



Propwash

February 2023

From the President



The year didn't start well with the very sad news of the passing of a beloved member in Brenda Green. Brenda was a life member of the club of which she had been associated with for over twenty years. I personally will miss her cheekiness around the club and sincere condolences to Dennis from all members I am sure.

Going back to the December meeting there were two members inducted as Life Members to the SWARMS Club. Those bestowed Life Membership were Ian Humphryson and Ron Waller. Both have been outstanding contributors to the club over many years and I would like to once again thank them both for their commitment to this great club's success through time, effort and donations. Without members like these this club would have really struggle so really appreciate it.

As you may, or may not, know that after the next meeting on the 26 Feb we will be starting to pull up the pegs that hold the old matting down ready for the new North/South concrete runway . So if you can attend and help it would be greatly appreciated. Some areas are already being boxed and the plan is for the concreting to start on the 14 Mar. There will be more communications along the way to inform people of what's happening and a schedule of events after the meeting.

Hope everyone is geared for a great year at the club, I know I am and looking forward to the year ahead. So dust off those old planes, get stuck into those builds your been putting off or just come out and chat to those around as it is all good therapy and you can't put a price on that. Until next time cheers.

Bill Darnell

I do not know why RC modellers are concerned about having a mishap during a flying session, some react as if was the end of the world, or in most cases the end of their model.

Be assured that there is a full production line working tirelessly to replace your model, it will just cost a few dollars and you will be back in the sky in no time.

These people are employed just to keep us happy so don't disappoint them go out and fly it like you don't own it and if the worst case scenario does develop your replacement is only a Hobby Shop away.



"As we prepare for takeoff, please make sure your tray tables and seat backs are fully upright in their most uncomfortable position"

From the Editor



As the sun went down on another flying year at the end of December 2022 we can reflect back on a successful year after recovering from the COVID restriction which did have an impact for around a two year period.



The two main events conducted annually at SWARMS, the September Funfly and the EDF day were both conducted and proved to be very successful last year and hopefully these will only improve further with the situation we have previously been faced with appearing to be settling down.

We just have to adapt and learn to live with COVID and continue to do what we enjoy most, building and flying model planes.

2023 will see the construction of the second runway, North / South strip. Planning is well advanced and there will be a requirement for members to assist with the preparation work to ensure that the build timeline is met so there are no holdups with the concrete contractor.

Watch for email updates on the dates and times that you can get actively involved in this project.

“The Pilot said: ‘Ladies and gentlemen, we have a little technical problem that is to be solved soon. I don’t know about you, but, as far as I am concerned, I do prefer to arrive late in this world than to arrive in advance in the other one.’”

General discussions and opinions around building and flying RC models on some occasions get distracted by politics or personalities. Whilst open discussion of the administration of our hobby (and everything that goes with it, such as regulation, insurance etc etc) has its place, however, it’s certainly not what attracted anyone to our hobby.

Regardless of where you stand on the administration of our sport, it’s obvious that it’s in everyone’s interest to continue to grow and promote our hobby. We need to all remember what’s important about aeromodelling - the joy of getting your plane into the air, introducing newbies to the hobby, the camaraderie and fellowship of mixing with like-minded passionate aeromodellers.

I’m not a competitive aeromodeller (I mainly fly for pleasure). Whilst I enjoy flying my combination of planes the biggest joy is getting away on a Sunday with a bunch of guys with a common interest, talking with members about their experiences in the sport and generally having a good time. Each weekend is different with various weather conditions to content with and a variety of models displayed in and around the pits.

This is what aeromodelling should be about. let’s reflect on why we got into the sport and make an effort to introduce a new member to the sport so they too can enjoy the challenges involved with RC modelling.

I was recently given a Scanner that had been built but never flown, after fitting it out here it is ready for maiden flight.



Wings appeared to have given way on take off this was the end result. Investigation highlighted that the centre joining wing ribs had insufficient glue.

Sunday 18th December was the last club meeting for the year and there was a good turn up of members, was it the meeting agenda or the Eggs & Bacon breakfast that preceded the meeting that motivated them to attend.



The egg & bacon rolls for breakfast were appreciated by all in attendance to finish off the year.



The chefs did a good job with the breakfast.



The breakfast was a good start to the day for these three members.



*Two eggs and a piece of bacon walk into a bar
The bartender asks them to leave.
They all ask why.
Bartender says, "We don't serve breakfast here."*

Ian Humphryson was presented with his SWARMS Life Membership at the conclusion of the meeting on the 18th December.



