

NSWRA Newsletter



New South Wales Rocketry Association Inc 22nd April 2009

Launch report: 28th March 2009

Conditions: Fine, clear and very still conditions
Total launches: 42
Boost Gliders: 1
No ignition: 12
Failed recovery: 4
Tree landing: 1

It was a great day for launching rockets with excellent flying conditions.

The eggloft competition was held and won (more on that later) and there was a good range of rockets from 1/2A to G size.

Some photos of the day can be viewed on the following website in addition to those on the NSWRA website:

<http://s278.photobucket.com/albums/kk99/elta100/NSWRA%20Mar09/>

If you want a full resolution image please email me with the filename and the album (directory) name.

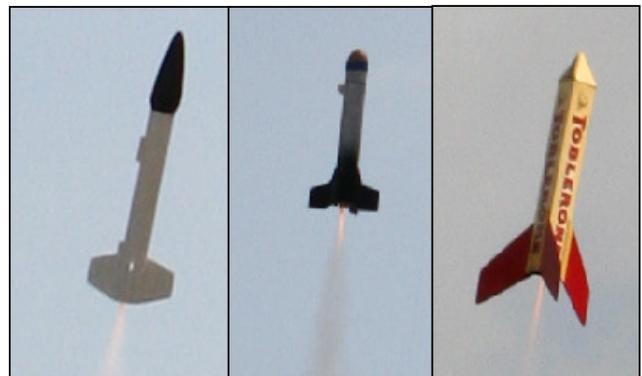


Eggloft Competition

The Eggloft competition was one by Jeff Booth with a flight duration time of 53.18sec with his rocket appropriately named 'Eggloft'. It was interesting to see the rocket catch a thermal and hang in the air for a period of time. There was a good range of rockets (unfortunately I did not get photos of all of them). Second place went to Neville Fraser's Eggcentric II with a time of 45.70sec. Thanks go to Neville for donating the prize of a 2000 edition of Sports Rocketry and an

October Sky movie poster. (I think Neville was just trying to win them back!)

All up, 10 flights amongst 5 rockets, and no damaged eggs! Congratulations to Jeff and all those who entered.



David's attempt, Neville's attempt, and oops wrong food group.

HPR theory classes

A theory class has been arranged for you HPR flyers out there! If you have thinking of flying HPR or if you haven't attended a class please make yourselves available. If you are not a HPR flyer this is still a valuable class to attend which will improve your knowledge about rocketry. If you are interested in attending please let me know. Details are:

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22nd April 2009

Date: 16/5/2009
Time: 9:00am
Location: Toongabbie East Primary School
Harris Rd Wentworthville

Points to note:

DON'T park in Portadown Rd at all. Park in Harris Rd or in the school car park. Gates are in Harris Rd. We will meet in the library, entered from the west up the stairs.

This week's topic - Ignition problems

There are launch days where we seem to have a large number of ignition issues. These can be caused by a number of reasons. Some of these are within your control while others aren't.

Control box. I'll get this one out of the way because 'it's never my igniters!' The control box does have some issues at times but there is little anyone can do but be patient with the LCO and RSO and let them resolve the issue. Sometimes the plugs and sockets give problems that are not immediately noticed. From your side, just make sure that the clips are on properly, you check the number on the controller, and that you enter the right number in the book.

Wire clips. When connecting the clips to the igniter leads check that the clips are clean and free of any build-up. Build-up will prevent the electrical current from being transferred to the igniter. In some cases you may need to scrape away material or even clean the surface with fine Emery paper or Scotchbrite. Keep your igniters clean and in sealed packets/bags. This will help reduce oxidisation on the leads or even deterioration of the pyrogen. If you can, strip the igniter leads just before you go to the launch racks. Be very careful with igniters as slight damage can render them useless.

Different propellants. Some propellants will ignite easier than others. Black powder motors like Estes motors generally ignite easily. With the composites, the high thrust motors, like Blue Thunder, Redline, etc, generally ignite quickly whereas White Lightning does require more heat and energy to get it going.

Storage. Humidity can destroy motors. Always keep your motors and igniters dry in sealed bags or similar.

Old motors. Over time, the oxidiser in the propellant will be affected by moisture. As the moisture increases and decreases, the oxidiser will dissolve in and out of the pyrogen and recrystallise on the surface of the propellant. This can be seen as a salt build-up on the surface as well as swelling of the propellant grain. Black powder motors generally don't suffer over time in the same way as composites. The White Lightning propellant is probably one of the worst for this. The oxidiser build-up will prevent the motor from igniting properly. If the damage is not extreme, this can be corrected by simply removing the salt build-up on the surface either by sanding or cutting off with a knife until darker propellant is visible. Be aware that you are removing material from the motor so your motor will have a slightly lower performance. You certainly need some pretty good igniters to get old motors ignited. Copperheads in most cases are not good enough.

Copperhead igniters. These are now old technology and were most likely sold because they were cheaper to manufacture. These are essentially two strips of copper separated by a film of plastic. Conductive pyrogen is at the end to provide continuity between one piece of copper and the other piece. Copperheads have a track record of being poor igniters for composites. Firstly, there isn't much pyrogen to ignite big motors or older motors. Secondly, you can get splinters of copper touching both strips of copper causing a short (this is a manufacturing problem). Thirdly, you need to ensure your clips are set up correctly so that both clips are not touching the same strip.

Final note. It is always good to check the continuity and resistance of your igniters. If you are not familiar with a multimeter ask for assistance. Typically, igniters should have a resistance of between 1.5 to 7 Ohms. Copperheads generally have a resistance



between 8 and 10 Ohms. However, I have some ranging from 0.5 Ohms to 25 Ohms! For this reason they require more current to start burning in some cases. The club controller is time limited and current limited so under some circumstances a second press of the button can usually get it going. Last launch day, a new control box was trialed on the HPR rack with a modified time limit. It seemed to work very well so this may be copied onto the other control boxes over time.

Membership renewals

A reminder that if your membership is due to forward the fees and a new membership form promptly. The NSWRA has ongoing expenses, primarily rental for Doonside, but we need to build up the funds for the insurance payment to the ARA later in the year. Your membership card states when your membership expires.

Next launch

Currently scheduled for the 25th April. We'll have to keep an eye on the weather.

Working Bee

A working bee is being scheduled for the 23rd May 2009 to maintain the launch site area. Any assistance that you can provide is appreciated. Start time is likely to be 9:00am but this will be confirmed as it gets closer.

Suggestions

Does anyone have any questions that they would like answered in the newsletter?

Andrew Eltobaji
NSWRA President
