

# Flypaper 2020

Official Newsletter of  
The Flying Electrons of Menomonee Falls



Celebrating 60 Years of Service to the Community & Counting!



## President's Preflight

As I write this article, the days are already getting shorter and we are headed toward Fall. Summer will be gone before we know it and another flying season will have passed.

Before it does, I'm hoping that we will yet have a couple of "safe" event outings at the airfield.

Joe Burzinski is still considering his Pattern Event for September 19th & 20th, and there is good reason to think that we could still hold our Swap Meet on September 12th.

We were successful in having a limited attendance Electric Event earlier this season and I think we could easily manage traffic for a Swap Meet without much trouble. So, look around the shop for planes and accessories that you would like to put on the market and get organized.

Watch your newsletter and email for updates on these happenings.

In addition, we are considering also hosting our second annual Builder's Challenge and third an-

(See **EVENTS** on page 15)



### IP Program Continues to Generate Returns

As you may recall, we initiated our Introductory Pilot (IP) Program a couple of seasons ago and it was met with immediate success. Since that time we also introduced the STEM Student Membership Academy for students age 18 and under. This program grants a complimentary Electrons club membership to students that pass solo pilot certification under the IP program. These students are granted all flying rights at the field along with the ability to participate in events and club meetings



Both programs continue to generate interest and parents that visit the club to learn more find our programs to be just what the doctor ordered during this pandemic over the summer months.

If you know of a young relative that could use an outlet over the

(See **STUDENTS** on page 23)

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**Club Meetings:**  
Second Sunday of Month  
7:00pm  
De Marini's Restaurant  
N88 W15229 Main Street  
Menomonee Falls, WI 53051

**Flying Site:**  
N61 W17000 Kohler Lane  
Menomonee Falls, WI  
[www.flyingelectrons.com](http://www.flyingelectrons.com)



Last year we implemented our Incident Reporting System.

As you continue to fly throughout the spring months as weather permits, be sure to indicate any signal interference you may experience so that we can begin tracking events for the 2020 flying season.

To reach the Incident Reporting System, simply click this link, [Incident Reporting System](#)

You can also register an event by going to the [www.FlyingElectrons.com](http://www.FlyingElectrons.com). Select "Contacts" from the left side bar and then "Incident Report" from the dropdown.

**Flypaper Contact Information**

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*The Flypaper welcomes for consideration articles of interest, recommended video links, letters and questions you may have about the club, meetings, newsletter, and events. Please direct those communications via email to tjacobs421@att.net. We will respond to all inquiries.*

**Next Club Meeting**  
**TBD**

**De Marini's Restaurant**  
N88 W15229 Main Street  
Menomonee Falls, WI 53051

**Bring a Friend and/or a Plane to Show & Tell**



## The Flying Electrons Reach 60-Years of Service and Counting!

### Club History 1976 to 1980

Over the next 4 years, a lot happens. This series covers the events that subsist at Aero Park and set the stage for the club's eventual migration to Tamarac Airfield in Menomonee Falls.

In 1976, the club was pressured into writing some safety rules for members while flying at Aero Park. As pilots continued to fly over parked aircraft at the airport, the owner/managers of the field insisted that the club adopt some written safety rules that members could be held accountable to. Beyond this, it appeared that many newer members were also in need of training as planes would often find themselves crashing into surrounding neighborhood yards causing complaints from outside residents as well.

This became more problematic by the fact that flying was up considerably due to a seasonal drought whereby the field would



see some pilots flying seven days a week. This increased air traffic provided more opportunity for mishaps and led to the introduction of our first graduated skill level testing program whereby members had to prove their ability via a flight test to move up to unsupervised ranks. LEVEL I was the student who could not fly without an instructor, LEVEL II was defined as a pilot that has soloed and certified to fly alone but not yet capable of giving instruction, and lastly, LEVEL III, the instructor rating. After reviewing several training methods and test procedures, the club settled on a set of maneuvers that we cur-

**HISTORY** *Continued next page)*

### Regarding the Facts Presented in this History

The dates and events listed in this and future articles are drawn from documents and a handwritten histories that were compiled by several past officers.

Several years ago a published historical document was created and covered events that occurred from years 1968 through 1979. There was very little information prior to that time period until I uncovered some hand-written pages in an old file box that shed light on the club's earlier days.

From these documents I tried to construct a connected history which takes the club back to 1958.

Some of the names may be misspelled due to handwriting legibility. These documents were created well before the days of computers and spell check. There are conflicts in some cases regarding accounts but I tried to adopt those most credible for this history.

Later accounts were extracted from club newsletters, event brochures and other documents that were uncovered in the files.

This history is broken down in several parts but will be eventually compiled into a single document and placed on our website once completed.

I hope you find it fun and interesting.

TJ

**HISTORY** *Continued*

rently still use today to certify pilots and instructors.

At the end of the season the club had about 16 instructors and about 36 certified pilots. The rest remained students for a period with some never reaching solo pilot status which is also something we experience yet today.

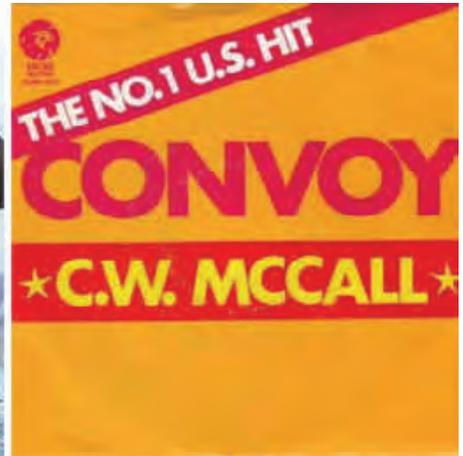
The managers of Aero Park helped to make improvements in safety as well by moving the parking lot which made it more convenient for modelers and guests to get to the airfield without having to watch for runway activity.

Steve Misher was the current Electrons field manager at the time and would adjust his schedule to mow the field when pilots were least likely to be there. The tractor mower that Steve was using had a 38" cut which ended up taking quite a while to complete the job. Jim Zahorik and his dad Art rigged up two hand push mowers to trail behind the tractor actually widening the cut to 78" completing the job in half the time. Ingenious!

When the dust settled on the 1976 flying season, the flight rules were rewritten to include training and certification levels, and mailed out to all members. This was followed by the raising of annual dues from \$12.00 to \$15.00 after holding it at \$12.00 for more than six years.

1976 was also the year of the "Great CB Radio Craze." This was a national threat to RC modeling in that the FCC was consid-

ering giving away the 27MHz frequency to CB radio operators during that period when CB radio operation became a big deal mostly due to the song that hit the airways call "Convoy" by C.W. McCall. Here's a little taste;



*"Breaker Breaker 19"*

*'Cause we got a mighty convoy  
Rockin' through the night  
Yeah, we got a mighty convoy  
Ain't she a beautiful sight?  
Come on and join our convoy  
Ain't nothin' gonna get in our way  
We gonna roll this truckin' convoy  
'Cross the USA' ... CONVOY!*

*I'm sure that this brought back some memories.*

## 1977

This year saw a further development of the proposed public flying site located in the Milwaukee County Park system. The clubs found that the plot of land was located near a flood plain, which would make it a protected site for modelers for the future. The proposed site was also said to

be so large that pilots could fly a 315 degree radius and the nearest homes would be nearly a mile away.

The Park Commission required some form of commitment and the Electrons and surrounding

clubs agreed to establish a petition.

This year the club also invested in a new 60" cut field mower and retired the old smaller model that was starting to see more and more problems.

In April, the club introduced its first initiation fee of \$10.00 to new joining members. This fee was meant to help offset the cost of field equipment.

In June, concerns were raised at the news that Karl and Sophie Schaarschmidt, owner/operators of Aero Park, were planning their retirement. This would mean the sale of Aero Park.

Loss of Aero Park to the club would be devastating, so the club selected a committee that

**HISTORY** *Continued next page*

**HISTORY** *Continued*

would seek out potential buyers that would be favorable to allowing continued use of the park for RC modeling. The club also put in motion a study to purchase the airport section of Aero Park which would secure the location for the club.

This year also placed the Flying Electrons as the 18th largest club in the nation according to AMA records.

Later in the year the Milwaukee County Parks granted approval of the land parcel just south of Rainbow Airport for a public flying site. The consortium in charge created an association whereby pilots could purchase annual permits to fly at the new site.

The new site was graded and seeded with the initial income from permits purchased to make the site ready for use by the spring of '78.

