



Propwash

May 2020

From the President



Wow, what a difference a couple of months makes with some significant changes being implemented since the last edition of the Propwash was distributed, a lot of these changes we had no control over and could well be around for some time to come.

With the closure of the field towards the end of March for flying activities due to the Corona Virus to reopening on 28th April after some restriction on group numbers being relaxed by the Government.

Certain restriction still remain in place at the club and will do so into the future but if we comply with these recommendations it will enable members to fly in a relatively safe environment limiting exposure to the virus, however, these will only be effective if members comply.

During this shutdown period it was unfortunate that we had a very well respected and dedicated member, Ray Anderson, pass away, he lost his battle with brain cancer. The frustrating thing was that with the restricted travel bans in place and the number of people attending funeral being limited to 10 made it impossible for any member to attend his funeral.

I am sure if he was aware of the situation we were confronted with he would understand. R.I.P. Ray

The runway upgrade has temporarily been put on hold due to the current situation and we will continue to monitor this as we get closer to the proposed scheduled start date of October, we will keep you updated on the progress.

All the materials are on site to erect a new boundary fence along the access road but it has also been put on hold until the situation we are in eases.

The annual funfly which is normally scheduled for the long weekend in September is also in doubt at present, we will monitor the restrictions that have been imposed by the Government and if the large gathering numbers do not change it may well have to be cancelled.

The club AGM which is always scheduled in June may also be at risk of postponement due to the numbers permitted to attend, this is the meeting that elects the committee for the next year and it is important that every member gets the opportunity to nominate for the committee and attend to cast their vote.

And the list of disruptions goes on, when they continue to say that life will be different when things are back to normal they are not joking, another comment that is used extensively is "We are all in this together" so we will progress our way out of this as a team for the benefit of the club and hopefully there are brighter days ahead.



Tribute to Ray Anderson**Passed away 22/4/2020**

Ray joined the SWARMS club in July 2010 he had arrived in Australia from South Africa and settled in Dunsbough. He became aware of the SWARMS club and paid a visit one Sunday morning to enquire about becoming a member.

From our discussions it was pretty obvious that he had some knowledge and involvement in model aeroplanes and we soon became aware of how much when he next fronted up to have a fly. He was a keen scratch scale builder and had several scale model in his hanger which eventually all flew at the SWARMS field.

He was elected onto the committee in June 2013 and served as Treasurer for a period of 5 years from 2013 to 2018 he was a very committed member of the committee during that period. It also turned out he has a background in accounting and that certainly showed in the detail he presented the meeting financial reports and annual reports. He had done a lot of flying previously and was a very professional pilot, however, there was no wings accreditation available in South Africa hence he had no official pilot status.

Being actively involved with Rob Woodhead and his large model builds and having the desire to actually fly one he was required to have his Gold Wings if this was to eventuate. He approached me to enquire if it was practical to under go the assessment for his Gold Wing accreditation so a time was arranged for him to be assessed and it was locked in.

The morning had arrived for his assessment and I had never seen him so nervous, however, there was only one manoeuvre that he had to do twice to achieve his wings.

Ray being presented with his Gold Wings.



When Ray arrived at the club the annual club flyin in September was listed as a scale weekend, this has now changes to open flying, but this fitted in with his passion for scale model aeroplanes.

He arrived at the field with some very detailed models which was a real bonus for the club and for the spectators who attended the events and they were flown very impressively during the weekends activities.



Ray paid lots of attention to detail be it building his models, setting up and flying his models and with his duties as Treasurer. He served under me in his roll as Treasurer and during that 5 year period we did not have one disagreement, however, at times it was difficult to obtain any expenditure from our account without having to first justifying the necessity for that expenditure, this is the reason we are in the financial position we are today.

The scale detail is evident on this warbird on the start line ready for a flight.



A quick check on the wind sock and then taxi for take off.



Then the sky is the limit as it gracefully circles over the field.



Ray was always keen to share his knowledge with members at the field and many members benefited from his wisdom and experiences during the time he was a member at the club.

Another one of his models being prepared for a fly



Final pre flight check prior to take off.



A successful flight now set up for landing.



Ray was a true gentleman and respected by all he came in contact with he will be sadly missed both within the club and the sport of RC model flying.

R.I.P. Ray

During our virus shut down across Australia I came across this with the caption!

Another empty airstrip, all mine !



