



Propwash

June 2020

From the past President



As the wintery sun sets on another flying year it is time to reflect on what has happened over the past 12 months, and look at what might be ahead of us into the 20/21 flying year.



The Annual General meeting was conducted on 21st June and the following members were elected to serve on the committee for the 2020/21 flying year the results are:

President:	Bill Darnell
Vic President	Ian Clapp
Secretary:	Dennis Milligan
Treasurer:	Trevor Wilson
Canteen Manager:	Vacant
Propwash editor:	Ron Waller
Maintenance coordinator:	Steve Green
Safety Officers:	John Frings Ian Clapp

I would like to wish the elected committee members all the best for the coming year and hope that they can continue to work together on improving the facilities and flying experience of current and new members at SWARMS.

The first round of the IMAC competition, the Capel Classic, was cancelled due to the virus restrictions, this was not the only impact on the club with the field gates being closed from any flying activities for a period of 4 weeks.

We are currently flying with some restriction still in place and I would say these could be around for some time to come, the bonus being that none of our members were effected by the virus during the shutdown hopefully this will remain the same well into the future.

The wild weather condition we experienced recently had caused some runway matting damage, pictures enclosed, but the damage had been rectified with the surfaces being restored back to normal within the hour.

Concern was raised at the recent general meeting in relation to funding for the runway upgrade, three grant applications have been submitted and the MAAA application has been unsuccessful, we await the outcome on the other two as the successful approval of these funds will determine if we are able to proceed with the upgrade.

The position of Canteen Manager remains vacant after the AGM, I would encourage members to consider filling this position to ensure the smooth running of the canteen for the new year, if you would like some information as to what this entails have a talk to Troy.

The trouble with retirement is that you never get a day off !

Good to see that some members took advantage of the isolation period to get some building done in the shed, some results are still to be tested but here are a couple of nice models that have already had successful maiden flights.

This Corsair fitted with a 46 nitro motor being constructed by Bill Darnell is nearing completion, had a few problems with the retracts but all sorted now.



On the start line ready for a motor run up and then maiden flight. Very successful maiden flies on rails.



Smart move putting the arrow in direction of flight.



Meet your new President, **Bill Darnell**, pictured on the left, Bill joined the club in April 2017 as a new member to the sport, he went through the standard flight introductory training program as a verrrrrry average trainee with yours truly as his instructor.

All went well and he progressively picked up the skills as the weeks went by, figure of eights, procedural turns, landing circuits and the list goes on until it was time to master the art of landing.

Bill thought that the word flair related to a pair of pants he used to wear as we had several heavy landing which resulted in the firewall being replaces on the trainer no less that three occasions then it was only propellers that he broke so there was an element on improvement starting to show.

Once he went solo he progressed to obtain his silver wings and now the skies the limit for him he has several planes in his hanger to choose from on flying days, both nitro and electric.

Flying is hours and hours of boredom sprinkled with a few seconds of sheer terror.

Once I pulled a job, I was so stupid. I picked a guy's pocket on an airplane and made a run for it.

It was a good feeling to finally get the motor sorted out on this Cessna flies very well now.



It has been good to be able to get out and get back into a bit of flying over the past couple of weekends, we have had some really good weather since the field was reopened which a few members have taken advantage of, however, we do still have restrictions in place and Social Distancing is one of the key things we will need to comply with for some to come.

Here to prove that we are complying with this requirement some members observed relaxing between flights and ensuring they do not breach the distance rule on Sunday 17th May.



Some key tips for returning to work during the lifting of restrictions for the Corona Virus.

*A sweet grandmother telephoned St. Joseph's Hospital. She timidly asked, "Is it possible to speak to someone who can tell me how a patient is doing?" The operator said, "I'll be glad to help, dear. What's the name and room number of the patient?" The grandmother in her weak, tremulous voice said, "Norma Findlay, Room 302". The operator replied, "Let me put you on hold while I check with the nurse's station for that room". After a few minutes, the operator returned to the phone and said, "I have good news. Her nurse just told me that Norma is doing well. Her blood pressure is fine; her blood work just came back normal and her physician, Dr. Cohen, has scheduled her to be discharged tomorrow". The grandmother said, "Thank you. That's wonderful. I was so worried. God bless you for the good news". The operator replied, "You're more than welcome. Is Norma your daughter?" The grandmother said, "No...I'm Norma Findlay in Room 302! No one tells me sh*t".*

Found an old photo in my collection of what we used to have. Who can remember the pits being like this with matting on the floor and old wooden benches.



