

Silver Lining

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Radio Control Flying Club
AMA Charter #3117



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Flying Field GPS location N42 48.596 W83 34.642

www.hollycloudhoppers.org

Be Safe, Have Fun and Don't Have Too Many Rules!

Behind The Flight Line

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About the same time most members decided to pack it in for the season because of colder weather the club officers became busy with behind the scenes type stuff. A lot of emails have been going back and fourth with ideas, questions, comments and vote casting.

One of these discussions/votes resulted in something most of you already learned about in an email from Jim Finch. That is a \$10 reduction for 2011 membership renewals. Jim's financial report say's we're operating well into the black. With this positive news, officers unanimously agreed to the reduction. Bottom line is if you were a 2010 member, your dues for 2011 will be \$25 for individual membership, \$35 for family and \$15 for associate.

Among the business matters hashed out there was one more that directly affects the membership. This matter kept communication lines very active for some time and subsequently, for the most part, *HCH* webmaster Larry Pittman very busy implementing. The result is a system that allows *HCH* members to renew online. Yep, that's right. You can now renew your membership online through the *HCH* website with a credit card, debit card or PayPal. The system is officially up and running and has been test driven by a couple members already.

On the Cover:

Mike Wizynajtys' electric powered Wind 110 at the 2010 HCH Open House.

Photo by Scott Rhoades

Just because this option is available does not mean that it's the only way members can renew now. Jim will still do renewals at the annual meeting or you can mail him a check. Offering online renewal is another way to take your money... I mean, it's another way that *HCH* is keeping up with the times.

Finding where to renew is easy; Larry has posted a link on the [homepage](#) of the website that you simply can't miss. If you go to the homepage and don't see the link right away I might suggest two things: an appointment with the eye Dr. and different hobby, like macramé.

Once you click on that link you have a choice of either downloading the membership renewal form to print and mail in OR go through the online process. Here is a direct link to the [Renewal Page](#), bypassing the home page just incase your afraid to discover you're better suited for macramé.

If you choose the online renewal, each step is fairly self explanatory as you go along. If you're not very clear on what to do, just click on the HELP link that Larry created to open a step by step tutorial. Here is a direct link to that [Help Page](#) if you would like to review it before you start.

A few FYI's about the online process. First, this is for renewals only. New memberships still need to go through Jim Finch. Second, it will only be active during the *HCH* renewal period which is from now until April 15th. Lastly, PayPal is our agent for processing all online transactions so the club is charged a fee of little more than \$1 for each regular member renewal.

► **Flight Line, 3**

◀ 2 Flight Line

With colder months upon us not only do we need to consider our membership renewals, it also means the start of swap shop season.

Having been to numerous R/C swap meets over the years I typically don't go looking for anything in particular; just keeping my eyes open for the bargain of the century along with everybody else I guess.

I've noticed some guys are fanatical about finding that bargain of the century, which is why every meet is precluded with several dozen guys just itching to rush in as soon as the doors open. I'm more laid back and like arrive at the meet just as the doors open or shortly after it starts. Sometimes airplanes and equipment are leaving the swap before I ever get to the door. Sometimes I arrive in time to still see the first guys that have been waiting a long time, often shivering their butts off in the cold.

There was one time, however, when I did arrive at a meet almost 20 minutes before the doors opened. This was due in part to leaving the house early because of a snowstorm the

night before. Turns out the road crews did a very tidy job clearing the roadways prior to my departure.

Arriving at the swap location and sitting in the truck all of one minute, I decided might as well join the frenzy of being one of the first in. With my ticket purchased I was still far from the first one in line, however my early arrival afforded me a wait in the warmth of a vestibule area with other early arrivals. The temporary position I had taken gave me a good vantage point through the door and into the swap floor. Less than half a dozen other guys were blessed with this view as the vestibule became more tightly packed. As luck would have it, my random foothold turned what would otherwise have been several minutes of sheer boredom into something quite entertaining.

A traveling squad of Hawaiian Tropics bikini clad cheerleaders had use of the hall just prior to the swap and was still practicing. Ok, that didn't really happen. What I did have though is a guy standing next to me getting very agitated as he could see people that got in as "vendors" were already, in essence, shopping.

