Laurel Highlands Model Airplane Club - AMA #557

2780 Rte 981, Mt Pleasant, PA 15666
www.lhmac.org

Wing Tips

July 2018

Inside

MEMBERSHIP FORM available on our website

Events and Times

Regular Meeting July 13, 2018 at 7:00 PM at the flying field, Mammoth Park. **This is a PIZZA meeting!**

This Month's Breakfasts will be at Bob Evans Restaurant at Greengate (in front of WalMart), Greensburg
8:30 AM, July 11, 2018
8:30 AM, July 25, 2018

Foamy Warbird Racing & Trainer Pylon Racing - July 8 & 22, 2018 at 1:00 PM at the field.

Float Fly - July 14, 2018 (rain date July 28) at Chestnut Ridge Park (Acme Dam). Set up after 9:00AM Flying begins at 10:00AM

High Wing Tuesdays - July 3, 10, 17, 24 & 31, 2018 at the field.

Glider Wednesdays - July 4, 11, 18 & 25, 2018 at the field.

Thursday Training Days - July 5, 12, 19 & 26, 2018 at the field (weather permitting). Don't forget, if the weather is bad, we meet at Westmoreland Mall Food Court about 7:00 PM - venue & times could change and will appear in a notification via email.

Officers for 2018

President: Jim Andrews	*(724) 837-4111*	president@lhmac.org
Vice President: Dave Oswald	*(724) 454-3180*	vicepresident@lhmac.org
Treasurer: Rene Marquis	*(724) 523-3320*	*treasurer@lhmac.org*
Secretary: Steve Mickel	*(724) 953-5933*	*secretary@lhmac.org*
Field Control: Mark Yothers	*(724) 423-4725*	*fieldcontrol@lhmac.org*
Editor: Linda Pollock	*(724) 532-0210*	*newsletter@lhmac.org*
Website Admin: Vishal Jariwala	*(734) 272-7029*	*admin@lhmac.org*

Correspondences *- Events, Other RC Club info, etc. –* ***PLEASE*** *send to the club* ***Vice President*** *(above)*
Membership *– Applications, Dues Forms, AMA information –* ***PLEASE*** *contact the club* ***Treasurer*** *(above)*

The Prez Says

Stop by the SHOP 'n SAVE on E. Pittsburgh St. in Greensburg and look up. There you will see the biplanes Dean and Rene lent the store as part of their promotion and sponsorship of the Westmoreland County Airshow July 28 and 29. The planes are hanging above a 6' by 80' runway laid on the floor. The planes really look great and SHOP 'n SAVE and the Airport authority have received many positive comments about the display. Our club has brochures at the service counter where tickets for the show are sold. We will be displaying at the airshow. We have a good spot for parking and displaying. Details will be given at our July 13th meeting at the field. Pizza will also be delivered to the meeting that evening. Plans for the geotex runway are moving along. As reported, the geotex has been delivered. Don Gilbert from the Ridgeview Golf Course in Ligonier has graciously agreed to lend us some equipment for the installation. Samples of the staples used to secure the runway are on their way. Once they arrive we will get an installation tool made to make that job a little easier.

And one more thing, flying! We are right in the middle of the year and this should be the best time to be at the field. See you there. I can't believe I got through writing this column without once mentioning the weather, including tornados. Darn, I just did.

Jim

Minutes of the Meeting of June 8th, 2018

The meeting was called to order by President Jim Andrews with the Pledge of Allegiance

Officers report.....
A. Secretary's minutes for the May meeting were approved as printed in the June newsletter
B. Treasurer's report was approved as read. Motion by Dean Pollock and second by Jim Pennington. All were in favor,
C. Vice President showed raffle prize from Hobby King: an electric Slow Poke
D. Newsletter reported all is going well, but they would like more pictures and articles.
E. Field Control Officers Report is as follows
1. Field is in great shape.
2. Thanks to everyone for using the portable stand. Haven't heard of any issues in weeks.
3. Bad news - we have had two crashes, on or behind the flight line, in the past few weeks. This is not acceptable. Please respect the hard line of not flying over or near the flight line.
4. Remember, if you are using a computer radio, always make sure you have the correct airplane selected on your transmitter.
5. Remember, the best time to discover a problem with your radio setup is while your plane is on the ground and not in the air.
F. Web Master - please send any info, pictures, or "for sale/trade items" to admin@lhmac.org, so that Vishal can get them posted on the web site.
G. President - discussed the runway; the material has arrived and Bill Cecchetti is storing it for the club at his warehouse. He also said we need a 15 ft. trailer for when we go to move it to the field.