If toast always lands butter-side down, and cats always land on their feet, what happens if you strap toast on the back of a cat and drop it?

My psychiatrist told me I was crazy and I said I want a second opinion. He said okay, you're ugly too.

WE'RE ALLOWED BACK TO WORK!

BUT! You've got to remember to:

AVOID MEN 

M - mouth
E - eyes
N - nose

INSTEAD, FOLLOW WOMEN

W - wash your hands
O - obey social distancing
M - mask up
E - exercise and eat well
N - no unnecessary traveling



SIMPLE TIPS TO KEEP YOU SAFE

- 1- Treat every propeller as if it may turn at any moment.
- 2- Treat every propeller as if it will fail structurally at any moment. Keep all body parts clear of the propeller arc at all times.
- 3- Remove the propeller from the motor whenever you are doing ESC/motor setup, testing and programming.
- 4- Properly secure your electric aircraft before you attach any power source; remember, it may start at any moment.
- 5- Be sure to properly secure your model with a tie-down or have a helper hold it before you start its engine or motor.
- 6- Between hand-props, give glow and gas airplanes a firm tug to ensure that the tie-down is holding them securely. One of my friends lost a few fingers when his model jumped forwards after starting with a loose tie-down rope.
- 7- When tuning your engine, you must stay clear of the propeller arc. Preferably, tune the needles with the engine shut down.
- 8- If its available on your transmitter, use a throttle lock or a throttle kill function to avoid an unplanned application of throttle until you're ready to fly. I use this function religiously but I never trust that it is activated! Check!
- 9- Always tell spectators not to touch or move your models propeller.
- 10- Never, ever reuse a damaged propeller. The cost of an injury far outweighs the cost of a new propeller, even if it takes a quick drive to the hobby shop.
- 11- Keep a first aid kit in your work shop and in your car.

I experienced my first incident with a propeller failure in 28 years and it had the potential to cause serious injury, lucky for me at the time I was complying with section 2 of the tips above and working behind the prop.

The 15/8 three blade propeller fitted to a 150 Satio 4 stroke motor which had been in this plane for around 16 years and done very little work but the plane had not flown for the past 15 years, it has been in storage on the shelf in the shed.

After starting the motor on Sunday 10th May I commenced going through the normal tuning I increased the revs to do the high mixture adjustments when there was a loud bang and the motor stopped. When I looked at the front of the plane the propeller was missing.

At first I thought that the motor had back fired and spun the prop off but on further investigation around the start up area it became very obvious that there was now three sections of propeller spread over an area of some 30 metres with the prop nut and washer about 20 metres directly in front of the plane.

Plane and propeller prior to the incident.



Propeller pieces back together, no not to fly again.



Shattered hub of the propeller after the incident.



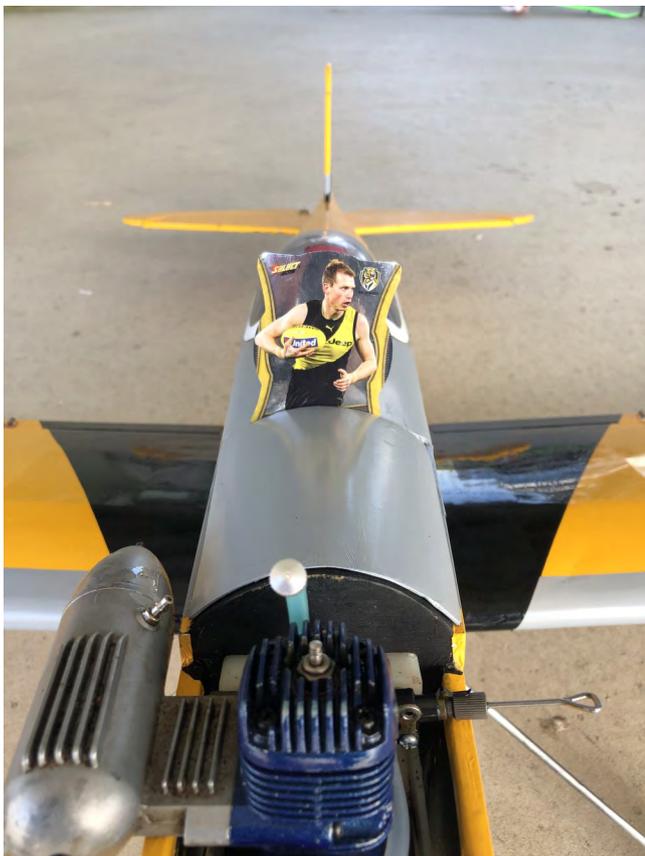
On Sunday 17th May I had fitted a brand new 15/8 three blade prop and proceeded to go through the start up procedure only to have the same thing happen again. Another incident where one of the propeller blades flew off section and disintegrated around the start up line, again, very lucky there were no injuries as this time there were several more members around the start up line than on the previous occasion.