► **Flight Line, 4**

Links to key HCH web pages

Home page

<http://hollycloudhoppers.org>

Officer contacts, Announcements, Weather, Club Dates, Etc

Members Only (password protected) <http://hollycloudhoppers.org/members.html>

Financial report, Meeting minutes, Club roster, Gate code

Classifieds

<http://hollycloudhoppers.org/classifieds.html>

Field Operation Rules

<http://hollycloudhoppers.org/documents/Field%20Operational%20Rules.pdf>

Newsletter Archives

<http://hollycloudhoppers.org/newsletters.html>

Club Frequency Usage

<http://hollycloudhoppers.org/documents/clubfreq.pdf>

Web page help

http://hollycloudhoppers.org/help_faq.html

Membership renewal

<http://hollycloudhoppers.org/renew.html>

◀ 3 Flight Line

This guy was beside himself blurting out comments like, "They should not be allowed to do that" and "That's unfair".

Karma may spite me for this, but as this guy's anguish increased so did my amusement level. This guy's whole world was falling apart because the bargain of the century was going out the door before he even had a chance to get in.

More evil struck me as I found myself wishing they would delay letting us in a few more minutes just so that I could see how this guy would react. In retrospect, it's probably a good thing they didn't, as I don't think his buddies would have stuck around to call 911 after the inevitable heart attack.

Going to these swap meets I often spend more on the admission and a doughnut than I do on merchandise. So what? I spent five bucks to save fifty cents on a bottle of glue. A swap meet is more of a cultural experience anyhow. Some meets I see more club members than I do any given day at the field. We might as well hold club meetings at these things.

Anybody that regularly attends local swaps knows there is a ritual that must be performed when you run into someone you know. One of the first things you do is ask the customary, "Find anything?" as to take inventory of the purchases they have made. That, of course, requires you to account for all the deals you've struck upon as well. Then, of course, each of you must list the common acquaintances that you either rode with or have run into so far. Then before going your separate ways both of you are required to make at least one mention, with a point in the general direction, of a plane or engine that caught your attention.

After the doors of swap have been open for awhile everyone gets into a rhythm that I like to call "The Swap Shop Shuffle". Describing the movement of an individual doing the swap shop shuffle would be akin to describing the walk of nearsighted elephant in a drunken

stupor... <cue the Henri Mancini music> Shuffle, shuffle, pause and stoop to look at something. Shuffle, shuffle, bump into the person in front of you because they stopped and you didn't notice.

At most swaps the aisles between tables are too narrow and when more than two guys stop to look at something or stop to talk, it brings the whole procession to a complete standstill. At that point the whole drunken stupor dance is altered slightly as the elephant parade tries to squeeze past.

Swap meets are quite the microcosm of economic dynamics too. Some sellers have their wares priced as if they needed money to build a Donald Trump type empire. While others are there to simply get rid of it, a.k.a. the fire sale. A number of guys have like new equipment that makes you wonder why they are getting rid of it. While some appear to have gone into the basement the previous night and simply found some beat up planes or R/C cast-offs that have not seen day light since the Eisenhower administration. Some guys are quite organized with their merchandise with each item neatly laid out and clearly priced. While a few have several big dusty boxes placed on the swap table in a manner that says, "Good luck. I have no clue what's in there either - and if you find something that interests you, expect a high figure when you ask because I really don't want to get rid of this - I'm only here because my wife made me."

Finally, what the heck is up with the people that set up an entire table of nothing even closely related to R/C? Seriously, who in the heck is going to an R/C swap meet hoping to find a CB radio from 1972? Not me! Where are the cheerleaders? †

Things to ponder

Why do we buy a product that takes 2000 flushes to get rid of?

Electric Powered Flight

By Scott Rhoades

I've been flying planes with internal combustion engines for a couple decades now and the thought of going electric causes me to hyperventilate. I'm trying to learn about electric flight but there just seems to be a bazillion things one needs to understand just to get that first electric plane in the air and I find the reading on the subject so friggen boring.

Having ventured into electric helicopters recently I learned a few things but for the most part I took the easy route and relied heavily on *HCH* member Mike Wijnajty's, because he has this electric stuff pretty much figured out. Once Mike had me and the heli on the right road I thought how cool it would be if he wrote an article or two for the newsletter, demystifying electric flight.