The last piece of Electron news from 1977 announced the introduction of a model airplane builders course for young people. Similar to today's Builder's Workshop, the course was manned by six instructors and surrounded building a Goldberg "Ranger 21" rubber powered flying model.

The course was to begin September and run through October but not enough students signed up to make it happen, a similar problem we had during our first year setting up our recent builder's Workshop.

The lack of student sign-ups was

overcome by reaching out to parents rather than students at schools. Unfortunately the Covid-19 pandemic cut off the classes before they could begin in 2020.

# 1978

'78 started out with a challenge from sister club Kettle Moraine



Flyers to meet them in a combat challenge. The Electrons had considered combat three years prior but felt that having combat flyers mix in the air with normal flying would bring about chaos. The idea was back on the table and with proper controls the membership thought it could be workable.

Aside from eliminating smoking from all further club meetings, the news for the year mostly focused on the public airfield that was under development. It was origi-



nally planned that the field would be graded and seeded in the fall of '77 allowing the field to be used in spring of '78. To that end permits were sold for use of the field and revenues collected. The weather did not cooperate and the grading and seeding operations had to be postponed 'til early spring. Even this schedule was further delayed due to bad weather.

The association had planned for a grand opening on Labor Day in '78 but continued rain kept the field unusable with a 5" down-pour the night before the expected



opening day. This left the exact opening date unsure and it

**HISTORY** *Continued next page*

**HISTORY** *Continued*

was thought that it would not be able to open at all in that year.

In September the current land-



scape contractor was fired and a new one was hired.

The Park Commission at its October meeting approved the lease for 1979, however because the field could not be used by permit holders in '78, the association was forced to extend the '78 permit through 1979 out of fairness to permit holders.

This would leave a deficit in the revenue stream and force the associated clubs to look for additional supporting revenue streams to cover the field lease obligation.

Despite the bad weather season, the Electron's managed to hold its Aerobatic & Scale Contests in August of '78 at Aero Park with great attendance.

The AMA awarded the Electrons with an "Award of Excellence" at

its December meeting. The award was granted to those clubs who show outstanding activity through member recruiting and AMA sanctioned contests throughout the year.

In 1978 AMA dues were raised \$5.00 to \$25.00 annually and the magazine subscription was added as part of the membership program. During '78 only



14 frequencies were available for pilots flying 27 and 72MHz. The AMA went to work to secure 20 to 30 more frequencies from the FCC. It was expected that it would take a year before the request would get an answer moving at the pace of government.

Back in the 70's, weather patterns were quite different. Flying seasons were longer, more manageable and there were not as many drastic changes in the weather as we now see today. As evidence of this, the club's annual Fun Fly was generally held on October 1st each year. It would be difficult to plan such a large event this late in the year nowadays.

'78 also saw the initial introduction of "precision scale" contests at the club. This event secured judges with a national reputation to handle the judging procedures. These events would require a great deal of participation from club members as volunteers. This initial "precision scale" event involved the support of 63 volunteers working in shifts, which

involved nearly every club member in one way or another.

To close out the year, the AMA presented the Flying Electrons with an Award of Excellence during its December meeting. The award is extended to clubs that demonstrate

outstanding activity

through large memberships and sponsorship of AMA sanctioned events. A great way to end the year.

In 1978 the club sponsored the Greater Milwaukee Association RC Auction. Jim Zahorik served as lead auctioneer as he still does today at the Washington Fairgrounds site.

That year also saw a proposed change to the field rules requiring that all gas engine pilots have on hand a fire extinguisher. The rule was voted down in favor of the club purchasing an extinguisher to be stored in the shed which it currently still does.

1978 Continued to see RC flight violations which interfered with full scale aircraft, skydivers and flights over local households, giv-

**HISTORY** *Continued*

ing rise to further warnings and the possible threat of loss of the airfield. To remedy this, the club officers met with pilot and skydiving representative to agree on further field rules.

The Public Airfield near Rainbow Airport was getting close to completion. Final seeding was underway and the expected Grand Opening was expected over the Labor Day weekend. Apparent controversies were experienced between student trainees and



Instructors, forcing Instructors to insist on students signing a waiver of responsibility should a crash occur. I believe these were the days before "buddy-boxes" which totally made training a much simpler and more reliable task.

Unlike today, upcoming club elections had several candidates hoping to serve as officers. In '79 there were two running for president, two for vice president, two for secretary, four for director's positions, and two for newsletter editor. Today it is much different. Nowadays, it requires a lot of recruiting and soul searching to bring an officer on board.

## 1979

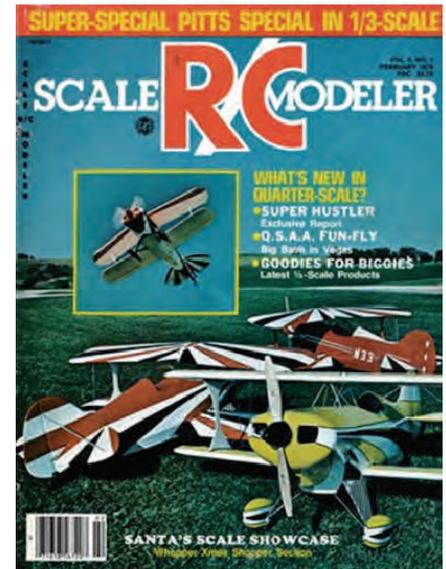
Note: Although I haven't mentioned it earlier, after reviewing club meeting minutes, I noticed that the club often showcased guest speakers and even short films often provided by the EAA which followed business at meetings. In addition, newsletters were filled with great information and tips for builders.

Frequent presentations were made at Southgate Mall over the 70's whereby aircraft would be

displayed over a weekend, roped off from the public. Sometimes as many as 100 planes might be on display with local area hobby shops awarding prizes for best of show

and other categories. The show was generally coordinated by the RC Association.

The club also introduced scale judging workshops sponsored by knowledgeable Electron club members. These workshops taught other members how to judge scale events and broadened the pool for what was an important contest venue for the club every year. In fact, in 1979 Scale RC Modeler and Model Airplane News both carried pictures and articles of the club's contest event giving the club national attention.



In 1979 CB radio operators and pagers were beginning to infringe once again on the 72MHz band causing further concern to RC modelers. They had already taken over a couple of 72MHz frequencies in Houston, TX. The AMA would later begin to lobby for frequency isolation for RC modeling.

After only a few years of service, the new mower had to be taking in for repair. Following the repair the tractor threw a piston and had to go back into the shop ... again! The wear and tear seems to be related to overheating under tall grass cutting situations.

The new public site talked about earlier comes closer to opening during Labor Day in 1979. After a two-year long wait, the site finally opened to modelers with a ribbon cutting ceremony and full TV coverage. That year, Electron memberships reached 131 according to newsletter reporting.

**HISTORY** *Continued*

# 1980

1980 was one of the wettest years on record, the EAA held a full scale homebuilt fly-in at Aero Park and movies were incredibly popular at club meetings.

**HUSBAND FOR SALE,  
CHEAP!**

Comes complete with RC gear, 1 pair of jeans, 2 shirts, boots, a stable of model aircraft and 4 gallons of fuel. Pretty good guy, but not home much May thru October.

**Will consider trade.**

In 1980, the newsletter started introducing cartoons. The above ad and cartoon (top/right) ran in the April edition of the club newsletter.



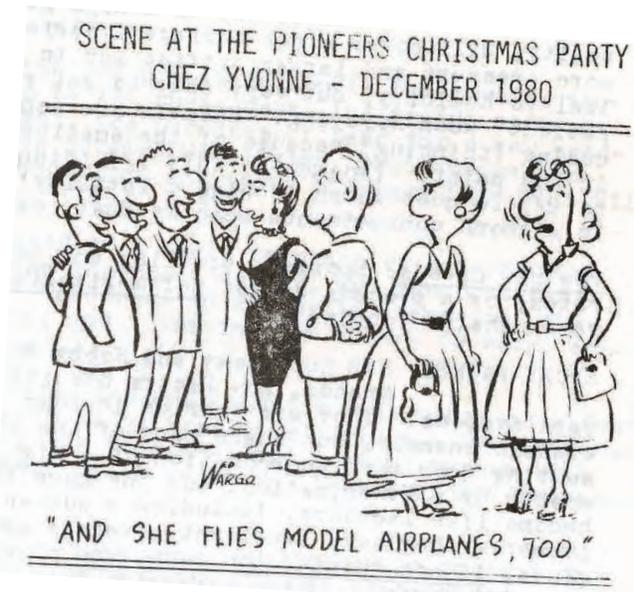
In '80s the RC hobby received a huge blow. While attending NY Jets Football game, a Patriot fan and associate and his associate were by a 35 lb. RC aircraft which was performing an air show for fans. The individual struck, point blank, died while his associate survived. There is no

further information in the files regarding this mishap, and I include it only to illustrate how our hobby can receive negative nationwide focus if we are not careful.