Ian joined the club in 1987 when the club was flying at Kemerton. He was heavily involved in establishing the field and facilities out there.

When the club moved to its current site at Elgin, he was instrumental in shifting the mats and other equipment. Although he has never held any senior club positions, he has been an MAAA instructor and large model inspector and his contribution to the club over the years has been invaluable.

He was heavily involved in the annual seaplane event at Lake Gnungara and won numerous events with his big Beaver.

He was also active in scale, slope soaring and aerobatic events. He has also made financial donations including plant hire and the donation of the pit building to the club.

Congratulation Ian.

I always preferred the English way of spelling "diarrhea" which is "diarrhoea" it really looks like you've lost control of your vowels.

At breakfast, a man asked his wife What would you do I if won the lottery?

She replied, I'd take half, and then leave you.

Great, he said I won \$12 yesterday.

Here's \$6. Stay in touch.

It was the day of the big RC hobby Boxing Day sale. Rumours of the sale and some advertising in the local paper were the main reason for the long line that formed in the morning before the store had even opened.

A small man tried to push his way to the front of the line, only to be pushed back, amid loud and colourful curses. On the man's second attempt, he was punched square in the jaw, got knocked around a bit, and then thrown to the end of the line again.

As he got up the second time, he said to the person at the end of the line, "That does it! If they hit me one more time, I don't open the store!"

Troy acquired an E-Bobcat ARF model and it found it's way into my trailer for construction. It has been build but yet to do a maiden flight.



Not black and yellow but does have the "Tiger" emblem.



A gentle reminder about why you are utterly exhausted...

No one I know began this year on a full tank. Given the vicious onslaught of the previous two years (let's just call it what it was) most of us dragged ourselves across the finish line of 2021... frazzled, spent, running on aged adrenaline fumes...

We crawled into 2022 still carrying shock, trauma, grief, heaviness, disbelief... The memories of a surreal existence...

And then it began... The fastest hurricane year we could ever have imagined. Whether we have consciously processed it or not, this has been a year of more pressure, more stress, and a race to "catch up" in all departments... Every. Single. One. Work, school, sports, relationships, life...

Though not intentionally aware, perhaps hopeful that the busier we are, the more readily we will forget... the more easily we will undo the emotional tangle... the more permanently we will wipe away the scarring wounds... We can't.

And attempts to re-create some semblance of "normal" on steroids while disregarding that for almost two years our sympathetic nervous systems were on full alert, has left our collective mental health in tatters. Our children and teens are not exempt. The natural by product of fighting a hurricane is complete and utter exhaustion...

So before you begin questioning the absolutely depleted and wrung-dry state you are in- Pause. Breathe. Remind yourself of who you are and what you have endured. And then remind yourself of what you have overcome.

Despite it all, you're still going. (Even on the days you stumble and find yourself face down in a pile of dirt).

Understanding brings compassion...

Most of the world's citizens are in need of a little extra TLC at the moment. Most are donning invisible "Handle with care" posters around their necks and "Fragile" tattoos on their bodies...

Instead of racing to the finish line of this year, tread gently. Go slowly.

Amidst the chaos, find small pockets of silence. Find compassion. Allow the healing. And most of all... Be kind. There's no human being on earth who couldn't use just a little bit more of the healing salve of kindness.

Credit to: Naomi Holdt - Psychologist and Speaker

Did your 2023 start like this, resolutions "What"

- A New Year's resolution is something that goes in one year and out the other.
- My New Year's resolution is to be more optimistic by keeping my cup half-full with either rum, vodka, or whiskey.
- My New Year's resolution is to stop hanging out with people who ask me about my New Year's resolutions.
- May all your troubles last as long as your New Year resolutions in 2023.
- Dear God, my prayer for 2023 is a fat bank account and a thin body. Please don't mix it up like you did this year.
- Many things can be preserved in alcohol this New Years Eve, but dignity is not one of them.
- Just heard that in 2023 there will be a new device that can turn thoughts into speech. I have had that for years, it's called alcohol.
- It's officially New Year's Eve, you only have a couple of hours to do all the things you will resolve not to do in the new year.
- My New Year's resolution is to help all my friends gain ten kilograms so I look skinnier.
- I was going to quit all my bad habits for the new year, but then I remembered that nobody likes a quitter.
- My wife still hasn't told me what my New Year's resolutions are.
- I love when they drop the ball in Times Square, it's a nice reminder of what I did all year.
- The year 2023 is going to be filled with so many puns about perfect vision and I can't wait to see them all.
- Youth is when you're allowed to stay up for New Years, middle age is when you're forced to.
- If 2022 was a person, I'd sue him for pain and suffering and lost wages.
- I have only one resolution. To rediscover the difference between wants and needs. May I have all I need and want all I have. Happy New Year!