When I asked Mike he gave the subtle look that simply says; are you nuts? Well little did I know at the time the enormity of what I was asking. Although instead of flat out saying no, Mike later emailed me a PDF he had found labeled, *"Everything you wanted to know about electric powered flight"*.

This file is a 72 page long e-book. It's basically a compilation of input from internet forums. What I intend to do is present parts of this book in a series of articles over the next few newsletters.

Not sure how many articles this is going to take because the idea here is just to relay electric power basics, not delve not 'Everything you wanted to know'. Also the wording in this document can be somewhat confusing to the true neophyte. So as a true neophyte I'm taking the liberty of doing some serious rewording as the

proverbial light bulb goes on with each passing ah ha moment during my learning process.

Without further ado here's the first installment of what you need to know to enter the realm of electric powered flight.

AMPS vs. VOLTS vs. C rating

This discussion is intended to clear up a few terms and concepts of electricity as it applies to electric airplanes. The beginning of this may come across as a little dry but if you stick with it I promise it will all come together later.

First, think of electricity like water. Volts = pressure, while Amps = flow. Volts is like pounds per square inch (psi.), however it says nothing about how much water is flowing, only how hard it is being pushed. Just like the water pipes in your house right now. If no faucets are open there is no flow (amps), however the water is still under pressure (volts). If you open a faucet you have flow (amps) so amperage is similar to gallons per minute of water that is going through the pipes.

Ok you've likely heard amps and milliamps, so what's the difference? The difference is just moving a decimal point. 1 amp (short for ampere) = 1000 milliamps. So a milliamp is 1/1000 of an amp.

If we look at amp hours or milliamp hours (mAh), this would be (flow) over (time), in other words how long can those amps be sustained. This is used as a way of measuring how much electrical capacity a battery is capable of, just like how many gallons of gas is in your tank. Although mAh says nothing about flow or pressure. Let's take a 7 cell NiCd pack that provides

◀ 5 Electric flight:

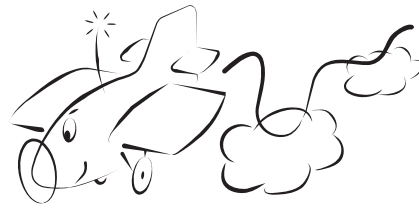
8.4V (pressure). The motor will draw electricity from the pack at a certain flow rate, or amps. If the pack is rated at 650 milliamp hour (mAh) that means it can deliver a flow of .650 amps (650 milliamps) for one hour. If you draw it out faster, it will not last as long. Let's bump up those numbers and say the pack is now powering a motor that is pulling 6.5 amps (6500 milliamps) then the battery will only last for 1/10 of an hour, or about 6 minutes.

What is C in relation to batteries? C ratings are simply a way of talking about the maximum charge and discharge rates for batteries. 1C, = 1 times the rated mAh capacity of the battery. For an example let's go back to our 650 mAh pack. A 1C, maximum charging rate is 650 milliamps. 2C would be 1.3 amps (1300 milliamps). 3C would be 1950 milliamps... I think you get the idea.

When looking at motor batteries they are often rated in both discharge C and charge C. So if we take a 1600 mAh pack that is rated at 15C discharge. This means it can deliver a maximum 24 amps ($15 \times 1600 \text{ mAh} \div 1000 = 24 \text{ amps}$) without damaging the battery. The same battery might be rated at 2C maximum charge rate, so you can charge it at 3.2 amps ($2 \times 1600 \text{ mAh} \div 1000 = 3.2 \text{ amps}$) without damaging the battery.

Let's look at some other C rating examples just to make sure the concept is clear. Take a 2200 mAh pack that is rated for 20C discharge, that means you can pull 44 amps. ($20c \times 2200 \text{ mAh} \div 1000 = 44$) If you have a 3300 mAh pack that is rated at 30C discharge, that means it can deliver a maximum 99 amps. Easy stuff right?

When determining what size pack to use, first you need to know what your amp draw



will be. Then you have a choice to use a pack with a higher C rating or a pack with a higher mAh rating to get to needed amp delivery level.