I would think that during the shutdown members of clubs around Australia took to opportunity to build or repair models in preparation for the lifting of flying restrictions, I was no exception.

I spent many hours in the shed doing just that with the end result giving me five planes to test fly, the most important was the final completion of the mosquito which is all set for it's maiden flight. The concerns I had was getting the C/G right prior to take off and to achieve this I was required to place two Kilos of lead in the nose.

This added extra weight to the retracts so they had to be upgraded I also had some concern having read up on previous flight failures of this model on you guessed it, You Tube, I purchased an Eagle flight stabilizer so assist with any issues experienced on the first flight. Feeling a bit more comfortable now, however, the day of the maiden flight things may be a bit different.



Dennis recently went to the dentist to treat a terrible toothache he had.

The dentist sat him down and said: "Open wide."

After a moment's pause, the dentist gasped and said: "Good grief! You've got the biggest cavity I've ever seen... the biggest cavity I've ever seen."

"Okay Doc!" Dennis replied in annoyance. "I'm scared enough without you saying something like that twice."

*I didn't replied the Dentist. "That was the echo."
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I found this Cessna covered up on the shelf which has not flown for over 15 years and as expected the Satio 150 four stoke motor was a bit stiff to turn over. I pulled it apart and fitted new bearings and it now purrs like a Satio 150 four stroke. This is ready for another flight, it has a wing span of 2.5 metres and **"DID"** fly very nicely it remains to be seen if that is still the case.



I had some real issues trying to get the main bearing from the crank case housing it could not be accessed with a puller / pusher or any other tool it appear that it was there to stay.



Why don't you google it !!

I did and was advised to put the motor into the oven at 200 deg, heat the motor and then bump it in a piece of wood and "Bingo" it came out very easily.

To fit the new bearing just reverse the procedure, it worked very efficiently

The ten rules on chocolate.



1. If you've got melted chocolate all over your hands, you're eating it too slowly.
2. Chocolate covered raisins, cherries, orange slices & strawberries all count as fruit, so eat as many as you want.
3. Diet tip: Eat a chocolate bar before each meal. It'll take the edge off your appetite and you'll eat less.
4. If I eat equal amounts of dark chocolate and white chocolate, is that a balanced diet? Don't they actually counteract each other?
5. Money talks. Chocolate sings.
6. Chocolate has many preservatives. Preservatives make you look younger.
7. Question: Why is there no such organisation as Chocoholics Anonymous? Answer: Because no one wants to quit.
8. Put "eat chocolate" at the top of your list of things to do today. That way, at least you'll get one thing done.
9. A nice box of chocolates can provide your total daily intake of calories in one place. Isn't that handy?
10. If you can't eat all your chocolate, it will keep in the freezer. But if you can't eat all your chocolate, what's wrong with you?

The mosquito fleet in action, due to the construction materials used in these planes, high maintenance, there are very few still flying.



The Streets of ANZAC

A virus came along and shut the world down
 And people went crazy and emptied the town
 Stay at home and survive the best that you can
 Be a good citizen and respect fellow man
 For this lonely old digger, it's always been the way
 As he prepares to remember on ANZAC Day
 Social Distancing in place and nothing new to him
 And quietly chuckles at the fancy dressed ladies, putting out the bins
 He polishes his medals as he sits home alone
 Cup of tea and the crossword and sits by the phone
 For the calls that never come from mates long since passed
 The platoon is all gone, and he is proudly the last
 They told him Services and Marches are cancelled this year
 No poppies, no badges, no two up or beer
 Wondering will No one honour or even remember?
 Till Remembrance Day, the 11th November
 He hears a strange noise and gets to his feet
 And with a tear in his eye as he looks up the street
 The driveways of people with poppies and candles
 Honouring the fallen is more then he can handle
 They did all remember and they do really care
 They wave and salute while he just stops and stares
 Some children have handmade signs on his fence and the lawn
 "We honour your service at the rise of the Dawn"
 The ANZAC Spirit lives on in the youth of today
 With respect and honour as this is our way
 The virus won't win, the futures not set
 As we whisper the words, Lest We forget...



*Mayday! Mayday! VHF 001 to control tower!
 There "WAS" a gyrocopter in my air space.*





Trevor Wilson has put his time to good use in lockdown with the partial construction of a SIG 4 Star 20 EP. Sports.

