



Fort Worth Thunderbirds Radio Control Association Inc. **The Pilot's Log**



Issue 4475, September 2020

Next club meeting: September 28th, 2020, 7:00pm at our flying field

Presidents Corner: by *James Meadows*

Cooler weather is upon us, or so it would seem. To many this signifies that summer is ending and fall is around the corner, it also means several future transitions within the club. Officer elections are just around the corner. Nominations can be made at a club meeting or via email to any of the officers at or before the October Meeting. Nominees must accept the nomination, prior to being placed on the ballot for a November vote. It's a great way to give back. Our Training program will be wrapping up in a few weeks as the days grow shorter. Despite the COVID19 crisis, the training crew did an outstanding job at introducing our pastime to a few students, achieved a few solos, and promoted our club and field as one of the premier sites in the country.

I would expect an increase in the number of members and visitors to field as the weather cools and the days grow shorter. This is a good thing! A way to enjoy your club membership, see old friends, and perhaps even provide a positive experience to a visitor or two while practicing safe distancing and any other precaution's that the member or guests are comfortable with. Recently I was informed about a not so positive experience for guests and members alike. This incident involved the incessant use of profanity, engaging in loud degrading conversation about race, ethnicity, gender, sexual orientation, and chastising of guest who choose to wear masks or maintain social distancing. While membership and Guest access has its privileges, it does not provide for the type of conversation or behavior illustrated above. You only get one chance to make a first impression. Let's make it a positive one.

Safety! I know why there is so much lately about safety and the reminders about no-fly areas, pit safety etc. The short answer is observations and trends. RC Technology

has come a long way in a short time, over the past few years. It's this progress that has also fueled, recent commercial applications and government concerns/responsibility to provide safe airspace. By following our local field, AMA and FAA rules and policies it will ensure we don't provide a bullet point on a safety incident, for further restrictions.

Perhaps with fewer folks flying due to COVID or the Texas heat individuals have formed bad habits. Some people don't understand that technology does not equal safety in all forms and I dare to say a lack of plane old situational awareness. Thunderbird Field and the Thunderbirds RC Association welcome all types of Drones or UAS (FAA Description of RC platforms), Airplanes, helicopters, coaxial, and quads. Recently I observed a quad in operation at the field. What caught my attention was that it was approaching the pit area from over the parking lot area. Clearly not within the fly zone. It then proceeded toward the lake and I lost sight of it. The operator who was sitting in the shade of the pit area, soon got the audio warning on his radio for low battery and a friend of his, said time to push the return to home. Moments later the quad was on the south side of the field, over the grass, parallel to Joplin lane "Heading Home". Luckily the operator was watching because two individuals who were walking toward the south pilot boxes with aircraft in hand did not. The quad operator arrested its decent with the hold command. They passed and the quad continued to come into the pits, hover, and then touched down at the operator's location just inches in front of the NO ENGINE START sign. I could go back and address each violation of our policies, the AMA and FAA rules, but I think each of you can see the potential for disaster here. Fly what you like, but let's do it safely under rules that

have protected all of us over last 60 years. If you're not clear on the rules or policies ask!

Safety is all of our priority and concerns.

Pleasant flying.

Vice Presidents Corner: *by Rob Lowe*

Hello Thunderbirds! Welcome to Fall! Let's hope it begins to feel like that soon. I hope you are getting out and enjoying some of the great flying weather we've had.

I wanted to remind you about some of the great technology we are able to use to communicate with you. You've seen the great looking e-mails that come to your inbox with all the club logos and layout. I wanted to tell you a little about the system that generates those. It enables your officers to send one email in the system and with a database of members, it then sends you (and every club member!) an email addressed to you by name.

Please understand we only send emails and club communications to transmit needed information, raise awareness and inform you of things you need to know! We do not send a personal email to any one individual to address any issues. Your officers will be much more thoughtful and tactful while addressing any item of concern with an individual. We would not send one of the cool emails - mostly because it's too hard to send to just one vs. to all of us! Seriously, we only strive to make this a better club and flying field for all that exemplifies the family friendly values our club desires.