The Southgate Mall continues to be a showplace for RC displays with its annual RC Association showcase. It's not clear however if the annual showcase actually draws in any new members to RC organizations.

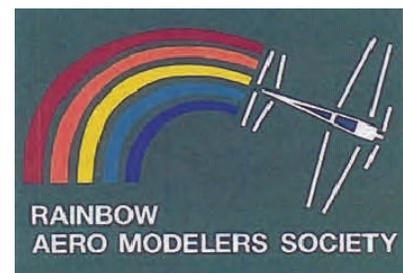
The club also this year accepted an invitation to host a scale contest that serves to establish a nationwide scale master. This nationwide tournament was called "The US Scale Masters Championship." The Electrons were one of five clubs selected to participate; truly a high honor as a result of the club's past history in scale contests.

If you've paid attention to the TV, you've noticed increasing interest in law suits claiming that talcum powder causes cancer. The Electron's April 80 newsletter had early warnings about the use of talcum powder mixed with dope. For all you younger readers; "dope" is the paint that modelers used to decorate aircraft before Monokote became so popular. This paint was especially "fuel



proof" so that the exhaust residue wouldn't penetrate and remove or affect it.

In 1980, we still had many hobby shops to serve the hobby. Some of those were Happy Hobby, All in 1 Hobby, Casanova's Hobby, and Al's Hobby Shop. Each of these shops advertised in the Electron's monthly newsletter and were frequented by club members.



The Public Airfield is completed during this year and becomes the home of the Rainbow Aero Modelers Society (RAMS) with an official opening during the month of November. Dues were set at \$10.00 annually with a \$5.00 initiation fee. The club still resides there today. It was intended that this club would fill a gap for pos-

**HISTORY** *Continued*

sible RC members in that local area.

Bertrand Michels, a 20-year old exchange student from France, had been an RC enthusiast for more than six years before coming to study in the US. In his application for student exchange, he requested that he be placed with a family in the RC community.

That didn't work out but he made contact with Electron members and they got him out to the field with donated aircraft and an experience for both him and the

club members that neither will forget.

Bertrand recounted that RC is not very available in France. France has 6-million people occupying the same space that one million occupy here in the US. The French live in apartments; have no basements or workspace for building. Bertrand was studying to be a veterinarian and would like to return to Southern California to practice ... Who wouldn't?

Marv Ingerson Jr. competes to win the NATS this year beating rival Rick Horn of Long Beach, CA. The contest, held in Wilmington,

OH won Marv "Expert" class which is the second highest level of difficulty just under "Master." This award brought honor to the Flying Electrons and all other clubs in our local area.

Next series begins with 1981! The year the club sought out and located Tamarac Airfield.

*If any member has photos from this article's time period that would help to give this account more substance, I'd love to include them. You can reach me at [tjacobs421@att.net](mailto:tjacobs421@att.net) and we can arrange a way to get them transferred.*

## Be Prepared for Emergencies!

Emergencies at the field can require a quick response. Be informed so you can give authorities the information they need to respond.

**Tamarack Field**  
N61 W17000 Kohler Lane

### FIRST AID BOX

(Located on the North Side of the Building)

**Contact Police or Fire  
by Dialing 911**

**Hobby / Recreational Flying**  
**What Can I Do With My Model Aircraft?**

Having fun means flying safely! Hobby or recreational flying doesn't require FAA approval but you must follow safety guidelines. Any other use requires FAA authorization.

**AVOID DOING ANYTHING HAZARDOUS TO OTHER AIRPLANES OR PEOPLE AND PROPERTY ON THE GROUND**

- ✓ **DO** fly a model aircraft/UAS at the local model aircraft club
- ✓ **DO** take lessons and learn to fly safely
- ✓ **DO** contact the airport or control tower when flying within 5 miles of the airport
- ✓ **DO** fly a model aircraft for personal enjoyment
- ✗ **DON'T** fly near manned aircraft
- ✗ **DON'T** fly beyond line of sight of the operator
- ✗ **DON'T** fly an aircraft weighing more than 55 lbs unless it's certified by an aeromodelling community-based organization
- ✗ **DON'T** fly contrary to your aeromodelling community-based safety guidelines
- ✗ **DON'T** fly model aircraft for payment or commercial purposes

For more information about safety training and guidelines, visit [www.knowbeforeyoufly.org](http://www.knowbeforeyoufly.org)

For more information, visit [www.faa.gov/uas](http://www.faa.gov/uas)

Federal Aviation Administration

# Get Out & Fly!

We've had some great weather over the last month for flying and many pilots are out enjoying it. I thought I would include several shots taken over the last couple of months by myself, Chris Ocampo and Jim Hendrickson.

If you haven't been out for a while, we miss seeing you and encourage you to come out and get some fresh air.



You can't get much closer than this!



Cliff makes a rare appearance with his GeeBee.



Tom Kowalewski maidens his giant scale cub. I think you know the rest of the story.



Augustine Dax certifies as solo pilot



Shelter tenant renews lease!



Another nice day and a nice line-up of aircraft



Terminator and his new Pitts Special.



Awesome Mustang!



New Cows and Spinner ...  
New plane!



The Warbird guys make a visit



Ryan maidens his DeNight Special



Tim's gear fails to deploy and Marv  
brings it in safely for a belly land-



Troubleshooting Ryan's Ultimate.

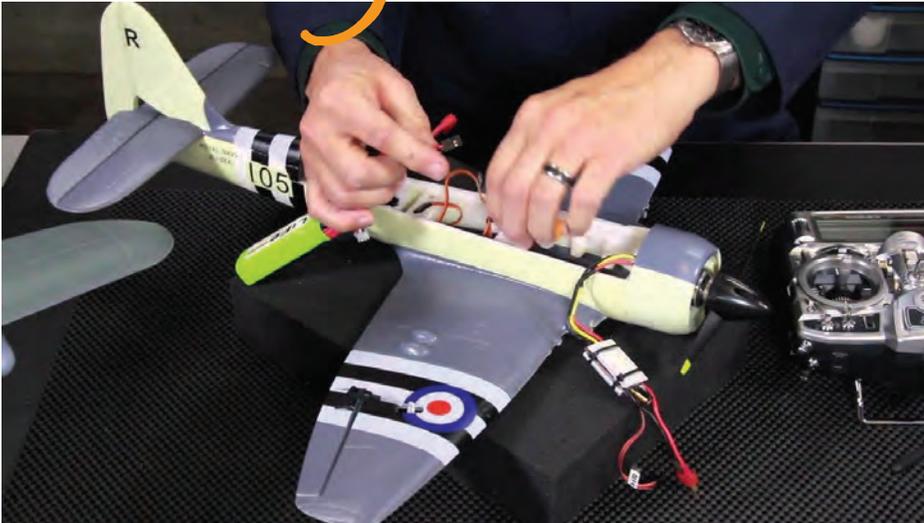


Steve Tarney takes up  
his giant T-28



All the king's horses and all the  
king's men, couldn't put Steve's  
F-27 together again.

# Getting Started in RC



here has to do with choosing complete aircraft and power system packages available to modelers known as RTF's or "Ready-to-Fly" aircraft.

These RTF aircraft generally include both the aircraft and recommended power system as a package. Of course, these aircraft cost more as a rule primarily because you need to do less to get into the air. That's fine for some modelers, however this arti-

## Selecting Components for an Electric Power Setup

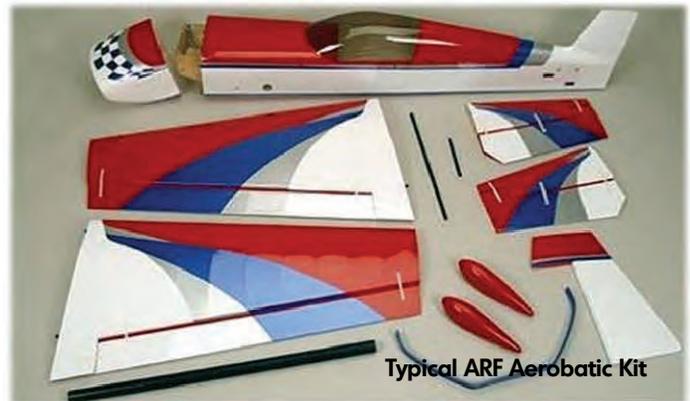
If you've chosen "Glow Power" as your power source, then the aircraft kit or ARF you purchase will state the engine size needed to successfully power the aircraft. The kit or model will usually specify an engine by cubic inch size and also offer option choices for two or four stroke engine types. Most glow engine modelers will start with the engine size and then select a plane that the engine can service.

