



P&DARCS

Pakenham and District Aircraft Radio Control Society



P&DARCS NEWSLETTER NOVEMBER 2022



Alex Butler's great Grumman Wildcat, ¼ Scale, power is Moki 150cc petrol
It was built by Alex's Father Clive Butler more than 10 years ago, Clive also built the retracts

**Next Club Meeting, Wednesday 9th November
7-30 pm, via Zoom**

BURLEY FIELD

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EDITOR'S BIT

The way the weather is going, we may need to resort to a fleet of seaplanes



This would be a nice one to start with !

Frank McPherson Editor.

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NOTICES

DARCSFIELD COOPERATIVE REPORT

Flooding of Burley Field and surrounding properties.

Over the past couple of years we have seen an increase of flooding to our property.

This has been in spite of increased improvement to clearing of growth in the creeks and maintenance on flood gates at our request representing Burley Field and other local farmers.

The level of maintenance has proved to be inadequate particularly considering the increased drainage from developments to our north.

The level of funding given to Melbourne Water appears to be totally inadequate to cope with the maintenance that is really required. Melbourne Water have a mandate to provide suitable maintenance of their facilities for our protection and are obviously falling far short of providing the necessary works required.

Of great concern is the continued developments to our north and the continuing poor conditions of the creeks and drains in our area.

With respect to future developments, we are now in liaison with Sarah Doring from Victorian Planning Authority who has confirmed that we will be included in with the public consultation which is scheduled not earlier than Feb next year relating to future developments that will have an impact on our property.

She confirms that Melbourne Water are responsible to improve creek flow if required and are currently doing flood mapping analysis.

After the last two years of negotiations and submitted work requests, I do not like our chances of achieving major works through Melbourne Water.

We are now preparing a submission to our local Victorian Member Jordan Crugnale in an endeavor to achieve a more positive resolution to these issues.

We will keep members informed with progress reports as we proceed.

Peter Harris Chairman Darcsfield Cooperative Ltd

PROPOSED CHANGES TO CLUB RULES

With the increased amount of Jet aircraft now flying at P&DARCS the, we need to make sure our Club Rules are appropriate. The P&DARCS Committee have taken this opportunity to revise the Rules to bring them up to date.

A copy of the proposed Rules can be downloaded from the following address
www.pdarcs.com.au/proposed-rules

Motion For December Club Meeting

The P&DARCS Committee Propose that the document entitled P&DARCS CLUB FLYING RULES, Version 3 Dated November 2022 be adopted as the current Rules for P&DARCS



Annual Christmas Dinner

This year the annual Christmas Dinner, will be on Saturday 10th December, More details to be announced via Email from your Committee

The following Club Events have been cancelled due to flooding, and poor condition of the Field

November

01 (Tue) [Melbourne Cup Aero Tow](#) **CANCELLED**

05 (Sat) 2:00 pm - 4:00 pm [Mini Working Bee for Rally](#) **CANCELLED**

06 (Sun) [P&DARCS Scratch / Kit Built Scale Rally](#) **CANCELLED**

PRESIDENT'S REPORT

Greetings to all our members, and what a wet month we have had once again. It seems that our focus might need to be on float planes or boats if this keeps up. We have reported on the status of the field over the past week, so we won't dwell on that.

At our next general meeting (Wednesday, November 9th), members will be asked to vote on some important and long overdue upgrades to our flying field. These are big dollar figures and are not part of the current financial year budget which is why the motion must be put before our members. The committee has reviewed and is recommending that we proceed with the following ground works:

- Upgrading the eastern carpark surface, by grading, levelling, and laying a hard base material to suit.
- Upgrading the western carpark surface, by grading, levelling, and laying a hard base material to suit. As we know, this area is prone to flooding and becomes unusable for long periods due to the soft surfaces. Of course, this will not prevent flooding will help mitigate our closures of that area.
- Installation of a pit pump on the western carpark side to assist in drainage during periods of heavy rainfall.
- Upgrading of driveway into club (from the front gate) by grading, profiling, and laying additional hard base material.
- Installation of new pilot barriers.

It's been a difficult run obtaining quotes for these works, but we enough to proceed are currently reviewing them. Our calculated costs will be in the region of \$25 000 over the following areas (figures rounded up, all inclusive of GST).