Progress photos of the build to date.



This is Trevor's first attempt at a balsa laser cut kit build and it is progressing well, it will be powered by an electric motor and this will be a new experience for him in the air as all his previous planes that he has flown have been electric foamies.

The next stage of the project will be spent learning the skills of heat shrink covering which finishes off the model, the other advantage with this is it covers any mistakes that may have occurred during the build. Looks good Trev.



Here are a couple more that Trevor has completed ready for a maiden flight when the restriction have been cleared



Hey Troy, is this the key to Richmond's success for 2020 I think they will need plenty of oil on the lock to be as good as last year. Could be a bit "Dusty"



Several of the planes from Ray Anderson's hanger have remained here in the South West either via sales or gifts to members when he cleaned out his hanger to make the move to Perth. I have had discussion with Sue and I indicated to her that due to the circumstances surrounding his funeral arrangements with members not being able to attend that I would like to hold a memorial day for him at the field.

She indicated that this would be something she would appreciate so when all the restrictions have been lifted a day will be arranged where all the planes that he owned will be flown at the field on that particular day. I will keep members who have them informed as to what date that would be when things have settled, it may well be next year.



The six remaining partially built scale planes that he had were put up for sale via a web page, this created a lot of interest and eventually we were fortunate enough for all of these plus his plane trailer being sold prior to him passing.

Maybe this was the solution to the toilet paper bulk buying saga !!

A little old lady went to buy cat food. She picked up three cans, but was told by the cashier:

"I'm sorry, but we can't sell this to you without proof you have a cat. Too many seniors are buying cat food to eat. Management wants proof that you are buying this for your cat."

So the lady went home, brought in her cat and was sold the cat food.

The next day, she comes in and tries to buy two cans of dog food and was again told she couldn't buy them without proof.

So the lady went home, brought in her dog and was sold the dog food..

One day later, she brought in a box with a hole in the lid and asked the cashier to stick her finger in the hole. The cashier said:

"No, you might have a snake in there."

The lady assured her that there was nothing in the box that would harm her. So the cashier put her finger into the box, quickly pulled it out and screamed:

"That smells like shit."

The lady replied:

"It is... I want to buy two rolls of toilet paper please."

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If you take your dog for a walk it is mandatory for you to take a plastic bag for when things go wrong.



I should also be mandatory for every modeller to have one in their flight box for when things go wrong at the field.

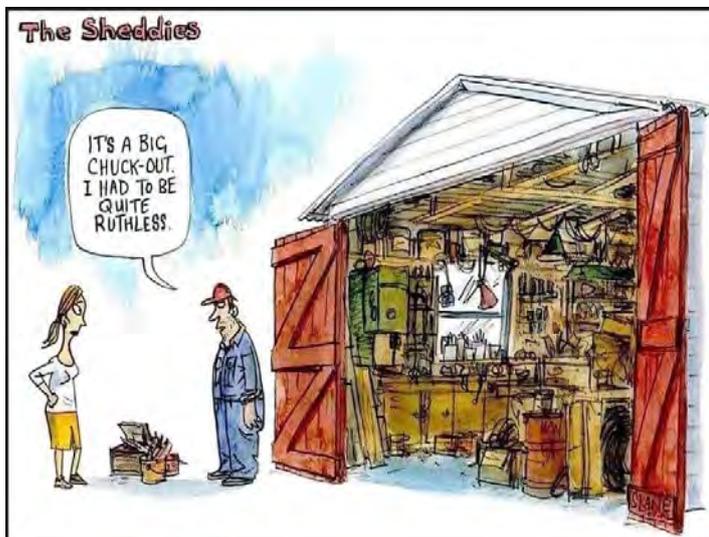


Resulting from the Corona virus outbreak it is with great sadness that I have to mention the loss of a few local businesses.

- A local Bra Shop has gone bust.**
- A Mining Company has gone under.**
- A manufacturer of food blenders has gone into liquidation.**
- A Dog Kennels has had to call in the retrievers.**
- An origami book company has folded.**
- An Ariel Installation company has called in the receivers.**
- A Key Company has gone into lockdown.**
- A Watchsmith has wound down and called time.**
- An Iceland store has had its assets frozen.**
- A Shoe Factory has been soled and employees given the boot.**
- The Heinz factory has been canned as they couldn't ketchup with orders.**
- The Tarmac company has reached the end of the road.**
- The Bread company has run out of dough.**
- The Laundrette has been taken to the cleaners.**
- And finally the AA Recovery Service are on their way to a breakdown.**



Good to see that some members put the shut down to good use with a clean out of their shed.



