Bayou City Flyers

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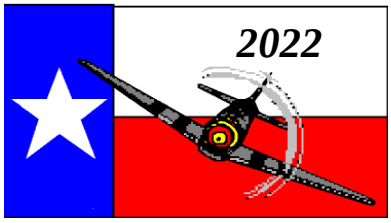


NOTAM

• Presidents Corner:

This will be my last year serving as your president, and I want to say thanks for the opportunity and the confidence you placed in me. It has been a privilege to serve as treasurer for two years and president for another two. After four years of service on the board, I have decided it is time to give someone else the opportunity to take us to the next level.

Being president has been a wonderful experience. In many ways I have grown because of this experience. One true blessing is I had the opportunity to work with some of the best people in the hobby, namely Jerry Wilson, Rudy Villarreal, Gary Woodhouse, and Corey Johnson. Working with this BCF executive board could not have been better. I always appreciated the diversity of ideas that I could draw on when we had important decisions to make. We could debate and disagree, but we always had the utmost respect for each other, and we kept the good of the club as our top priority.

I want to also say thanks to the many members who contributed greatly to make the club better. Clubs are only successful when members get involved, and we have a good core group who were always there when we needed you.

I am proud to say we accomplished a lot in the past two years. Here is a short list of some accomplishments:

We signed a new contract with Harris County that made us the custodians of all flying fields at Scobee Memorial Airfield. In addition, we have established a great partnership with the county.

We re-focused on safety and added new signs to communicate the importance of safety to all flyers

We improved the finance report and made it available to all members.

We started a newsletter that has been a key communication tool to the club members. Thanks to Joe Chauffe who produces this each quarter.

We added a canopy to provide shade for the helicopter area and helped the Houston Hawks to purchase one for the glider area.

We partnered with Fort Bend RC in teaching a ROTC High School group how to fly trainers.

Lastly, we had a successful warbird fly-in in memory of our dear friend, Ron Mers. In addition, we installed a new 25-foot flagpole in his honor. Thanks to Corey Johnson and Greg Yancy, who worked tirelessly to accomplish this.

This list of accomplishments is evidence that BCF is a great club with a strong executive board and great members. My hope is we will continue to strive to make BCF a great club and Scobee Field the best in the area

I am proud to have been a small part of what it takes to make this a great club…….Max Burton

Bayou City Flyers : Safety First

Out of Control!!!!

It can happen to anyone. You take off on a maiden flight and the plane just seems to have a mind of its own, no matter what you do. It could also happen to a plane that's been flying great– battery fails, receiver fails, servo fails, hinges pull out, etc.

The fact is you should always be aware that this can occur at any time. This is one of the reasons we discourage passes down the center of the runway. If something does go wrong you are awfully close to other pilots.

You really need to keep aware of where you are in relation to the Flight Line and Pit Area. Another area to be aware of is your relationship to the roadways. When you lose control and are in close proximity to these places what do you do.

The NO FLY Zones are there for everyone's protection. People in these areas are not necessarily watching or paying attention to what you are doing. Now I've seen people fly over these area and even crash in them. Their response is usually I didn't have control the plane was doing it by itself. The fact of the matter is You are the pilot and responsible for your plane and flight. Generally you are aware you are having a problem before it progresses to the point that you have no control or are going into these no fly zones, you have a responsibility to cut the throttle and put the plane down immediately. Sometimes this means a hard landing or even a forced crash. Everyone wants to try and save their plane but you have to balance that with the possible consequences of failing, which is mainly hitting someone, or damaging someone's property. Flyovers and crashes in the No Fly zones are not acceptable!

Announcing you have a problem is very important, and it needs to be done loudly to get everyone's attention. In most instances if they are close enough people will rush to try and help you.

The important thing here is to remember at this stage of the game the protection of people and property is paramount! There is a good chance you are going to lose your plane anyway, don't compound the disaster by trying to recover, it's likely too late at this point!! You will be respected more if you put it in the ground than if you hurt someone.

Be mindful of the vehicles on Westheimer Parkway. They definitely are not watching you, and crashing into one of them will most certainly involve the police, and possibly the court system. Be aware if you do end up talking to the police and court, nothing you can say is going to get you out of anything!! You Are Ultimately Responsible!!!

Now I'm trying to scare anyone, or call anyone out. This article is to make everyone aware of their responsibility. Before you fly make sure you check and double check everything, and if you find yourself out of control - announce it loudly, cut your throttle, and put it down ASAP!

Bayou City Flyers Club Officer Elections

Club Officer Elections are approaching. Its time to start thinking about who you would like to see running the club affairs. It might even be you.
Our current President - Max Burton will not be running for 2023 so here is an opportunity to step up!!
Max has informed me that he is looking to take some time off and spend a little more time flying! We appreciate his years of service, however this leaves us with an opening for the Presidents position for sure. Here is your opportunity to take a turn at the helm and steer the club into the future.
Each year Bayou City Flyers nominate and elect officers for the position of: President, Vice President, Secretary, and Treasurer. (A description of the duties of each board officer can be found in the by-laws.) The persons who currently serve in these positions can choose to run for the following year. However, our by-laws require that we have open nominations and elections each year. We want to make this a free and open election - Anyone can run. This means any current member can run for any of these positions, or nominate someone else if you know they are interested. You or your nominee must be a club member and that means you will also need to be a member in 2023 if elected.
Joe Chauffe has been appointed to lead the nominating committee. If you would like to run for any of the positions listed, talk to Joe at the field, or by phone 713-298-7056 or email Joe at joechauffe@comcast.net. Please include your name, contact information, and the position for which you want to be nominated. Joe will include your name on the ballot, and the club members will determine who is elected by a vote at the December meeting. If you know of anyone that is interested or considering a position, send his information and we will discuss this with them. Deadline for nominations is December 9th.

The following incumbents will be running for the 2023 board positions:
Open -- President
Garry Woodhouse -- Vice President
Jerry Wilson -- Secretary
Rudy Villarreal -- Treasurer

Member Profile:

This quarter is Dave Wiseman, who has been a member of Bayou City going on a year now. A transplant from California where he flew with Victor Valley RC for 15 yrs; where he served as Safety Officer, Event Coordinator and Contest Director. Dave moved to Texas in 2019 and flew for a year at Bomber Field before coming to Scobee Field. Dave started flying and building at the young age of 10 with his dad, beginning with Slope Soaring. Gliders are still his favorite today. He got into powered flight at 13 and has not let up.
He has flown Competitive Scale, Precision Aerobatics IMACC, & Giant Scale Pylon Racing.
He is currently flying a 35% YAK and building a 1/4 Scale P-51 & AT-6.
Dave loves building as much or more than flying and has built 7 planes since January of this year alone. His wish for the club is to start a build night - a periodic gathering of people who want to build or assist others. It would be hosted at various members shops.
Welcome to the club!!