One note before we move forward is a piece of advice; if the manufacturer recommends a range of engine size for your glow engine aircraft, always choose the high end engine size for best performance. You'll find that your new aircraft will fly with

the smallest recommended engine size, however it will perform at its expected best using the larger size engine.

Glow engine modelers have a wide array of models from which to choose and the model selection can be rather easy. When it comes to electrics, choosing the best power system is generally reversed. What I mean by this is that modelers will first choose an aircraft and then construct the best power system to support the aircraft and the pilot's type of flying.

There are always exceptions. The exception that I speak of



Typical ARF Aerobatic Kit

cle is going to focus on how to design your own power system for an aircraft that you either want to build or purchase as an ARF.

If you recall from previous articles, ARF refers to "Almost-Ready-to-Fly." The "Almost" portion of the description refers to the fact that modelers must decide on a power system for the ARF they

(Continued next page)

have purchased. This flexibility allows modelers to choose either electric or nitro as a power source and then also decide how much power they want to provide the aircraft based on their flying style.

## Flying Style

"Flying style" is a relative term. It is a balance of what your aircraft is capable of and how hard you want to push its limits. For example, a trainer aircraft's inherent flying style is very conservative and stable by design giving the



student ample time to react to problems while learning to fly. The recommended power source for such an aircraft would provide enough power to allow the aircraft to fly conservatively so that the student is not overwhelmed by with significant speed.

But what if the student wants to do more eventually? This might require more power. One can always "throttle back" an aircraft (fly it slowly) if the craft is capable of flying at a slower speed. By planning ahead, additional power at the controls can allow the plane to do more when nec-

essary once the trainee becomes more proficient.

So, if you are looking for a plane that you can train with but you would like to learn aerobatic maneuvers with that aircraft then you'll need a power source that can step up with what you need, when you're ready, to deliver that experience.

When selecting a power system, Flying Style also refers to where you are in the pilot training cycle. If you are an accomplished 3D pilot, then you'll want the most powerful system that your aircraft can handle. If you are interested in military aircraft, then you'll want a power system that performs in a way that reflects the characteristics of that aircraft realistically.

To accomplish this with electric power, we'll need to do a little STEM math. With math we could specify a power system that is perfect for the aircraft and our flying style. We're going to look at some basic STEM math that will provide you with the formulas you need to build a pretty reliable system.

So where do you start? First, we need to understand the aircraft that we trying to outfit for power.

## The Aircraft

For an aircraft to take to the air, two things are necessary; speed and lift. The aircraft must have a wing area to handle the flow of air over and under the wing and,

the plane must move forward at a velocity fast enough to create a force that will lift the plane from the ground.

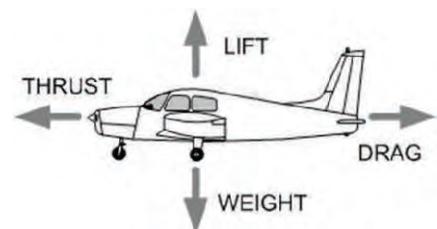
## Aircraft Design & Weight

Before we can specify a power source we need to understand the four forces that must be in balance for the aircraft to stay airborne. The four critical forces in flight are Lift, Weight, Thrust and Drag.

All aircraft must deal with these forces whether a trainer, sport plane or a jet aircraft. When a plane is traveling in straight and level flight, all of these forces are perfectly balanced. When one of these is out-of-whack, the plane will change its attitude or direction and the pilot may have trouble. It's easier to understand these forces when we pair them together.

## Lift & Weight

The lift on an airplane (upward direction) forces the aircraft upwards while the weight (downward direction) caused by gravity, forces the aircraft downwards. When the aircraft is flying level, the lift is equal to the weight. If the lift were to decrease, the airplane would not be able to hold itself in the air and



would eventually fall (which is called stalling). Remember, any-

*(Continued next page)*

thing will fly with enough speed, therefore if an aircraft slows enough that it falls to the ground, this is called the stall speed. The speed an aircraft needs to take flight is called its "take off speed."

## Thrust & Drag

These two coupled forces work in a similar way but on the horizontal axis (front to back); when thrust and drag are equal, the aircraft neither accelerates or decelerates: it will continue at the same speed. If you were to increase the drag while the aircraft was flying, the plane would slow down unless more speed was applied to balance those forces. Thrust powers the aircraft forward creating the speed needed to maintain flight.

The design and weight of an aircraft determines the amount of velocity (or speed) required to create enough lift to raise the aircraft into the air. The main factor that influences "lift" is what is called "wing loading." Wing Loading can be high, low, or somewhere in between. So what is "wing loading" exactly? Here's an example; A butterfly has a "low" wing loading because it has very large wing area compared to body weight, therefore it can become airborne with very little speed or effort. Why? because its wings are large compared to its body weight and it takes very little velocity to become airborne.

"Body weight" is the "payload" that the wings must carry. In fixed wing aircraft, the wings do the



work of carrying the payload and creating overall lift for the aircraft.

A jet aircraft has a "high" wing loading because its wings are very small compared to the body of the aircraft. This means that the craft must move fast enough to lift the body off the ground and then keep moving fast enough to stay in the air, then even more so to climb. Therefore the wings must take a "high load" or air pressure to keep the aircraft airborne.

The power source which speeds the aircraft forward must provide enough force, or thrust, to move the aircraft fast enough to get it airborne, keep it airborne, and then provide controlled maneuverability. Because the power source also has a weight on its own, this means that its own weight needs to be considered



as part of the overall wing loading calculation.

Wing loading affects an aircraft's performance. For this reason alone, wing loading can tell you a lot about the aircraft before you select it as your next model.

For example; let's say that you are a novice flier and want to be comfortable flying in both calm or somewhat windy conditions. An aircraft with a low wing loading of 7 to 10 will fly very nicely on calm days and provide a lot of fun. Gusty winds however will toss that plane around like a feather. On windier days you'll want to fly a plane that will be

able to penetrate the winds and handle nicely. On those days you'll want a plane with a wing loading rating of maybe 15 to 18.

Wing Loading also provides a guide in how an aircraft can be designed and engineered. The chart below provides a general categorization of aircraft as related to wing loading. Following

this chart is a brief description of each of the categories.

## Gliders

These are large slow flying aircraft usually with a large wing

*(Continued next page)*

area and rely mostly on thermal air currents to keep them aloft. These can be great aircraft if you're looking for something that is slow and relaxing to fly.

### Trainers

These aircraft are designed specifically for flight training. They are more forgiving and stable in the air providing students with more reaction time to make adjustments during flight. These are generally high wing aircraft with built in dihedral and large wing areas.

### Sport Planes

These planes are more aggressive in the air and have greater

because of their thin airfoils. This means that the pilot is always on the hot seat when flying these craft. Scale aircraft are planes designed to be as near to the real thing as possible. This includes all the full scale flying problems that incur when flying a real aircraft. Many of these aircraft will include wing flaps needed for take-offs and landings, landing gear retracts and other scale additions.

### Jets

This is the domain of the jet. These aircraft must attain high speeds simply to lift off and become airborne. Pilot reaction time is very limited and only some of the best pilots take on flying jets.

There are a huge number of aircraft designs and configurations out there in the hobby. Many new hobbyists will make their purchase decision solely on what they find attractive or interesting and that can be a mistake.

Using the chart above to choose your first or next aircraft is helpful, but how do you ensure that the aircraft you are considering falls into the category that you are capable of handling? By calculating the wing loading of the aircraft you're considering.

These aircraft have larger power sources and can perform unlimited vertical flight. These aircraft are highly sophisticated and can perform difficult maneuvers like snap rolls, knife edges, and more.

### Aerobatics

These aircraft are race planes. They take off fast and land fast

### 3D, Pylon & Scale

These aircraft are race planes. They take off fast and land fast

### A Final note about Wing Loading

The specified value range for Wing Loading within a category describes you a range of performance within that category. For example; a trainer can have wing loading less than 10 or greater than 18. It is the design of the aircraft that makes it a trainer. The wing loading describe the trainer's performance level. If you are looking for a trainer that can fly slow and easy, you should choose one with a lower wing loading. If you're looking for a trainer that can penetrate gusty winds, then choose one with a higher wing loading. In either situation, the plane is still a trainer by design.