On another note, your officers continue to work a number of club issues for the immediate future as well as long term. We are still working hard to adapt to a COVID-19 world. We have been working on solutions for monthly club meetings since Buffalo West went out of business and fall will take away sunlight and our ability to hold meetings at the field. Stay tuned as we work through adaptive solutions. Also in the works, we are sorting through safe alternative solutions for our Christmas gathering and much more. We are hard at work on your behalf and are honored to represent each and every one of you.

Lastly, don't forget officer elections are coming soon. If you are interested in a great opportunity to serve the best RC Club on the planet, get your name to James or any of us. As Uncle Sam says - I NEED YOU! In our case "The club needs you"!

GO FLY! Bring a friend and reach out to a young person and get them into the hobby! I hope to see you at the field soon.

Here's my virtual low pass salute to you Thunderbirds! See ya soon!

August Club Meeting Minutes: *by Mike Schroeder*

Meeting Starts at 7:00pm or 1900 hours

James Meadows: Welcomed all members and asked if we have any new members at their first meeting or guests. Phil Dunlap is attending his first meeting and guests are Ahmed Ajlouni, Todd Kensler, Avery Kensler.

Events

Warbirds over Benbrook: Canceled due to the ongoing virus.

Jet Event: Is still a GO for October

Alliance Airshow: Is a drive in style event where you will stay in your car and watch the show of planes. There will be no static line this year.

Fun Fly event: Challenge to complete your landing in the red tape box on the runway. Wayne was the closest to landing and won first place.

IMAC in Abilene:

Four club members attended with:

Daniel Boamam taking second place in Basic Class
Sam Jr. won second and Sam senior won third place
with Ken Knotts attending.

Overall the contest event was a lot of fun with about twelve pilots competing.

Show and Tell

Ronald Schwarzkopf: SU17 Russia wingspan 65 inch to 89 inches and length is 112 inch. The build started in 2017 and many of the parts have been 3D printed. It is a swing wing plane and flew after the F-111. Poland is still flying this plane and it has an interesting color scheme. Next step is to start smoothing out the surfaces and hope to have a flight by the end of the year. Powered by a 190 turbine and it should weigh in at 42 pounds. Need to make the canopy and mold the tires as they are just 3D printed right now.



Paul Bloxham: RAF Blackburn Buccaneer that is almost finished. The gear is in and it works. The plane should weigh in at 50 pounds. The Blackburn will be powered by twin 100 turbines. Most of the radio gear is in and Paul needs to buy the turbines which are the next big purchase. The main gear is custom made and the nose gear is Electron gear. The plane was retired 1990 and the first flight will have to be in Waco because of the runway length.



James Meadow: Showed his cardboard plane. It is a Phoenix Cub from the 1980's with a cardboard spar.

James had a failure issue on takeoff and he will need to do a small repair and try again.

Reports

Secretary Report by Mike Schroeder: Motion by Bill Lake to defer the reading of the minutes, second by Ed. Show of hands and everyone is in favor of deferring the reading of the minutes.

Safety Report by Ed Kettler: A reminder that the grass between the pilot box and the runway is a safety zone and not to be flown in or landed on. Grass landings are for the East side of the runway or the far side. Hand launch planes need to be launched from the same pilot box area that the pilots are flying from for good communications with the other pilots. Drink lots of water as it is still way too hot and dehydration is still an issue for all. Watch out for snakes if you have to walk out to recover a plane. Be safe out there.

Vice President Report by Rob Lowe: No report at this time.

Treasurers Report by Chris Berardi: No report at this time. The club's finances are in good standing.

New Business

The automatic gate at the front entrance to the park installed by the Corps will be self serve and start October 1. This is for all those who are using the rest of the park. Nothing needs to be done if you are going to the flying field. All Thunderbird members will not be required to pay.

Place to Meet: We are looking for a place to have our club meetings. Wayne has offered his place with a limited menu as he is normally closed on Mondays. We will consider that option but we are looking for a little more central location to have meetings.

Old Business

The field has new stripes and no misspelled words thanks to Tim Ott and his hard working crew David.

Lease renewal is still ongoing and we are looking for a longer lease.

Fraud, no one and no officer of the club will ever ask or use an email to ask for money. We will not ask for donations unless it is followed up with a phone call and if you do get an email asking for donation on an officer's behalf please call the officer.