It was with heavy hearts that we recently announced the passing of our much respected friend and member, Brenda Green, Brenda had been a dedicated member of the SWARMS flying club for over 20 years.

Brenda passed away peacefully on 29th December 2022

Brenda was a very active member of the club behind the scenes but did not fly, she was honoured with her Life Membership for her dedicated involvement over many years, the past couple of years her health had declined, however, she still looked forward to visiting the club on Sunday mornings to coffee and socialize with current members, she will be sadly missed around the pits at Sunday morning flying sessions.

Rest In Peace Brenda



Anybody interested in a free ride in a helicopter for 4 people? I'm still looking for 2 more adults to join me and my wife.

We leave early Saturday morning (March 18th) from Bunbury and will fly to Broom, where we will have a late breakfast, then have lunch on a friend's yacht.

Then we'll do a flight back along the coast, to Geraldton returning to Perth for dinner, then fly back home. If interested, please message me.

Preferably someone with a helicopter and yacht, otherwise we can't go.

The new solar battery charging facility was given a good workout on Sunday 8th January, it is good to see the members being environmentally friendly by utilizing solar power to maintain and charge their batteries.



On Sunday 8th January Troy filled his vehicle up with a variety of planes and enjoyed some time in the sky. They all went home in one piece !! Or did they ??



Rockets? Maybe. But the Chinese haven't contributed to aviation.

After all two Wongs don't make a Wright.

Aviation joke.... It's better to break ground and head into the wind.

Than to break wind and head into the ground.

Sunday 15th January was a great day for flying and there were a good number of members present to enjoy the conditions. We had several planes that had been flying and at one stage we had a backlog of models lined up on the main taxiway to take off.

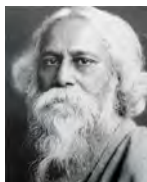
This had never happened at the field prior to this event and an urgent investigation was required to remove the backlog and get these models into the air.



It was a real health concern to members that due to the high temperature and them standing in the blazing sun for extended periods pilots might be struck down with heat stroke whilst waiting in the line, or worst case scenario get aggressive with each other as to who was next to grace the sky



*A wise man once told his wife
"Nothing".
Because he was a wise man*



The investigating committee soon identified the problem for the park up of these models. President Bill was doing a maiden flight on his new electric glider under the close supervision of Eddie. The end result was very pleasing for Bill as his plane returned back on the ground without incident.



Looking good after several flights and still in original condition, not sure how confident Bill is but I do know he has purchased an 18Volt hot glue gun. Does that mean there will be more repairs carried out at the field during flying sessions.



A young pilot in a Fighter Jet was flying escort for a B-52 Bomber and generally being a nuisance, acting like a big hotshot, flying loops around the lumbering old bomber. The hotshot said over the air, "Anything you can do, I can do better". The veteran bomber pilot answered, "Try this hot-shot". The B-52 continued its flight, straight and level. Perplexed, the fighter pilot asked, "So? What did you do?" "I just shut down two engines, kid" came the sarcastic reply.

Some members may find the follow true stories distressing.

My elbow bumped throttle stick as I was reaching over the plane to disconnect the 4s lipo battery. And yes my hand broke the prop and spinner.

Modellers detailed account relating to another incident making contact with spinning propeller.

A sobering reminder that you can not be complacent around active propellers

This incident is a result of laziness. I was using my older gen1 DX6I that was in the house while I was assembling and setting the plane up because I was too lazy to go to the car and grab my good radio that is a gen2 dx8e.

The dx6i has a throttle cut button that only works properly on electric planes when pushed and held. The dx8e I have throttle cut programmed to a switch.

My laziness cost me over 5k in hospital bills. Don't be like me and be lazy.

Luckily he will still be able to hold a radio and enjoy flying in the future.

BE AWARE take CARE around rotating propellers
"Be alert and don't get hurt."



Coincidental or not, I did read this article, I posted it here in this newsletter and on Sunday 5th February I went out and did a similar thing.

Whilst attempting to start my Fly Baby with the electric starter I had placed my hand under the cowl to secure the plane also to prime the motor via the exhaust as the cowl prevents doing this over the carburettor, I have done this on numerous occasions, however, this time the plane moved back when I attached the starter and commenced spinning the prop.