The famous T-28 Navy trainer has a wing loading of 25, yet it is still a trainer and it serves a specific training purpose for the Navy. So, when you consider wing loading, understand that it reflects an aircraft's performance characteristics and the high the wing loading the more attention you'll have to give the aircraft while flying it.

### The Aero Star .40

The good news is that manufacturers provide the information you

Model Type	Wing Loading
Gliders	Under 10
Trainers	10 to 18
Sport Planes	15 to 24
Aerobatics	18 to 30
3D, Pylon, Scale	28 to 40
Jets	35 and up

need in the aircraft's specifications before you make your decision. By way of an example, we'll choose a trainer aircraft that is expected to weigh about 5lbs when in the air. Most manufacturers will provide the anticipated weight and wing area of the aircraft. These are the only two pieces of information you need to place the performance of your aircraft into a category.

The Aero Star .40 is an aircraft that I use frequently for training at the field. It has a 62" wingspan, 11" chord and weighs in at 5lbs. 8oz. (88 oz. total). It is designed for a .40 size nitro glow engine and I generally fly a .46 size on it because I could use a little more power when it gets into trouble. I chose this aircraft design also because it looks very similar to the top view drawing shown later in this article which you can use as a reference to identify various parts of the aircraft.

What we need to do to specify an electric power system is determine which motor, battery pack, ESC and prop will provide enough power so that the aircraft will perform as desired. To accomplish this we'll use a few basic rules and formulas which have proven to be very reliable over the years.

One of the best known rules in electric flight is a generalization the an aircraft requires about 50 to 100 watts of power for every pound of aircraft weight. I use 100 watts for aircraft that don't require much power to stay aloft, and 150 watts for more aerobatic designs. 200 watts should



provide great 3D performance, but with the added wattage comes additional motor weight.

The chart below is provided compliments of Hacker Motors. Hacker is a premier supplier of good quality electric motors for RC. This chart can be accessed with the link:

### [www.Hacker Motor Chart](http://www.Hacker Motor Chart)

The chart on the next page provides a variety of options and data that one can use to make a great motor selection. It also provides the glow engine equivalent which is a great cross check.

This wattage rule works well but it refers to input power, which is the power that enters the motor through the ESC (Electronic Speed Controller) and it also re-

quires that that the motor, power supply and ESC are 100% efficient. If all your components were 100% efficient, you would get the full power specified by the component but this is not the real world. This is why we need to add in Efficiency Factors.

### Efficiency Factors

While your chosen motor may claim to generate 100 watts of power, there is always something lost as current passes from the battery pack, through the ESC, and into the motor. This is why we always assume an efficiency factor. Motors are about 80% to 90% efficient. Therefore, if you are seeking an output power of 100 watts, then you should plan on using a motor that claims to output 110 to 120 watts to allow for the inefficiency of the component. Most brushless motors will operate at a 90% efficiency level.

(Continued from previous page)

Gear drives, if used also have their losses due to efficiencies as does your propeller. Choosing the wrong propeller can significantly reduce output power. We won't cover gear drives here because we really don't need one. The good news is that motor manufacturers will generally recommend a prop that is most efficient when paired with a recommended number of battery cells. What we'll be looking for when we choose a motor and prop is that the output power provides the thrust and speed we need to make the aircraft perform as we wish.

### Stall & Pitch Speed

Another rule of thumb indicates that the chosen propeller should result in a pitch speed that is 2.5 to 3 times that of the aircraft's stall speed to provide suitable performance. But to calculate the Stall Speed we need to know two things; the aircraft's Wing Loading and Weight. The Weight is the "in the air" weight, which includes the motor and all electronics. Once we know the Stall Speed, we can calculate the performance speed and then select a prop and motor combination that satisfies our needs.

To convert the Aero Star 40 to electric, we have to start with wing loading. The wing area

measures out to be 692 sq. in. (62" wingspan X 11" chord = 692 sq. in.) The overall flying weight (to include engine and all internal components) is estimated to be 5.5lbs or 88 oz. We will elect to use 150 watts per pound as our target wattage value for this aircraft because we want good maneuverability.

Having these specifications, the wing loading is calculated like this.

$$\text{Wing Loading} = [\text{weight (oz.)}] / [\text{wing area (sq. in.)}] \times 144$$

$$\text{Wing Loading} = (88 \text{ oz.} / 692 \text{ sq. in.}) \times 144$$

$$\text{Wing Loading} = (88 / 692) \times 144$$

$$\text{Wing Loading} = 18.31$$

This places this trainer at the higher end of the wing loading chart shown earlier and indicates that the aircraft should perform well in gusty wind situations because of the higher load value ... and it does.

### Stall Speed

An aircraft will simply fall out of the air if the aircraft is not moving forward fast enough to satisfy its wing loading. The speed point at which an aircraft will fall out of the air is called the "stall speed."

Stall Speed is a function of aircraft speed and wing loading. If you can figure out how fast your aircraft

Power level	GLOW	Model Weight	Hacker Motor	CELLS/Prop	Amps	Price
300 watts	.10	2-3 lbs	A30 28S	3S 2100 10x5	25	\$63.99
400 watts	.10 / .15	3-4 lbs	A30 16M	3S 2100 11x5.5	28	\$69.49
500 watts	.15	3.5-4.5 lbs	A30 10L	3S 2500 11x5.5	36	\$81.49
650 watts	.25	4-5 lbs	A30 10XL	3S 2500 14x7	42	\$86.99
650 watts	.32	3.5-6 lbs	A30 12XL	4S 2500 14x7	45	\$86.99
900 watts	.46	4-7 lbs	A40 10S	4S 3000 14x7	50	\$110.49
1,000 watts	.60	5-8 lbs	A40 12L	6S 4000 16x8	50	\$118.49
1,200 watts	.60	6-10 lbs	A50 16S	6S 4000 16x10	55	\$139.49
1,900 watts	.90	8-13 lbs	A60 7XS	8S 4500 19x10	85	\$212.49
2,000 watts	1.10	10-15 lbs	A60 5S	6S 4500 21x10	68	\$233.99
3,000 watts	1.60	12-20 lbs	A60 14L	10S 4500 21x13	90	\$269.99
3,000 watts	PATTERN	15-24 lbs	Q80 13XS	10S 5000 20x13	76	\$459.99

(Continued from previous page)

needs to travel to stay airborne, then you're one step closer to

does the aircraft need to go to surpass its stall speed? To calculate the Stall Speed use

mph, it will stall and drop out of the air.