Several donations were auctioned off:

Johnny Hunt bought an engine that we still do not know what it is except it looks like a chain saw size.
Daniel Boamah bought a Nieuport plane

Peter Devlin bought two planes
Adam Rush bought a P-51 ARF

Meeting ended 19:46

Thunderbird Members in Attendance

Sam Corlett
Sam F Corlett
James Meadow
Grant Schroeder
Peter Lucas
Daniel Boamah
Woody Lake
Ian Warning
Peter Devlin
Bill Lake
Steve Konkle

Tom Benke
Ed Kettler
Gary Alpine
Mel Wells
Rob Lowe
Brian Lowe
Sarge Bell
Phil Dunlap
Adam Rush
Buck Garza
Lonnie Cooper

Randol Shaw
Chip Kiehlbauch
Johnny Hunt
Ronald Schwarzkopf
Wayne Lemkelde
Kenneth Kilggo
Paul Bloxham
Rex Anderson
Mike Schroeder



From the Treasury: by *Chris Berardi*

See Attachment A, page 18

Safety: by *Ed Kettler*

Safety runs the gamut of topics, and this month I am going to write about physical property protection. We have several lines of defense around the field, none of which are impervious either in combination or individually. Together, they form deterrents to individuals or groups from causing damage and loss for the club.

- **Remote location:** good news: a lot of the bad guys don't know we exist; we are too far away from more lucrative targets. Bad news: if they want to do something, their chance of discovery is remote.
- **Access control:** it was better when the Mustang Park gate was staffed, now we are limited to the gate at the end of Joe Joplin Road. In the last month, somebody left this gate opened and unlocked. That doesn't help the club at all
- **Locked areas:** this includes restricted access areas, like the shed where the bulk of our club resources are stored, as well as member only access, like the AED cabinet.
- **Club Rules:** probably the most important from a property safety perspective is the "last member out locks up" rule for the gate. I know it is difficult to ask folks to move their vehicles, but leaving the gates open to unknown actors is not being a solid club member. If they won't move, you can call 911 and the park rangers or sheriff will take over.

Social distancing and masks are still a necessity. Some folks take the rules/guidelines more seriously than others, so please be respectful of their decisions and requests regarding PPE and practices. We have canceled many events this year in order to protect members and guests, but also to shield the club from liability in the case the event generated cases. This too shall pass, and one day we will be fully back to normal operations.

Blue skies!

SPECIAL 50th ANNIVERSARY AIR SHOW EDITION



**50th Anniversary
Radio Control
Air Show**

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Thunderbird web site at: www.fwthunderbirds.org
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In September 2012 the Fort Worth Thunderbirds celebrated their 50th year anniversary. This year, 2020 marks 58 years and before we know it 60 years will be upon us. This month I've included the anniversary edition recapping this historic event for those folks that were not Thunderbirds at the time.

Sunday, September 30th 2012, Fort Worth Thunderbirds Airfield, the long anticipated Air Show came to pass. Saturday it rained all day and I was beginning to think my long standing record was about to be broken.



However, at the time of this writing I can report my record still holds true when I say “it never rains on my parade”. Sunday produced overcast skies and cool northerly winds for the most part right down the runway. Other than a slight misting at 1030 the rain confined itself to north and south areas of the metroplex region.

Opening ceremonies included local Girl Scout troop raising our nation’s flag to the National Anthem. Flying portions of the opening ceremonies included a flight by ‘Thunderbird One’ to the music of Steppin Wolf’s “Magic Carpet Ride”, an SAE aircraft, and two turbine jets; a Boomerang and F-16. The turbines flew choreographed breathtaking flights to the music of the Top Gun theme “Danger Zone”.



President Ken Knotts introduced Thunderbird Officers and special invited President Guests.





