

**SKYMASTERS RADIO CONTROL CLUB
OF MICHIGAN**
AMA Chartered Club #970
18 Year Gold Leader Club
www.skymasters.org



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From the President...



Dear Skymasters,
Happy Thanksgiving and Merry Christmas... you won't hear from me via the newsletter now until next year after this one.

I want to congratulate the club and its newly elected, or re-elected, board members. John Billinger was re-elected VP, Pete Foss; Secretary, Phil Saunders; Treasurer, and Paul Goelz;

At-Large. Jon Grigsby and Jim Satawa were elected as At-Large board members, replacing Gary Wells and Mike Bard. Yours truly, was re-elected president for 2016. Make sure you let your EOC know of any ideas you have that can help our club grow and thrive, also, take a moment and thank the board members. It is a commitment to service and there is quite a time commitment as well as other obligations. There is a lot of work that goes on behind the scenes to keep things running smoothly so you

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can just show up at the field and fly!

Make sure you take some time to understand the changes to the AMA and our **club membership renewals**. Basically, if you renew (AMA) before December 31, 2015 your AMA will continue as it has year to year. If you wait to renew after that date your AMA will renew every year on the date that you renew (or register new) on the AMA site. Our board has opted to have a rolling renewal of club memberships in line with the AMA which will require a change of the bylaws which we will do at the January 28 club meeting, by a vote of the membership. Contact Jim Satawa our Membership Director if you have any questions. We will continue discussion about these changes at our club meetings and Jim will be sending a communication explaining it in more detail soon, as well as renewal reminders.

Don't miss our club family Christmas Party on Thursday December 10 at the Orion Center. Invitations have gone out by mail. If you don't get the postcard in the mail, then you should check the address in your Skymasters profile. If you've never attended a **Skymasters Christmas Party**, I cannot encourage you enough to bring your family and celebrate this great season with Skymasters! Please contact Pete Foss for RSVP and the dish you will bring to pass and then don't forget each child under 13 that comes gets a present from Santa Claus. Please email; santa@skymasters.org and let him know the names and ages of the children. This is a very nice worthwhile event. Don't forget to bring some display models for the family and kids to look at!

Something that has fascinated me about the

hobby and our club is the background and backstories of the people in our club. We are a model aircraft flying club, a hobby, a group of people with similar likes, interests and passions who gather, fly together, build and work together, do an incredible job of outreach and giving back to the local and wider community, and yet, on the surface this seems pretty simple, but, in reality it is anything but simple. It would be great if more of our members could take a moment and jot down "their story" in RC and share that with us in the newsletter or just write about something you've learned or is of interest to you. It is well received when we get some of the reports from our members who go elsewhere for the winter and share what the other clubs are like. It would be equally great if someone would take some time and interview a member or two a month, and **write** it up for the newsletter, or if you wrote a **column for the newsletter**. Be sure to thank and complement our regulars like Joe Finkelshtein "Prop Wash" and Paul Goelz who write great columns for our world class club newsletter.

Our annual **Krazy Snow Fly** is set for New Year's Eve Day at the field beginning around 9:00 a.m. This will be my 5th year attending and my very first one the weather was very mild and the field was packed. I think we have a good chance of mild weather this year. My mouth is watering thinking of Paul Zabawa's chili.

I was finally able to get a plane to fly indoors and went last Tuesday to **Skymasters Indoor Flying at Ultimate Arenas**. What a nice relaxing and enjoyable activity. I hope that, even if

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Front Cover:

The "low down" at Ultimate Soccer, our home for indoor flying each winter.

Paul Goelz photo

(Continued from page 2)

you've never been, and are not working some random Tuesdays from 10-1:00 p.m. you'll stop by and check it out. Watching is free and who knows, you may get the bug.

We've got the **Ultimate Indoor Flying Toy Drive** to support and the new for our club, **Troops Need Love Too** group that we will be collecting items to be packaged and shipped to our military overseas. We've done a pretty thorough job of vetting the group and I think you'll be impressed that it is 100% local (grassroots) organization with 100% of all items both gifts and cash donated goes towards putting together care packages for the troops and shipping them. We'll learn more at our January club meeting about this group. Check out their web site and let me know what you think. If you can make it to their December 5th day of packaging and wrapping for their Christmas overseas shipment, please do so.

I hope you'll mark your calendar and plan to attend our Winter **club meetings** at the Orion Center. We have a great presentation for our first meeting of 2016. Andy Low of Electrodynamics will teach us all about **battery technology**. Club meetings are the 2nd and 4th Thursday of each month from 6:45-8:45 p.m. I hope to announce soon our **President's M.A.D.** prize. M.A.D. stands for **M**-eeting **A**-ttendance **D**-rawing and last year we gave away a $\frac{1}{4}$ scale Cub that was beautiful. Each club meeting you attend you get one entry in the drawing that will happen in late April or early May. If club meetings are not your thing, then you have other options to earn an entry in the drawing like writing an article for the newsletter or helping run an event for example. If you have any recommendations for great speakers or presenters for our club meetings I am always looking for great ideas.

