered pre-qualified if it was obtained from a high-powered rocketry supplier.

Safety Reviews

- 2nd Review – day of launch
  - Each rocket must be examined for flight safety by the RSO[1]
  - **Tripoli RSO has final word on flight safety!**

[1] RSO – Range Safety Officer

4 Aspects to Competition

- Design Report (25%)
- Presentation (15%)
- Flight (45%)
- Post Flight Performance Report (15%)

4 Aspects to Competition

Design Report

- Communicate the engineering and design effort involved
- Analysis of predicted performance
- Analysis of non "pre-qualified" components
- SHOW the design and construction(pictures, diagrams, etc.)
- 25 page MAX.
- Due 2 weeks in advance of presentation

4 Aspects to Competition

Presentation

- Communicate the engineering and design effort involved
- Organization and presentation important
- VISUAL AIDS
- Rocket Apperance
- 10 minutes
- Friday evening before launch

4 Aspects to Competition

Launch

- Successful flight requires:
  - Launch
  - Minimum of 1500ft at apogee
  - Electronically deploy recovery parachute
  - Safely land all parts of rocket together
  - Recover in re-flyable condition
- Finishing order
  - Successful flight
  - Mass of rocket not including the mass of rocket motor

4 Aspects to Competition

Post Flight Performance Report

- Compare actual performance to predicted
- Discuss differences

Model Rocket Demonstration Flight

- Purpose
  - demonstrate a minimum knowledge of rocketry
- How
  - Purchase a model rocket flight kit
  - Assemble
  - Successfully fly
  - Record flight with before and after photos
  - Email photos along with flight date and location
- Must be completed before funds will be released

Model Rocket Flight - cont.

- Example Kits:

http://www.estesrockets.com

http://www.questaerospace.com

http://www.discountrocketry.com

http://www.apogeerockets.com