Left to right: Jerry Dittrich, Bobby Faucett, Brian Phelps, Larry and Barbara Ragland

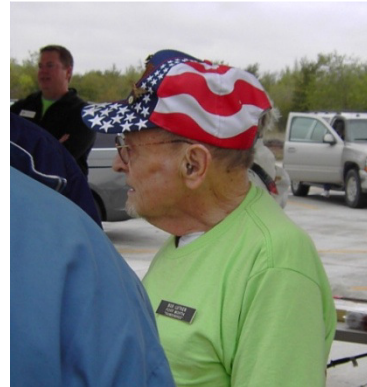


Left to Right: Bobby Faucett, Brian Phelps, Joe Stout (in second row), 'Zim' Zimmerman, Dave Wheaton, Ralph Heath

Attending guests:

- Barbara Ragland - District Director for Kay Granger
- W. B. 'Zim' Zimmerman - FW Mayor Pro Tem and City Councilman Fort Worth District 3
- Jerry Dittrich - Mayor Benbrook
- Brian Phelps - Corps of Engineers District Lake Mgr.
- Bobby Faucett - Benbrook Lake Manager
- David Wheaton - Retired VP Lockheed Martin, F-35 Leader
- Joe Stout - Director of Communications Lockheed Martin
- Ralph Heath - Retired President Lockheed Martin
- Norman Robbins - FW School Board, Lockheed Martin
- Roy and Pat Craig - Roy's Hobby Shop

In addition to the above mentioned guests were two founding Thunderbird members, Bob Lutker and Walker Brents. Bob presently lives out of our area and holds an associate membership, while Walker is a dues paying active member involved in club activities.



Bob Lutker



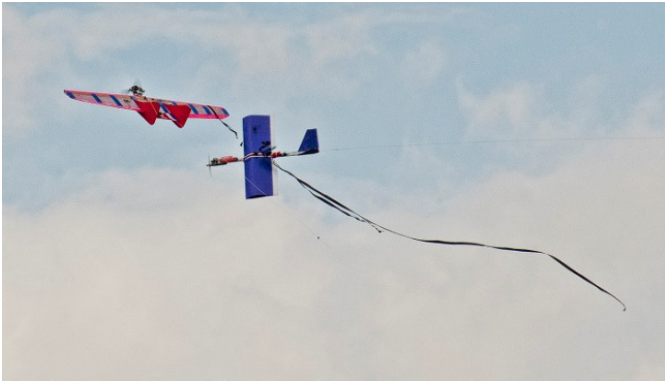
Walker Brents

Free style Aerobatic demo by Rick Byrd wowed the spectators but unfortunately ended in disaster when the tail section separated the aircraft.



Demo flights included combat, fun fly, helicopters, warbirds, biplanes, racers, and aerobatics.

Combat demo was a crowd thriller especially during the midair collision. I always said spectators love the carnage.



Combat



Racing

Balloon Bust demo: balloons partially filled with kitty litter to minimize movement on the runway and planes are flown low and try to bust the balloons. Pilots Gary Alphin, Will Campbell, Jason Meadows, and Blake Arnold. Blake Arnold was high scorer flying his Ugly Stick. Jason Meadows tried it inverted with the obvious results.



Left to Right: Blake, Jason, Will, and Gary

Amazingly choreographed helicopter demo flights flown by Chris Berardi and Will Campbell (not shown in photos).



demos on schedule. Colorful narrative by Chip Mull entertained the crowds and Thunderbird members.



Left to Right: Terry Thorpe and Chip Mull



Benny Throne and Chris Berardi



Noon time “comic relief “segment: While Travis Berry and Mel Wells argued over who would fly the Cub, the transmitter was dropped, exploded into a hundred pieces, and the Cub careened into the air (piloted by Rick Byrd and hidden from crowd). The J-3 Cub appeared to get away from the pilots and wildly flew about the runway at low altitude. Chip Mull, announcer, kept the crowd engaged in the ensuing thrilling wild flight.



Flight line marshallers: Dave Dingman, Will Campbell, and Chris Berardi kept the birds in the air and flight



Two flight simulators were in high demand all day by interested spectators and the food court kept the visitors and members’ bellies full.

Park entrance folks said they issued 149 passes and estimating 2 people per car that’s right at 300 plus spectators and approximately 60 Thunderbirds in attendance. Just think what the attendance would have been if it hadn’t rained in the surrounding area.