Bayou City Flyers/Fort Bend RC Fun Fly

Radio Repair and Maintenance

Our Radio Transmitters are pretty reliable; however should you break it, encounter issues or maybe just want to get that old trustworthy radio updated, tested, or repaired. Maybe you are told by your manufacturer that the radio is too old and not supported, or worse they just don't reply to your requests for Help! All is not lost; there is a good chance Tony Stillman at Radio South can help you.

Give Tony a call or preferably e-mail him and describe what you need. You will need to give him the Radio Brand, & Model Number—as well as a description of what the radio is doing or what you need repaired or checked out. He is pretty good about getting back with you! He has very reasonable prices.

With JR and Airtronics now out of business, parts for these brands are no longer available. He will be very limited on what repair work he can do on these systems based on what parts he still has in stock.

Tony also does custom work… For example, adding a rudder knob to a two-stick transmitter to allow 3 channel operation on one stick. This makes it much easier for someone with one hand to operate the radio system. He also does other customization work, as well as conversions of older 72 MHz transmitters to 2.4 GHz. Please contact him for details.

He uses PayPal exclusively; you can still use a credit card, but you have to go through PayPal.

He doesn't respond to text messages or voice messages. If you want to talk to him, you must call him at: 912-242-2426 between the hours — Mon-Thurs, 6:30PM – 9PM EDT ONLY!
Again if you need a response, the best way is to email him at tony@radiosouthrc.com

Tony Stillman, President
Radio South, Inc.
PO Box 512
Morristown, IN 46161
912-242-2426
www.radiosouthrc.com

I HIGHLY recommend Radio South. Tony is actually a member of the governing board of AMA and has been doing repairs for over 45 years. I have used him in the past. He is fair honest and reliable.
Good Luck,…….. George Lumpkins

Bayou City Flyers Christmas Party

The Bayou City Flyers 2022 Christmas Party is scheduled for December 10th - 11:00am at Rudy's Bar-B-Que on the South I-10 Service Road just East of Mason Road. Join us for some great food and camaraderie! The Elections for the 2023 Club Officers will be held, so come out and vote! After the business and meal concludes, there will be drawings for door prizes! As I recall there were some pretty nice prizes last year. Only paid members qualify for the prize drawings, but do bring the wife and immediate family along! So come on out and spend some time with your fellow club members, you are likely to meet some that you have never seen at the field!

HOUSTON - I-10W KATY

21799 Katy Freeway
Katy TX 77450

832-772-7242

BCF Warbird Fly In

July 16th was the date of the Bayou City Flyers Warbird Fly In!!! This year the event name was changed to the Ron Mers Warbird Event in memory of Ron Mers, who was a long time BCF Member and huge warbird fan. As expected in July the temperature was Hot!, the planes were pretty Hot as well! We had a pretty good turn out considering the weather. A new flag pole commemorating Ron was erected and dedicated at the event.

The Pilots started showing up early Friday morning, and by Friday evening we had 17 pilots registered. The Texas Warbird Thunder was out in force! Friday was a pretty good day for flying that only got interrupted a couple of times when some rain showers passed thru. It was enough to stop flying for a bit, but did not dampen the spirits, flying resumed shortly afterwards. Lunch was pizza. A couple of crashes but all in all a great day.

Saturday was quite a bit busier as the pilot field doubled in size. There was also an abundant supply of spectators! The rain stayed away and even the wind wasn't too bad although it did decide to blow crossways! Most of the pilots were able to compensate and it didn't appear to bother them too much. I have only heard of about 6 crashes thru the entire event which is pretty good. Lunch was sandwiches from Subway and considering that everyone was a little hot, the lighter cold sandwiches were just the ticket!

At lunch time Ron Mer's family showed up and the new flag pole was dedicated in his name. Corey Johnson and John Keller spoke of Ron's life, military career, and love of flying, full scale and R/C. As a veteran Ron had requested that a proper flag pole be put up, it was a fitting ceremony with the Star Spangled Banner being played. Thanks to Contest Director - Corey Johnson and all of the people that helped put this event together, and came out to help pull it off!!

Flying continued thru the afternoon until raffle time. The raffle prizes were a Large P-47 & Corsair along with an EME engine.

EME 35cc engine : Robert Thompson, BCF member from Crockett TX

Top Flite 60 size Corsair ARF. 62" WS: Jacqueline Haskell. BCF member

Top Flite Giant Scale P-47D Tar Heel Hal, 85" WS: Larry Garrett from Waco TX

I have put some photos here but there are a lot more on the Bayou City Flyers Facebook page

BCF Warbird Fly In

BCF Warbird Fly In

BCF Warbird Fly In

Retrieval Squad in Action

Hot Air Ballooning?

We had some strange objects show up at the field. On close inspection they were candle powered hot air balloons that had landed in the park. I found out that they are generally called Funeral Lanterns and are part of a lantern release which is usually associated with a Celebration of Life when a loved one passes.

A lantern release is, a loving expression of release and hope. In the Eastern tradition, mourners light and release paper lanterns into the sky, believing that the lantern will guide their loved one's spirit to final rest. Alternatively, floating lanterns (on ponds, rivers, etc) can be released in remembrance of a loved one. By writing special notes on them, mourners can send messages of love with their loved one's spirit.

Now this is all fine and good except during a drought when the grass, brush and trees are dry like kindling. All total we gathered up about a dozen. There is really no way to tell where, or how far away they came from. Hopefully the candles had already gone out before they touched down. The incident was reported to the county.

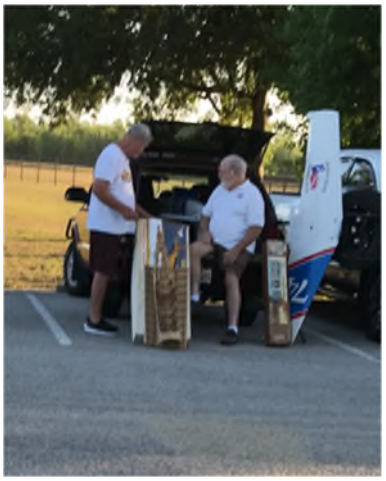
I'm not saying anything against the practice, only that if you do happen to go to one of these functions please keep the fire hazard in your mind. Considering that Harris County was under a burn ban - this would likely be frowned upon by the authorities.

