



P&DARCS

Pakenham and District Aircraft Radio Control Society



P&DARCS NEWSLETTER JULY 2025



Our team would greatly appreciate any donations to support the P&DARCS members traveling to the USA for the F3A World Championships.

Members, please be aware that your club fees are now due. Your MAAA Insurance Cover lapses on 30th June 2025.

If your subscription is not received by the 1st of July, you no longer have insurance cover and are not permitted to fly at the club.

Next Club Meeting On-Line 06 Aug (Wed) 7.30 - 9.30 pm AGM

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June, 2025

28 (Sat)

[ASA Chew and Chat](#)

July, 2025

23 (Wed) 7:30 pm - 9:30 pm

[Committee Meeting](#)

August, 2025

06 (Wed) 7:30 pm - 9:30 pm

[Club Meeting & P&DARCS AGM
\(Online\)](#)

20 (Wed) 7:30 pm - 9:30 pm

[Committee Meeting](#)

President's Report

Following up on discussions at this week's General meeting we want to draw your attention to two matters.

Privacy Policy

The Committee ratified Privacy Policy is now under the '[Official Documentation](#)' section of our website. This comes from extensive review of the legislative environment and Club needs by the Privacy Working Group.

The biggest change for members is the introduction of a Member Contact List. This will be implemented in parallel with this year's membership renewal process.

In practice it means:

- contact details (email, phone number) to be included in the Member Contact List. Only those providing permission will be included in the list.
- Members will be able to request a copy of the Member Contact List via a form on the club's website. To receive the list the member will need to agree to the Approved Purposes for use of the list which are limited to:
 - Accessing the details for personal use only, and not sharing more widely within or outside the club
 - Use of the information for one-on-one contact with other members, or small group discussions that select members have opted into
- The list will be emailed to the member's email address on file. Please note that use of the information for any broadcast, mass communication or advertising to members is strictly prohibited.

The ability to request the Contact List via the website will be made available in August once the renewal cycle has completed.

Further details are in the Privacy Policy document which we have tried to keep as simple and clear as possible.

Animal Policy

Following Alex William's unfortunate incident with a cow on our property we remind all members not to approach an animal either on the access roads, or in our flying field itself.

If you do see an animal on one of the access roads or in our property there is now a page on our website to facilitate reporting to the right people. There are two paths:

- If the animal is on one of the access roads and outside our flying area you should report it to the Council Compliance Department on the number provided.
- If the animal is in our flying area then the webpage contains a form for you to fill out that provides details and will immediately be forwarded to the relevant people

This information can be accessed / reported on our website under the **Our Field** menu or by going to www.pdarcs.com.au/looseanimals

Keith Quigg | AUS 22897 P&DARCS President 2024/2025



Editor's Report

Hi Everyone,

Welcome to another edition of the newsletter.

Alex Williams has kindly contributed another terrific article and I am hoping he will send in a lot more. I really enjoy reading them.

We also have some news about the P&DARCS members travelling to the USA for the F3A World Championships.

Also find out about propellers this month.

Keith Quigg has sent in an interesting article from Airborne about Mr Anthony Mott who is a member of P&DARCS and holds the Australian Electric Duration record (a little over 14 hours airborne).

As always, please send me anything you think members might be interested in.

Cheers

Liz



Propeller Basics

Using the right propeller for your aircraft is a very important part of how it will perform.

Choosing the correct pitch and diameter for the type of flying and aircraft you have, are the two main variables of the propeller.

The diameter is obviously the span of the propeller, and the pitch is how far the propeller will travel theoretically in one revolution.

A propeller can be thought of like the gearbox in your car, a fine pitch is like 1st gear, so good for climbing but slow, a coarse pitch is like top gear, good for speed but not climb. The problem is that these two variables cannot be changed without consideration of other factors mainly engine power.