The boss's job is never done:



Discussing Flight Schedule with Terry



Helping Austin with repair



Pilots' Briefing



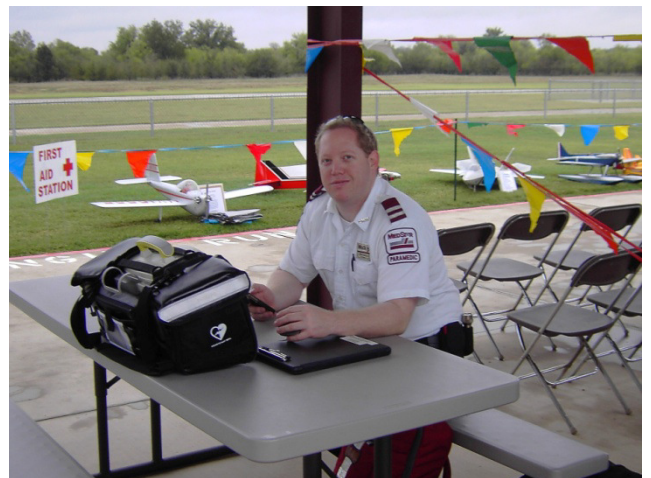
Joe Jopling conversing with Tom Blakeney.

Joe was instrumental in the development and completion of our flying site. Tom was the pilot for 'Thunderbird One' and Joe later said "with enough power and the correct CG Tom can fly anything." Amen!



Pat and Roy Craig: Roy's Hobby Shop

Roy's has been a long time supporter of our club as well as all RC Model clubs in the area. Their generosity is greatly appreciated by our members.



Medical support provided by Med Star Ambulance Service, compliments of 'Zim' Zimmerman, Mayor Pro Tem, Fort Worth.

Aircraft lineup photos



Overflow parking on Jopling Lane (looking north)

Little boys with big dreams

The People:



The Planes and Pilots



Miscellaneous Photos:





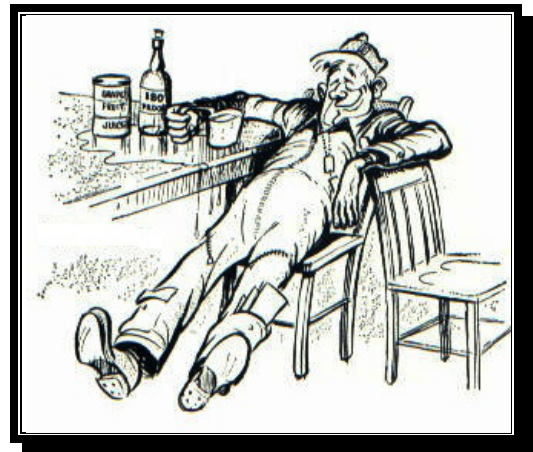


In closing I would like to convey a heartfelt thank you to all those Thunderbirds that helped in making our 50th Anniversary Air Show a huge success. If I tried to list all names it would take another eleven pages and I would still manage to miss someone. In any case you know who you are and I owe you all big time.

People in attendance expressed how wonderful and helpful the Thunderbirds in the 'green' shirts were. They were also amazed at the level of flying professionalism and the sheer magnitude and detail of the aircraft on display.

Just a special thanks to Jacques, Roy's Hobbies for rounding up the combat folks and they're exciting demo.

I'll keep all my notes for the Centennial Celebration and pass them on to the next generation of flyers. Where are Logan and Austin?



*Cheers to all
Woody*

THUNDERBIRD TENTATIVE 2020 CALENDAR

September 26-27	Wes Blair Scale Competition	GSW RC Club
October 3	Bi-Plane Fly-In	GSW RC Club
October 17-18	Alliance Airshow	
October 24-25 (tentative)	SPA West	Ken Knotts
October	Benbrook Thunder EDF Fly-In	Tom Blakeney
October 31st	Texas Electric Expo	Tom Blakeney
November	Toys for Tots	
December 12th	Club Christmas Party	Officers

WWW.FWTHUNDERBIRDS.ORG

POSITION	BOARD MEMBER	CONTACT EMAIL
President	James Meadows	president@fwthunderbirds.org
Vice President	Rob Lowe	vicepresident@fwthunderbirds.org
Secretary	Mike Schroeder	secretary@fwthunderbirds.org
Treasurer	Chris Berardi	treasurer@fwthunderbirds.org
Safety Officer	Ed Kettler	safetycoordinator@fwthunderbirds.org

Club Officers 2020



Pres: James Meadows **VP:** Rob Lowe **Sec:** Mike Schroeder **Safety:** Ed Kettler **Treas:** Chris Berardi

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THIS FIELD IS LEASED BY, MAINTAINED BY, AND ITS CONSTRUCTION FUNDING WAS SECURED BY
THE FORT WORTH THUNDERBIRDS RADIO CONTROL ASSOCIATION

ALL AMA, CORPS OF ENGINEERS AND THE FOLLOWING RULES APPLY TO EVERYONE FLYING HERE.