- Eastern carpark area – \$8100 (from quotes obtained)
- Western carpark area – \$5200 (from quotes obtained)
- Driveway refurbishment - \$4000 (from quotes obtained)
- Western area pit and pump installation - \$5000 (PC sum only)
- Installation of new pilot barriers - \$8000 (maximum amount, final cost dependant on materials used)

As you see, these are not small amounts of money, but the club is in a very healthy financial position. We are not a bank, we are an aeromodelling club that needs to put resources back into the club for our members benefit. Several other maintenance projects will be undertaken in the coming months (weather permitting) and these projects are contained in this year's budget, so they will not need to be voted on. This will include clubhouse repairs, deck painting and lots of other smaller jobs that have been on the "to do" list. All members will be kept informed as we prepare for the work and a large part of that work will associated with our working bees on the field.

Invites for the next general meeting will go out to members in plenty of time, so make certain that you register for the ZOOM Webinar using the for the link that Daniel will send to you. Remember, this is your club, and you get to have a say in how your money is spent.

MAAA Restructure

Many club members would have noticed some changes within the federal MAAA team recently. The current executive team is working towards some restructuring to allow greater flexibility in decision making and placing key members in state areas to reduce the workload on any one individual. A new Federal Secretary has been appointed as well as a Members Services & Development Officer to deal with marketing, strategic club growth and promotion. Other key positions within the MAAA that work closely with CASA are also being filled to spread the workload for the important tasks outlined in the MOPS.

Committee Correspondence

If you are wishing to correspond with the committee or are wanting to have anything raised at our meetings, the most successful path is to send an email to the secretary or one of the other committee members via our website. A text message to one person is a sure way to have your enquiry left behind. It's a simple process and works quite well.

That's enough from me folks, over to the rest of the team. I hope everyone is fit and well and as always if you have any questions, comments, or suggestions, please feel free to contact me anytime.

Keith Quigg | AUS 22897
P&DARCS President 2022/2023
0448 749 865

SECRETARY'S REPORT

Minutes of the P&DARCS General Meeting held on Wednesday October 5th via Zoom at 7:30pm.

Meeting to open at: 7:30pm

Chair of meeting: President, Keith Quigg

Members Present; 37

Apologies: Nil.

Visitors; Nil.

Minutes of previous Meeting: Moved by Bill Reynolds seconded by David Glossop **CARRIED**

Business Arising from Previous Minutes;
Nil.

Reports

President: As printed in Newsletter.

Secretary: Reminder of the Club's Scratch & Kit Build Scale Rally on Sunday November 6th and the working bee on Saturday 5th to get the field ready for the Rally.

There will a boot sale space available. Any member wishing to set up a "boot sale" please contact the Secretary so that space can be allocated. Also, some modelling vendors have been invited to attend so bring money.

We need members to volunteer to assist in running the Rally.

Don Klien queried if food would be available at the Rally. Ivan noted that his request for assistance for the day resulted in zero, however Peter Harris advised that he will provide limited food but needed assistance.

Treasurer:

Barry law moved that the Treasurer's report be accepted. Seconded Daniel Jenkins **CARRIED**

Registrar: As printed in Newsletter. We have had one new members application this month.

Field Manager:

Craig reported that the western car park is open but to be careful if we have a lot more rain.

Facilities Manager:

Norm reported he was getting ready for the working bee on October 22. He encouraged members to attend to get the work done.

There was a query re the levee banks. Norm reported that he and Peter Harris had had a meeting with Melbourne Water and they were working with them to improve the flow in the water courses.

Safety Officer:

Glen reported that all going well. He reminded members to check out their aircraft before flying due to the long time since we had good weather.

Editor;

Frank McPherson asked for articles and pictures for the Newsletter.

Webmaster:

Daniel Jenkins thanked the club for his award for his work for the club. Don Klein also thanked Daniel for his work.

Daniel reported that he was working on a membership renewal system for the club and will give a brief demonstration at the next meeting.

Social Secretary.

Absent.

Club Captain:

Nil to report.

Chief Flying Instructor;

Nil to report.

Future Planning Sub Committee;

Nil to report.