“Breaking News” from Rob Woodhead.

The decision has been made I am going ahead and constructing another B29 bomber, however, the wing span on the new one will be 19ft that’s even bigger than previous model

He has commenced the build with the plans being enlarged to suit the new model dimensions and he will now progress through many, many hours in the shed to produce another one of these magnificent models.

Work on the tail plane stabilizer and control surfaces are well advances but that is just a start of things to come.

Those who were lucky enough to see the original model grace the skies over SWARMS would appreciate the time and effort that was put into the precision build, and the flights impressed the crowds who witnessed any of the many flight before fatigue took over along with a bit of gravity causing a disastrous ending.

Previous model in all it’s glory.



The new model could end up something like this large model, can’t wait to see it flying, though it will be some time down the track, Rob indicates the build could take around two years to complete.



RC airplane crashes *are* all part of the hobby, there's absolutely no doubt about that. Any RC pilot who tells you that he hasn't crashed his airplane obviously hasn't been flying for long enough.

So what's my point?... Don't get too upset if you crash your RC airplane. It happens. Be a man about it. Smile about it, even laugh and joke about it. If it makes you feel any better these photos demonstrate that you were not the first and will not be the last to do it.



Julia tells her husband, "James, that young couple that just moved in next door seem such a loving twosome. Every morning, when he leaves the house, he kisses her goodbye, and every evening when he comes homes, he brings her a dozen roses. Now, why can't you do that?"

"Gosh," James says, "Why, I would, but I hardly know the girl!"





I trust that all members respected ANZAC day services though be it somewhat different to what we have been used to in the past.

With the social distancing restriction that we were experiencing on the 25th April people around Australia still found ways to show their respect

The ANZAC tradition lives on, it is the sacrifices that were made by these diggers that has given us the freedom we have today and enables us to relax and enjoy the sport of flying Model Aeroplanes.

*They shall grow not old, as we that are left grow old;
Age shall not weary them, nor the years condemn.
At the going down of the sun and in the morning
We will remember them.*



Dead Penguins—I did not know this

*Do you know why there are no dead Penguins on the ice in Antarctica
Where do they all go ?
Wonder no more ! It is a known fact that the Penguin is a very ritualistic bird and lives an extremely ordered and complex life.
Penguins are extremely committed to their family and will mate for life, as well as maintain a form of compassionate contact with their offspring throughout the remainder of their life.
If a Penguin is found dead on the surface of the ice, other members of the family and their social circle have been known to dig holes in the ice, using only their vestigial wings and beaks until the hole is deep enough for the dead bird to be rolled into and buried.
After packing the ice in the hole, the male penguins then gather in a circle around the fresh grave and sing:
“Freeze a jolly good fellow.”
“Freeze a jolly good fellow.”
You really didn’t believe that I know anything about Penguins, did you ?
It’s so easy to fool elderly people.
Sorry an urge just came over me to do that !!*



Another detailed scale model from Ray Andersons hanger, Swordfish.



*A couple drove several kilometres down a country road, not saying a word.
An earlier discussion had led to an argument and neither wanted to concede their position.
As they passed a barnyard of mules and pigs.
The husband sarcastically asked,
“Relatives of yours?”
“Yep,” the wife replied, “In-laws”.*

The ultimate RC Flying Glossary is here.

This *RC flying glossary* contains some of the more common words and terms that you'll likely hear when you're reading about rc airplanes, or when you're down at the flying field.

The glossary is as non-technical and light-hearted as possible.

2.4GHz - the frequency band of the newest, interference-free '*spread spectrum*' digital rc systems that have all but replaced the traditional MHz ones. Now commonplace.

2-stroke - the most common type of glow plug or petrol engine for rc airplanes. The fuel/air mixture is drawn in, ignited and spat out with one single revolution of the piston inside the engine.

4-stroke - the 2nd most common type of glow plug or petrol engine, much more suitable for larger and scale planes because they sound more realistic. 4-stroke engines take 2 revolutions to do what a 2-stroke does in one, but this doesn't make them twice as lazy.