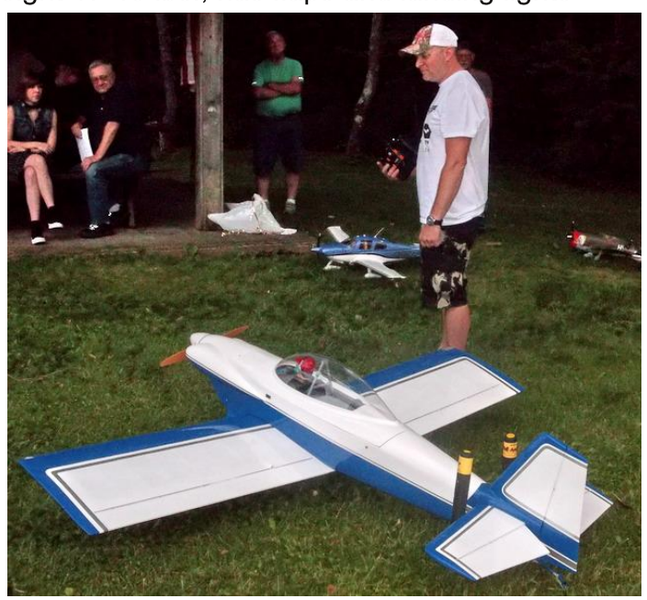
Old Business
A. Museum committee is looking for planes to fill in the gap between WWI-WWII. If you have any ideas, contact Dean Pollock. Also Dean will check to see if the museum will be doing anything for the airshow
B. Fuel committee - Bill Cecchetti reported there is 35 gallons of fuel on hand.
C. Runway Committee reports that the Park wants the material tucks 18" back under the grass.
D. Scale contest set for August 12th, with a rain date to be August 26th, at 1PM

New Business
A. Any interest in night flying; several member are interested.
B. Snyder Cup date and time to be announced sometime in September, hopefully after the new runway is installed.

Show And Tell

1. Bill Cline showed his new electric Cirrus plane; it has full lights and is a great flyer.

2. Jeremiah Ulishney showed his new Hanger 9 Van's RV-4, wingspan 85", length 72", engine Evolution 33GX 33cc gas, servo's 8 Spektrum A6180 digital servo's with metal gear's, prop 17x8 or 18x8, weight 17-19 lbs., has flaps and landing lights



The raffle prize, a Hobby King electric Slow Poke, was won by Tim Bartlow.

Meeting Adjourned

Steve Mickel

Your Roving Reporter

From: The Roving Reporter

Hi again everyone – well, summer is finally here, but you would hardly think so. Weather patterns have been quite unpredictable, and above normal rainfall has been the norm. So far this year, we are 9” above seasonal rainfall, and as much in the way of very windy conditions. I don’t think we have had a 3 – 4 day stretch of flying weather, so we continue with spotty flying days.

I finally put the finishing touches on my Busa Phaeton 90, and took advantage of a nice day to get

the maiden on it. As usual, I had our clubs’ “Test Pilot”, Lester Faroux, do the honors. The motor is an OS 120 four stroke, and is still in its’ initial break in period, so it’s a little rich for now. Les taxi’d down the runway, and it tracked very nicely, and lifted off. A few minor trim adjustments, and it flew nice and straight. I made a few laps around the

field, and brought it in to check fuel consumption. The 9 minute flight at ¾ throttle almost emptied the 16 oz. tank. I’m very happy with it.

Lester Faroux lifts off with his nice P51 Mustang, and

enjoys flying this one.

Tim Bartlow picked up this U-Can-Do from Rene Marquis, did some nice re-covering, and installed a

Super Tigre 2 stroke in it. Tim’s maiden went well, and he’s going to enjoy this one.

