

NSWRA Newsletter



New South Wales Rocketry Association Inc.

Mullaley, 21-22 May 2022

Well... after more than 12 months since our last trip to Mullaley for High Powered Rocket launches, we were all expecting some big things, and we were not disappointed!! Here are some highlights.

Madison Weekes L3 Certification

For the very first time NSW Rocketry hosted a HPR Level 3 attempt. Madison Weekes under the mentoring of Mathias Gaertner (our Level 3 TAP member); after many months of documentation, calculations, specifications and building saw Madison (and team) preparing his Madcow Frenzy Massive rocket, called "M.W.A.B.", running on a M1560 motor.

His rocket launched successfully to an altitude of 6350ft (1935m) deploying the drogue; the main chute then deployed at 1000ft (330m) and the rocket eventually touched down, down-range at a distance of 750m. The rocket was successfully retrieved for TAP review.... SUCCESS!!

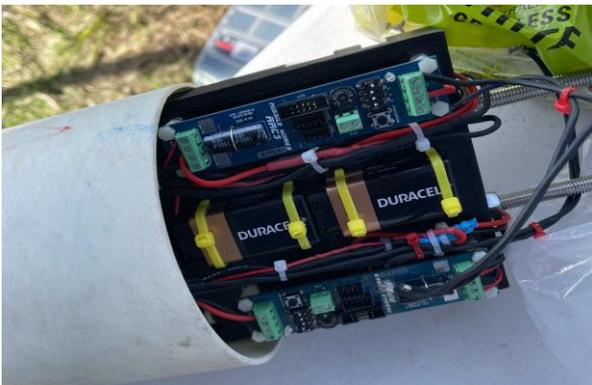
Congratulations, Madison, on joining a very select group of Level 3 flyers!



Team Photo



The Launch



On-board Flight Computer



The Retrieval (Madison in the middle)

An abundance of University students

What a great contingent of University students who joined us to both learn about rocketry as well as pass certain levels of rocketry qualifications. Due to the ongoing cancellations of launches at Whalan in the last few months, due to rain, we had a high demand for launch spots for both (Low Powered Rocketry) LPR and (Mid Powered Rocketry) MPR assessment at this Mullaley launch, with both experience gained and qualifications achieved. Congrats also to those that achieved High Powered Rocket level 1, 2 and the above-mentioned level 3.

The first "experience" gained for some of the "newbies" was in the form of Flight Safety Reviews, rejecting several rockets... fins were "floppy" or loose, nose cones were too tight, etc. However, problems were quickly overcome and rockets resubmitted for flight. - Lessons learnt.

Off the launch pads, we had many LPR flights... we also had a number of non-flights due to non-ignition of motors... again this was seen as a learning experience and throughout the weekend other "failures" were overcome and (hopefully) - Lessons learnt.

Let's summarise this into several categories.

Igniters – Estes igniters for black powder motors can be "fiddly". Typically a single millimetre separates the 2 wires between the filament that causes the ignition. It's very, very easy to either cause these wire to "short out" or separate to the point where the filament breaks... either will not launch the rocket. Preparing igniters and very carefully inserting the plastic plug are crucial – Lesson learnt

Shock Cords – The purpose of the shock cord is to keep the rocket components attached, after apogee so that the nose cone and rocket body return safely to earth under either parachute or streamer. Shock cord made of fishing line, attached with sticky tape was never going to be successful... after a few modifications – Lesson learnt.

As many of our "Uni Students" launched their first, second and even third LPR, experience was being gained by the minute... With some LPR experience under their belts, time to switch it up to MPR... generally all successful flights, however with the wind, long walks to recover.

By the end of the weekend many "newbies" had successfully flown LPR flights and a MPR flight... Congratulations!! But don't lose sight, flying rockets is about the experiences and knowledge gained. It's not just about "passing exams". This is not about University, this is Rocket Science!

The wind

The wind was mentioned earlier but at a constant 20-25kmh, gusting at times to over 30kmh and causing a temporary halt to launching, it was certainly a "talking point" all weekend. Flyers had some decisions to make. Those flying off the rods, pretty much had their fate determined – launch vertically and enjoy the walk as their rockets drifted north under the strong southerly wind. Those launching off rails had an extra choice. Under the TRA safety rules, where you can deviate from the vertical by up to 20 degrees, how far to tilt the launch rail. It was actually an interesting experiment with many flyers getting the angle somewhat right, with launched rockets heading into the wind, deploying and then drifting back onto the range.