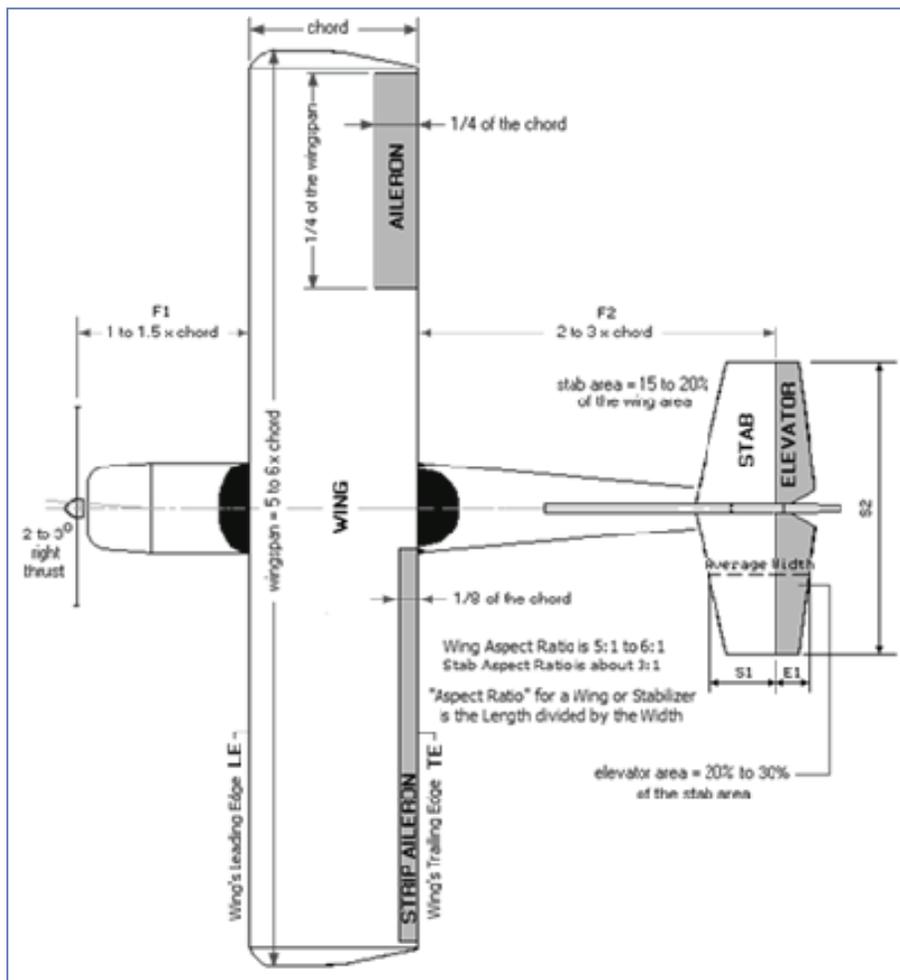
### Target Pitch Speed

Target Pitch Speed is calculated by multiplying the Stall Speed by 2.5 for a sport flyer, or 3 for more aerobatic aircraft. I'm choosing to use a multiple of 3 for this aircraft because it has a higher Wing Loading for a trainer, so I want to be sure that it has enough zip in the air. This results in a Pitch Speed calculation of 56.34 mph (18.79 X 3 = 56.34). This is the "target speed" we're looking for from our selected power system and propeller of choice. We'll show how we resolve selecting the right propeller as we get closer to the end.

### Battery Packs

When selecting a motor, the manufacturer will recommend efficient propeller and battery pack combinations. We now know that our motor should output 825 watts of power to satisfy our needs. This value was arrived at by multiplying 5.5lbs X 150 watts = 825. Usually the motor under consideration will recommend one or two LiPo cell packs as options with a milliamp (mA) rating range.

A 2200 mA 3S LiPo pack for example indicates that the pack has 3 cells ("S" wired in series). Each LiPo cell individually provides 3.7 volts. When wired in series these three cell voltages are added together to create a pack that puts out 11.1 volts of power. A 4S pack would output 14.8 volts of power and so on.



figuring out what power system you need.

When a propeller turns at a high enough speed, it produces a force that propels the aircraft forward. If the speed of the propeller produces enough force, the aircraft will move forward fast enough and it will take to the air no matter how much it weighs. The big question is: how fast

this formula:

$$\text{Stall Speed} = 4.4 \times \text{SQRT}(\text{Wing Loading})$$

$$\text{Stall Speed} = 4.4 \times \text{SQRT}(18.31)$$

$$\text{Stall Speed} = 4.4 \times 4.27$$

$$\text{Stall Speed} = 18.79 \text{ mph}$$

Our Stall Speed for this aircraft is about 18 mph. If the plane slows to a speed less than 18

(Continued from previous page)

### Choosing a Motor

We'll start with our motor choice from the Hacker website chart. You'll never find a motor that offers exactly the wattage you're looking for; they just don't make motors in that broad a variety. So when choosing a motor, we choose the one that offers a choice closest to our specification. Remember, we are looking for "output power" which must factor in efficiency.

At 825 target watts of output we'll be looking for a motor that offers about 10% more because brushless motors tend to be 90% to 95% efficient. So, we'll want a motor rated at about 907 watts



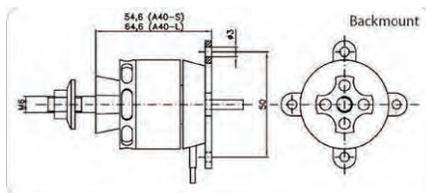
(825 watt target X 1.1 = 907 watts output).

Hacker offers their A40 10S model which yields 900 watts of output power. Perfect! By confirmation, the chart shows that this would be comparable to a .46 size nitro engine which is exactly what we are looking for.

The manufacturer recommends a 4S 3000mA LiPo battery pack. An Electronic Speed Controller (ESC) is also needed to control the flow of energy from the battery pack to the motor. This component must have the capability

of handling the amount of current draw by the motor under power. If the wrong size ESC is used, it could easily burn out or worse, catch fire. So what size ESC is needed?

ESC's are rated by amperage and the amp rate chosen must exceed the total amperage drawn by the motor to operate properly. Figuring out the required amperage is a basic calculation using the formula:



$$\text{Amps Required} = \text{Watts} / \text{Volts}$$

From the chart we know that the recommended battery pack is a 4S 3000mA pack. Our motor is specified to output 900 watts and our battery pack is a 4S pack, which at 3.7 volts per cell comes to 14.8 volts total output. So let apply the formula:

$$\text{ESC Amp Rating} = \text{Watts} / \text{Volts}$$

$$\text{ESC Amp Rating} = 900 / 14.8$$

$$61.22 = 900 / 14.8$$

60.81 Amps will be drawn by the motor when at full speed. Most RC aircraft do not fly at full speed all the time except for pylon racers and possibly military scale aircraft. So as a trainer, I would generally fly at about half speed for the most part which means



that a 60 Amp ESC would probably be just fine for this motor and battery combination, so I would go with that. If you were putting this motor into a 3D or pylon aircraft you'll want to locate a minimum 65 or 70 Amp ESC to handle this system.

### Choosing a Propeller

Most manufacturers will recommend an efficient propeller for the power pack of your choice. In our case, Hacker recommends a 14 x 7 prop.

These specifications relate to the length and pitch of the prop respectively. Length is also referred to as diameter of rotation. The pitch refers to how far forward the aircraft will travel with no resistance for every complete revolution of the prop.

In this case, each time the prop makes a full rotation, the plane will move forward 7 inches. Remember, this is a theoretical num-

(Continued from previous page)

ber. Efficiency plays a huge role in this formula. Pitch is the basis for determining how fast your aircraft will fly and or penetrate the winds. A prop with a high pitch will produce more thrust but the motor will not be able to hit its maximum rpm. A prop with a pitch of 6 will enable the motor to run faster but not as much thrust will be created, and, the motor could overheat.

This is why it is always good to start with the manufacturer's recommendation on prop size and pitch. It is much more likely that they have arrived at the best balance of thrust and rpm to maximize efficiency.

Now, if we can trust the manufacturer for prop size and pitch, we can use these figures to figure out if this power system will provide the speed we are seeking. Remember, we calculated a Stall Speed of 18 mph and we are seeking a top end performance speed of about 56 mph. Let's look at what this motor and prop will produce.

When we drill down for more information about the motor we find that the RPM Volt KV is 750. KV stands for 1000 rpm per volt. Our motor is running on 14.8 volts at 750 KV which means that it will turn 11,100 rpm without resistance (750 KV X 14.8 Volts = 11,100 rpm).

### Calculating Maximum Speed (MPH)

Following are the steps needed to calculate the hypothetical MPH for this motor and prop given absolutely no resistance.

Multiply the RPM by the propeller pitch (e.g., RPM 11,100 X 7 = 77,700 inches)

Calculate inches traveled over one hour (i.e. 77,700 X 60 minutes = 4,662,000 inches per hour)

Convert to inches to feet (i.e. 4,662,000 / 12 inches = 388,500 feet traveled in an hour)

Calculate number miles traveled in 1 hour (388,500 / 5280 feet = 73.57 mph)

This aircraft has the potential to travel as fast as 73 mph. In this calculation we used the KV number and voltage to arrive at the MPH. Because of resistance that can affect the aircraft in flight this speed will be actually less. The only way to get a truer rpm with the prop attached is to use a tachometer while running up the engine on the plane or a test bench.

If we apply an 80% to 90% efficiency factor to the hypothetical mph we arrive at 58.4 to 65.7 mph (73 X .80 = 58.4 mph). Our target Pitch Speed was 56.34 mph so we have a little more speed than we needed which is great. If the mph was low, then we would have to look at the

next size up in motor and recalculate or decide to accept less in the way of speed.

We covered a lot of detail in this article but now you have the knowledge you need to select a reliable electric power system and apply it to the type of aircraft you've either selected or are shopping.

We covered a lot of territory in this article but now you have the knowledge you need to select a reliable electric power system and apply it to the type of aircraft you've either selected or are shopping for.

RPM Volt KV	750
Max Watts	900
Max RPM	-00
Timing	20° - 25°
Poles	14
Idle Current	2.8
Resistance	12
Weight (grams)	208
Length Metric	42
Diameter Metric	41.7
Shaft Diameter	5mm
Product Place Of Manufacture	China

# 3D Printing to the Rescue



The lower wing attaches by means of a plastic key that rotates to lock

place and solve my problem.