The internal combustion engines we use in our models have a range in their rpm that give maximum torque, so maximum power. If that rpm is exceeded at full throttle by too much it will not achieve maximum thrust and it will damage the engine because of over revving. Conversely if the engine is restricted too much and the rpm is too low at full throttle, again it will not achieve maximum thrust but could also damage the engine through overloading and overheating.

All engine manufacturers will specify the best operating rpm for their engines and suggest a propeller that is a good starting point to achieve this rpm. The maximum rpm the engine can achieve on the ground is not the same as the rpm in the air. When the manufacturer is stating a maximum rpm of say 7500 it means in the air, the rpm on the ground (static) would be something like 6500 rpm. There can be a variation of up to 1000 to 1500 rpm from static to flying because of inflow once the aircraft is moving.

For electric power torque is constant so the variable is how many amps the motor and esc can handle. The manufacturer will suggest a propeller range to start with, to achieve the amps allowable for their motor, but again the amps the motor is pulling on the ground will be higher than in the air, so fine tuning will be needed to get the maximum power from the motor.

Two excellent tools that are essential for fine tuning size of them propeller is a rev counter and for electric, a current meter. If your radio is capable of telemetry this is the best scenario.

It is important to remember that not all propellers are created equal. For example, an 18x10 from one manufacturer is not the same as an 18x10 from another, so if you have a brand you like, stick with it then you are working with a known quantity.

If you want your aircraft to climb well you need a finer pitch on the propeller but, a fine pitch will make the engine rev higher, so to compensate for this you must increase the diameter. For example, if you have a 18x10 that is in the rpm range you want you would try a 19x8, which would sacrifice a bit of speed but would keep the right rpm range. If you want more speed you would change to a 17x12, which would sacrifice a bit of climb, but the rpm would stay in the desired range. If you want a very fast plane like a racer. you would decrease the diameter further and increase pitch, like a 15x14, this would keep the rpm at the desired rpm.

The other thing to consider is whether you want 2,3,4 or more blades, but there is no advantage to more than 2 blades apart from aesthetics and less noise. More blades will always be less efficient and sacrifice engine power to drive the extra blades. In control line speed, they even ran a single bladed prop with a counterweight to maximize efficiency.

So, to find the best propeller for your plane and flying preference, will take a bit of time and patience but will result in maximizing the performance of your aircraft and engine combination...

Cheers,
Simon Ventevogel



Electric Flight

by Bob Hickman

ELECTRIC FLIGHT DURATION RECORD

After years of dedicated effort, prolific Australian and world record setter Anthony Mott has established a new Australian record for electric flight duration. With a flight that lasted 14 hours, 21 minutes and 35 seconds Anthony raised the previous record, also held by him, by one hour and six minutes. What an achievement! At the time of writing, the record has not been officially ratified but I'm familiar with the rules and the requirements and I am confident that Anthony will be formally awarded the record. The process does take some time though. An electric-powered flight of well over fourteen hours! Can you begin to imagine what it is like to pilot a model for that long? The record

flight was not only a test of model endurance but also of pilot endurance. Anthony flew the aircraft for the entire period even though the rules do permit the use of an assistant pilot for up to 10% of the flight time.