Motor batteries vs. receiver batteries: Some batteries can sustain high discharge rates. Others can not. Those used as transmitter/receiver packs typically are made for low amp (flow) rates, while those made for motor packs can sustain higher rates.

Having a 600 mAh pack does not tell you if it is a motor pack that can put out 6 amps, or if it is a transmitter/receiver pack that would be damaged if you tried to pull power at 6 amps. Clearly a motor pack could be used for a transmitter/receiver job, but a transmitter/receiver pack should not generally be used as a motor pack.

It is best to size your battery packs so they run somewhat below their maximum C rating. You will stress them less and they will last longer. For example, if your motor needs a pack that can deliver 10 amps, getting a 1000 mAh pack that is rated for 10C (10 amps) it meets the spec, but it is running at its limit. A 15C rated 1000 mAh pack would be better, or perhaps a 1300 mAh 10C pack. In either of these cases, the pack will be less stressed and should handle the load much better over the long term.

That should be enough for this installment. Not sure what the next segment will include because by the original author's admission the sequence could have been organized better. So I have a couple months to read, learn, and put it all into an article that even I could understand. †

In The Know

By Scott Rhoades



- The first couple items for "In the Know" are staples of every Fall Newsletter. Since this is the last newsletter until the after annual meeting in February, some reminders and notices may seem quite premature.
- The first notice is for the **annual HCH meeting**. As usual, it has been scheduled for last Sunday in **February (27th) at 2:00 pm at the Holly VFW Hall** on Airport Dr. in Holly. Keep in mind this is somewhat tentative because it's too early to schedule anything with the fine folks at the VFW. So be sure to monitor the *HCH* web site and your email inbox for any changes with this meeting. All members, prospective members and guests are encouraged to attend. As always, be sure to bring the plane you worked on all winter for the Winter Project Contest.
- The second notice is for membership renewals. 2011 renewals are being accepted by *HCH* Secretary/Treasurer Jim Finch. Dues are due by March 1st. As noted earlier in this newsletter, renewals have been reduced across the board by \$10 (\$25 for full members, \$35 for family). Although keep in mind any renewals paid after April 15th will be assessed a late fee of \$15. Here is a link to the [Membership renewal](#) page to either renew your membership online (see *page 2 for more info*) or print a membership renewal application form, to mail in your dues.
- Just in case you missed the news, the DNR has eliminated the State Park window sticker! It is being replaced by the \$10 "Recreation Passport". The Passport is now available from the Secretary of State when renewing your license plates. Jim CANNOT sell you this passport! So don't have a brain fart and accidentally send Jim an extra \$24 for a window sticker. If you do, the rest of us thank you for your donation to the club. For more info on the passport, read In the Know of the [Summer 2010 edition](#).
- Here's one more renewal reminder...your AMA! Jim cannot process your club membership until the AMA gets their money. When your 2011 AMA card arrives in the mail, there is one important task every *HCH* member being asked to do this year. Take a couple minutes and thoroughly review the [safety code](#) that accompanies your card. Oh stop moaning and groaning. It's not that long. As you read each item, take a moment to ask yourself if you have been complying with that rule. If you answer no, consider what you can do next season to make sure you're in full compliance. Consider that failing to comply with any part of the code could likely void your AMA insurance coverage. Not to mention put the future of the club in jeopardy should something go wrong. †



Events Calendar



December							January							February						
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4							★ 1			1	2	3	4	5
5	6	7	8	9	10	11	2	3	4	5	6	7	8	★ 6	7	8	9	10	11	12
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31		23	24	25	26	27	28	29	★ 27	28					
							30	31												
March							April							May						
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
		★ 1	2	3	4	5						★ 1	★ 2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	★ 3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				

HCH dates

Events around the area

Date	Event	Host Club/location/Link	Time
★ Jan 1	Chili Fly	HCH Club Field	11:00am
★ Feb 6	Chesaning Swap Meet	Saginaw County Fairgrounds	
★ Feb 27	HCH Annual Meeting	Holly VFW Hall	2:00pm
★ March 1	HCH Renewal Due Date		
★ April 1,2,3	Toledo R/C Exposition	Seagate Center	9:00am

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