Bill Cecchetti primes his “BIG” U-Can-Do 35cc gas

motor, and gets it ready for his first flight. It is a rock stable flyer, and the gasser ran flawlessly.

Your Roving Reporter
continued

Lester Faroux taxis out Rene Marquis' Old Time "Commodore" for a flight, and it's a really sweet flyer.

On another day I went to the field, and Fred Snyder was there with his Telemaster. The grass and clover were kind of high, but he did get a flight in. Not long

after that, one of the County's maintenance men came with the gang mower, and cut the field. This

shows how much mulch was being thrown up from the high grass. He went over the field twice, and did a superb job for us. Our "Thanks & Appreciation" to him.

Lester Faroux gets ready for a flight with his newly

acquired Kaos that I picked up for him at the Kittanning Swap & Shop. It's a rock stable flyer, and Les is pleased with it.

Jim Curry primes the OS48 four stroke on his newly acquired Quaker

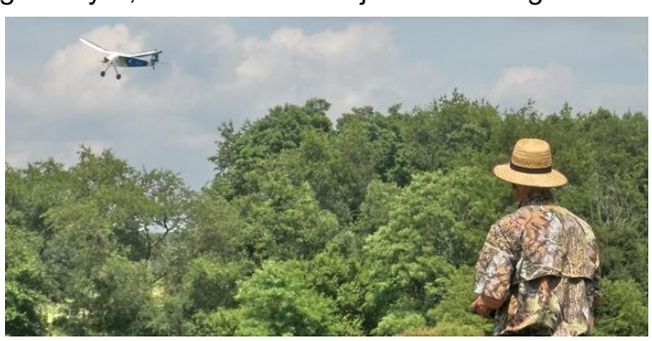
"Old Timer". Jim picked this one up at the Kittanning Swap & Shop. Jim does a few taxi laps to see how well it handles on the ground.

Your Roving Reporter
continued

Bill Kline gets ready to fuel up his pretty Decathlon for a flight.

Jim Curry runs up the Saito 120 four stroke on his old timer he calls a “Star Duster”. This plane is a

collection of parts from other wrecks. Surprisingly, it is a good flyer, and Jim has fun just lumbering around



the field. Upon landing, a crosswind lifted the wing and flipped it over. No Damage!!

On June 9, 2018, the Armstrong RC Flyers hosted their 1st Annual “Swap & Shop” at their field in Kittanning, PA. A bunch of us from our club went up there to peruse, and sell, We want to “Thank” them for their “Welcome”, and “Hospitality”.

On another note, club president Jim Andrews was contacted by the Marketing Manager for SuperValu/Shop & Save, Rich Haeflein. Since Shop & Save is a prime sponsor for the Latrobe Air Show, Rich asked if we would be willing to loan a couple planes as a display at the Greensburg Shop & Save. He specifically asked for a couple bi-planes. I volunteered a scale

Your Roving Reporter
continued

Great Planes PT17, done up in Navy markings, and Rene Marquis volunteered his Sig Liberty Sport bi-plane. We went to the Shop & Save, E. Pittsburgh St, in Greensburg on Sunday, June 24th to get them setup. Rich met us there, and we got the planes hung up, over a runway that Rich arranged to have installed. The runway is right down the main aisle. Here are a few pics.

That's about it for this month.

Your Roving Reporter
Dean Pollock

THE PIT STOP! PYLON RACING!

CD - MARK YOTHERS

2018 SEASON

June Foamy War Bird Race Standings

As of June 17th here are the standings. First place Jeremiah Ulishney, second William Cecchetti, third is Dave Oswald, Fourth is Tim Bartlow, Bringing up the rear is Rene Marquis.
July races are on the 8th and the 22nd.