THE RULES

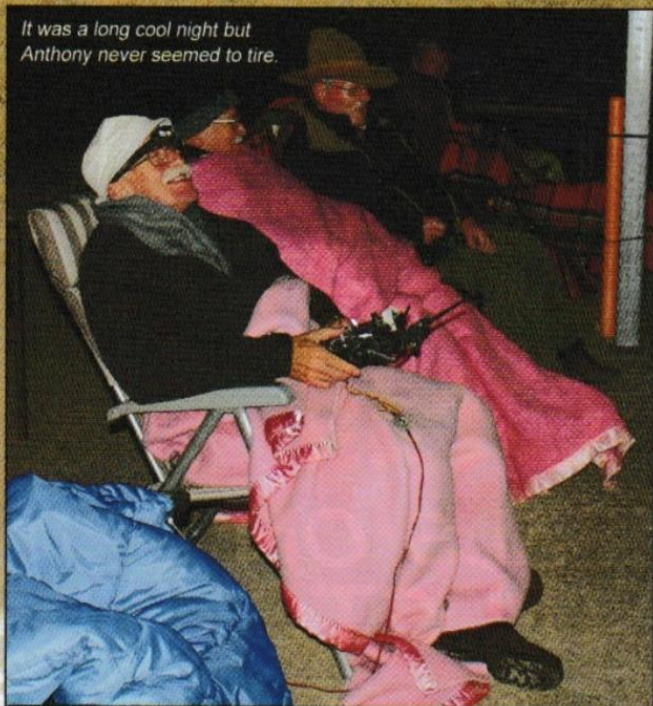
As for other aviation record setting, the rules are determined by the FAI (Federation Aeronautique Internationale) and they set out the requirements for the aircraft and the flight in great detail. They require that the model weigh no more than 5 kilograms and that it take-off under its own power or be hand launched. Anthony's model, the Tedium E#7, weighs within a few grams of the limit and spans over 5 metres so hand launching is not really a viable option. During the flight the motor must turn the prop continuously for at least 98% of the flight time. Stopping the motor and gliding is therefore not permitted for much longer than it takes for the model to descend and land. At the end of the flight the model must touch down no further than 500m from the point at which it was released for its take-off run. Timing of the flight begins when the model is released and ends when the model touches the ground or an obstruction that ends its flight. There are lots of other details but these are the basics. The design implications of the rules are pretty clear. You need a large model to achieve a low wing loading. The aircraft needs to be as aerodynamically efficient as possible in order to minimize the power required to maintain flight and the airframe has to be as light as possible so that the largest possible batteries can be carried without exceeding the aircraft weight limit.

THE MODEL

Anthony's record-setting model the Tedium E#7 was, of course, of his own design and built by him. It was the end result of continuous development of his Tedium series of duration aircraft since 2008. The Tedium #1 was an internal-combustion (IC) duration model powered by a PAW .49 diesel motor and it set a new Australian IC duration record of a little over 12 hours, flying during daytime. Tedium #2 was again IC powered, this time with a .40 to save weight. It was designed to fly for much longer, necessitating the fitting of lights for night flying. In December 2009 it set a new record of just over 24 hours. Tediums 3 and 3.5 continued the development of Anthony's IC record-setting aircraft, eventually achieving a record 29 hours, 26 minutes and 55 seconds in February 2011. This internal combustion world record still stands.

Somewhere around this time, Anthony noticed that the electric duration record stood at "only" 3 hours 23 minutes, set by the late Ray Pike in the early 1990s. I remember Ray's record flight well as I was official observer for it. Ray's record was set using the best technology of the day; nickel chemistry

It was a long cool night but Anthony never seemed to tire.



The crucial pre-flight weigh in.



batteries a brushed motor and a special, high efficiency ESC designed and built by me. Of course by 2011 battery and motor technology had been revolutionised by lithium batteries and brushless motors and efficient ESCs were readily available so Anthony was confident that he could do better, much better. To quote Anthony, "I thought that I should have a go. It was rather simple – use the Tedium wing and build a new, light fuselage to carry the batteries and gear". After some research Anthony decided to use a Turnigy 3639 motor and nine 3S, 5000 mAh LiPos wired in parallel. The result was Tedium E#1 and a new electric duration record of just under 7 hours, set in September 2011. Now for most people doubling a long-standing record would represent "mission accomplished" but for Anthony the new record was but a hint at what might yet be achieved.