As the plane moved my hand slipped off the cowl and made contact with the spinning propeller, I am certainly glad that the motor had not actually fired up at this stage.

After receiving some first class first aid administered by Troy at the field I headed to the hospital. Four plus hour at the Bunbury hospital five ex rays, one tetanise injection, four stitches on one laceration and two in the other this was the end to my days flying.

My first contact with a prop in over 30 years so can't really complain, hopefully I will believe what I read in future and not go out to experience it myself.

Thank you to the members who assisted me in packing up my gear into the trailer and cleaning up the bloody mess on the startup line..

I was not able to get any photos of my finger damage.

This well presented model owned and flown by Marcus Burr is very stable in flight, (or is that the pilot) and presents with more than enough power to perform all manoeuvres with ease.



Fighter Training Manual

“You know your landing gear is UP and LOCKED when it takes full power to taxi to your parking



Dennis Milligan has accumulated a nice collection of War Birds over a period of time. They are all racked in storage awaiting their time in the sky which I know Dennis is eagerly awaiting the right moment to achieve this..



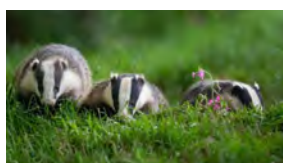
One of the hazards associated with flying Drones. So much for the rule that they are not to be flown within 30 metres of people. Could be a good reason for that rule to be in place.



Hey Troy, found a couple of the latest model chain-saws 2023 models you might be interested in. There is no requirement for earmuffs whilst operating and limited training necessary. If you are interested please don't hesitate to contact me for further details.



I was driving along and saw a suitcase on the side of the road, so I pulled over to investigate. When I opened it up I saw a family of badgers. I immediately pulled my phone out and rang the Animal Rescue number.
"Hi, I've just found a family of badgers in a suitcase."
"Are they alive?"
"No idea, I'm not a vet."
"Well, are they moving?"
"Oh yeah, good point. That explains the suitcase."



The RC model plane cycle.

Build em, Fly em, Crash em, Repair em.

Then do it all over again.

It's all part of this fun challenge.



The hazards of living too close to the flight line, or is this a new front door feature.



My mate is getting upset because he says that everyone talks behind his back at work.

I had to remind him that he was a bus driver !



Two pilots are discussing piloting. One asks, "Why did you become a pilot?" One asks, He responds, "To overcome my fears." The other asks, "Which one? Heights?" To which he responds, "Dying alone."

*Why couldn't the fighter jet pilot communicate with his co-pilot?
 He hadn't broken the sound barrier yet.*

I was presented with this new foam glider that had not been constructed which was originally designed to be a tow glider or used as a bungy line launch.

Looking at the technology available today and having seen a couple of EDF powered units, mainly Bixlers, successfully flown with this setup by a couple of members at the field I decided to fit a 50mm EDF electric unit to this model.

Some modifications were required for the inclusion of the speed controller, receiver and the battery but I was able to get these inside the fuselage without too much difficulty.



The 50mm EDF 6 blade fan power unit moulded in foam fitted to the top of the glider.



This motor setup did not last very long during trials before the motor gave out so a second motor 50mm 12 blade unit has been ordered, it may well have been caused by the battery output being a bit high for the motor size. I thought the rule of thumb was ***“Bigger is better”*** maybe not in this case.

Looking forward to continuing more trials with this configuration when I receive the new motor towards the end of February.

Fact or Fiction Pilot stories ?

- In 1958 a pilot ejected from his F-106 when it entered a flat spin. He was surprised to see it come out of the spin and land itself in a cornfield. Today the plane is known as the Cornfield Bomber.
- 12 cyanide pills were located in the cockpit of the Enola Gay. The crew was instructed to take these pills in case the bombing of Hiroshima went wrong.
- Tex Johnson, a pilot who was demonstrating a Boeing 707, did a barrel roll. When the Boeing executive asked him what the heck was he doing, he replied that he was selling airplanes. He went on to do another barrel roll.
- In 1959 a pilot ejected from his plane at 45,000 feet but flew straight into a thundercloud. The wind kept him airborne for 40 minutes and he even had to hold his breath so that he wouldn't drown.
- On 9/11 some fighter jets took off without any ammunition. The pilots knew that they may have to ram their jets into the hijacked airplanes and eject at the last minute.
- In 1956, Thomas W. Attridge's jet was shot down during a test flight. It was later found that he had run into his own bullets that he had just fired.
- In 1953, No Kum-sok, a North Korean pilot defected to South Korea with his MiG-15. He received a \$100,000 reward from the US military thanks to Operation Moolah. This operation was an American led effort to acquire a MiG aircraft.
- In 2001 Rowan Atkinson, Mr. Bean, was in a plane with his family when the pilot passed out. Rowan took the controls and slapped the pilot until the pilot woke up.