General Business

1. Works.

Peter Harris advised the members that there will be notices identifying projects and funding requirements sent to the membership shortly in preparation for works to be done.

2. Deferment of Installing Watering System & removal of Metal Pilot Barrier

Below is an extract from the minutes of the April 8th 2022 General meeting which requires attention at this meeting;

- Andrew Smallridge noted that the club members had voted to remove the pilot barrier and install the watering system and if we want change that then the members should have the option to vote for deferment or not.
- The motion “the Sub-committee proceed with the investigation to improving the runways and due to the possibility of the works interfering the planned move of the pilot barrier and installing the new irrigation system be put on hold until October” was moved by David Law and seconded by Rob Barbuto. **CARRIED**

Keith reported that the Sub Committee had not made much progress due to difficulties in getting consultants to give advice and quote

Peter Harris noted that if the installation of the sprinkler system is further delayed then the ground will be too hard to do the necessary works for this summer.

Ivan Chiselett supported Peter’s comments and noted that the ground becomes extremely hard in the summer and if we did not install the system very soon we would go through the summer with no watering of the strips which will lead to excessive cracking in the runways. He also noted that the watering system design is that it runs down the edge of the runways and would not interfere with any proposed future works.

Craig noted that he would like to see the system installed now to reduce the cracking as he did not want to see a repeat of last year with bad cracking in the runways..

Norm informed the members that the proposed watering system is installed on one side of the runways and would only water half the width.

Ivan noted that the design incorporated sprinklers that sprayed 20M width, (the runways are 30M wide), with a little drift the majority of the runway would be watered. He noted that as the vast majority of take offs and landings occurred close to the pilot, which is on the side where the sprinklers are located. He also noted that the club’s water storage was only 500,000 litres which is not enough to water the entire runways. We have to be selective.

Keith proposed the motion; “Due to ongoing investigations to runway improvements, it is recommended the sprinkler upgrade program remain on hold for a further 6 months.”

CARRIED

Keith noted that the steel pilot barrier would be removed shortly and new barriers constructed. He noted that he had a couple of designs for the new barriers.

3. Location of Pilots and Safety Barrier.

It was noted that the main runway plot barrier was some distance to where the Large Scale Aero and Pattern aircraft pilots stood and some found this disconcerting and a safety concern as there was little contact/communication between the two groups.

4. Maintenance Items – Discussion on Priority etc.

Peter Harris noted that there had been an extensive committee meeting which identified many maintenance tasks to be done. Several of these items budgets had already been approved but some required approval for funds. Therefore required the members approval. This would be sort at the next general meeting.

5. Septic System

Barry Law queried if the excess water on the western runway compromised the septic system.

Norm noted that it did not but plans were in hand to get the system & kitchen grease trap pumped out when access can be obtained.

Meeting closed at.8:20pm

Ivan Chiselett Secretary

October 19th 2022, Committee Meeting Summary

The Club's committee met on Wednesday night October 19th via Zoom.

Some of the items considered are noted below;

- No new member applications received this month.
- One new Probationary Members voted into the club.
- Planning Committee gathering information.
- Draft Club flying rules were reviewed by the committee and will now be sent to a General meeting for consideration and approval of the members.
- Committee investigating repair of car parks and driveway.
- Committee investigating possible better access to adjacent paddocks. Waiting for quotes for the work.
- Continuing to work with Melbourne Water trying to improved drainage of area.
- Scratch Built Scale Rally and the Melbourne Cup Glider Tow days both cancelled due to the flooding of the field.
- The committee agreed to work with the Vic Scale Flying Aircraft Association for the running of the 2023 Monty Tyrrell Scale Rally as a 2 day event.
- Quotes are being obtained for fencing to enable farmer better access to the high ground for the cattle.
- Awaiting further quotes for repair of driveway.
- Design of new pilot barriers agreed to and works to commence once field has dried out enough.
- Starting preparations on Club Christmas party.

Ivan Chiselett Secretary

REGISTRAR'S REPORT NOVEMBER 2022

New Member Applications

No new membership applications this month.