I have never used three blade props previously not sure if I have an allergy to them but I am going to try a two blade prop and see what the outcome is this time around. When I fitted the two blade prop and went through the same startup procedure this prop was spun off across the field.

Stripped the motor down again and checked the timing and all appears to be to the required specifications so not sure of what the next step is, yes I do, fit a 20cc DLE engine to the plane.

Don't be disillusioned here, **Yes**, it is Dennis Milligan's newly built plane, **Yes**, it is black and yellow, **Yes**, there is a Richmond football player card in the cockpit, and, **No**, he has not been converted from the Eagles to the Tigers.

With the football season recommencing I think Troy was trying hard to make a point here, not sure if he succeeded.



I was also busy in the shed and in between fixing Troy's plane twice I completed this PC 9 it has also had its maiden flight and performed very well. It is fitted with an OS 46 with electric retracts.



I never called you stupid, but when I asked you to spell the word "Orange" and you asked me the fruit or the colour it kinda caught me off guard.

If you think you are too small to make a difference, try sleeping with a mosquito.

Expecting the world to treat you fairly because you are a good person is a little like expecting the bull not to attack you because you are a vegetarian.

When I die, I want to die like my grandfather who died peacefully in his sleep. Not screaming like all the passengers in his car.

The very First example of radio control was demonstrated in New York City in 1898. Its inventor—Nikola Tesla—was a 43-year-old immigrant who was duly awarded U.S. Patent no. 613,809 on November 8, 1898. It was only one of 113 U.S. patents that this prolific genius received during his lifetime. Many electrical engineers and historians regard his basic inventions as the foundation of the 20th century as we know it. In the decades that followed, the military and its suppliers attempted to implement Tesla's work in various R/C projects—including boats and aircraft—without very much fanfare.

By the middle of the 1930s, miniature airplanes were just beginning to be powered by very small gasoline engines. An R/C contest event was even scheduled for the 1936 model aircraft Nationals in Detroit. It was a little premature; not one entrant showed up! The following year however, must be regarded as the true beginning of R/C.

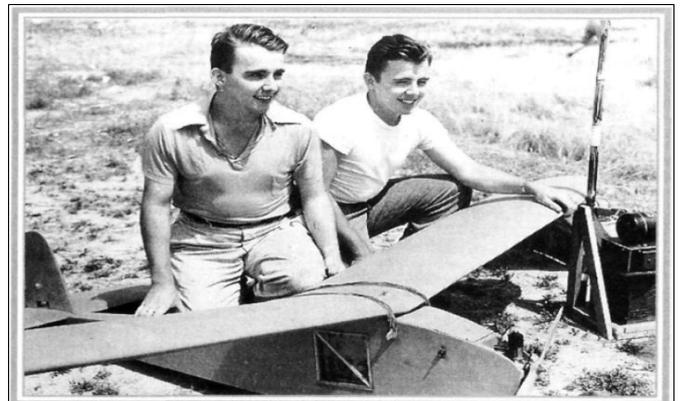
R/C PIONEERS

Several men who were active in amateur radio became interested in the possibility of controlling model planes by radio. Two of these early pioneers were Ross Hull and Clinton DeSoto. Both were officials of the American Radio Relay League (ARRL), which is the governing body of ham radio operators. Hull was a very gifted radio designer whose achievements include the discovery and eventual explanation of the tropospheric bending of VHF radio waves. Since his youth in Australia, Hull also happened to be an avid modeler. Hull and his associate DeSoto successfully built and flew several large R/C gliders in the first public demonstration of controlled flights. Their sailplanes made more than 100 flights. (See the January and August '38 issues of Model Airplane News). Tragically, Hull died one year later in 1939 when he accidentally contacted 6,000 volts while he was working on an early television receiver. DeSoto died a decade later.