FOR SALE - WANTED - SERVICES

THE FOLLOWING ITEM IS FOR SALE - Contact: Mark Yothers 724-423-4725

Tower Hobbies 40 Trainer, with OS .46 LA, LiFe Battery, Maxx voltage regulator, 5 Futaba 3151 servos, MPI switch. During construction the following mods were incorporated; converted to a two aileron servo wing from the single center mounted servo (Better, more positive control,) wing mount is front dowel and nylon screw mount from the rubber band wing hold down (No more rubber bands!). Probably the most important change is the stock lite ply wing joiner (Possibly the worst material to make a wing joiner from.) was scraped for a solid maple joiner re-enforced with Carbon Fiber. No more worries that the wing joiner will fail. $275.00. If you don't want the servos, the battery and the voltage regulator, price falls to $150.00. Call Mark Yothers 724-423-4725

Float Fly - Saturday, June 30th

by Mark Yothers

First thanks to all who attended, also to all who helped make this successful, Jerry Thomas for spreading the word to other clubs, Dave Oswald for providing the recover boat, Rene Marquis for getting the AMA insurance, myself for getting the county permits and placing them at the park, to the LHMAC for sponsoring the event.

This was by far the best attended Float Fly to date. For the first three hours all was well. Dave was complaining that he really didn't need to bring the rescue boat. I told him, just wait. Well an hour later he sat beside me and said man am I tired, had to rescue four planes in a row. I just smiled.

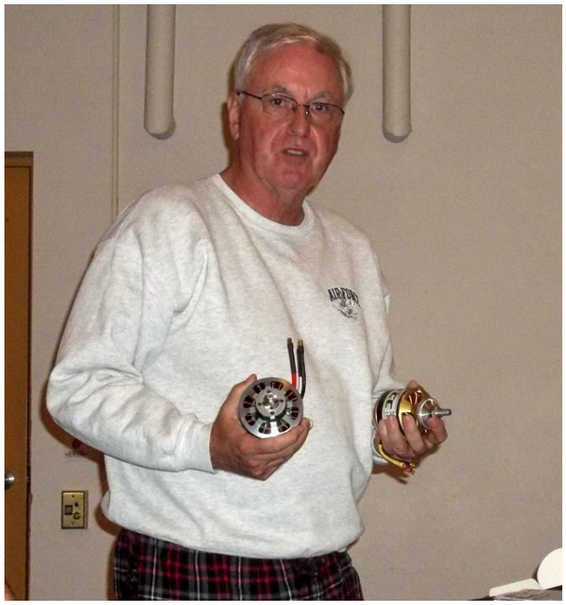
Next Float Fly July 14th if all goes weel with the weather. Hope to see you there.

Here are some pics of the event.

Shawn Trout
Qualified Electric

Congratulations to Shawn Trout for successfully passing his electric flight test in June. Reported by Bill Cecchetti - Thanks Bill for the report and picture!

Converting Glow and Gas Models to Electric Power - Part 2 of 2



by Curt Hughes

In the last article I emphasized the importance of watts as a measurement of power in RC models. In the last installment of the series, let's take the final step in understanding how a typical conversion is accomplished by an actual example. We will go through the steps necessary to convert a typical trainer to electric power. Using a series of simple questions we'll identify the right power system for the model.

First, if the model we intend to convert is considered over weight as a glow model, do not even consider an electric conversion. It will not fly any better as an electric model. In addition, most ARF glow models cannot be lightened enough to make a difference so don't start putting holes in all of the balsa parts thinking the performance will improve. All you will be doing is making the model's structure weaker.

Let's use a Sig Kadet LT 40 for an example since it is a straightforward project and a very popular trainer. Remember the same process of asking the following questions can be used to convert almost any RC model.

The first question we need to answer is, what is the estimated weight of the model, ready to fly? The answer to this question should assume that the model should end up weighing about the same as it would with glow power. The actual weight of the model with electric components will be within a few ounces of the glow model with few exceptions. Usually, it's a simple matter of looking at the box for the specs or looking it up on the internet. So, let's assume the flying weight of our LT 40 is estimated to be around 5 lbs. That gives us our starting data point.

Next, the second consideration is to determine an appropriate propeller. Yes, that's right, before choosing the motor the question of, "which prop is best" has to be answered. But how do we select a prop when we haven't selected a motor yet?