Membership statistics – No change from last month

	Paid 22-23	Unpaid	Last Year
Associate	18	1	17
Full	109	2	108
Honorary	0	0	0
Junior	4	0	6
Life	3	0	3
Non-flying Pensioner	1	0	-
Pensioner	14	1	16
Probationary	8	12	26
Prospective	0	0	3
Student	2	0	0
Spouse	1	0	1
TOTAL	160	25	180

Kind Regards,

Steve Malcman Registrar

registrar@pdarcs.com.au

Mobile 0410 464 186

WEBMASTER'S REPORT

As you would have heard mention at previous club meetings, I've been working on a new online system for membership renewal. I thought I'd give you an overview of that this entails.

Background

Under the existing system, we have a large amount of time consuming processes to get membership renewals out to members and then then process them upon payment.

The Registrar Prints 150+ renewals for each member, two sided (so 300+ passes through printers), printers 150+ labels for each renewal for envelopes and return labels, folds each renewal, then places renewal with matching label into envelopes, purchase stamps (currently \$1.10 each) for 150+ renewals & mail renewals to members.

Once a member pays, the renewal form is meant to also be sent back to the club to complete the processing. What happens in reality is once the payment is made & picked up by the Treasurer, he then tries to match the payment to the member & also match / guess what their paying for (some have extra badges, some pay MAAA fees through other clubs etc).

Once this is done it is sent to the Registrar & myself who will then update our records and send out a new membership card. In the meantime the Treasurer will finally receive a renewal form, which may have updated information, so again and update is sent to the Registrar & myself to update membership records.

I write the above to highlight the problem we're trying to address by moving to a new online system. There is a large amount of time consuming work and double handling of data, which can lead to errors. Our Treasurer & Registrar are very good & therefore errors are minimal, but we can improve things.

The new online solution

The new approach will be to do all renewals processing electronically. At renewals time, each member will get an individualised renewal email with their specific fees attached. This will also include a unique payment confirmation link for each member.

Upon receipt of the email, the member will make their payment via the same means as they have in the past (EFT, PayPal etc) then they will click the payment confirmation link and complete some details to advise us of their payment and any update to their contact details.

This data will then feed into a backend tool to allow the Treasurer, Registrar & myself to do the processing required all working off the same data.

The new tool has been designed to automatically generate & email payment receipts from the Treasurer to the member and then email confirmation to the member once the Registrar has completed processing the renewal & has posted the badge. This should increase accuracy, reduce turnaround time and eliminate double handling and improve feedback to the member through automatic email notifications throughout the renewal cycle. It will also save money as we will not need to print and mail 150+ renewal forms.

We recognise of course, not every member will wish to use electronic renewals, so prior to beginning next years renewal cycle, we will give members to option to opt out of electronic renewals process

Where to from here

At the next club meeting on the 9th, I will give a brief demonstration of the new process the members can expect to see next year, so that you can see what renewals will look like for you.

In the near future, I will also be asking for some guinea pigs to test this new system by going through a mock renewal cycle to we can test everything works the way I intended prior to going live at next renewal cycle.

DANIEL JENKINS Webmaster

FIELD MANAGER'S REPORT

Hello All. I visited the field today for a site report. There is a lot of water everywhere, draining quite slowly.

The runways are all underwater, pits are even worse. More than a foot deep in areas. All the buildings survived quite well, 300mm the flood water level was noticed along the toilet walls.

A thorough clean up will be needed on toilet blocks and sheds. Our carpark power pole on the western carpark has ended up near the main runway on the east side.

No other damage I can see. With the field as is, I can't see it opening up for another 2 weeks at least.

Hopefully we don't get any more floods. Even the Eastern carpark is under flood on the grass areas. Also the field rain gauge only showed 35mm from Thursday morning 13th

There's quite a lot of work ahead to get it up to standard again.



Pits and transmitter pond looking East



From the main Strip looking North at our Clubhouse



Looking North along the East Strip, one of our Western car park power poles floated up against the grass barrier.
It is extending onto the Main strip



Eastern carpark Looking North

Craig Fitzsimons Field Manager

From Our Flying Field

2017 Scale Rally Photos





THE OCTANE RATING OF PETROL

You have seen at the petrol pump or bowser,

- * Unleaded 91
- * Unleaded 95
- * Unleaded 98



A typical petrol bowser, and the advertised Octane ratings for each fuel

Have you ever wondered what the Octane rating of gasoline means, and where and how it was derived ? well, read on

A bit of History

During the 1920s the growing role of aviation relied on the increasing power of aircraft engines, which in turn, relied on the development of better grades Aviation fuel, this allowed major improvements in horsepower, fuel economy, and lightness of weight.