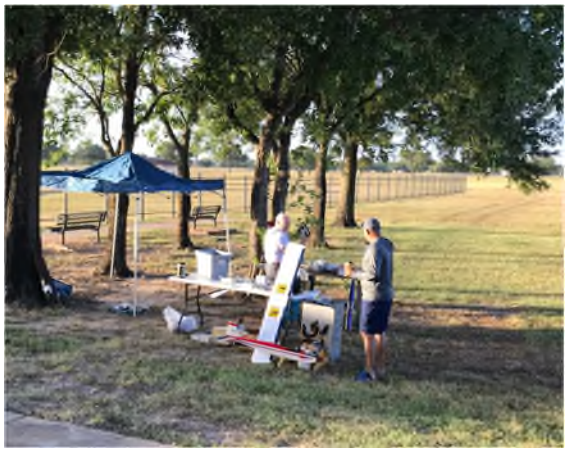
A lot of Balloon release memorials use helium balloons. This also presents some hazards, wildlife eating them and choking, litter, mylar balloons get in power lines and short them causing disruption of service, the list goes on. In fact there are actually Balloon Laws. Mass balloon releases are illegal in several states, cities, and countries. **US States** that have laws: California, Connecticut, Delaware, Florida, Hawaii, Maine, Maryland, Rhode Island, Tennessee and Virginia. **US Cities** that have laws: **Alabama** – Huntsville, **California** – San Francisco, **Kentucky** – Louisville, **Maryland** – Ocean City, Queen Anne's County, Wicomico County, **Massachusetts** – Chatham, Everett, Nantucket, Provincetown, **New Jersey** – Atlantic City, Bradley Beach, Brigantine, Cape May City, Egg Harbor, Long Beach Township, Longport, Margate, North Wildwood, Sea Isle City, Somers Point, Upper Township, Ventnor, **North Carolina** – Wrightsville Beach, **Rhode Island** – Block Island, **Washington** – Bainbridge Island —- Fines can range from $50—$500 per incident or per balloon depending on the local

Fortunately in Texas we have no such laws, but then again it only takes a couple of incidents before we do! All of this is basically just an FYI…...

BCF July Swap Meet

Carlos Santana had it right "Man, it's a hot one. Like seven inches from the midday sun". Well July 9th was the date of the Bayou City Flyers Summer Swap Meet!!! And while the temperature was Hot!, the deals were Hot as well! We had a pretty good turn out considering the weather. The parking lot was full as was the road leading to it. Those that got there early were able to secure a spot in the few shady places. Everyone else just had to tough it out. Considering the heat, there were quite a few sellers and buyers! I think John Keller and Cory had the prime spot by the concession stand. With all of the stuff from the Ron Mers Estate they looked like a small hobby shop! If you missed this event don't fear we will have another one around October or November!





What's In A Crash

I've been told that if you don't have to bend over more than once to pick it all up its not a crash!! Hmmm probably came from someone who had to bend over a lot.

Now I've seen a whole mirid of crashes both from the spectator and pilots view points. It kind of goes with - If you don't crash you ain't flying!

I will tell you that crashes are all different, some more spectacular than others. You have your basic stall on landing approach, which usually results in a cartwheel. The bouncing down the runway with the inevitable nose over. The lack of rudder during takeoff or landing, with you ending up in the pilots box fences. Did you force the plane into the air without enough air speed and stalled? You have the high speed turn wing folding kind of scenario. Maybe you got too slow in a turn and tip stall and spin into the ground. How about the hey watch this, and it gets away from you kind of crash, loops too low to the ground. The I can't see it or I got disoriented type—usually results in a plane lost forever in the jungle.

Each one has differenced and each one has similarities! Some can be repaired some well lets just say are better left in the trash.

The most important thing with any crash is what did you learn? There's a lesson in everyone of them. But first and foremost you have to be honest with yourself.

Make sure you pick up everything, you don't want to miss what might be the evidence you need to analyze what happened. When reviewing your crash get some 3rd party input. People are watching even when you think they aren't. Their perspective is going to be a little different than yours. Check everything immediately with an eye towards what doesn't look right.

If you still can, check all your controls and function. Check connections on wiring and control surfaces. If possible check your balance, something might have changed. If you performed a thorough pre-flight you will pick up on any differences.

If you became disoriented, ask yourself why. Did I loose orientation because I had just flown thru the sun and couldn't see, or did I get too far out and couldn't tell which way I was going. Did I put the wrong inputs—bank left when I should have banked right. Did I fly too slow and tip stalled the plane—easy to do! Did I just get over confident in my abilities and tried doing something new to low. Is the plane a little outside your skill range. Just because a plane is touted as easy to fly doesn't mean it will be easy for you, everyone's skill set is different!

Lots of questions to ask yourself!

But don't let a good crash go to waste; send me your crash photos and each quarter I'll select one or two of the more spectacular ones and immortalize you in the Club Newsletter!

What's a Waffle?

Have you ever heard of a Waffle? I'm not talking about the kind you get at IHOP or Denny's; but a Waffle where you can get a RC Plane or Equipment for pennies on the dollar. Note participating in Waffle is like buying a spot in a Raffle; no guarantee you are going to win, you have a better chance at not winning. However if you do win you picked up a plane or equipment at a really good price.

Basically a Waffle is a play on words for a Raffle that is run by different groups mostly on Facebook! Now there are many Waffle's out there for just about anything you can think of. There are some specifically for RC'ers - Cars, boat, planes, and associated equipment. I am going to discuss just some of the groups that Waffle off RC Planes and associated equipment.

If you go to search on Facebook and type in "r/c waffles" you will see about 100+ Waffle Groups.

I currently follow 3 Waffle groups on Facebook that cater primarily to our interests. They are Marks's — "Dads RC Waffles"; "RC Waffles" run by Daniel Hudson; and "R/C Plane Buy Sell Trade And More USA" run by Steve Anderson

If you remember last issue in the member of the month article I had interviewed Mark Natanson - Well he is an administrator for one of the RC Waffle Groups. I spent a little time discussing Waffle's with him - how they work, rules, tips, drawbacks, etc.