COMPETITIVE FLIGHT

The 1937 Nationals R/C event attracted six entrants: Walter Good, Elmer Wasman, Chester Lanzo, Leo Weiss, Patrick Sweeney and B. Shiffman. Lanzo won with the lightest (6 pounds) and the simplest model plane, although his flight was a bit erratic and lasted only several minutes. Sweeney and Wasman both had extremely short (5-second) flights when their aircraft took off, climbed steeply, stalled and crashed.

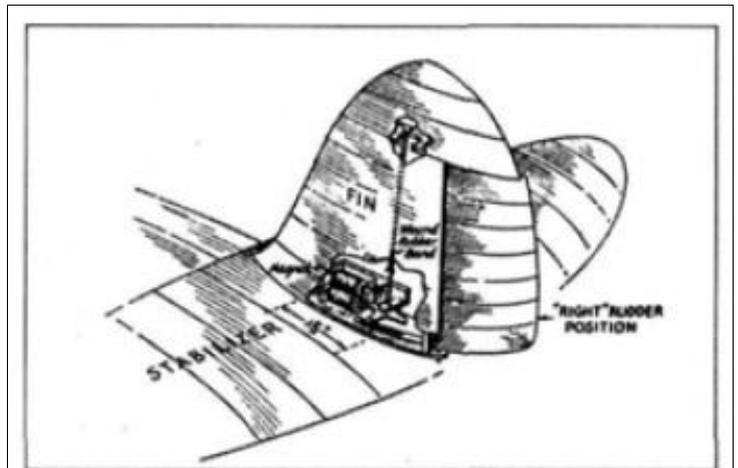
Sweeney, however, had the distinction of being the first person to attempt an R/C flight in a national contest. The other three entrants weren't able to make any flights at all.



Walt and Bill Good and their R/C model—the Guff (circa 1939).

BIRTH OF THE REED

One of them—Weiss—was an 18-year-old aeronautical engineering student who had constructed a very large, 14-foot-wingspan RC model. He and an electrical engineering student—Jon Lopus—had devised a very sophisticated, innovative RC system consisting of six tuned reeds that reacted to audio tones. The reed-control system became widely accepted in the 1950s. During the 1937 Nationals, however, Weiss wasn't able to start his plane's Ferguson twin-cylinder engine. He went on to successfully operate an avionics manufacturing company.



This is the rudder actuating control in the Good brother's model.

The surest sign that intelligent life exists elsewhere in the universe is that it has never tried to contact us.



Troy had an incident Oop's, Troy's scanner had an incident during a recent test flight that I was in control of, the take off was normal, however, that did not last for very long once in the sky. There was very little response to any radio input and the plane was very content to do it's own thing but it would have looked quiet impressive if you were standing in the pits.

It went into steep climbs, rolls and loops and a lot of other 3D manoeuvres that had never previously been tied with a Scanner until gravity took over and it finally made contact with the ground in the paddock adjacent to the access road.

When we arrived at the scene it was not a pretty sight but all pieces were retrieved and returned to the pits for an accident investigation which identified a faulty flight battery as the cause. It was fully charged just prior to the flight but dropped the charge very rapidly when in flight and was found to be flat on investigation.

Troy said put it all in the



I said put it all in my



The extent of the damage became very obvious when I took it home and removed the covering



Being still in the lock down isolation period it was an ideal way for me to consume some of my spare time in the shed on a rebuild.

After a few lengthy session in the shed it came out the other side ready for another session in the sky. It has been test flown and went well. But has since crashed again twice.



The United States Air Force C-17 Globemaster III Military Transport with the 14th Airlift Squadron located at Charleston Air Force Base in South Carolina flies away after releasing flares over the Atlantic Ocean.

Smoke from the flare salvo reveals a crisp, dramatic, startling, and beautiful visual of the turbulent air - including two vortices each with an "eye" - created by the plane as it flies through the air.

Before you judge a man, walk a mile in his shoes. After that who cares?... He's a mile away and you've got his shoes!