1. Neither the Thunderbirds nor the Corps of Engineers is responsible for accident or injury.
2. Place your AMA card in the proper slot above before turning transmitter on.
3. All engines must have effective mufflers.
5. Fly from the station nearest the downwind end of the runway. In case of a crosswind the first pilot to fly will select the station.
6. Aircraft must follow the takeoff and landing pattern in effect.
7. Landing aircraft have the right-of-way over aircraft taking off.
8. Running aircraft shall not be left unattended.
9. No more than 5 pilots shall fly in each designated zone at one time.
10. LMA rules are posted in the bulletin board

Academy of Model Aeronautics
National Model Aircraft Safety Code
Effective January 1, 2018

A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraft using AMA's *See and Avoid Guidance* and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's *Competition Regulation*.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

For a complete copy of AMA's Safety Handbook please visit:
www.modelaircraft.org/files/100.pdf

Attachment A

From the Treasury: By Chris Berardi

Gas, Glow or Electric?

What mode of power did you “grow up” within this hobby? Maybe your answer is diesel - that was certainly my entry into the hobby. It was all of 1 cc and had a very smart blue anodized cylinder head. With an 8x4 yellow nylon prop it powered a simple control line model produced by Keil Kraft called “Champ.” Many a summer’s evening was spent at the high school not far from home. My brother and I would set up in the parking lot usually with a couple of friends watching on. I’d start the Davies Charlton Spitfire diesel using it’s built in spring starter; it was actually quite a friendly motor and not too hard to start. I’d back off the compression, lean the needle and hand the model to Charles who would wait for me to dash over to the handle.

Once airborne, I’d make a few circuits to get warmed up, and then without giving it a second thought, my brother would lay down on the edge of the circle while I inched the Champ closer to him on the over-flight. Looking back at what we did and got away with doesn’t help me remember what we were thinking about. What I do remember is the sweet smell of the ether and the black oily exhaust that I’d wipe down after a day of flying.

Once I got more proficient my models got larger. My favorite and last control line model that I flew regularly was a Carl Goldberg “Shoestring.” Of course, it was powered by a Fox 35 stunt, the quintessential stunt motor of all time. My motor was given to me as a gift by my mother when I was 12 years old. It was loud because no muffler came with the motor and I didn’t have any other options. But it ran sweetly on a can of “Duke’s Fuel” and the 10x6 grey nylon prop by Taipan seemed huge in comparison to the little prop on the Champ. Plus, it was a glow motor and took a completely different set of skills to start. On the plus side, it was loud and scary enough that I couldn’t persuade my younger brother to take a chance on my piloting ability.

Many of you may have started with gas motors with a spark ignition and then when the glow plug really took hold things moved away from spark and diesel to the modern glow era. And for decades the glow engine ruled before giant scale and the demand for large motors mandated a more efficient engine with less costly fuel. Once again, gas engines became popular and are available in every variant possible. What was old became new again until quite recently.

Have you noticed how, like it or not, we all seem to be moving toward electric power? Personally, I want my glow and diesel motors, even gas satisfies my need for something burning and turning; where my ear can tell the state of the mixture or the need to ease the compression lever - I reckon I can tell just how much power that motor is producing! Well, in my mind an electric motor is a heartless beast. It doesn’t work like it should, any glow motor makes more power when the rpm rises, but an electric motor...well that’s all about load and kV and Io. They really don’t have much personality: When was the last time you wanted to look at someone’s electric motor? Probably never. On the other hand, the machine work on any DA is almost too nice to cover up with a cowl.