Waffles are pretty simple, First you join a Waffle Group and read their rules payment methods. If you agree to that they accept you and you can Waffle. Next you need to setup a payment account according to what they will accept. This is usually something like - PayPal, Venmo, Zelle, & Cash App to name a few. You will have to find the ones that your Waffle Admin accepts.

Now you wait and monitor the Groups until you find something you are interested in! Read the descriptions carefully and know and understand what you are purchasing a chance on! The description will detail how many spots are available and how much per spot. Example $10 a spot @ 23 spots. You let the person running the Waffle know how many spots you want and which number or numbers you want. If you want the same number as someone else the first to respond gets it. Next you make payment for the spots you are claiming. Once all of the spots are claimed and paid for a number is chosen. If it's your number you win!!

Numbers are usually selected by one of three random methods (shown below)- Bingo Ball, Computer Generated Random Number Program, or Computer Wheel of Fortune. Usually live on line.

Most Waffles include shipping, and let you know how soon after you win your item will be shipped. Make sure you are familiar with the terms and agree to this before playing.

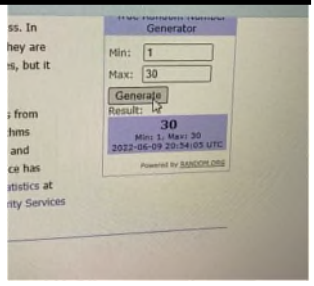
Now all of this works just as described as long as all of the spots are purchased in a timely fashion; but what happens if all of the spots aren't taken. Well that can be taken care of 2 ways. One way is to cancel the Waffle and refund the money for the spots purchased. The other, and what usually happens, is the remaining spots are Waffled off in what is called a Step Up.

A Step up is a second or even third Waffle that, if you were on the Main one, you can buy chances at usually half price of the Main to win remaining spots on the Main. This increases your chances to win—at a little extra cost.

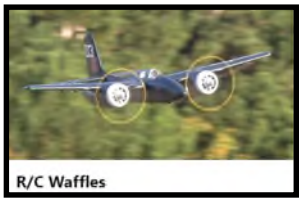
So if you want to have fun and take a chance on winning some nice planes at a fraction of the cost give Waffles a try!!!

Bingo Ball

Random Number Generator



Computer Wheel of Fortune



Old Timer

Mark Troutman sent me these pictures and a little background. Here is a picture of the KG-1. It's the only model that has won both a Free flight (first gas powered flight event 1935) and R/C (Powered RC I believe 1938) event at the Nationals. I original flew it free flight at the Society of Antique Modelers championships in Henderson Nevada with the first gas model engine developed (Brown Junior .60) that had been awarded as a prize by Amelia Earhart at a contest to a 11 year old boy who grew up to become a full Col in the Air Force. He gave the engine to my son when he won the free flight junior world championship with the US power team in 1990. When I converted the model to R/C I switched to a OS FP-40 which is actually too much power for the model. Wing span is 72 inches and it weights about 5 lb's ready to fly. The KG stands for Joe Koval and Charles Hampton Grant who as young men are credited with the first successful design of a gas powered free flight model and later R/C model aircraft along with the Good brothers. Koval went on to become a aeronautical engineer and designed the flap systems for many of the Boeing airliners. I built this exact replica about 25 years ago and it still flies very well.

What is It!!

Twin EDF……..”Sky Arrow 650”
George Lumpkins at golumpk@swbell.net a long time member of Bayou City Flyers in Katy, Texas, had gotten a deal on an old pusher plane, from Gotta Know Joe’s. The unidentified model turned out to be a 20 year old Hacker Sky Arrow 650. Took some research to identify this one!
The full scale Sky Arrow 650 was a tandem-seat, pusher configuration, high-wing carbon fiber light aircraft that was manufactured by 3I (Iniziative Industriali Italiane) and used for recreation, sport, training and aerial reconnaissance

George was not really interested in the plane at that time so it was passed on to fellow member John Bartosh who initially got it converted to electric and thru the first few flights. Due to its poor flight characteristics and inevitable crashes; he passed it back to George with the warning that it really did not fly well. This just meant a challenge. The warning was well founded, in that it always flew with around 30 degrees of yaw. that could not be trimmed out. Not a lot of fun. George figured out, the rudder was actually so thin and tapered that the rather thick vertical stabilizer blocked airflow to the rudder. Increasing the length and eliminating the taper of the rudder seemed to solve the problem.
Now that is flies well, time to “Fix” it; Off came the single pusher prop and 32 size motor, two value hobby 60 amp ESC’s installed in the same top motor mount for cooling air, two Value Hobbies 70mm 4 cell EDF’s were installed in 70mm A-10 warthog nacelles…..don’t ask……..and modified to fit the wing structure securely. Power comes from two Bad Ass 4000 mAh 4 cells
End result is (As usual) a unique looking and sounding jet that really flies well.
“Basic designs are a starting point and some people should not be left alone.”

Full Scale Sky Arrow


MFG. Photo of Hacker Sky Arrow


John Bartosh’s Electric Conversion


George Lumpkins Twin EDF Conversion

What Size Motor Do I Need? – Lucien Miller August 10, 2016

When you build a model that is designed to be powered by an electric motor, most of the time the kit manufacturer already gives recommended motor sizes. This is especially true if the kit manufacturer is large company like Horizon or Great Planes, who also sells electric power systems. For other kit manufacturers, or for models that were originally designed for glow engines, picking the right motor can be a bit challenging. In this article, I am going to go through the steps of selecting the correct Motor, ESC, Battery and prop for an aircraft.

To begin this process, you need to know a few things about the model. Most important are the weight of the model, the type of model, the desired flight speed and the desired flight duration. With these specifications, a power system can easily be chosen which will provide the required power.

There are a few rules of thumb that I like to go by when selecting a power system for a model. The first ones are for Glow to Electric conversions. For a decent, ball-bearing ABC type 2-stroke glow engine, each cubic inch of displacement is roughly equal to 2000 watts of electrical input power. To get the required wattage motor for a model, you simply multiply the engine displacement by 2000, and you get the required number of watts.

For example, if you have a plane that is designed to fly with a .45 to .50 size 2-stroke engine, .45 x 2000 equals 900 watts, and .50 x 2000 equals 1000 watts. This means that you would be looking for a motor that consumes somewhere between 900 and 1000 watts of electrical power. Likewise, a .25 size engine equals about 500 watts, a .60 size engine equals around 1200 watts and a .90 size engine equals about 1800 watts of electrical power.