Tedium E#2 was a paper design that was abandoned before construction. Tedium E#3 sported a new, larger span and higher aspect ratio wing. Most of the batteries were carried within the wing centre section and the fuselage was a very sleek fibreglass "pod and boom" affair. Sadly the aircraft crashed and was destroyed shortly after launch due to radio interference, probably radiated from all the battery wiring in the wing into the 29MHz radio gear. Tedium E#4 was another paper design that never went into production, partly due to its complexity and anticipated very long build time. Tedium E#5 represented a return to a more simple design. The plan was to put an even larger span wing, with 25% more area on the Tedium E#1 fuselage with some increase in fin area. After a few setbacks, including a failed take-off that led to damage and some re-building, a new record of just short of 8 hours was established. Anthony however reported that the model was difficult to fly, particularly at the slow cruise speeds necessary to minimize power and maximize duration. Tedium E#6 was designed to overcome some of the handling problems of #5 and incorporate a battery made from 66, 18650 Lithium Ion cells. The previous Turnigy motor that drove the prop directly was replaced with an OS 3805 motor and 4.2:1 gearbox driving a large folding prop. This combination proved much more efficient. A flight of 13 hours 14 minutes and 53 seconds was achieved in November 2014.

Finally, Tedium E#7, a totally new model was designed and built. The wingspan was increased again to 5187mm, with an aspect ratio of about 18:1. The wing area of the model was 146.5 sq dm, (2270.75 sq in) 150 sq dm being the maximum allowed. The fuselage was 2020mm long and of the lightest construction that could carry the 3.1kg battery and withstand take-off and flight loads. Anthony designed the aerofoil, combining the better aspects of the Eppler 387 and the section used on a local powered glider design, the "Bubble Dancer". A tubular carbon-fibre tube, stepping down in diameter progressively towards the tips, was chosen for the centre section main spar. Two (removable) outer panels, each spanning 1m, were of more conventional structure.

The undercarriage was a dolly arrangement that was locked to the fuselage during take-off and jettisoned after the model was clear of the ground. Flashing LED lights were fitted to the wingtips and tail. The battery and motor were from the Tedium E#6. The aircraft had its first test flight in August 2015. After this and subsequent tests, some changes were made to the wing incidence angle and the position of the centre of gravity. During these flights John Lamont spent some time flying the model to get used to its "rather individual" characteristics as he would be the assistant pilot during an attempt, if needed. On February 1, 2016 another record attempt was made. Tedium E#7 took off late in the afternoon and Anthony piloted it through the night. At about 3:45am fog began to settle in and seeing the model was problematic. There was nothing for it but to abandon the flight. Anthony managed to keep the model in sight during the landing circuit and all was looking good on the final approach until the southern airfield boundary fence suddenly appeared out of nowhere. The ensuing collision caused extensive damage. The fence didn't fare too badly but the model wasn't in good shape at all. Repair initially seemed to be impossible because the aircraft had already weighed only a few grams less than the permitted 5000g maximum. After some encouragement from others, Anthony did indeed manage to rebuild Tedium E#7 with almost no weight gain.

This was an incredibly difficult task. For every gram added by repairs another gram had to be pared off somewhere. Anthony's success in this was a tribute to his tremendous tenacity. The repaired model was still of "legal" weight but too close to the limit for comfort. After further weight saving measures including redesigning the navigation light flasher unit and after a series of test flights, Anthony and Tedium E#7 were ready for another record attempt. The ultimate aim was to improve the Australian record, but also to try and surpass the World record of 18hrs 06min currently held by an American team. According to calculations, 17 hours or better seemed possible with favourable weather. All Anthony and his support team had to do was to wait for favourable weather, and wait and wait....

THE RECORD-BREAKING FLIGHT

I'll quote Anthony directly as he describes the record-setting flight of February 1-2. "Having waited since early October for some good weather, I finally bit the bullet and decided to chance the forecasts. As it turned out, the weather, particularly during the dark hours, equalled the best I had ever experienced for an endurance flight. On my arrival at the GMAC field at 4:00pm there was a high overcast and a south-westerly breeze fluctuating from 3 to 6 KPH. All the bits of gear were arranged and the model assembled in the club house. Then came the vital weigh-in – 4,977g.