I was privileged enough to have spent some time recently with Rob Woodhead in his workshop to share the progress on the build of his large B 29 bomber, I have enclosed some photos of the build to date with the tail plane and fin being complete ready for final sand and paint and the fuselage foam structure has been cut to size.

Rather than me explain the project here are the details straight from the horses, Oop's, Woodies mouth.

I decided to build her after a lot of thought, my health is not too good & finance wise it would be a bit of a strain. With this virus around, I thought if I'm going, I will do so with a bang, also if it takes 2 years to build, I will be able to handle the finance. Marj is quite happy as I told her I've booked another 2 years on mother earth.

Anyway, the good bits, she is about a 1/8th scale (the last one was 1/10th scale). The real one had a wing span of about 140ft which makes mine 17ft 6, 5.2 meters, length 12ft, 3.6 meters, fuse diameter is about 400mm, wing chord, about 600mm at the fuse. She will be powered by 4 --85cc DL 2 stroke engines.(my last one was powered by 4---20cc DL,s.)

The last B29 I built was a Laser Cut Kit with a built up construction, to do this again I would have to get it specially cut which would take a long time & be very expensive. Having had some experience, decided to build in foam. This isn't your basic foamy, it will be balsa skinned & the whole covered with a light fiber glass cloth.

A lot of strengthening spars will be used & lots of glass in the key areas. Anyway, my biggest problem is not to get ahead of my budget, with just a little bit of luck, she will be gracing the sky over SWARMS late next year, happy landings, Woody.

This is the nosecone of the plane



The foam has been cut in sections braced and joined with wooden slats that have been set into the foam.



When the sections are joined together the length of the fuselage is 13.6 metres long. Looking along the fuselage towards the tail of the model



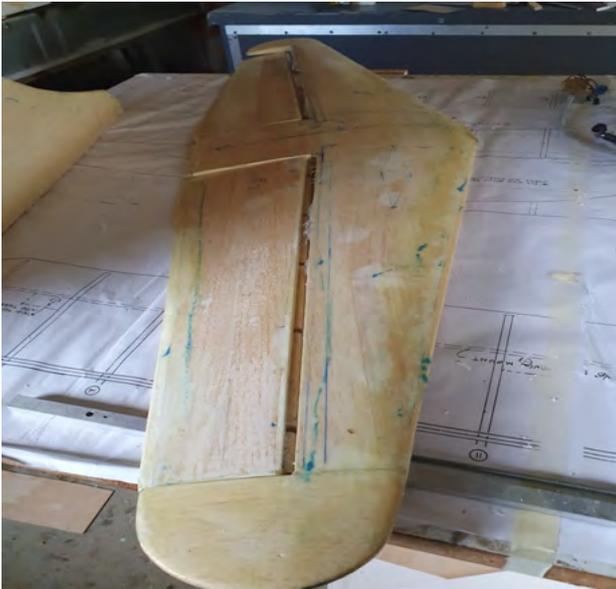
Looking along the fuselage, forward from the tail section.



Looking along the fuselage from the nose cone, with the builder sitting in the background it gives you some perception of the size.



The tailplane and fin have been balsa covered and glassed ready for final prep and painting.



The builder, Rob, caught here when he was a few years younger, not sure what he is up to but it looks like he is up to no good.



My Cessna now fitted with a DLE 20cc engine finally gracing the skies over SWARMS, thanks for the photo Ed.



Little Johnny was being shown the shape of the earth on a globe atlas by his mother. After pointing to all countries with unusual shapes, she asked: "Now Johnny, what shape is the world?"

Johnny, looking very wise and happy, said: "Daddy says it's in terrible shape".

The wild weather that battered the South West recently did not miss causing some damage to the SWARMS field runways on it's way through.

The pictures show the extent of the damage caused once things settled down again. Both runways had the matting blown back over onto it's self but there was no serious damage to any other sections of the field.

Having defined a procedure, from previous incidents, to rectify this it was all back in place and pinned within the hour.

Thank you to Dennis and Trevor for their assistance.

East / West runway damage



North / South runway damage



One friend said: "I'm betting on a horse that is 20 to 1 and I can't lose."
"What do you mean 'you can't lose'?" the other friend asked.
"I can't lose, the horse is starting at 20 to 1 and the race doesn't start till one."