When considering a 4-stroke glow engine, the conversion factor is around 1500 watts per cubic inch. Base on this, a .45 4-stroke engine would need 675 watts, and a .60 size 4-stroke would require 900 watts of power from an electric motor.

The new rule of thumb is based on the performance requirements on a “watts per pound” basis, depending on the type of aircraft. Different types of aircraft have different power requirements, based on the type of aircraft, wing loading, drag and other considerations. Based on this, you can get the following “categories” of models, and the amount of power required.

Motor Gliders: (50 to 60 watts per pound) These types of planes are essentially gliders with a motor assist to get them up to altitude without the need for a winch or high-start line. The lightweight structures of these models have very low wing loadings, and do not require much power to pull them through the air. In this category, a 2-pound glider would need 100 to 120 watts of power.

Trainers: (70 to 80 watts per pound) These types of models have moderate wing loadings, with high-lift flat bottom airfoils, and spend most of their time flying at around ½ throttle. This much power would give you the equivalent of a plane like a Midwest Aerostar 40 or Great Planes PT-40 trainer powered with a basic ringed .40 glow engine. In this category, a 5-pound trainer would need around 400 watts of power.

Sport Models: (100 to 120 watts per pound) These types of planes are more advanced acrobatic models such as the famous Ugly Stick, Great Planes Sportster or SIG Cougar. A 6 pound Ugly Stick type model with a good .45 ABC glow engine would have this level of power, and would take about 700 watts of electrical power to get similar performance.

Pattern and Warbird Models: (140 to 160 watts per pound) While these are different classes of aircraft, they both have similar power requirements. Pattern models need good power for clean up-lines and the ability to carry speed through large loops. Warbird models typically have higher wing loadings that other similar sized models, especially if a lot of scale details and retracts are included. An 8-pound airplane with a piped .60 size engine would have this type of power level.

3-D Aerobatic Planes: (200 to 220 watts per pound) These types of planes typically fly with a 2 to 1 thrust to weight ratio, and have the ability to hang on the prop in a hover at 50% throttle. From a glow engine perspective, this would be like having a 3-pound sport model with a hot .45 size engine.

Pylon Racers: (250 watts per pound and up) Going fast takes a lot of power, and pylon racing is all about going fast. Since pylon races typically last for less than 2 minutes, you can use a lot of power quickly, and only carry enough battery to get the job done.

There are other things to consider when selecting an electric motor for a model, such as battery capacity and propeller size.

What Size Motor Do I Need? (cont.)

Because electric motors tend to put out more torque than equivalent size glow engines, they tend to spin larger props at a lower speed that their glow counterparts. However, there are cases where the design of the model limits the prop size, and this is when getting the right Kv version of a motor comes into play.

Many electric motor manufacturers try to "Make it easy" for people coming over from glow to electric by naming their motor with "equivalent" size numbers. For example, a company might call their motor a Power .40 to signify that it makes power similar to a .40 glow engine. The problem with this naming convention is that the electric motor will only perform like a .40 glow engine on a specific size battery, with 2 or 3 specific size props.

Electric motors are essentially "Constant Speed Machines", and try to spin at the same RPM regardless of load. Because of this trait, the prop is the most important part of an electrical power system, as it "pulls" the power out of the motor. If you take a motor that is rated as a .40 glow equivalent, and run it on a 4-cell Li-Po battery, it may take a 12×8 prop to pull 800 watts of power because of the motors Kv value. Most people that fly .40 size glow engines are used to putting a 10×6 size prop on their engines, and if you put a 10×6 prop on the "Power .40" electric motor, it will most likely only make about 400 watts of power, and act like a .20 size glow engine. This would cause horrible performance and make the pilot think that the electric motor is defective, since it makes so little power.
On the other end of the spectrum, if a prop that is too large is used, the motor will make a lot more power, but the motor will pull excessive current doing it. Unfortunately, when this happens, the motor typically does this for some time, giving the pilot a false sense of security that everything is OK, when in fact, the motor is slowly being cooked to death. This is why it is so critical that a modeler have a wattmeter, and test the actual current draw of their model to make sure that they do not exceed the max current rating of the motor, battery or ESC.

When choosing an electric power system, it is important to make sure that every component is properly matched to the others. In the following example, we will walk through the step by step process for selecting a power system for a model. Let us assume that we have a 5-pound trike geared sport-pattern model, that was originally designed for a .35 to .40 glow engine, and can take a maximum prop size on 11 inches and still maintain ground clearance.

If you use the "2000 watt per cubic inch" method of selecting a motor size, you would need something between 700 and 800 watts of power. If you use the 140 to 160 watt per pound method for a pattern type model, a 5-pound plane would need between 700 and 800 watts of power. You should see that both methods end up giving you the same power requirement, and shows how both work to get you the correct size motor.

Next you would look for a motor that can produce somewhere between 700 and 800 watts of power from a prop that is 11 inches in diameter or less. Before we do that, we need to take a look at the battery size we will be using. The number of watts of power for a motor is calculated by taking the battery voltage and multiplying that by the motor current. A 3-cell battery produces 11.1 volts under load, and a 4-cell battery produces 14.8 volts under load. If we shoot for the middle of our power range, and go with 750 watts of power, running at 11.1 volts will require 750 ÷ 11.1 or 67.6 amps of current. With a 4-cell battery, 750 ÷ 14.8 give a required current of 50.7 amps.

When sizing a battery, I like to keep the Current to Voltage ratio somewhere between 3 and 5. This gives a good level of efficiency for the power system, and keeps the current in an acceptable range. In the case of the 3-cell power system 67.6 amps ÷ 11.1 volts give a ratio of 6.09, which is a bit high. For the 4-cell setup, 50.7 ÷ 14.8 equals 3.42, which is right in line with what we are looking for, so for this model, a 4-cell battery would be best. The actual capacity of the battery will be decided on a bit later, after we select a motor, and determine how long we want to fly.

At this point, the only good way to select a motor is to have prop data for the motors you are looking at. This is one area where there is a tremendous lack of information available. For the Cobra and Scorpion motors that we sell at Innov8tive Designs, virtually every motor goes through a rigorous testing phase and a comprehensive set of prop data is collected and provided to our customers. Without this data, you are really guessing at a motor to use, based on very little information.

When selecting a motor, you should always find one that has a max current rating that is 10 to 20% higher than what you actually need. This provides a bit of a cushion, and makes sure that the motor is not pushed too hard. Earlier we saw that with a 4-cell set-up, we would need to pull 50.7 amps to generate 750 watts of power.

What Size Motor Do I Need? (cont.)