3D flying - a complex form of advanced aerobatic flying. 3D airplanes have over-sized control surfaces, exaggerated control surface deflection and excess power for maximum performance and sensitivity. Many 3D maneuvers are performed at very slow speeds, often with the plane at the point of stall.

Adverse yaw - when a plane drops its tail during a banked turn, as a result of the wing on the outside of the turn causing more drag than the inside wing.

Aerobatic/s - any maneuver or series of maneuvers that involve stunts of any kind, such as [loops](#), [rolls](#) and [spins](#). An airplane that is capable of performing such stunts is said to be "fully aerobatic".

Aeromodelling - the general term used to describe the hobby of building and flying model airplanes and aircraft. *Aeromodellers* are the guys and gals that do it - that's you and me ;-)

Ailerons - the moving section of the [trailing edge](#) (TE) of the [wing](#), either located towards the outer end or along the whole length of the TE. Ailerons come in pairs, (left and right) and always work in opposite directions to each other (one up, one down). When used, they cause the airplane to [roll](#) to the left or right.

Aileron Differential - when the ailerons are set up to move upwards more than downwards, to counteract any adverse yaw during a turn caused by extra drag on the outer wing from the down aileron.

Airfoil - the cross-section shape of a wing. Airfoils can be flat-bottomed, under-cambered, semi-symmetrical or symmetrical, depending on the style of airplane and what it needs to do. Also written as *aerofoil*, depending on which country you are in. Different shape airfoils have different lift generating properties.

Air speed - the speed of your plane in relation to the speed of the air immediately surrounding it.

Altitude - the vertical distance between your rc airplane and the ground, usually expressed in feet ('). Just the fancy way of saying *height*.

Angle of Attack - the angle of the wing (when viewed from the end) in relation to the horizontal airflow when the airplane is flying. Nothing to do with your incoming trajectory when trying to cut the tail off your friend's plane in aerial combat games!

ARC - Almost Ready to Crash. An rc aircraft that knows something that the pilot is just about to find out.

ARF / ARTF - Almost Ready To Fly. This one's a legitimate abbreviation! An ARF airplane needs a few small finishing touches and you have to install the engine/motor and radio gear yourself. They vary in degrees of completeness, from manufacturer to manufacturer.

Attitude - *not* the obvious meaning, but in the flying world 'attitude' refers to the angle of the plane in relation to the horizontal eg "*My plane had a very nose-down attitude, from which it could not recover...*"

Barrel roll - an aerobatic maneuver that involves the airplane following the twist of a large imaginary corkscrew (horizontal) through the air.

BEC - Battery Eliminating Circuit. A common feature of ESCs, whereby the ESC supplies a regulated 5V to the radio control gear (receiver and servos) from the flight battery pack. BECs can be of the linear variety (constant current flow) or the *switching* variety, whereby they turn the power on and off thousands of times per second.

Bind-N-Fly (BNF) - a trademark name for a range of *Horizon Hobby* distributed aircraft whereby the model is sold in RTF form but lacks the transmitter. A DSM2/DSMX compatible receiver is included though so you just, er, bind and fly.

Binding - a 2.4GHz receiver needs to be 'bound' to the transmitter before it can receive signals from it. The process involves the Rx identifying a unique code being emitted from the Tx, and then the two components lock together on an available frequency. The process usually only takes a few seconds.

Brushless motor - type of electric motor commonly used in rc electric aircraft. Brushless motors are much more powerful than traditional brushed motors, and have become the norm. They can be *inrunner* or *outrunner* motors.

Buddy Box - one of the best training aids, where the student's transmitter is attached via cable (or wirelessly) to the instructor's. The student has complete control over the airplane, but at the flick of a switch the instructor can take control if the student gets into difficulties. Or just to be mean, funny or annoying.

Bulkhead - the foremost former of your airplane, on to which the engine is mounted. Also called a *firewall*.

Bungee launch - a popular method of launching rc gliders.

Butterfly - not a cute little flying insect, but the name given to a type of air-braking method on rc gliders, whereby the flaps go down and the ailerons go up simultaneously. The lowered flaps create high drag, while the raised ailerons reduce lift. This combination makes landing a fast glider easy. Also called CROW braking.

Centre of Gravity / CG / CoG - the airplane's point of fore-aft balance, or the point at which all gravitational forces act on the plane. As a very general rule of thumb it's found approximately 1/4 to 1/3 of the way back from the leading edge of the wing and is built in during the design stage.