The view from the pit area prior to rectifying the problem, not a pretty sight.



Two campers are walking through the woods when a huge brown bear suddenly appears in the clearing in front of them. The bear sees the campers and begins to head towards them.

The first man drops his backpack, digs out a pair of joggers, and frantically begins to put them on.

The second man says: "What are you doing? Joggers won't help you outrun that bear."

"I don't need to outrun the bear," the first man says. "I just need to outrun you."

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Two Irish guys are making letter bombs.
 Pat say's "Do you think I have put enough explosives in this envelope?"
 "dunno" says Mick "open it and see"
 "But it will explode" says Pat
 Mick says "Don't be effing stupid.....it's not addressed to you"

As you get older three things happen. The first is your memory goes, and I can't remember the other two.

Probably a few things here we do not need to know particularly if we are frequent flyers !

Never let it be said that ground crews lack a sense of humour. Here are some actual maintenance complaints submitted by Qantas' Pilots and the solutions recorded by maintenance engineers.

Pilots: Left inside main tire almost needs replacement.

Engineers: Almost replaced left inside main tire.

Pilots: Test flight OK, except auto-land very rough.

Engineers: Auto-land not installed on this aircraft.

Pilots: Dead bugs on windshield.

Engineers: Live bugs on back-order.

Pilots: Something loose in cockpit.

Engineers: Something tightened in cockpit.

Pilots: Autopilot in altitude-hold mode produces a 200 feet per minute descent.

Engineers: Cannot reproduce problem on ground.

Pilots: Evidence of leak on right main landing gear.

Engineers: Evidence removed.

Pilots: Friction locks cause throttle levers to stick.

Engineers: That's what they're for.

Pilots: Suspected crack in windshield.

Engineers: Suspect you're right.

Pilots: Number 3 engine missing.

Engineers: Engine found on right wing after brief search.

Pilots: Aircraft handles funny.

Engineers: Aircraft warned to straighten up, fly right, and be serious.

Pilots: Target radar hums

Engineers: Reprogrammed target radar with lyrics.

Pilots: Mouse in cockpit.

Engineers: Cat installed.

Pilot: Noise coming from under instrument panel. Sounds like a midget pounding on something with a hammer.

Engineers: Took hammer away from midget

This pride of lions have the right idea on a hot day.



An Irishman is sitting at the end of a bar. He sees a lamp at the end of the table. He walks down to it and rubs it. Out pops a genie.

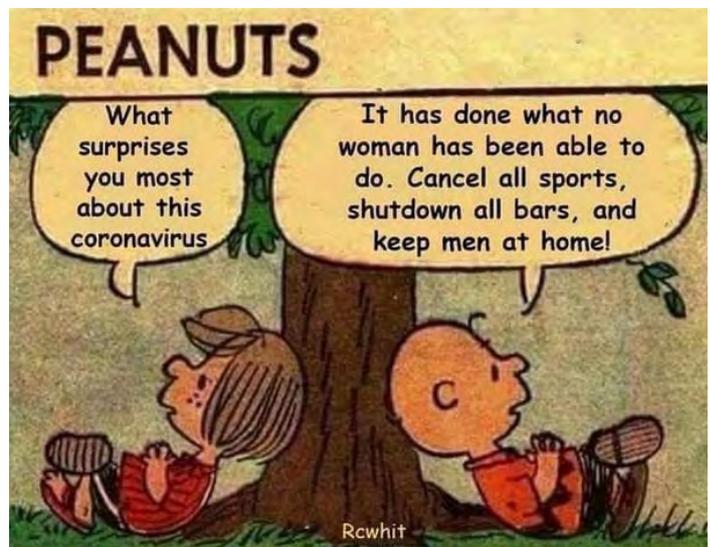
It says, "I will give you three wishes."

The man thinks awhile. Finally he says, "I want a beer that never is empty."

With that, the genie makes a poof sound and on the bar is a bottle of beer. The Irishman starts drinking it and right before it is gone, it starts to refill.

The genie asks about his next two wishes.

The man says, "I want two more of these."



Any man who can drive safely while kissing a pretty girl is simply not giving the kiss the attention it deserves.