To give this cushion, a motor should be chosen that has a maximum current rating of around 60 amps or so

Looking through some motor charts, the Cobra 3520/10 980 Kv motor looks like it will fit the bill. It has a max current rating of 60 amps, and provides good power on 11 inch props when running from a 4-cell battery.

Below is a section of the prop chart for this motor that shows the prop data running on a 4-cell battery pack.
From the chart you can see that the APC 11×7-E prop gets us the power levels that we were looking for. Here is a list of the full throttle prop data for this combination.
Volts – 14.8 — Amps – 52.4 — Watts – 775 — RPM – 10,420 — Thrust – 96.7 ounces — Pitch Speed – 69 MPH

Now that we have a motor selected, we need to finalize the prop and select a battery and speed controller. The power that an electric motor produces is roughly equal to the square of the throttle percentage. At 100% throttle, they put out 100% power. At 90% throttle the power level is 0.9 x 0.9 or 81% power. At 70% throttle, the power level is about 50% of the full throttle value and at 50% throttle, the power level is about 25% of the full throttle value.

Since power is equal to Voltage x Current, if the power is half, the current is also half. This means that when flying at 70% throttle, you will be able to fly twice as long as you can at full throttle, and when flying at 50% throttle, you can fly 4 times longer than you can at full throttle. This needs to be taken into consideration when you calculate battery size. If you are flying a pylon racer, where you will be flying at full throttle all the time, then you need to use the full throttle current to calculate battery size. If you are flying a sport plane, where you will be mixing it up between full throttle and partial throttle, then you can use about 2/3 of the full throttle current for calculating battery size. For a trainer model, where you spend a lot of time putzing around at half throttle, you can use half of the full throttle current for calculating battery size.

Cobra C3520/10 Motor Propeller Data

Motor Wind	Motor Kv	No-Load Current	Motor Resistance	I Max	P Max (4S)
10-Turn Delta	980 RPM/Volt	Io = 1.84 Amps @ 14v	Rm = 0.025 Ohms	60 Amps	890 W

Outside Diameter	Body Length	Total Shaft Length	Shaft Diameter	Motor Weight
43.0 mm, 1.69 in.	46.0 mm, 1.81 in.	68.0 mm, 2.68 in.	5.00 mm, 0.197 in.	210 gm, 7.41 oz

Prop Manf.	Prop Size	Input Voltage	Motor Amps	Watts Input	Prop RPM	Pitch Speed	Thrust Grams	Thrust Ounces	Thrust Eff. Grams/W
APC	9x6-E	14.8	27.19	402.4	11,965	68.0	1554	54.82	3.86
APC	9x7.5-E	14.8	41.77	618.2	11,061	78.6	1618	57.07	2.62
APC	9x9-E	14.8	45.05	666.7	10,794	92.0	1611	56.83	2.42
APC	10x5-E	14.8	33.00	488.4	11,678	55.3	1960	69.14	4.01
APC	10x6-E	14.8	36.27	536.9	11,327	64.4	1984	69.98	3.70
APC	10x7-E	14.8	42.56	629.9	11,047	73.2	2085	73.55	3.31
APC	10x10-E	14.8	57.53	851.4	10,104	95.7	1789	63.10	2.10
APC	11x5.5-E	14.8	45.51	673.5	10,864	56.6	2697	95.13	4.00
APC	11x7-E	14.8	52.40	775.5	10,420	69.1	2741	96.68	3.53
APC	11x8-E	14.8	56.81	840.8	10,160	77.0	2538	89.52	3.02
APC	11x8.5-E	14.8	60.60	896.8	9,931	79.9	2529	89.21	2.82
APC	12x6-E	14.8	56.94	842.7	10,033	57.0	3146	110.97	3.73
APC	13x4-E	14.8	50.30	744.4	10,565	40.0	3309	116.72	4.45
MAS	8x6x3	14.8	23.36	345.7	12,277	69.8	1428	50.37	4.13
MAS	9x7x3	14.8	36.29	537.0	11,400	75.6	2047	72.21	3.81
MAS	10x5x3	14.8	32.78	485.1	11,693	55.4	2132	75.20	4.39
MAS	10x7x3	14.8	45.60	674.8	10,842	71.9	2560	90.30	3.79
MAS	11x7x3	14.8	53.69	794.7	10,358	68.7	2947	103.95	3.71
MAS	11x8x3	14.8	57.51	851.2	10,111	76.6	2984	105.26	3.51
MAS	12x6x3	14.8	59.12	875.0	10,013	56.9	3309	116.72	3.78

What Size Motor Do I Need? (cont.)

In this case, since it is a sport pattern model, we will use 2/3 of the full throttle current for calculating battery size, which is this case would be 52.4 x 2/3 or 34.93 amps. To keep the math easy, I will just round this up to 35 amps, and consider that this will be the average current draw over the course of the flight.

When calculating battery discharge rate, it is typically expressed in multiples of C. By definition, C is equal to the Amp-Hour capacity of the battery, and when a battery is discharged at a rate of 1C, it takes 1 hour, or 60 minutes to completely drain the pack. At a 2C discharge, the time gets cut in half to 30 minutes, because 60 ÷ 2 = 30. A 5C discharge rate will drain the pack in 12 minutes, and a 10C discharge will completely drain the pack in just 6 minutes.

When discharging Li-Po batteries, you NEVER want to fully discharge them. Doing so damages the internal structure of the cell and cause gassing of the electrolytes which leads to the dreaded "Battery Puffing" which signifies the beginning of the end of a Li-Po cell. It is best to only use 80% of the battery capacity for each flight, leaving 20% of the battery capacity in the pack.

Earlier we calculated that the average current draw over a flight would be around 35 amps. Next we need to decide how long we want to fly, and then select a battery to give that flight time. We should always take into account the 80% factor that was mentioned earlier to make sure that the battery we select will still have 20% of its energy left at the end of a flight. This can easily be done by basing the C rate of discharge on 48 minutes instead of 60 minutes, since 48 is 80% of 60.

For the sake of this example, let's assume that we want to be able to fly for 7 minutes per flight, and still have 20% energy left in the pack. Normally, we would take 60 and divide that by 7 to get The C-rate of discharge, but that would drain the pack completely. By taking 48 and dividing it by 7, we get a discharge rate of 6.85C. Finally, to determine the size pack we need, you take the average current draw and divide it by the discharge rate, so 35 ÷ 6.85 = 5.11 Amp Hours. Since there are 1000 milli-Amp-Hours (mAh) per Amp hour, this would mean that we need a 4-cell 5,110 mAh battery pack. This would then be rounded off to the nearest standard size of a 5,000mAh pack or a 5,200mAh pack, depending on the brand that you are using.