Another phenomenon was also noticed on a number of flights... the rocket would launch, heading into the wind and then "weathercock", further into the wind. This caused the adverse effect that their rocket was almost horizontal, heading into the wind, at the time of the ejection delay charge. With that pressure on the nose cone, deployment was not achieved and a few rockets "lawn darted" up range. As it turned out, it was a very, very fine line between a successful flight with a short retrieval walk and a disastrous flight with a long retrieval walk, to find a destroyed rocket.

To the best of my knowledge, Mathias held the weekend record of travelling 6.7km to retrieve his rocket (thank goodness for GPS) after his HPR rocket deployed both drogue and main chutes at apogee and then began to drift and drift and drift...

Saturday night social event

Word passed quickly with flyers on Saturday that an impromptu gathering was going to happen at the Gunnedah Ex-Servicemen and Bowling Club that evening at 7.00pm. With an opportunity to share stories and experiences, commiserate over lost rockets, or generally enjoy each other's company, it was not surprising that over 70 people enjoyed the evening... Nothing further to say... What happens in Gunnedah, stays in Gunnedah.

Wilson FX controller and extra launch rails

With the number of cancelled flights since we took delivery of our new Wilson FX launch controller late last year, Mullaley basically saw its inaugural use.

IT DID NOT DISAPPOINT.

Not only was our previous capability of 16 close-wired pads improved to 21 launch pads, but being wireless, a HPR launch pad at 150 metres was easily achieved. On the weekend the pad configuration was:

-Pad A: 8 rods for Lower Power Launches.

-Pad B: 4 Rods and 4 Rails for MPR and HPR launches at 30 metres,

-Pad C: 4 Rails 60 metres out for larger HPR launches and

-Pad H: 150 metres out, for the serious big Level 3 HPR flights using motors up to "M".

For the technically minded, each Pad unit and the main controller unit are powered by sealed lead acid 12v batteries (which typically charge to 13.6volts). After 2 days of use the batteries easily coped (lowest reading at the end of the weekend was 12.7volts) and could easily power units for a few more days before requiring a "top up" on a battery charger.

Our friends from Victoria

It was such a lovely surprise to have 2 members of the Victorian Rocketry Association join us for the weekend. Jeremy and Peter brought some wonderful experiences. They also gained a few new experiences seeing sparky motor flights (which are banned in Victoria) as well as watching George Katz's water rocket flying to some extraordinary altitudes. What was shared with us were some "spinners" on composite motors and the most unusual "Estes CATO" that is designed to fly reasonably low, before it disintegrates into almost a dozen different pieces. Words can NOT explain what the novelty rocket does... you really have to witness it to believe it!

Boys, you are welcome back any time.



Site conditions permitted the use of sparky motors

Lessons learnt and overall statistics

On the weekend there were 109 successful launches.

There were many newer members who flew for the first time (with LPR rockets) and ended the weekend with their MPR qualification.

3 flyers upgraded their status from MPR to HPR Level 1

- Congratulations to Robin Biskupic, David Hill and Phillip Morath

4 flyers upgraded the HPR Level 1 status to HPR Level 2

- Congratulations to Elena Viatos, Mitchell Galletly, Ray Clark and Margarita Piperias

1 flyer upgraded his HPR Level 2 status to HPR Level 3

- Congratulations to Madison Weekes

Everyone who walked out into a paddock to retrieve a rocket grew in height by 3cm and added 3kg in weight. Coming in threes it then took 3 minutes to remove all this mud from the bottom of shoes (thereby returning to their normal height and weight)

On the weekend all flyers complied with safety rules and other directions of the club, enjoyed themselves, learnt something new and generally had a good time.

I would like to thank all attendees for their compliance and respect of the landowner's property, and especially thank those that volunteered for range duties. I think a special thank you should go out to the committee for organising a fabulous weekend, with an extra acknowledgement to David Cumming, Scott Arnell, Geoff Ingram and Derek Waterman who were not only there on Friday afternoon to set up the range, but were also there with Phill Morath on the Sunday afternoon to close down and pack up all the equipment.

Ryan Shaw
President