Centre of Lift / CL / CoL - the point at which all forces of lift act on the plane. Typically the CG needs to be in front of the CL for a plane to be stable and flyable.

Chicken stick - . A wooden/plastic stick with a rubber coating on one half that you use to flick over the propeller, instead of using your finger. Can also be a tough rubber sleeve that you put on your finger if starting the motor by hand to give essential protection from the prop.

Control horn - plastic or metal component that is securely attached to a control surface, onto which the servo linkage is connected to.

Control surface - the term used to describe the moving part of any flying surface *i.e.* rudder, elevator and ailerons are all control surfaces.

Control surface mixing - when two control surface operations are performed by one pair of surfaces *eg* when aileron and elevator movement is combined into elevons.

Channel mixing - when two or more channels are made to operate together with one transmitter stick movement *eg* rudder can be mixed with aileron, so that the rudder automatically deflects when the ailerons are moved.

Crosswind - when the wind is blowing at, or approximately, 90 degrees to your line of flight, take off or landing.

Dead stick - when your airplane's motor cuts out unexpectedly in mid-air. With any luck you'll have enough altitude to glide safely in for a nice landing, otherwise you may need to use your plastic bag.

Dihedral - the upward 'V' angle of the wings when viewed from the front. An airplane with dihedral is more stable in the air than one without.

Disorientation - when you lose sight of which way up your rc airplane is and what it's doing, either because it's too far away to see properly or because of low light levels, or you've just flown it directly over your head and momentarily lost all visual reference to everything. Not much fun when it gets you.

Drag - the force that is created by the movement of the airplane through the air, on the air immediately surrounding the plane. Higher drag means that the plane has to work harder to cut through the air. Low drag, oddly enough, means the opposite.

A real drag is the term used to describe your flying day when it's not going to plan.

Basic principles of flight

The basic principles of why and how airplanes fly apply to all planes, from the Wright Brothers' first machine *Wright Flyer* to a modern Stealth Bomber, and those principles are the same for radio control and full size airplanes alike.

Although the true physics of flying airplanes are quite complex, the whole subject can be simplified a bit - enough for us to get a fundamental understanding of what makes a plane fly, at least!

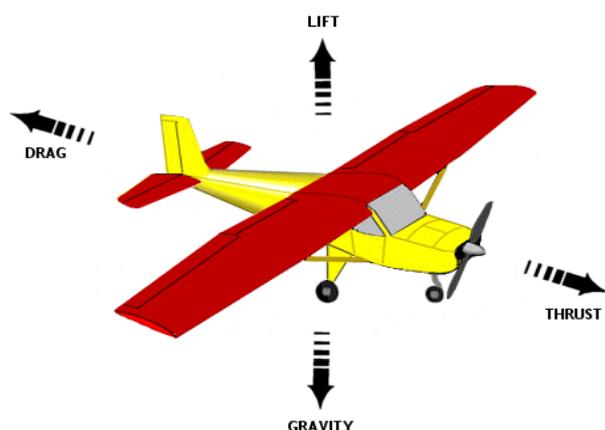
Aerodynamic forces

Essentially there are 4 aerodynamic forces that act on an airplane in flight; these are **lift**, **drag**, **thrust** and **weight** (*i.e.* gravity).

In simple terms, drag is the resistance of air molecules hitting the airplane (the *backward* force), thrust is the power of the airplane's engine (the *forward* force), lift is the *upward* force and weight is the *downward* force. So for airplanes to fly and stay airborne, the thrust must be greater than the drag and the lift must be greater than the weight (*so as you can see, drag opposes thrust and lift opposes weight*).

This is certainly the case when an airplane takes off or climbs. However, when it is in straight and level flight the opposing forces of lift and weight are balanced. During a descent, weight exceeds lift and to slow an airplane drag has to overcome thrust.

The picture below shows how these 4 forces act on an airplane in flight:



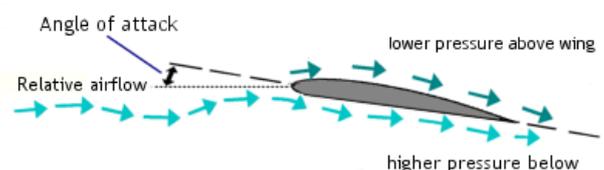
Thrust is generated by the airplane's engine (propeller or jet), weight is created by the natural force of gravity acting upon the airplane and drag comes from friction as the plane moves through air molecules. Drag is also a *reaction* to lift, and this lift must be generated *by* the airplane in flight. This is done by the **wings** of the airplane.