The model was released at

approx. 6:30pm into a very light southerly breeze, and made a clean take-off and climb out. The undercarriage was jettisoned and about 20 minutes were spent trimming the model and slowly reducing the power input. After a glorious sunset, the light began to fade and on came the navigation lights. From then until sunrise the flying was pleasant in the very calm conditions. At about 7:45am a cheer went up as we passed the old record of 13hrs 14min 53sec, and continued on in the smooth air.

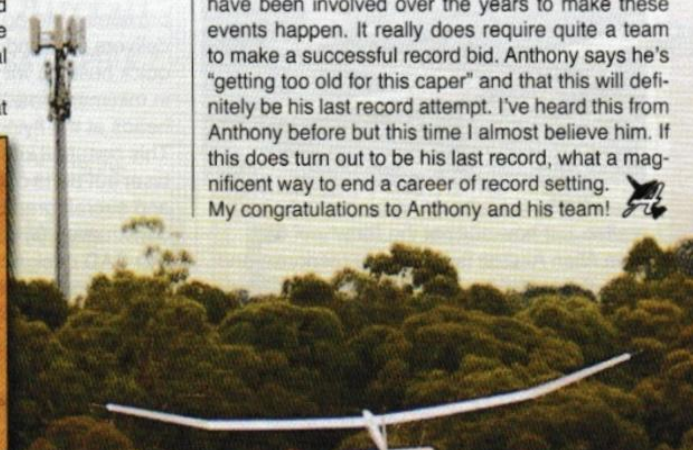
By around 8:30am it was still cool but some thermal/updraft activity was experienced as I was flying east-west circuits south of the main strip. Suddenly the updraft got stronger. The model gained height quickly and I decided I should get it away from the lift. Winding the power right down and heading upwind did not work as it usually does so I headed south, got into smoother air and slowly circled down to a reasonable height. I had almost got back into position to resume my circuits, but on the first east-west pass the model suddenly performed a large right turn and disappeared north from my view, obscured by the roof of the shelter that I was under. I stood up to walk out onto the grass but tripped over as the blanket that I had been covered in was still wrapped around my legs. I managed to roll over, and look up, but could not find the model. It had crashed. Fortunately, the timers' watches had been promptly stopped". And thus the flight ended at least a couple of hours earlier than Anthony had hoped. I joined the search for Tedium E#7. Laurie Baldwin and I found most of it, minus one wing panel and some empennage, lodged high in a tree. What a disaster! But wait, how far was the tree from the launch point? Measuring revealed that it was only about 200m so the flight easily met the criteria for a record.

The aircraft was totally destroyed. The only part lightly damaged was the front half of the fuselage. The rest (including the prized wing) was trash. The loss of Tedium E#7 was tragic. The flight itself however was a triumph. Anthony has set an Electric Duration Australian record that seems certain to be ratified. Measures of the remaining battery capacity suggest that more than another couple of hours' flight time should have been possible. With some favourable morning air maybe, just maybe, Anthony might have given the World Record a nudge. We'll never know for sure but I prefer to believe so.

Anthony is already encouraging others to have a go at bettering his record and, with his typical generosity, is offering some assistance to anyone who'd like to try. My suspicion is that Anthony's record will stand for a long time. Anthony has been full of thanks to his support team, headed by John Lamont. Keith Schneider, David Anderson, Trevor Pugh and others helped for this last flight, but many others have been involved over the years to make these events happen. It really does require quite a team to make a successful record bid. Anthony says he's "getting too old for this caper" and that this will definitely be his last record attempt. I've heard this from Anthony before but this time I almost believe him. If this does turn out to be his last record, what a magnificent way to end a career of record setting. My congratulations to Anthony and his team! 🏆



Cowl off to reveal the motor and 4.2:1 gearbox.



Buy, Swap and Sell



Timber X

A few years old but in excellent condition with very low mileage.

Reason for sale: not enough space and it should be used not be in storage.

Complete aircraft with Safe Receiver, just bind and add battery to fly.

