

# NSWRA Newsletter



New South Wales Rocketry Association Inc.

January-February 2016

It's been a bit of a slow start to 2016. We were forced to cancel our first Saturday launch due to the torrential rain beforehand, the first Sunday launch fell on Valentine's Day, and conditions forecast for the Saturday launch in February were not very encouraging. We expect to see a lot more launches at the upcoming launch days.

## Our visit to ANSTO

Several members accepted the invitation to visit the nuclear science facility at Lucas Heights on Thursday 21<sup>st</sup> January.

It was very worthwhile and fascinating to see what is happening in this area.

Many also attended the Water Rocket Workshop earlier in the day, where George impressed the kids with his much more sophisticated water rockets. We also launched a couple of pyro rockets for nominal flights, which went down well (no pun intended) with the kids and their parents.

Thanks go to Andrew Eltobaji for organising this.

For any members that are interested that missed out this time, we are likely to arrange another visit in January next year.



## Anzac Day weekend at Mullaley

Don't forget our launch weekend on 23rd & 24th April at our HPR site at Mullaley, near Gunnedah.

Any rockets, with approval from the RSO, may be launched, up to an altitude of 8000 feet.

The usual club launch gear (ie club controller, launch rods) will be available, in addition to launch rails (1010 and 1515 sizes) for the larger rockets.

All NSWRA members & their guests are invited to attend. It will be possible to attempt L1 and L2 certifications, but you will need to get in contact with the AMRS certifying officer beforehand.

If you are planning on attending, or just want some more information, please send us an email.

## Macquarie University Astronomy Open Night

NSWRA will again have a stand at this event this year, to be held on Saturday 14<sup>th</sup> May, 6:30pm to 10:00pm.

This night is a good opportunity for us to promote rocketry and the club to the general public.

[www.mq.edu.au/about/about-the-university/faculties-and-departments/faculty-of-science-and-engineering/departments-and-centres/department-of-physics-and-astronomy/association-for-astronomy/astronomy-open-night](http://www.mq.edu.au/about/about-the-university/faculties-and-departments/faculty-of-science-and-engineering/departments-and-centres/departments-and-centres/department-of-physics-and-astronomy/association-for-astronomy/astronomy-open-night)

All members are welcome to help out - please contact David C or one of the other committee members.

Note: If you are helping out on the stand, there is no charge for admission

### Upcoming Events

All launches are at Whalan Reserve unless otherwise noted

#### March

13 Launch Day

26 Launch Day. Easter Saturday

#### April

10 Launch Day

23-24 Anzac Day weekend at **Mullaley**

**Note:** No launch at Whalan on Saturday 30<sup>th</sup> April

#### May

8 Launch Day. Mother's Day

14 Macquarie Uni Astronomy Open Night

28 Launch Day

## Launch Day 14<sup>th</sup> February

Number of launches: 15

Good conditions for our first launch for 2016, making up for the cancellation of the launch day scheduled for Saturday 30<sup>th</sup> January, due to wet weather.

Jason launched his “Patriot” on a C6 motor and his “Zenith”, first on an A8 and then a B4 motor. Dominic’s first scratch-built rocket called “Bob” flew well on B6 motor, but unfortunately broke a fin on landing (see the article following for tips on balsa fins)

David C’s “Spaceship One” scale model flew remarkably straight on a C6, and Paul launched his “Pod 2” for its usual reliable flight, also on a C6 motor.

Andrew tested his dual deployment system in his “Volcano” rocket using an F39 motor, in preparation for launches at Mullaley

George’s “Axion II” water rocket had 3 flawless flights at 120psi.

The most complex rocket launched today was “Kookaburra 4” on a cluster of 5 D12 motors. Rhys put great deal of preparation into this, and it was reviewed beforehand and on the day to help ensure that all motors would ignite. The rocket left the pad OK, but unfortunately the parachute didn’t deploy.



“Kookaburra” 4 leaves the pad on 5 D12 motors

## Launch Day 27<sup>th</sup> February

Number of launches: 6

The weather forecast predicted showers in the morning and winds up to 20km/hour – not ideal conditions. This may have been enough to deter members, as the number of launches today was quite low.

As it turned out, wind speeds were lower than expected, and the morning remained fine.

We had several visitors today, who were at least able to see some nice flights, including David C’s new “Big Rage” rocket and his trusty “Red Dwarf”, both on C6 motors, Mark’s MicroMax rockets, and Tim’s “Weasel” on a F22 to finish



Tim’s “Weasel”

## Tips for balsa fins – from the *Estes Technical Manual*

Fins are used to aerodynamically guide your rocket. Some model rockets use fins made from thin sheets of balsa wood. In many kits the fins are pre-cut. In other kits, or to make custom fins, you must use a pattern to mark and cut a blank sheet of balsa. All balsa fins must be cut so that the grain of the wood runs parallel with the leading edge of the fin for maximum strength.

### Balsa Fins from Patterns

To make fins from an un-cut sheet of balsa, start with a full-size fin pattern cut from stiff paper or thin cardboard. When laying out the fins on the sheet of balsa be sure to position the pattern so that the leading edge of the fin runs parallel to the grain direction. Trace around the pattern with a pencil or ball point pen to mark the balsa for each fin.

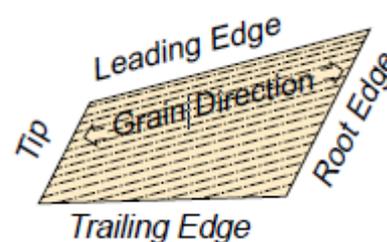
Use a metal straightedge whenever possible. For a clean cut, hold the knife blade perpendicular to the surface, and use a cutting angle of about 45°. If blade is dull or held too high, balsa tends to tear. A razor saw blade may be required to cut thicker balsa.

### Shaping Balsa Fins

The instruction sheets in many kits tell you to sand all edges of the fins square. This is fine, and it is the easiest method, but you can reduce drag and increase the altitude performance of your rocket by proper shaping of the fin edges.

For general purposes, sand all fin edges round except the root edge (the edge that glues to the body). Make the root edges straight and square, never rounded! The sides of the fins should be sanded smooth.

On high performance models sand the fins to a more stream-lined shape for minimum drag. The front (leading) edge of the fin should be rounded; the back (trailing) edge should come to a sharp edge.



The “Root Edge” is the edge attached to the body tube