Fact

Servo and control horn tips.

Servos and control horns have a major effect on the way an aircraft will fly. If not set up correctly they will have an adverse effect on the flight and this is something we can avoid. In this article, we discuss how to set up servos and control horns.

I enjoy watching an RC plane that is being flown well by an experienced pilot. So how much is the pilot and the rest setup? In actual fact, it's a bit both. Not only can an experienced pilot fly well but he can set up a plane so that it will fly well.

Flight Control Surfaces

Aircraft flight control surfaces are aerodynamic devices allowing a pilot to adjust and control the aircraft's flight attitude. It is important that these surfaces move freely without binding or slop and that they return to the same position each and every time.

These issues can be fixed fairly easily with a little care and attention.

Common issues include:

Hinge ceased

Hinges not aligned correctly

Control surface binding on the airframe

Linkage too tight

Debris caught in linkage

Loose-fitting control horn



Hinges can be easily replaced, however, just be sure that the cuts are straight. If the hinges are not straight it will cause binding. Tighten any loose control horn and if necessary re-pack the horn as over time the foam may compress.

Linkage Systems

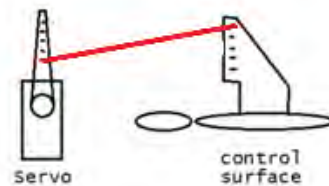
Linkage systems are often overlooked and it is one area that can be cause for concern. Check your servo, servo arms, pushrods, and control horns for underrated, loose, or ill-fitting parts. Some manufacturers may include parts that are not quite suitable and this may result in deflection or flutter of control surfaces. Fitting correctly rated parts are the keys to success and there are no workarounds or shortcuts here. Take the time to install linkages properly and securely so that they are free of slop or play.

Servo arms must travel parallel to the pushrod components, as they are not designed for side forces. Control horns are at their strongest when force is applied this way.

A side force may twist or fracture the horn causing an inflight failure. You need to ensure that a servo does not travel more than it needs to as it may overdrive a control surface or cause a horn, hinge to fail. Many radios have the ability to program the servos to travel and this is a perfect situation to configure this feature. In addition to servo travel, we can change the resolution and this can have a similar effect.

Resolution And Travel

By default, most manufacturers use the middle hole in the horn and the servo arm. Whilst this may be fine some planes will benefit from higher-resolution or a more precise control surface. We can make the control much more precise however it comes at the cost of travel. So, this may not be a bad thing if you intended to manually reduce travel in the radio anyhow.



To increase the resolution or make the control surface more accurate, you will need to move the control rod to the most inside hole on the servo arm and the most outward hole on the horn. This will give us the smallest travel. The reverse will give us the greatest travel and poorest resolution. Move the control rod to the outermost hole in the servo arm and the innermost hole on the control horn. You will notice as you move the servo via the transmitter you can see each servo step and the sensitivity is greatly reduced.

So by moving the pushrods around we can dramatically improve the handling of an aircraft.

Control Horns

There is little difference in cost between a poor choice and the best choice for control horns. I prefer nylon or carbon-reinforced plastic horns as they are robust and they will not fatigue easily. Plastic horns may be ok on very small indoor flyers but anything beyond this is inadvisable.

There is no reason that nylon could not be used on a little indoor flyer either as there is not a significant difference in cost.

Servo Selection

It is a good idea to select servos that can exert a greater force than what the manufacturer recommends for the aircraft. In addition to force, you need servos that are precise. Flying a plane with poorly centering servos is painful at best.

You will never enjoy an aircraft with poorly centering servos. Servos can be reused and in many cases spares sought so do invest in decent servos.

So, spending a little extra time setting up the control surfaces with appropriate hardware will give you a better flying aircraft. Mechanical advantage is preferred in place of reducing travel by programming. Choose better servos and upgrade control horns to reduce slop.

Yesterday my daughter asked why I didn't do something useful with my time.

She suggested I go down to the senior centre and hang out with the guys. I did this and when I got home last night I told her that I had joined a parachute club. She said, "Are you nuts? You're almost 61 years old and you're going to start jumping out of airplanes?"