\$300 firm

John Brann

0419 827 343

(Located in Mitcham)

F3A WORLD CHAMPIONSHIPS

Four P&DARCS members will be traveling to the U.S.A in August 2025 for the F3A World Championship.

Seth Huntingford is the exclusive Australian junior competitor with his father Chris Huntingford being Seth's caller.

Paul Rolph is the Team Manager and Norm Morrish is also part of the team as an official helper.

Please show your support and discover more information by visiting F3A Team Australia's new website: f3ateamaustralia.com.au

Click on photo below to go to the information page.



Alex's Corner

G'day folks,

Like an ashtray sitting on the psychological mantle piece of our minds, Murphy's Law hangs around like an annoying 6-year-old nephew.

"Wow, it's cold here this morning. Where's my batteries?"

Murphy says they are sitting on the garage bench.

"OK, all unpacked. Ready for the first flight. Where's my transmitter?"

Murphy says it's on the kitchen bench.

"Nobody move! I've dropped a screw."

Murphy says you ain't gunna find it and he doesn't care that it has a special thread, and you don't have any spares.

Even though Murphy is nothing more than a psychological trick we play on ourselves to shift the blame, he actually represents our own forgetfulness or fumbling's.

I had my own Murphy Moment recently. I had raced out to the field in the afternoon to get a quick flight in before the wind picked up. As I was setting the Avanti up ready to fly, I suddenly realised that the nose cone was missing. I didn't need the plane now because I was in a Murphy inspired flat spin all by myself. I checked the car; I checked every box, bag, nook, cranny, all to no avail. I was furious.

It wasn't until I started to pack to go home, still furious with Murphy, when I took off the canopy and guess what. Sitting there in all it's Murphy inspired, pointy gloriousness, was the nose cone, languishing inside the battery compartment.

Sigh.

Yes, I had been extra clever in putting it somewhere where I couldn't help but know where it was, only to forget the whole episode and have my Murphy Moment.

Seth saw the humour, but I think he was being kind.

Murphy runs the world but only if you let him.

Alex_of_Oz

Alex Williams

alex_of_oz@yahoo.com

Spotlight

Frank McPherson

* I was born in 1944, at Elsternwick Victoria, lived at South Caulfield, Dromana, Mordialloc, Keysborough, Langwarrin, and most recently at Skye.

I served an Apprenticeship as an Electrician, worked in industry, entered the TAFE system as an Electrical Trades Teacher, until retirement.

* I enjoy social Ballroom Dancing with my partner Rosemary.

* I entered Aeromodelling flying Control Line at Knox Model Aircraft Club, KMAC, in around 1997.

* I joined P&DARCS in 2007. So I have been with our great Club for 17 years, I have been involved with, Mowing, Coop, Editor, and general work around the Club.

* At P&DARCS, I mainly enjoy flying electric powered old style fun fly models, I also dabble in ARF scale, Nite flying, some oddball models, and recently, Control Line at our new Control Line Facility.

* I use Spectrum R.C gear, I currently fly with a DX9, and have a DX7.

* I have not been involved in Competitions, I am usually running around taking photos, and helping out .

* The models I am flying with at the moment are;

3 general fun fly models, mainly David Glossop's cast offs.

Two ARF scale models, Phoenix, Westland Lysander, & Phoenix Stuka.

Odball models, Robbe, Skyflex (flying tent), Boomerang 60 Modified for nite flying, and to drop an Iron Man with parachute.

5 Control line models, 3 glow motor powered, 2 electric powered with R.C throttle control.

That's about it.



An Early photo, holding a Control Line Stunt model at KMAC.

RECIPE OF THE MONTH

Chicken and Leek Filo Scrunch Pie

This amazing pie uses the simplest of ingredients and is absolutely delicious. Don't be afraid of filo pastry – it is so easy to use and very hard to mess up as not matter how it's presented; it always looks amazing when baked. Enjoy.