As I mentioned in the previous article, we want to swing as large a propeller as possible to gain the benefits of electric flight. The only exception to this rule is if you plan on racing your model or you have very limited distance between the prop tips and the fuselage sides (like on a twin). Before you remove the glow engine, measure the distance from the engine shaft to the ground with the model level and subtract 1.5-2.0 inches for ground clearance. That distance on our LT 40 is, let's say, 7.5 inches. Now, subtracting 1.5 inches on the radius gives us a 12 inch prop. (Note that the LT 40 probably flew with a 10 inch prop when glow powered.) Now we need to choose the pitch of the prop. Though this number can be changed later after some test flying, typically we calculate the pitch of the prop to be about 50 percent of its diameter, which should be good enough for sport aerobatics with a good climb rate; more than adequate for our trainer. We could use 60-75 percent of the diameter if we want more speed and less climb. At 50 percent, that gives us a 6 inch pitch so we now have our second data point: a 12 X 6 prop. Make sure to use a prop designed for electric flight whenever possible, as they are much more efficient than a prop designed for glow or gas.

Next, and this is the crucial step, is we need to understand how much power (in watts) we will need to provide the power system to fly the model the way it was intended to be flown. This important concept is known as "power loading". Determining how much power we need to fly our model depends on the answer to the first question (the estimated flying weight). Power loading is expressed in watts per pound (W/lb). The higher this number is, the more energetic the model

will fly... however at two costs: weight and expense. Here is a good rule of thumb for determining power loading:

Use...

75 watts/lb for mild sport models and trainers

100 watts/lb for non-aggressive aerobatics (most warbirds and sport flyers)

125 watts/lb for more aggressive aerobatics and

150+ watts/lb for unlimited flight modes such as 3D

As we might consider the LT 40 also a slightly more advanced trainer and would like it to do a little more than putt around and considering one might wish to fly it a bit more aggressively after learning to fly, we will choose 100 watts/lb as our power loading data point. So with the estimated weight of 5 lbs multiplied by the power loading of 100 watts/lb we get 500 watts of power required.

Next, we must answer the question, "what is the estimated current the system will need to handle?" To help define the electrical parameters of the model we can use the fire hose analogy. The electrical current is a measurement of the flow rate of electrons through the wires of the system. Consider this the same way you would as the number of gallons per minute flowing through the fire hose. Voltage can be compared to the pressure of the water in the fire hose, which is pushing the water along. The greater the flow (amps) the more power will be delivered to the propeller. However, the downside of more current being delivered is more heat being generated and heat is the enemy of electric power systems. Because of this, we always prefer to use more voltage (pressure), a larger wire (hose) and lower current to get the work done. That is why many modelers use multiple packs in series or higher cell counts to provide more voltage rather than use larger capacity packs. Remember the golden rule: volts times amps equals watts, so it doesn't matter if you use less amps and more volts as the result will be the same number of watts!

Here is a good rule of thumb when considering current requirements:

10-20 amps for glow models from .049-.15 cu. in with 18-14 gauge wire

20-30 amps for .15-.30 cu. in. with 14 gauge wire

30-45 amps for .30-.90 cu. in. and 12-13 gauge wire and

50+ amps for high current applications for experience electric modelers.

Since our conversion is within the .30 to .90 range, we'll use 35 amps as a number that also gives us a little headroom for safety. We now have our 4th data point.

Next: what batteries should we use? Let's look at how we determine the proper voltage and discharge rate for your LiPo batteries needed to power the model. The cell count (voltage) when using LiPo cells is determined by simply dividing the watts required (power loading data point) by the current data point we just used above. So, 500 watts/35 amps = 14.3 volts. Since LiPo cells are nominally 3.7 volts/cell we will need to round off to the nearest cell count: 14.3/3.7 = 3.86 cells, or 4 cells. Our LT 40 is going to require a 4 cell LiPo battery pack and an electronic speed controller (ESC) that can handle at least 35 amps.

We will also need to choose an ESC with enough capability in the battery elimination circuit (BEC) to handle the number and size of servos used in the model or use a separate receiver battery pack and power switch. I would probably elect to use a Castle Creations Ice 50 or ICE

Converting Glow and Gas Models to Electric Power - Part 2 of 2

(continued)

Lite 50 for the Kadet LT 40. Either of these will easily handle 35 amps continuous with a maximum of 50 amps continuous to the motor and can also handle all of the servos and receiver through the BEC (which gets its power from the main flight batteries). Always choose more headroom when choosing an ESC and one of good quality, especially if you plan to power the receiver with it.

Now what about the "C" rating of the battery pack?