I proudly showed her that I even got a membership card. She said to me, "Good grief, where are your glasses! This is a membership to a Prostitute Club, not a Parachute Club."

I'm in trouble again, and I don't know what to do... I signed up for five jumps a week.

Life as a senior citizen is not getting any easier.

Should have gone to Specsavers !!



Hope you had a good safe festive season and did the right thing whilst drinking and celebrating not like this persons message.

Friends - please be careful

Yesterday I went to a Christmas party. I had a few beers, followed by a few cocktails, followed by a few shots....

I still had the sense to know that I was over the limit. That's when I decided to do what I have never done before: I took a cab home.

Sure enough, there was a police road block on the way home, and since it was a cab, they waved it past. I arrived home safely without incident. This was both a great relief and a surprise because I had never driven a cab before. I don't even know where I got it from and, now that it is in my garage, I don't know what to do with it.

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I did own a boat and enjoy fishing, this could be the reason I took up flying.



Unusual model configuration must have been a challenging build but it does fly.



HOW TO STOP YOUR PROPELLER FALLING OFF IN FLIGHT

Losing a propeller in flight is a nightmare situation. If you intend to fly another day you've got to think quickly because you only get one go at it. In this article, we look at causes and solutions. If you have the height you should be able to land when you have an engine failure or lose a prop and if you're like me your emergency landings are always your finest landings.

If, on the other hand, you're a long way from home then you have few options, but it's highly likely you'll be ditching somewhere along the way. In this hobby, it is a certainty that you're going to have an engine or motor failure.

It is possible to reduce the chances but you cannot stop it from happening as there are inherent issues with internal combustion engines but we should do everything within our power to reduce the risk.

Stopping Propeller Coming Loose

Let's look at each cause and a possible solution.

1. Loose Prop Nut.

Running a large heavy prop such as a glass fiber reinforced prop that is designed for a glow or gas motor can be problematic when combined with the brake on an electric motor. It is possible the prop may come loose and this is due to Newton's First law of motion. Every object will remain at rest or in uniform motion in a straight line unless compelled to change its state by the action of an external force. In layman's terms, the prop would prefer to keep spinning and the motor is trying to stop.

The resultant force can loosen the prop and nut and you may even see the prop break completely free of the motor. One solution may be to apply a thread locking product so that the nut stays in position without breaking free. This is not a permanent bond and one that can be broken should you need to remove the nut to replace the propeller.

Another option is to use a lock nut as this can provide enough friction to reduce the chance of the propeller coming loose. If you don't have a thread lock handy yet you still would like to add a layer of protection, try a little nail polish, plumbers tape, and even dental floss.

You can reduce the chance of the brake causing an issue by adjusting the type and force of braking. For example, the YEP line of ESC allows for 5 different brake settings, and of most interest would be the soft setting.

2. Losing A Propeller In Flight

If you are losing propellers in flight it is highly likely you're using the wrong type of prop. There are normal rotation (Left hand) and reverse rotation (Right hand) propellers and if you are using a normal rotation prop in a pusher configuration then it's highly likely you're going to lose a propeller.

This was a common issue in the early days of multi-rotors when props would fly off. When force is applied to a normal rotation prop in a pusher configuration it will naturally loosen the prop and most likely fall off completely. When force is applied to a reverse rotation prop in a pusher configuration it will naturally tighten the prop and even whilst braking. The more force and breaking the tighter the nut and prop. The only solution here is to use a reverse rotation prop.

3. Propeller Collet Adapter Becomes Loose

There are two issues that could be at play. The motor shaft is too smooth and is allowing the collet adapter to slip on the shaft. The collet adapter is too large and cannot get adequate purchase on the shaft. If the shaft is too smooth you can rough the shaft up with wet and dry sandpaper. 400 grit should be sufficient to score the shaft. Be sure to tape up the motor so that no grit can enter the motor or the bearings as it will destroy the bearings in little to no time. If the collet is too large you can pack the shaft with paper to see if that is sufficient to provide enough fill. Start by wrapping the paper neatly around so that there is just enough paper so the collection can still slide onto the shaft without the paper bunching up. Best of Luck and Happy Landings. Article written by Gozarian.



From the pilot during his welcome message: "We are pleased to announce that we have some of the best Flight Attendants in the aviation industry. Unfortunately, none of them are on this flight!"



Catch you when we fly into the next edition in 2023. Happy Flying, regards Ron.