Tips:

I used a large cast iron frypan which was suitable for the oven or stove top.

I used frozen filo pastry as I always keep some in the freezer for emergencies. Just leave it in the bottom of the fridge overnight then take out to come up to room temperature while preparing the filling.

We used leeks, bacon and chicken but feel free to add in mushrooms or spinach to the mixture.

Amounts shown will feed 4-6 people.





Ingredients:

1 packet of Filo Pastry

150g of butter, melted

4 tablespoons olive oil

1kg of chicken thigh fillets, chopped into 2-3cm pieces

4 rashers bacon, chopped

2 leeks, sliced finely, dark green section discarded

2 cloves of garlic, minced

2 tablespoons of plain flour

1 cup of chicken stock (or a stock cube with a cup of water)

1/2 cup of thickened cream

Salt and pepper to taste

1 tablespoon of black sesame seeds

Method :

Before you begin, take your Filo Pastry out of the fridge or freezer to bring it up to room temperature in its packaging

Preheat your oven to 180C fan forced

You will need a 30cm deep frypan or you can use a baking dish to bake the pie

Heat 2 tablespoons of oil in the frypan over high heat

Add the chicken in two separate batches, cooking until lightly browned

Remove chicken from pan and reduce heat to medium

Add the bacon to the pan and cook until it starts to brown then remove from pan

Add another 2 tablespoons of oil to the frypan and add leeks

Cook until the leeks are soft, approximately 5 minutes

Add garlic and cook for another minute

Add flour to the pan and stir until well combined

Add the chicken and bacon back to the pan, followed by the stock and cream

Season with salt and pepper

Mix everything and allow to cook for 10 minutes on a gentle simmer, uncovered, or until the mixture thickens slightly, stirring occasionally

Remove from heat to cool slightly

Lay one sheet of Filo pastry onto your workspace and brush with butter

Using your hands, scrunch it loosely into a ball and place it on top of the chicken filling

Repeat with remaining Filo pastry, creating a spiral pattern of Filo balls

Pour any remaining butter over the Pastry and sprinkle with sesame seeds

Bake for 40 minutes or until golden and crunchy

Bon Appetit 😊

P&DARCS Calendar

June, 2025

18 (Wed) 7:30 pm - 9:30 pm [Committee Meeting](#)

28 (Sat) [ASA Chew and chat](#)

July, 2025

23 (Wed) 7:30 pm - 9:30 pm [Committee Meeting](#)

August, 2025

06 (Wed) 7:30 pm - 9:30 pm [Club Meeting & P&DARCS AGM \(Online\)](#)

20 (Wed) 7:30 pm - 9:30 pm [Committee Meeting](#)

September, 2025

17 (Wed) 7:30 pm - 9:30 pm [Committee Meeting](#)

October, 2025

01 (Wed) 7:30 pm - 9:30 pm [Club Meeting & Coop AGM \(Online\)](#)

22 (Wed) 7:30 pm - 9:30 pm [Committee Meeting](#)

25 (Sat) 9:00 am - 12:00 pm [Spring Clean Working Bee](#) Field Open: No

November, 2025

09 (Sun) [P&DARCS Scratch / Kit Built Rally](#) Field Open: No

19 (Wed) 7:30 pm - 9:30 pm [Committee Meeting](#)

December, 2025

03 (Wed) 7:30 pm - 9:30 pm [Club Meeting \(Online\)](#)

06 (Sat) 9:00 am - 4:00 pm [VPA Pattern Event](#) Field Open: Partial

10 (Wed) 7:30 pm - 8:30 pm [Pre Christmas Committee Wrap Up Meeting](#)

Members, please be aware that your club fees are now due. Your MAAA Insurance Cover lapses on 30th June 2025.

If your subscription is not received by the 1st of July, you no longer have insurance cover and are not permitted to fly at the club.



www.holkrc.com.au

Laser cut kits and modeling accessories



www.balsacentral.com.au

For your balsa supplies



www.austars-model.com