For comparison, the Liberty engine of **World War I** had 1,650 cubic inches in cylinder displacement

Using the gasoline of the day, it developed 400 horsepower.



Liberty engine of WW1

The Rolls-Royce Merlin engine of World War II, had the same displacement as the WW1 liberty, but produced more than 2,200 horsepower, using vastly better grades of fuel



Merlin engine of WW2

In the 1930s, Samuel Heron, a longtime leader in this field, stated that **"about half the gain in engine power was due to improvements in the fuel "**

High compression and " Knock "

The focus of fuel development was the struggle to boost engine compression ratio, piston motors produced more power and gained better fuel economy by achieving high compression ratio.

But the compression values were limited by a motor's ability to resist knock. Knock is a detonation of the fuel-air mix that occurs prior to the correct ignition timing,

(often called pre – ignition) one early researcher described it as "the noise that could be heard across a ten-acre lot."

The pre- ignition also caused great stress damage to the engine

During World War I, all that anyone knew about the subject, was that kerosene made motors knock badly while gasoline often did not.

The gasoline of the day was distilled directly from crude oil, and, by modern standards, had octane numbers as low as 50.

But, at this stage, the octane rating lay well in the future, and a principal measure of fuel quality was its volatility, or ease of evaporation.

Volatile fuels had a reputation for reducing knock, to a larger extent

Sir Harry Ricardo a British researcher, later recalled that "**the discriminating motorist never bought a drop of gasoline without first dipping his finger in the can and blowing on it to test its volatility.**"



Testing Petrol for volatility (and quality) in the 1920s

EARLY FUEL KNOCK CONTROL ADDITIVES

Tetraethyl Lead

Concern for the need to reduce “ knock “ led to the main advance in this area: the knock-suppressing qualities of tetraethyl lead.

Two research chemists, Thomas Midgely and T. A. Boyd, began by noticing that substances similar to **aniline** proved effective but produced a smelly exhaust.

Tellurium was even better but was also smellier, stinking like "a mixture of garlic and onions:"

Midgely and Boyd then proceeded systematically testing additives by using the chemical periodic table, and by 1921 they learned of the usefulness of **tetraethyl lead**.

It had a rich, bitter odor, and used as a fuel additive, it gave resistance to knock when mixed with gasoline in quantities as small as a few cubic centimeters per gallon.

Tetraethyl lead, was used as a fuel additive up until recent times, it was removed from all fuels, due to the health issue with the lead content

Thus leading to the Unleaded Fuels

Californian Crude

Around the same time, people had been aware that fuel distilled from California crude had particularly good antiknock properties.

Modern investigation showed that they had octane ratings as high as 73.

Further research showed that modest improvements in fuel volatility could give dramatically disproportionate improvements in resistance to knock and allowed compression ratios to be increased.

In 1932 a Wasp radial aero engine was under test at an American Army laboratory, putting out 720 horsepower when using fuel from Californian Crude.

The engine nevertheless continued to knock at full throttle, and the investigators responded with a California grade that contained far more tetraethyl Lead than usual. This fuel permitted 900 horsepower, from the same engine

This particular blend was useless for operational aircraft squadrons, for much smaller amounts of tetraethyl were damaging engine exhaust valves.

Still, these results spurred new interest in research into further fuel improvement

Iso-Octane

Researchers now tested a volatile chemical, called Iso-Octane, as an aviation engine fuel

This chemical was only available from the American Rohm & Haas Corporation, which prepared it as a synthetic organic chemical by using an elaborate process, and in small quantities as a specialist chemical, making it especially expensive

It was out of the question to use iso-octane itself, for it cost up to £25 per gallon at a time when the wholesale price of normal fuel was measured in pennies.