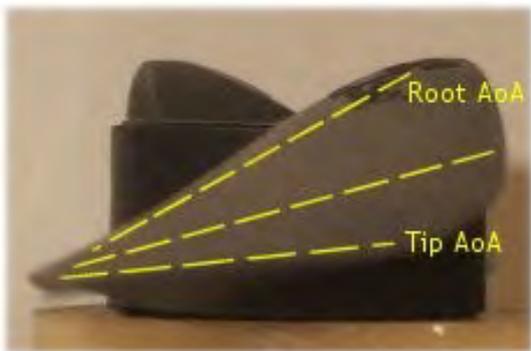
Albert Einstein



Understanding RC plane propellers

You'd be forgiven for just thinking of your rc plane's prop as the thing at the front of the plane that spins round very fast, but understanding a bit about how propellers actually work is no bad thing.

Propellers for rc airplanes are nothing more than vertically mounted rotating wings. The prop's job is to convert the engine power in to **thrust**, to pull/push the plane through the air. Thrust is generated in exactly the same way as lift is generated by the wing, and that's why props have a profile airfoil section.



The 'twist' in the propeller is there to create the essential **Angle of Attack** of each blade, just like a wing has an AoA. The twist is greater towards the hub of the prop because of varying airspeeds along the length of the blades, and hence varying thrust generation. The picture to the right approximately illustrates how the Angle of Attack varies along the blade length.

This difference in thrust generation occurs because the tips of the prop blades move faster than inner portions of the blades, so the AoA has to change accordingly along the length of the blades; more thrust is generated at faster speeds, just like more lift is generated over a faster moving wing. At slower speed (i.e. nearer to the hub of the propeller), the AoA has to be greater to generate a similar amount of thrust being generated at the faster moving tips.

RC propeller size labelling

All rc propellers are designated two measurements, both usually given in inches. The first number is the **diameter** of the imaginary disc ('arc') created by the spinning prop *i.e.* the length of prop from tip to tip.

The second number is the **pitch** and this is the harder of the two to understand - but we'll give it a go...

Essentially, the higher the pitch value, the faster your plane will go.

The pitch measurement of a prop indicates how far, in inches, that propeller will move through the air per single revolution of the engine (*i.e.* every single complete turn of the prop). However, the pitch measurement of your prop must only be taken as a guideline because real-life factors come in to play to influence this distance *eg* the material of the prop, its condition, efficiency, air density on the day etc.etc... So, pitch measurement is really only a *theoretical* value, but it is good enough to help you choose the right size propeller for your airplane.

One way to understand propeller pitch is to imagine the gauge of two different screw threads, coarse and fine, and picture both being screwed into a piece of wood at the same rotational speed. The screw with the coarse thread will cut into the wood a lot faster than the fine threaded screw will.

It's the same for propellers 'cutting' through the air (hence the reason why propellers are sometimes called *airscrews*).

You can see that the higher pitch prop (*eg* 10x8) takes only one and a half turns to cover the same distance that the lower pitch prop (*eg* 10x4) takes 3 turns to. So, with both engines and props spinning at identical RPM, the higher pitch prop will travel further in the same amount of time - hence a faster flying plane.

So you can see that selecting a different propeller pitch size is going to significantly change your airplane's performance, with speed being the primary factor.

The **diameter** of the propeller (10" in the example above) will also effect how the airplane flies, but also how the engine runs and, again, following your engine manufacturer's recommendations is the place to start.

Roughly speaking, diameter influences the amount of thrust generated but an ever-increasing and non-performance related issue these days, linked to prop diameter, is that of **noise**.

A faster turning propeller (and props can easily turn in excess of 10,000 RPM) generates a lot of noise as the tips cut through the air. In fact, when you hear an rc airplane flying it's more than likely the propeller that you're hearing more than the engine.

A larger diameter prop *reduces* the engine's RPM at any given power setting, because there is more for the engine to turn over and hence more work to do. And slower turning props generate less noise - therefore, larger diameter props run quieter than smaller diameter props, all else being equal.

In this environmentally-sensitive world that we live, this is a serious consideration to take in to account when selecting a propeller, especially if your flying site is 'noise sensitive' (eg close to houses etc.).

EP propeller sizes

It's no secret that matching a prop to an IC engine is fairly easy if you follow the general size recommendations outlined in the above chart, which have long been accepted in the hobby. Fitting an incorrect prop would mean the engine would still run, but your plane would perform poorly.

But with the advent of electric power (EP), propeller selection became a whole new minefield!