The trick would be to create a part design that would fit nicely over the remaining ledge yet provide a key-hole that the bot-

tom wing key could properly lock in to.

During a nice but windy afternoon a few of weeks ago I was flying my light weight E-flite Ultimate. This is one of only two electrics that I have but it's an outstanding plane for learning to fly 3D maneuvers.

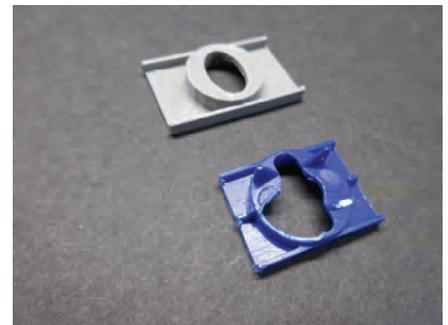
Under some tough crosswinds I was coming in for a landing when a gust of wind caught my

the lower wing in place. I unlocked the lower wing key and discovered that a portion of the base component that locks to keep the wing in place had broken away.

This piece had spanned the inner fuse and was embedded in the Styrofoam. The central locking keyhole would need to be repaired or replaced somehow if the plane were to be saved.

Another solution might be to simply glue the bottom wing to the fuse permanently but I didn't want to do that. So, I decided to explore 3D printing as a solution.

I decided to saw away the existing keyhole platform but leave a left and right ledge where I could attach a replacement part. I thought that if I could 3D print a new piece that could be attached to the remaining ledges left in the fuse, I could glue it in



After sawing away the original part, I took measurements and calculated adjustments needed to position the keyhole at the proper location to secure the wing.

I used TinkerCad to create the design and run some tests. After running four separate parts with incremental adjustments, I created a piece that would attach to the existing keyhole component and allow the key to lock up the lower wing.

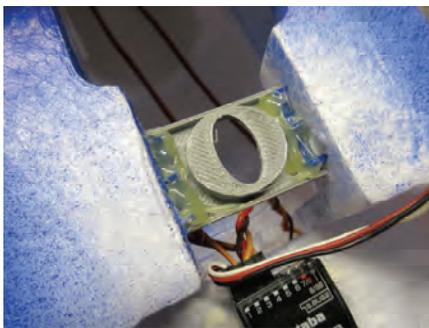
Unfortunately, the wing fit was a little loose and further adjustments would be needed to ensure the wing would be secured



wing, flip it up and cart wheeled it, breaking something holding the lower wing in place.

tightly. This meant Adjusting the location of the keyhole height slightly to create a tighter tolerance. After running two more parts, success was achieved.

I tried to CA glue the part into place but the plastic-to-plastic surface did not provide a good gluing surface. I ended up using hot glue to secure the part in place and the wing is now back in place.



3D Printing has opened up new solution avenues for me. I've been able to fix many things using my 3D machine; I've repaired my wife's mobile phone holder, printed 3D nitro engines of various sizes, replaced the handle on my sunroom door, created

new parts for a friend's collectible train set which were out of production, and more.

Lately, I'm exploring printing pilots of various sizes for the aircraft I have. I'll cover that experience in a future issue.

Long live 3D printing!



**EVENTS** *Continued from page 1)*

nual FrankenPlane Events. These two are also closed club events and last year saw light traffic and mild participation but they were a lot of fun. Details for both these events are covered here in the newsletter.

A few years ago, the club voted a change to the bylaws to allow voting by mail and/or email. It's likely that this year will be the first year we put that plan in place.

If anyone is interested in serving on the board either as an officer or director, let me know via email at [tjacobs421@att.net](mailto:tjacobs421@att.net) and I can fill you in on the requirements. All offices and directorships are open for nomination.

The board will meet soon to discuss how we accept nominations and conduct elections prior to election date in November.

Lastly, I hope everyone is staying safe. This pandemic is spreading

because some individuals are careless and disrespectful of others.

In America, we value our Freedom!

This freedom doesn't mean that we can do anything we want to do, it means that we are FREE to do what we should do.

Let's all do just that!

*See you at the field.*

**STUDENTS** *Continues*

summer, learning to fly RC is a great solution. Plenty of fresh air, fun, and sunshine awaits. We follow all social distancing guidelines while training and students walk away with a sense of accomplishment and an interest RC.

Ed Malec has continued to pursue interested candidates that inquire and has taken on several new pilots this year that have decided to join the club and continue to fly.

The month of July produced two interested IP students; Jack Korducki and Clay Collard.

Clay attended our Charity Event last year and became interested in RC when he took a Discovery Flight With Ed Malec. After the event last year, Clay's mother and I stayed in communication



regarding training. Clay received a nice Futaba T6J radio system from his grandparents last year as a gift, so he's half way to taking up the hobby full time.

Jack's Korducki's father contacted the club through our website asking about our training program.

We met shortly thereafter and got Jack started with the flight



basics. Jack and Clay are making great progress using club supplied trainers and buddy boxes.

Both Jack and Clay are also eligible for our STEM Student Membership Academy which provides free club membership once the student passes flight training certification.

If you see us at the field training, stop by and say hello and welcome these two bright new pilots to the airfield.

Most recently Henry Reed has been visiting the field with his grandson Michael. Mike's been training with Henry for the last few weeks and Henry says that he's just about ready to solo.

Mike has been practicing with a flight simulator, as has Jack Korducki. Both are making fast progress testifying to the benefits that a flight simulator can have on pilot skills development.



## It's Time to Renew Your FAA Registration

The Federal Aviation Administration (FAA) has important registration information for drone recreational flyers whose registration was automatically extended until December 12, 2020.

It's time to renew your FAA registration. The process is simple and easy by clicking the link below and accessing the FAA Drone Zone Dashboard.

### [FAA Registration Renewal](#)

Be prepared to provide your credit card information to handle the required \$5.00 renewal fee.

## Other Official FAA News

While nothing much is being reported on the remote ID program, we did receive confirmation from the FAA indicating that we no longer officially have to notify Timmerman Airport regarding our presence at the field.

The FAA has officially granted the Electrons this waiver but reminds us that we still need to stay below 400 foot altitude limit when flying aircraft.

# FRANKENPLANE

**Do you have old airplane parts and components laying around?**

Celebrate the Halloween season by creating something diabolical and horrifying ...

**... A FRANKENPLANE!**

Combine those old wings, fuselages, stabilizers and other parts to create life at the field and win a cash prize! Best and most outrageous creation wins as voted for by participating pilots!

**Saturday, September 27th  
(10AM to 2PM)**

**Entry Fee: \$5.00 per pilot**

FREE Refreshments & Snacks while supplies last.

## **ANYTHING GOES!**

Gas, glow, electric, rubber band or even nuclear power is fine ... well, maybe not nuclear.

Any type or configuration is accepted.  
The crazier the better!

All monster planes must fly at least one lap around the field and successfully land to qualify for judging.

**Observance of Social Distancing and proper use of Hand Sanitizers will be Required.**

**Please bring a mask.**

**Hand Sanitizers will be made available.**

**Note: The field will remain open to all fliers as this is NOT a formal event. Feel free to bring one of your favorite planes to fly ... it will be a good contrast to all the monster aircraft there!**



# Take the "Build & Fly" Challenge

**When: September 27th, 2020**  
**Where: Flying Electrons Airfield**  
**(10AM to 2PM)**

Held in conjunction with the FrankenPlane Event

## General Description

Scheduled for September 27th, 2020, our 2nd "Build & Fly Challenge" competition will be hosted at the Flying Electrons Airfield. This event is a non-sanctioned event available to Flying Electron club members only at this time and the field will remain open to general member flying. This event was created to challenge our members to select a favorite or unique aircraft design and then engineer and build it from a list of approved materials. It will test member's cleverness, creativity, engineering skill and resourcefulness.

## Aircraft Selection

Any aircraft design, plans, photos or drawings may be used as a reference for your build, however the design reference materials that are used to build the aircraft must be submitted with the finished aircraft at the event to be judged.

## Accepted Building Materials

Any paper, foam or cardboard product substrate may be used for construction. These include foam core, corrugated, paper, poster board, cardboard tubing, etc. There are a few other materials permitted for use but they are limited to the following:

**Metals** - Nuts, bolts, screws and wire for pushrods and landing gear are acceptable.

**Accepted Woods** - Wood may be used for firewall, landing gear mounts and control horns only. Small diameter wood dowels (1/8" max) or bamboo skewers may also be used where desired.