The major advantage of Iso-Octane as an aviation fuel, is that it resists compression ignition, or Pre- ignition, “ knock “ to a far greater extend to any other fuel

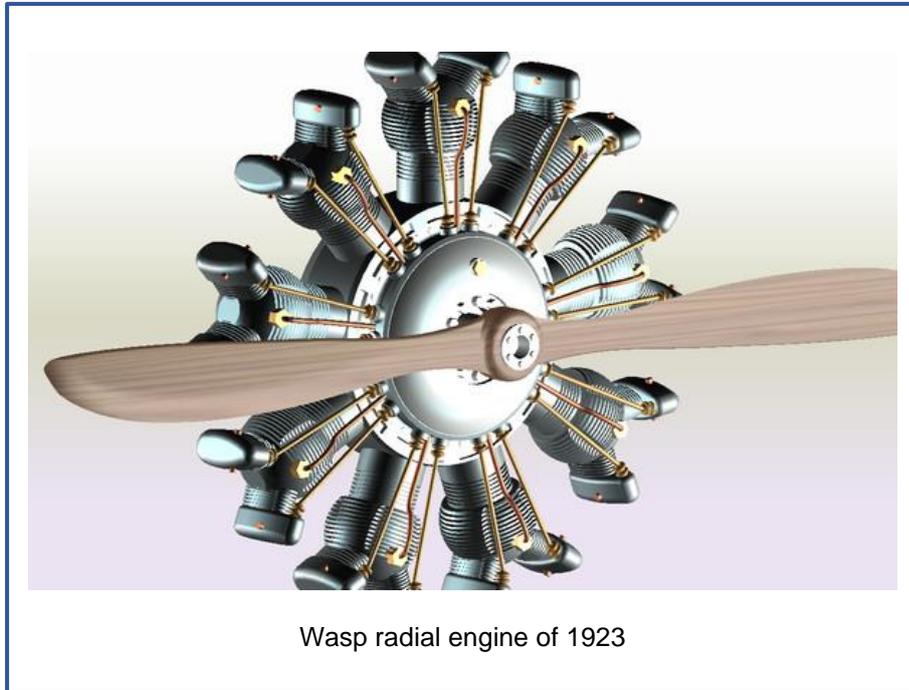
So the compression ratio of the engines could be increase substantially, with the benefits of increased power, and better fuel economy

Shell Oil succeeded in providing a thousand gallons of this fuel, in a less pure grade, and the results were outstanding.

Research tests showed that using **Iso - octane** boosted the power of a **Wasp or Cyclone aero engine by up to thirty percent.**

Shell and Standard Oil went on to build plants to produce iso-octane in quantity, at affordable prices.

In 1936 the U.S Army's chief of staff ordered that Iso - octane fuel was to serve as the standard aviation fuel for all its warplanes.



Wasp radial engine of 1923

The Octane Scale or Rating

Chemist Graham Edgar, and American researcher, working for the firm of Ethyl Gasoline, defined the octane scale in 1927.

He found that iso-octane, which has a molecule with eight carbon atoms, gave far better knock protection than any available fuel.

Edgar declared that if a fuel prevented knock as well as iso-octane, it would be rated at 100 octane, (100% effective as Iso-Octane)

The Modern, automotive fuel ratings correspond to Iso- Octane as follows:

- * 91 unleaded fuel is 91% as effective at Iso-Octane
- * 95 unleaded fuel is 95% as effective as Iso- Octane
- * 98 unleaded fuel is 98% as effective as Iso-Octane

How modern fuels achieve this result involves complex chemistry

So, now you know more than the other guy !

P&DARCS CALENDAR FOR 2022

November

[Cancelled] 01 (Tue) [Melbourne Cup Aero Tow](#)

[Cancelled] 05 (Sat) 2:00 pm - 4:00 pm [Mini Working Bee for Rally](#)

[Cancelled] 06 (Sun) [P&DARCS Scratch / Kit Built Scale Rally](#)

09 (Wed) 7:30 pm - 9:30 pm [Club Meeting](#)

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

December

04 (Sun) [VPA Pattern](#) Field Open: **Partial**

07 (Wed) 7:30 pm - 9:30 pm [Club Meeting](#)

10 (Sat) 1:00 pm - 4:00 pm [Christmas BBQ](#)



www.holkrc.com.au
Laser cut kits and modeling accessories



Dragon R.C
Dragonrc.com.au

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For your balsa supplies

**Next Club Meeting, Wednesday 9th November
7-30 pm, via Zoom**