EP prop selection is *much* more critical because different combinations of motors, ESCs and battery packs can generate huge differences in operating speeds and loads.

As with IC, electric motor manufacturers give a specific propeller size range for their motors but it's more critical that the range must be adhered to. Over-propping can do irreversible damage to electric motors and ESCs, because an incorrect propeller will force the motor to work harder than it was designed to.

If you put an oversize prop on an IC engine, the engine will likely stall. No harm done. But put an oversize prop on an electric motor and the motor won't stall, it'll just keep on trying to turn the prop.

The motor will draw more and more current as it tries to keep up with its Kv rating - the number of revolutions per minute it has been designed to turn, per each volt fed into it. With too big a propeller, the motor will just keep working harder and harder to spin the extra load, until something (likely the ESC) overheats and catches fire.

Too small a propeller on an EP motor won't do any damage, but you won't get the required performance for your plane. The motor will draw less current and the plane will likely be seriously under-powered.

The *only* accurate way to know whether or not your EP propeller is resulting in the correct current draw through the ESC and motor is to use a **Watt meter** connected between battery pack and ESC,

Number of propeller blades

The majority of propellers used in the radio control flying hobby have two blades but props with three or even four blades are available.

Two-bladed propellers are commonly used because they are relatively efficient and easy and cheap to produce but sometimes an rc airplane will call for more blades, particularly where a scale look is required.

Adding more blades decreases the overall efficiency of the prop because each blade has to cut through more turbulent air from the preceding blade. In fact, a single blade propeller is the most efficient but these are rarely (almost never!) seen in our hobby although they have been experimented with. Incidentally a single blade prop has to be balanced with a counterweight on the other side of the hub to the blade, otherwise the plane would shake itself to pieces as soon as the prop was turning!

If choosing a three or four bladed propeller, over a two bladed one, a very general rule of thumb is to decrease the prop diameter by an inch and increase the pitch by an inch, but on some models fuselage and ground clearance issues might dictate which propeller size you can and can't have on the model. As with everything, trial and error - and forums!



Beware the biting prop!

Never ever underestimate the potential for an rc plane propeller to do serious damage. There are countless stories of model pilots losing fingers, or suffering horrendous lacerations to skin on their hands and arms. Even a small size plastic propeller can hurt and cut skin, so imagine what the bigger ones can do.

Always, always take great care around a spinning prop and treat it with the utmost respect. Keep hands and fingers well clear and never become complacent.

If you want some gory evidence of what props can do, just Google "rc propeller injuries" and you'll soon see. Keep safe!

Well hopefully this has given you an understanding of propellers used on rc airplanes, and an idea of how to select the right size propeller for your model.

Remember to follow your engine/motor manufacturer recommendations whenever you can, and **use a Watt meter** if you are going to experiment with different propeller sizes for EP rc planes.



Above is a great optical illusion photo taken of a Lufthansa 747-400 and a United Airlines 757-200 that were on simultaneous approaches to runways 28L and 28R at San Francisco (SFO).

The separation requirement for flying parallel and simultaneous approaches is 225 meters (738 feet). These two aircraft are at a safe distance for the approaches they are each flying. Due to the Lufthansa 747 being three times larger than the 757 plane and being slightly behind, gives us this incredible optical illusion.

That's the funny thing about life. We're rarely aware of the bullets we dodge. The just-misses. The almost-never-happened.

We spend so much time worrying about how the future is going to play out and not nearly enough time admiring the precious perfection of the present.

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A woman calls triple-0 ...she's in labour. Due to a power outage, only one paramedic responded to the call.

The house was very dark so the paramedic asked Katie, a 3 year-old girl to hold a torch high over her mummy so he could see while he helped deliver the baby.

Very diligently, Katie did as she was asked. Heidi pushed and pushed and after a little while, Connor was born.

The paramedic lifted him by his little feet and spanked him on his bottom. Connor began to cry. The paramedic then thanked Katie for her help and asked the wide-eyed 3 year-old what she thought about what she had just witnessed.

Katie quickly responded, "He shouldn't have crawled in there in the first place, smack his arse again!"

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It may not fly but there is certainly an amazing reflection within this photo, taken recently on the Franklin River in Tasmania



Catch you when we fly into the next edition in 2020. Happy Flying, regards Ron.

