

HOTROD CHALLENGE 2010

EGG PAYLOAD Duration

Your eggs are your simulated Astronauts. Get them back safe!

Middle School grades 5-8 Timed Duration

Participants will use a HotRod **Kestrel** kit and **Express** cargo module kit.

Your rockets will lift **ONE** raw large hen's egg of 57 to 63 grams weight and must return this from the flight without any cracks or other external damage.

Middle School impulse (thrust) limited to "D" total maximum impulse range!

Your Goal is Maximum Flight Duration.

***KESTREL is a single 24mm motor kit.*

High School grades 9-12 Timed Duration

Participants will use a HotRod **NITRO-X** kit and **Express** cargo module kit.

Rockets will lift **One** raw large hen's eggs of 57 to 63 grams weight and must return the egg from the flight without any cracks or other external damage.

High school competitors Rocket Kit is a Two Motor Cluster!

High School impulse (thrust) limited to "C" motors maximum.

Your Goal is Maximum Flight Duration.

**** Nitro-X Express is a clustered 18mm motor kit.*

***** *LIMIT 20 contestants TOTAL. ENTER EARLY!* *****

*Contest will be held at the SPRING (APRIL)
CMASS LAUNCH in AMESBURY, Massachusetts.
Contestants: check for **CMASS Launch updates:**
www.cmass.org*

ENTRY

All competitors MUST PRE-ENTER!

Registration begins Jan 15, 2010 and closes March 15, 2010

HotRod Rockets will supply you with the kit and the **Express** cargo module kit.

All kits will be mailed out starting February 1, 2010 until March 15, 2010.

This gives participants at least one month for construction.

Enter via e-mail at HotRodRockets@yahoo.com

Please include your current grade level in school!

Competitors will receive:

1. One Rocket Kit. Kit depending on your grade level.
2. One **Express** cargo module kit.
3. One entry form and score card. Bring this to the launch.
The Kit is free. After the contest keep it, it's yours.

HOTROD CHALLENGE **2010**

RULES

Contest Day

1. Eggs will be issued to the participants by event officials.
2. Payloads must be re-opened in front of an official at the return of the flight to be considered a successful flight. Any external damage to the egg is disqualifying.
3. Rockets must be allowed to land at the end of flight without human intervention (catching). Participants will be disqualified if there is such intervention.
4. Duration timed until the rocket hits the ground. Or Timers lose sight of the rocket.
5. Rockets must be recovered. Plan your flights and recovery strategies accordingly. Rockets need to land within the boundaries of the launch field.

SAFETY

1. All rockets must be built and flown in accordance with the Model Rocket Safety Code of the National Association of Rocketry, any applicable local fire regulations, and Federal Aviation Regulations.
2. All Rockets will be inspected before launch and observed during flight by an event official, whose judgment on their compliance with the Safety Code and with these rules will be final. Competitors are encouraged to consult with an NAR member before the competition to answer questions or concerns regarding design, flight safety, and the NAR's Model Rocket Safety Code.
3. **SAFE RECOVERY.** Each part of the rocket must either contain a recovery device and return to earth at a velocity that presents no hazard. Any entry which has a major part (including but not limited to an expended engine casing) land without a recovery system or at a velocity that is judged by an event official to be hazardous, due to recovery system absence, insufficiency, or malfunction, will be disqualified.
4. The entire rocket must be returned to the officials in order to be considered a successful flight.
5. The rocket must be able to perform a subsequent flight. Any damage to the rocket should be such that light repairs could be done to fly the rocket again.

NO expendable parts. All parts must be able to be re-flown!

THE ROCKETS

Middle school Challenge: HotRod Rocket's **KESTREL** kit.

High School Challenge: HotRod Rocket's **NITRO-X** kit

Both kits will include with **Express cargo module kit** to convert kits to Egg lofters.

1. Participants will use high quality HotRod Rocket's kits. Provided with entry.
2. **MOTORS:** Choose motors wisely, never exceed the maximum liftoff gross weight for the motor used. See the motor size limits for your age group.
Example: motor "D12-5" **Max 10oz liftoff weight.** (But you would want to be much lighter than that!)
3. All entries must pass inspection and approval by CMASS Safety personnel.
Their decision is final.
4. Motors: Middle School Challenge: Maximum of "D" black powder motors.
High School Challenge: Maximum of **Two** "C" black powder motors.

ROCKET KNOWLEGE

This should be a learning experience!

All competitors should be ready and able to show an official or any other interested person the following:

Your rockets:

1. Center of Pressure (and how you calculated it)
2. Center of Gravity
3. Type of motor.
4. Recovery System

A short written description of your rockets build process is always nice. Photos are also great!

Need help with these terms? Go to: www.nar.org

Hotrod Rocketshop.com Page for contestants:
www.hotdrocketshop.com/CONTEST

LAUNCH SYSTEMS

Launch systems will be available at the event. Including but not limited to:

1/8" standard launch rods.

3/16" launch rods.

1/4" launch rod.

Standard Rail.

If you plan to bring your own Rod, launch pad, piston or tower launcher. It must be checked in (inspected) Before you set up you rocket.

Must pass inspection and approval by **CMASS Safety**.

This is not the call of the contest organizers.

NO loose black powder allowed. Period. For any reason.

Launch Site

CMASS Field Lion's Gate road. Amesbury Ma.

Primary contest launch site will be the launch field in Amesbury Ma.

Weather or other factors could delay this event and or move it to another launch site on another date.

CMASS Launch updates: www.cmass.org

1. The CMASS club has graciously offered to host this contest at their launch on their field.
2. Check the CMASS website for launch status and weather condition prior to leaving for the contest.
3. Participants are expected to use their best conduct and sportsmanship at all times.
4. Please remember to thank the CMASS volunteer launch staff!
5. This launch field is ONLY in use during CMASS club launches. It is not for Rocketry use at any other time. Please check the CMASS schedule.

Entry FEES

1. There is no contest entry fee.
2. There is a field fee charged by CMASS. This allows you to launch rockets all day.
So bring all your rockets, launch all day and enjoy yourself. An afternoon of Rocketry is an enjoyable family event!

Scoring

Longest timed Duration of flight is the primary goal of the contest.

DURATION.

1. Times are based on total flight duration of the portion of the rocket containing the egg.
2. Times are measured from first motion at liftoff from the launch pad until the moment of landing or until the rocket can no longer be seen due to distance or to an obstacle.
3. Times must be measured independently by Event Official not by the participants.
4. Times will be measured by separate electronic stopwatches accurate to 0.01 seconds
5. All Rockets will have a maximum of THREE flight attempts. Make certain you bring motors and recovery supplies for three attempts.
6. Notify a Contest Official that you plan a launch attempt.
7. All rockets and any portion of a rocket **MUST** land within the launch field boundaries!
8. Follow all CMASS rules for safe launch and recovery. Don't be afraid to ask questions on launch day.

Bonus Categories

Just for Fun separate awards.

Best Paint Job/ Artwork: Good looking rockets are always cooler!

Best Presentation: Document your work, present your work to the judges in book format. Simulations, build photos, testing and research.

Best Appearing Participant or Team: Look good, look professional.

Questions and Clarifications please contact: David

HotRodRockets@yahoo.com