So based on the motor we chose, the Cobra 3520/10, which is spinning an APC 11×7-E prop, we would need a 4-cell battery with a capacity of between 5,000 and 5,200 mAh to fly for around 7 minutes per flight, leaving 20% of the battery energy in the pack at the end of the flight. All that is left to do now is select a speed controller.

Sizing a speed controller is actually pretty easy. You simply look at the maximum current capacity of the motor, which in this case is 60 amps, and select a speed controller that is equal or greater to this value.

In the case of the Cobra speed controllers, there is a 6-cell 60-amp model available, and this would be a perfect fit. If the max motor current falls between two standard ESC values, always round up to the next value. For example, if your motor had a maximum current rating of 68 amps, and the choices for an ESC are 60 amps or 80 amps, you would use the 80-amp model. The ESC will never force more current into the motor if a larger one is used. The motor and prop combination determine the current draw. Having a larger ESC will simply operate cooler and more efficient.

I know that this article is a bit long, but I wanted to cover this subject completely from beginning to end, and explain the entire process of selecting a power system for an electric powered motor. By using this step by step method, anyone can select a power system for their model that will be guaranteed to work properly, and give the correct performance for any given model.

See you all next time! ……. Lucien

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Phone: 442-515-0745

BadAss batteries and other products are available from his distributor R/C Dude Hobbies

https://rcdude.com/
https://rcdude.com/products/batteries/badass-lipo-batteries.html

We Thank Mr. Miller for letting us use this story.

I actually have two 4S 4000 mAh BadAss batteries and am very happy with them after three years…..George Lumpkins

Control Line Circle !!

By Mark Troutman

Back in the early 1960's there was a model published in Model Airplane News that I became enamored with; not because of its good looks but because I had grown up hearing about it. My father built and overhauled real airplane propellers for antiques and crop dusters and this was a model of a crop duster designed and built by Texas A&M called the AG-1. At the time my father had most of the remaining propellers that fit the engine combination used on this airplane so as each one was built my father would supply the propeller for them as he had a large inventory of surplus propellers for the engine combinations they where producing. The model was designed by legendary control line flyer/designer George Aldrich who, went to Texas A&M (thus his interest in this design) and, designed the Nobler and Flight Streak control line stunt and combat models that Top Flight kitted and produced by the thousands (George got 10 cents for each kit sold).

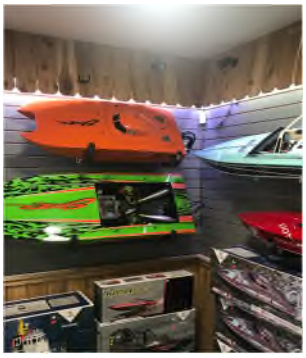
Turn the clock forward to 1991 and I am now living in San Antonio Tx and flying at the Tri Cities fliers field in Segun TX with my son, who has become a serious free flight competitor. A big guy walks up to us and asks if we need any help with engines and introduced himself to be none other than George Aldrich who lived 10 miles from my house and was fascinated that a 10 year old kid was flying really sophisticated free flight models at his home field. A friendship ensued and every time we went over to his house the same AG-1 model I admired as a kid was hanging over his workbench. It turned out that the model had a very short flying life as an up line broke during a contest and the model was damaged beyond repairs to still make it fly. George had repaired it to a static display and thus very few were ever built from the published plans, as it never earned the contest records his other designs had achieved. George passed away long ago but his friendship and expertise helped my son go to three world championships and win many national and international events.

I had bought the plans to the AG-1 back when it was published in the 1960's when I was only about 10 years old and have kept them all these years.

This winter I decided I would try and build it from scratch as there was never a kit and no one was interested in cutting me any parts for a one and only model; so balsa sheets and sticks of wood in hand I started cutting. Here are a sequence of pictures of the building process. I made it electric as are most of my current models but its still the original design as a tribute to my friend and mentor from long ago. Remember it's a crop duster, so instead of beautiful flowing lines of most control line stunt planes, its supposed to look like the square brute it is in real life The motor is a Cobria 2820 with a castle lite 50 esc and Thunderpower 4 cell 2800 battery. In control line we use a Hubin FM-9 timer with the ESC which gives us a programable flight time and RPM. A standard stunt pattern takes 5 minutes and 20 seconds and we turn the motor around 9300 RPM to give us 5.2 second laps using 60 foot lines. Since its electric and doesn't have to be fuel proof I painted it with spray cans of enamel I got from Ron's estate at the last swap meet and pin lined it using a fin point Sharpie pen. I hope to compete with this model next year at the Vintage Stunt Championships in the classic division in Tuscan AZ as it will be something know one has seen since the 1960's and should fly very well.

Samano's Hobby Shop

Following up to the prior reviews of Gotta Know Joe and Randy's Hobbies, I paid a visit to Samano's Hobbies—903 -H FM518 Kemah TX 77565, down on the Southeast side of town. Mr. Samano has recently retired and Blake Sullivan now runs the show. They have been in this location for 3 year now and I have to say I was impressed by the selection that they had. Whether it be Planes, Boats, or Cars they likely have what you need. For us on the west side of town it is a little bit of a haul to get there but worth the trip! If you are into gas, glow or electric they have the equipment to set you up and they are competitively priced against the online suppliers. An excellent assortment of covering, paint, and building supplies. If you need it in a hurry this is the place—you can even call first! Definitely and old school hobby shop that you can go browse! I will definitely be visiting them again in the near future.



A Stick in the Mud!

Well stick in the woods anyway! It's called an Ultra Stick!
Now these are pretty popular planes and fairly easy to fly. Their demise is usually the result of over confidence in ones ability. Wonder if the Stick part is the reason they often end up in the sticks, so to speak! Or is it because they eventually end up as a pile of sticks?
The world may never know!

Gliding the Rivers of Air

Hawks –
I was contacted today by Harris County Pct. 4 Supervisor Tommy Morrison informing me that the proposed Scobee Sailplane Field canopy sunshade has been approved by the Corps of Engineers and we are authorized to proceed with the installation. There is no word yet if HC Pct.4 can/will accept the canopy as a Houston Hawks gift to Scobee Model Airfield, thus assuming ownership and maintenance responsibility. For transparency, if that does not happen it is possible that the Hawks could face future costs to repair storm damage or vandalism, etc., which could necessitate a treasury expense or future member donations.