Unfortunately, as I mentioned this has become a state of “like it or not.” Look around and you’ll find very few glow engine manufacturers. One of the iconic brands, Rossi, stopped producing airplane motors last summer and even budget motors like Magnum or Thunder Tiger are long gone. Glow and diesel engines aren’t dead and gone yet but it seems that the situation will not improve given the changes in our hobby. Fortunately and because we are flying larger models gasoline engines are readily available to meet our needs but it is electric power that is rapidly replacing even large displacement gasoline engines.

While electric motors have no heart and soul what they do have is tech. Indeed, our familiarity with technology in our everyday lives has bled over into our hobby such that even a newcomer comes with the knowledge to ask about battery capacity and voltage. In no time at all our radio gear has taken advantage of this to provide almost every conceivable parameter worth worrying about. This means that I don’t actually need to hear what the motor is doing for speed or power, I just need to be able to read it off the transmitter’s screen.

With electric motors available in every size from the tiny micro sized radio controlled indoor models to 60cc and larger giant scale motors it won't be long before all of us will be comparing data files, like it or not.

My brother is older and wiser now; and though he still does stupid stuff lying underneath a spinning propeller isn't one of them. As for me I'm coming around to powering my models with clean electrics and recognize their advantages. But I miss the personalities of my glow and diesel engines and the repertoire of knowledge I've earned over the decades to make them run at their peak. I may be grown up but I'm still a child at heart.

And the Nobel Goes To

While we were just talking about electric motors to power our models, one of the major drivers for their success has been the improvement in battery technology. The era of nickel cadmium, a.k.a. NiCad is long overdue to their toxicity in our landfills. This chemistry was superseded by nickel metal hydride that is still around though its higher internal resistance limits it to low power operations. Indeed it is lithium battery technology weighing in at about 25% of the mass of NiCad that has transformed battery tech for us. And who do we thank for that?

Let us recognize John Goodenough. In 1980 John Goodenough developed a lithium battery with a cathode of cobalt oxide, which, at a molecular level, has spaces that can house lithium ions. This cathode gave a higher voltage than earlier batteries. For this, John Goodenough received The Nobel Prize in Chemistry 2019. John Goodenough was born in Jena, Germany and since 1986 he has been a professor at the University of Texas at Austin.

As a side note, if you have some time take a look at where the metal, cobalt, comes from. You have heard of "blood diamonds" no doubt, much the same can be said of how cobalt is mined and by whom. When you see what and who is underpinning of our modern society, it makes you wonder how long it will all last.

2021 Elections

You will be most pleased to know that this isn't anything to do with our national, state or local elections. Indeed, it's something an order of magnitude more pleasant: Our Thunderbird elections to select the 2021 board members.

Section IV of our Bylaws state how new officers are nominated. It is worth repeating a brief summary here, but please go to the web site for the full section.

Nominees for board members shall be current members. There is no limit on the number of nominees for each board position. Elected board members shall serve for one year beginning with the January club meeting.

- ★ Candidates for office shall be nominated at the October meeting.
- ★ Candidates can be nominated from the floor, by mail or email if received by a member of the board prior to the October meeting.
- ★ Approval for inclusion on the ballot shall be obtained by a second nomination.
- ★ No candidates will be accepted after the October meeting.
- ★ Votes for write-in candidates will not be considered for election to office.

I have offered to take on another year as Treasurer as have the other board members with the exception of the Safety Officer. However, this doesn't mean that if you would like to be part of the board that you can't throw your hat in the ring! By all means, let the board know that you would like your name on the ballot.

We will also be looking to recognize our 2020 Thunderbird of the Year. Please pass on your recommendations to a board member.

Membership Update

The last newsletter I contributed to, apologies for my absence, reported 171 members as I recall. It has been a great summer and our club membership has grown in spite of COVID-19. However, maybe that is to be expected as many outdoor activities have seen a huge resurgence - people just want to get out of the house and into fresh air where the chances of catching something are reduced. Have you tried buying a bicycle recently? I have, and there isn't anything less than \$2k available in the next 20 weeks or more.

Here is our latest membership count

Membership Type	Count
Individual	171
Family	14
Associate	8
Life	12
Service & Gift	3
TOTAL	208

That's it for my report this month - see you at the field as fall wraps up a fantastic flying season.