In simplest terms, the "C" rating of a LiPo pack indicates the maximum ability of the battery to give up its stored power without damaging it. (Keep in mind as I have stated before that there are no standards for testing these values and many manufacturers exaggerate their "C" ratings a good deal so use 50 percent or so as a rule of thumb when choosing your packs.) If a battery pack is listed as "25 C" and its capacity is 4000 MaH (4 amp hours), then the maximum amount of current you should draw from the pack is 25 X 4 or 100 amps. DO NOT use this as an acceptable number, especially from inexpensive, unbranded batteries! So, using my 50-60 percent rule as a safety factor, you should be able to draw the maximum current at around 12-15 C. This also means that a 25C 4000 MaH LiPo will be fine at 35 amps for the LT 40 because although the battery can safely deliver up to 60 amps (and probably a little more) we will only be demanding 35 amps, and that probably only at full power. The battery should always have a little headroom over the power demanded by the motor/prop.

The final battery question is that of the capacity of the pack. This is mostly limited to the physical size of the battery compartment. Think of the capacity of the pack (in milliamp hours) as the "fuel tank" and the only important considerations here are weight, balance of the model and expense. Remember, the more volts (number of cells) the easier the current draw will be on your system.

And finally, "what motor should I choose?"

It's funny how the last step in the electric conversion process is usually the first step in glow or gas power selection! From all of our values determined above, we need to find a motor that can swing a 12 X 6 prop on a 4 cell LiPo battery at around 35 amps. You can research the specs on different motors on the internet or simply look in a forum on one of the electric RC groups that often offer similar conversions and free advice. Looking at motor specs, you might find a motor company with motor "X" that can swing a 13 X 6 prop with 14.8 volts (4 cells) at 5500 RPM and draws 40 amps. The fact is that if you use a 12 X 6 prop on this motor, the current draw will drop substantially. Larger props will generally draw more current from your battery and an electric motor will always try to turn the prop at its designed RPMs (RMPs per volt is referred to as "Kv" in electric jargon). It is not necessary to be concerned with RPM ratings; you just need to find a motor made of good quality materials that will turn a 12 x 6 prop on 4S and draw around 35 amps. If an exact match can't be found, get as close as you can.

That's pretty much the jist of it all. I hope you all have found this series of articles helpful in providing you with knowledge of some of the basic concepts associated with electric flight. If you decide to build and fly electric models that require conversion, remember that you will need to purchase at a minimum, a good charger that safely can charge LiPo batteries and a "watt meter" to measure and fine tune your power systems.

With all of that said, see you at the field and good luck!

THIS IS THE FINAL ARTICLE IN CURT'S ELECTRIC SERIES. WE ARE EXTREMELY GRATEFUL FOR HIS ADDITION TO OUR NEWSLETTER THESE PAST FEW MONTHS. I THINK CURT HAS ENLIGHTENED US ABOUT ELECTRIC MOTORS.

THANKS AGAIN, CURT!!!

Fred Snyder

John Hathaway

Walt Rubino

Tim Bartlow

Ralph Gaebel

John & Joan Marshall

Vaun Hile

Paul Cunningham

Jim & Timi Pennington

Dick & Shirley Schmitz

Don & Joan Accorsi

Bob Bushmire

And anyone else who needs our Prayers!

July Birthday Wishes

WE WOULD LIKE TO EXTEND A HAPPY BIRTHDAY TO THE FOLLOWING CLUB MEMBERS!

July Members

Happy birthday! Happy birthday! Happy birthday! Happy birthday! Happy birthday! Happy birthday!

Jeffrey G Hails

Gary Hinger

Vishal F Jariwala

Merril F Mc Mahan

Jeffrey L Moyer

David F Oswaldi

LHMAC CLUB PATCHES FOR SALE!

- **PRICE** - $2.00 each or 3 for $5.00
- **TYPES** - available in Velcro or sewn on
- **HOW TO PURCHASE** - The patches are available at the monthly meetings or contact our Treasurer, Rene Marquis, at ram158@msn.com or (724) 523-3320.

REMEMBER TO SUPPORT OUR SPONSORS WHO HELPS MAKE OUR NEWSLETTER POSSIBLE

LHMAC
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