Now that approval has been granted, Alan has emailed the Hawks members & friends who have made donation pledges with instructions for sending in the pledged amounts. Fundraising has been very successful with many club members donating, and generous contributions from Ft. Bend RC Club and the Bayou City Flyers as well

Sufficient funds have been collected and a sales agreement has been executed with the same canopy vendor, ProStructures Tomball, that provided the BCF helicopter area cover. ProStructures advised they will be able to install the canopy within 2-4 weeks after receiving authorization to proceed. The new glider field canopy should be available in September and will be a welcome addition providing shade and shelter for pilots and visitors.

Thanks to everyone who have pledged financial support. This canopy will significantly enhance the quality of the Sailplane field. If there are others interested in making a donation, please get in touch with Alan.

We now had a scheduled install date for the canopy.....Monday, Sept 19. The crew will arrive onsite between 1:00-3:00 and job will be completed that day. I will be there to confirm location etc. and maybe get in a little flying. Come join if interested in seeing the work in progress.
The Crew showed up and the Canopy is installed!

In other news:
Several Houston Hawks members will be participating in the Heart of Texas F5J soaring contest in La Vernia Tx. on Sept. 17. The event is sponsored by the HOTSS RC soaring club of San Antonio, and features two F5J classes using F5J and ALES (altitude limited launch) contest rules. There is also an introductory class for Radians (entry level 2-meter glider).

Pete Dawson
(281) 813-2333

It's All About the Unusual!!

Neil Chouker is in the truest definition of the word a scratch builder! His foam creations built from photo's and 3 view pictures are amazingly accurate This issue shows a creation of a 1914 French Caudron G.3.

The Caudron G.3 was a single-engine French biplane designed and built by René and Gaston Caudron for military use. The plane was widely used in World War I as a reconnaissance aircraft and trainer. It first flew in May 1914 at their Le Crotoy aerodrome.

The aircraft had a short crew nacelle, with a single engine in the nose of the nacelle, and an open tail boom truss. It was of sesquiplane layout (this is a type of biplane where one wing (usually the lower) is significantly smaller than the other. The word means "one-and-a-half wings"), and used wing warping for lateral control, although this was replaced by conventional ailerons fitted on the upper wing in late production aircraft. Usually, the G.3 was not armed, although sometimes light machine guns and small bombs were fitted.

It was ordered in large quantities following the outbreak of the First World War with the Caudron factories building 1423 of the 2450 built in France. 233 were also built in England and 166 built in Italy along with several other countries. The Caudron brothers did not charge a licensing fee for the design, as an act of patriotism.

Undoubtedly our hero will return with even more unusual designs!!! And as you can see this one actually flew pretty good! Nice slow and stable, very scale like in the Foggy Dawn Morning!

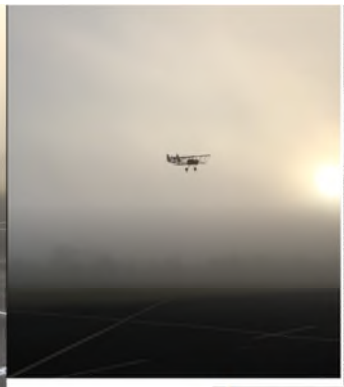


Photo of a real Caudron G3 in Flight

December 10 is the Club Christmas Party at Rudy's BBQ
Remember to Renew your AMA for 2023
Bayou City Flyers Memberships Expire December 31st

From the Bench: Editorial

Bored - Nothing To Do!

A friend of mine's wife said that we reminded her of this book by Peter Spier. The story follows two brothers kicked out of their house with the admonition "Go do something". Inspired by an old propeller in the garage, they collect items from all over the house and start building an airplane. They find a set of blueprints for a plane. Armed with this, they scour their farm for all the other parts they need, the wheels come off a baby buggy, the engine is from a small car, the television aerial, phone line, clothesline, fence, wood and bed sheets are all incorporated into the plane. Satisfying the fantasy of boys everywhere, the plane not only starts, but flies. However, the parents are extremely displeased when they discover all that is missing, and the boys do a flyby of the farm. Punishment is given and they must put all things back the way they were. Admonished and sent to their room, it concludes with the boys once again lying on their beds expressing boredom--starting the cycle all over again.

This is kind of where a lot of us older builders started, we would find a few odd parts and proclaim that our goal was to make a working model. Of course, we had no plans or specific knowledge of how it worked or how to get all of the other parts. Somehow we managed to overcome these obstacles and developed planes that actually flew, well most of the time! Now that we are older we take the junk we find in the trash and with a little imagination and a lot of effort we come up with unusual planes! This gives credence to George Lumpkins statement that some people should not be left alone!

The bottom line is don't be held back - Build your dreams and give them a try, nothing gives greater satisfaction and a feeling of accomplishment than seeing them come to life! For those just starting out - get a kit and spend some time learning how to build it. The techniques you learn will benefit you later as you learn to figure things out and come up with creative solutions to inevitable problems.

Keep'Em Flying and Keep building!!!!

Upcoming Events

Oct 1-2	Best Electric Fly In - Tri-County Barnstormers RC - New Waverly
Oct 8	BCF Swap Meet and Family Fun Day
Oct 7-8	Space City Warbird
Oct 21-22	Scale Shoot Out Bomber Field
Oct 22	Junior ROTC Training Group Scobee Field
Oct 28-29	Jetoberfest Bomber Field
Dec 10	Bayou City Flyers Christmas Party
Mar 31	Jets Over Houston Bomber Field

Bayou City Flyers
AMA Charter # 901

CLUB OFFICERS:
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Vice Pres: Gary Woodhouse ..…...(713) 240-4703
Tres: Rudy Villarreal …….…… (281)-797-8545
Secy: Gerald Wilson…… ..(281) 451-9182
Officer at Large: Corey Johnson .. .(218) 451-4625

SAFETY OFFICER:
Sheldon Reyher……...…..(281) 961-0419
Merle Bowler……..……..(832) 794-0377
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FLIGHT INSTRUCTIORS:
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Rudy Villerreal……..…..…...(281) 797-8545
Paul Curry ……..……..(281) 859-7626
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(AMA Certified/Insured Program)

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www.bayoucityflyersrc.com
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CLUB MEETINGS:
First Saturday of the Month at 10:00am
Scobee Field — 17260 Westheimer Parkway Houston TX 77082