The generation of lift has been an argued theory in the past, but certain principles have been known about and agreed on for a long time now.

A cross section of a typical airplane wing will show the top surface to be more curved than the bottom surface. This shaped profile is called an '**aerofoil**' (or 'aerofoil') and the shape exists because it's long been proven (since the dawn of flight) that an aerofoil generates significantly more lift than opposing drag *i.e.* it's very **efficient** at generating lift.

During flight air naturally flows over and beneath the wing and is deflected upwards over the top surface and downwards beneath the lower surface. Any difference in deflection causes a difference in air pressure ('pressure gradient') and because of the aerofoil shape the pressure of the deflected air is lower above the aerofoil than below it. As a result the wing is 'pushed' upwards by the higher pressure beneath or, you can argue, it is 'sucked' upwards by the lower pressure above.

One of the argued, but commonly discounted, theories of lift generation is related to *Newton's 3rd Law of Action & Reaction*, whereby the air being deflected downwards off the lower surface of the wing creates an opposite reaction, effectively pushing the wing upwards. This may well be the case but it's the pressure difference between both surfaces that is the commonly agreed factor of lift generation.



Trimming your RC airplane *- how to, and why you should*

The faster a wing moves through the air, so the actions are exaggerated and more lift is generated. Conversely, a slower moving wing generally creates less lift.

It's important to note, though, that different wing designs (aerofoil and shape) generate lift more (and less) efficiently than other designs at different speeds, depending on what the plane has been designed for.

A direct *reaction* to lift is **drag** and this too increases with airspeed. So aerofoils need to be designed in a way that maximises lift but minimises drag, in order to be as efficient as possible.

Angle of Attack and lift

Another crucial factor of lift generation is the **Angle of Attack** - this is the pitch angle at which the wing sits in relation to the relative airflow around it

As the Angle of Attack increases so more lift is generated, but only up to a point until the smooth airflow over the wing starts to break down and so the generation of lift cannot be sustained; this point is called the *critical Angle of Attack*. When the CAoA is reached the sudden loss of lift results in the wing **stalling** and the weight of the airplane cannot be supported any longer. When a stall occurs a sudden loss of altitude is inevitable unless the pilot rectifies the situation immediately by decreasing the AoA and getting the wing to generate lift once again. Typically a stall recovery means simultaneously pushing the nose of the plane down and increasing power to gain airspeed.

The angle of attack should not be seen as a lesser important factor in lift generation than the aerofoil shape of the wing, in fact the AoA is the single most important factor.

For example, a flat section wing can produce adequate amounts of lift because of the angle of attack, the big difference is the efficiency of the lift generation. Flat wing sections carry a large penalty in terms of much higher drag, compared to an aerofoil section where drag is suitably less.

Trimming your rc airplane is an important procedure, and when properly trimmed your plane will be so much nicer to fly, making your life at the TX sticks that much easier.

The aim of trimming a radio control airplane correctly is to get it flying straight and level at 'cruising speed', with no input from you on the transmitter sticks. In other words, with the elevator, aileron and rudder sticks in their central positions the plane should fly in a straight line. The throttle stick will typically be half-way to two-thirds full power.

Basic trimming

When you're first [learning to fly an rc airplane](#), the chances of you doing any *advanced* trimming are low; trimming your plane will involve nothing more than moving the transmitter trims to compensate for any unwanted tendencies of the plane to fly in any direction other than the one you want it to fly in.



These transmitter trims are located beside the sticks and correspond to their parent control. They can be analogue slide trims, held in position by a simple ratchet system, or they can be digital button trims - common on today's computer radios.

Moving a transmitter trim will move that particular control surface a very small amount, and keep that new position as the new neutral position. This lets you 'fine tune' your airplane's flight path.

For example, if your plane wants to roll to the left all the time then you would apply right aileron trim until the plane flies level on its own, without wanting to roll.

This type of trimming is completely common practice and even the best trimmed plane will need the occasional, or even regular, tweak of a transmitter trim here and there. And as I previously mentioned, this kind of trimming of your rc airplane is what you, as a beginner, will do.

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