**Adhesives & Tapes** - All types of adhesives and tapes are acceptable for use in construction.

**Plastics** - Plastic components must be acquired as recycled household items such as; plastic soda bottles, plastic cookie containers, etc. These components may be modified or heat formed for fit to your aircraft. Nylon bolts or screws may be used as well as purchased plastic spinners.

**Other Allowed Purchased Components** - All electronics, servos, motors, batteries, etc. Light weight wheels are also acceptable as a purchased item.

## Building Guidelines

- All power sources must be electric.
- No limit on the number of motors.
- Safe procedures in the use and placement of lipo packs is required.
- No maximum or minimum aircraft size.
- Landing gear or wheels are not required.
- You may choose to finish your aircraft or not, however one of the judging criteria will be appearance. You can finish your aircraft with any kind of paint, decals, adhesive films, etc.

## Event Qualifications

- Only one aircraft entry per pilot is allowed.
- Aircraft must make one successful complete flight pass around the airfield.
- Pilots are allowed 3 attempts.

## COVID-19 Notice

**Due to COVID-19 strict use of hand sanitizers and social distancing will be required. Also please make full use of disinfectants to keep charging stations sanitary.**

**Please bring your own food, drinks and snacks.**

## Prize Awards

Prize Awards are under current review and will be made known at the time of the event

**Please watch your email and newsletter for possible cancellations!**

# Closed Club RC Swap & Fun Fly

**SWAP and Fly all day for \$5.00!**

**Saturday September 12th, 2020**  
**(Rain date Sunday the 13th)**

**The Flying Electrons Flying Site**

N61 WI7000 Kohler Lane, Menomonee Falls, Wisconsin

**Gates open at 8:00AM**

**Not open to the Public!**

**Food & Refreshments TBD**

**\$5.00 Landing/Swap Fee for Pilots & Sellers**

**Swap from your vehicle, tailgate, table or  
blanket**

**Informal Auction TBD at 12:00 Noon.**

**Swap and open flying all day**

*(AMA membership required to fly)*

## **Directions to the Airfield:**

From Hwy. 41/45 take the Silver Spring Exit West to Pilgrim Rd. Take Pilgrim Rd. North to the first overpass. Turn right on Shawn Drive at the light before the overpass then left on Kohler Lane, follow Kohler Lane up the hill. Watch for Flying Field signs. At the big water tower turn right to the field access road. (behind Tom's Trailers).

From Pilgrim Rd. southbound, go over the Kohler Lane Bridge, turn left at the light onto Shawn lane and follow the directions above.

GPS Coordinates: N 43 deg 07.799'  
W 88 deg 07.408'



Observance of Social Distancing and proper use of Hand Sanitizers will be Required.

Please bring a mask.

Hand Sanitizers will be made available.

**NOTE: This event is tentative and may be cancelled due to the COVID-19 virus pandemic. Please watch your emails and newsletter for updates!**

# APPLICATION FOR MEMBERSHIP

You must include a photocopy of your AMA card to receive your membership card!

- Check this box if you have updated your address, email, phone...etc.
- Check this box if this is a "STEM Student Membership Academy" Application

AMA NUMBER: \_\_\_\_\_ FAA NUMBER: \_\_\_\_\_

*(Please include copies of both cards)*

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

EMAIL: \_\_\_\_\_

PRIMARY PHONE: \_\_\_\_\_ DOB: \_\_\_\_/\_\_\_\_/\_\_\_\_ (month and year only)

RADIO CHANNELS CURRENTLY USING: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 2.4 GHz: \_\_\_\_\_

SPONSOR (Required for new membership): \_\_\_\_\_

By signing this application I agree to abide by the Field Rules.

Signature: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Make checks payable to The Flying Electronics, Inc.

Mail to: The Flying Electronics

Chris Milbauer

4952 N 106<sup>th</sup> Street, Milwaukee, WI 53225

414-750-2740

chrismilb@fiet.net

Academy of Model Aeronautics, 1-800-1 FLY AMA, www.modelaircraft.org

The Flying Electronics Inc., www.flyingelectronics.com

# MEMBERSHIP FEES AND TERMS

Select the Membership Category (Enter Cost at Right)	Unit Cost	Extension
New Member Initiation Fee	\$50.00	\$
Non-Resident - Individual or Family Membership	\$75.00	\$
Menomonee Falls Resident - Individual or Family Membership	\$55.00	\$
Junior (18 Years or Younger by July 1st)	\$55.00	\$
Single Senior (65 or Older by July 1st)	\$55.00	\$
<b>Additional Costs</b>		
Add if renewing after January Club Meeting	\$5.00	\$
Add if renewing after February Club Meeting	\$10.00	\$
Deduct if you paid initiation fee previous year	-\$20.00	-
STEM Student Membership Academy (IP Qualified)	N/C	
Calculate Total Membership Cost Here	\$	\$

Incomplete forms will be returned to the applicant. Failure to provide proof of AMA membership will result in suspended flying privileges until proof such as a photocopy of AMA card or faxed confirmation from the AMA is provided to the club secretary. Applications for AMA membership are available from the club secretary or from most area hobby stores. Acceptance into membership of the Flying Electronics Inc. is contingent upon Club sponsorship, Board approval, and completion of all requirements of The Flying Electronics Inc. bylaws and based on the information provided herein.

All fees are payable in advance.

Member Application Form 6/29/2020 TI

## 2020 Flying Electrons Events Calendar

Below is a tentative calendar of events for the upcoming 2020 flying season. The Caronavirus epidemic has placed all meetings and events temporarily on hold.

Date	Time	Event	Club/Location
Wednesday, January 1st	8AM to 11AM	News Year Day Chili Dump	Flying Electrons Airfield
Sunday, January 12th	7:00PM	Member Meeting	Cancelled. Go Packers!
Sunday, February 9th	7:00PM	Member Meeting	De Marini's Restaurant
Saturday, March 7th	9:00AM to 12 Noon	RC Association Meeting	Wauwatosa Library
Sunday, March 8th	7:00PM	Member Meeting	De Marini's Restaurant
Saturday, April 4th	10:00AM	Builder's Workshop Starts	Menomonee Falls Rec Center
Sunday, April 5th	7:00PM	Member Meeting	De Marini's Restaurant
Saturday, May 2nd or 9th	8:00AM	Field Clean up	Flying Electrons Airfield (Weather permitting)
Sunday, May 3rd	7:00PM	Member Meeting	De Marini's Restaurant
Saturday, June 13th	10:00AM to 2:00PM	60th Anniversary Celebration & Club Fun Fly	Flying Electrons Airfield
Sunday, June 14th	7:00PM	Member Meeting	De Marini's Restaurant
Sunday, June 28th	10:00AM to 2:00PM	Electric Only Event	Flying Electrons Airfield
Sunday, July 12th	10:00AM to 2:00PM	Scale Event	Flying Electrons Airfield
Sunday, July 12th	7:00PM	Member Meeting	De Marini's Restaurant
Saturday July 18th	9:00AM to 2:00PM	Education Event	Flying Electrons Airfield
Sunday, July 19th	9:00 to 2:00PM	Education Event (Rain Date)	Flying Electrons Airfield
Sunday, August 9th	7:00PM	Member Meeting	De Marini's Restaurant
Thursday, August 13th-16th	8:00AM to 4:00PM	Warbirds & Classics Over America	Wellnitz Field In Fond Du Lac
Thursday, August 27th	10:00AM to 2:00PM	Dead Chicken Event	Flying Electrons Airfield
Saturday, August 29th	10:00AM to 2:00PM	Airfest 2020 (Rain Date 8/30)	Flying Electrons Airfield
Saturday, August 30th	10:00AM to 2:00PM	Airfest 2020 Rain Date	Flying Electrons Airfield
Saturday, September 12th	8:00AM to 2:00PM	Swap Meet	Flying Electrons Airfield
Sunday, September 13th	8:00AM to 2:00PM	Swap Meet (Rain Date)	Flying Electrons Airfield
Sunday, September 13th	7:00PM	Member Meeting	De Marini's Restaurant
Saturday, September 19th - 20th	8:00AM to 4:00PM	Pattern Contest	Flying Electrons Airfield
Sunday, September 27th	10:00AM to 2:00PM	FrankenPlane/Builder's Challenge	Flying Electrons Airfield
Sunday, October 11th	7:00PM	Member Meeting	De Marini's Restaurant
Sunday, November 8th	7:00PM	Member Meeting (Elections)	De Marini's Restaurant
Sunday, December 13th	5:00PM to 12:00PM	Christmas Party & Dinner	TBD
Friday, January 1st	8:00AM to 11:00AM	New Years Day Chili Dump	Flying Electrons Airfield