It's that time of year again when, maybe, more than usual we reflect on, and give thanks for

the many blessings in our life. We appreciate the people and things in our life that make us who we are and maybe do something a little bit more than our usual giving. Maybe we reflect on ourselves and make definite plans for improvement and growth. I want to take this moment to thank you for your great support, encouragement, and confidence as I lead our beloved club. If I've done something that upset or hurt you, I ask your forgiveness. I will continue to, with the other elected and appointed members of this club, make decisions and take actions that are in the best interest of the club and its members. Sometimes those are tough decisions and have important consequences. I could not have done what I did this past year without the great support of all the great members... thank you! I will never forget the best advice I got when I was elected last year for my first term. I received the best advice EVER! Someone (Randy MacInnes) said, "Bob all you really need to do is keep the lawn mowed and the gates open"! I like that simple truth. God Bless you and your family God Bless our Skymasters RC Club.



Bob Chapdelaine

President

Propwash

By

Joe Finkelstine

December 2015



"Disruption"

One good thing about swap shop season is that it always gives me ideas for this column. Since I visited my first one earlier this month, I thought it fitting to once again discuss a swap shop inspired rant.

The above title, *disruption*, has many definitions and it is currently one of the business buzzword terms.

In the business world, the term disruption refers to some new technology and/or business model that bring significant change to a market in a short time. Now, things are changing in the business world all the time, but what sets disruption apart from normal change is usually the pace and scope of change that the disruption brings about.

An example from the business world of disruption is the advent of downloading music from the internet. Before this practice began, we were all forced to go out and buy a CD (or LP album for those of you old enough to know what those are) that contained the song we wanted and were forced to pay upwards of \$25 or more for a CD on which we often only liked a few of the songs. This made lots of money for the record label and the artist.

Internet based downloading changed this entire business model in well under 2 years. Music lovers began downloading (some would say "pirating") music in droves and stopped buying CD's - Initially, the record labels fought it tooth and nail and finally gave in to the fact that customers were no longer willing to pay for a full CD when all they wanted was a few songs from the artist. This disruption lead to sites like iTunes in an attempt to get some revenue out of the song itself leading to mixed results. I believe this disruption was also a major factor in the near total disappearance of record stores.

The music artists themselves also realized the end to their CD royalties was near and quickly changed their own business model. I believe artists now seek to make their money mostly from concerts (which are a prime reason concert tickets are well into the \$100's of dollars now) - The internet based download paradigm was quite disruptive to the status quo in the music industry.

There are hundreds of examples from the last 30 years I could discuss, but I think it better to now focus on the disruption I have seen in this hobby with the last 5-10 years in particular and how I see it playing out at swap meets now.

First though, to some of the more prevalent disruptions, past and current I am seeing play out in RC.

One of the more drawn out disruptions is the advent of ARF's in the hobby. When they first appeared about 10-15 years ago, they were not disruptive at all. Early ARF's were very poor quality, covered with some kind of sticky contact paper, used coat hangers for pushrods, etc. Most everyone in the club at the time steered beginners away from these atrocities, as we knew failure with them was only a (very short) matter of time. While it took a while, the ARF manufacturers continued to improve their quality, and were also driven by US based design houses that mandated materials and sound building principles. ARF's soon became at par or even better than what many of us could build ourselves, and the true disruption began. For those of us in the hobby for more than a few years, we have seen the majority of the kit manufacturers either go out of business, or switch to a mainly ARF lineup in an attempt to survive. Unfortunately, many just closed shop. This disruption carried over to all of us as well, as the number of builders in most clubs dramatically dropped as supply of new kits approached zero and the quality of some ARF's became very high. Building a plane from a kit is becoming a rare experience, due this disruption, as well as a big change in the supply base to us all.

Another key disruption is the advent of capable electric power for our planes. Similar to the advent of ARF's the initial electric motor based choices and capabilities in our hobby were very limited and quite poor performers. The trifecta of Lipo battery technology, efficient speed controllers, and brushless motors started the disruption full

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speed ahead. This disruption is most apparent in any hobby shop. Glow motor sales have dropped considerably and most of the primary glow engine manufacturers have had to offer gas power plants to stay in business. If you sit at our field on any given active day the number of electric powered aircraft far outnumbers any fuel (glow or gas) burning ships. This has also led to a decrease in the number of members who are willing to try glow motors for fear of being on their own on getting it to run. If you are in this group who believe no one is available to help you with gas or glow, I can assure you that there are still more than enough members in this club to help any beginner with a glow or gas motor.

The final example of a disruption I want to mention is one that is ongoing now and is in the early stages.

This disruption is the availability of "open source" radios now emerging.

For those of you who are wondering what the heck this is, let me explain. If you own a mainstream RC transmitter, like Futaba, JR, or Spectrum, there is a considerable amount of software running on that radio. The radio software is proprietary to the radio manufacturer and as users, as we have no access to actually changing the functionality of this software other than the configurations the radio manufacturer makes available to us (trims, set mixes, etc.). This manufacturer specific technology also extends to the encoding used to communicate between transmitter and receiver. When you buy a particular brand of radio, you are basically stuck with buying receivers from the manufacturer as well as the pricing and packaging they determine. (Yes I am aware that some receiver clones are available for Spectrum and Futaba, but these are basically stolen IP from China and this is not the general case)

In the software world, the term "open source" refers to a software project that is worked on by many people voluntarily and not owned by any particular individual or company. Anyone is free to contribute (I.E. add source code) and the basic premise is that it must remain nonproprietary and freely available to the user community.

Many examples exist of this in the Personal computing world. For example, in response to the near total monopoly that Microsoft once had with the windows operating system, many people got together (online of course) and essentially created Linux - It is an alternative to windows, 100% free to use (you don't have to pirate it) and is still being developed. Remember that all of the development is done voluntarily - no one owns Linux, no one owns the technology.

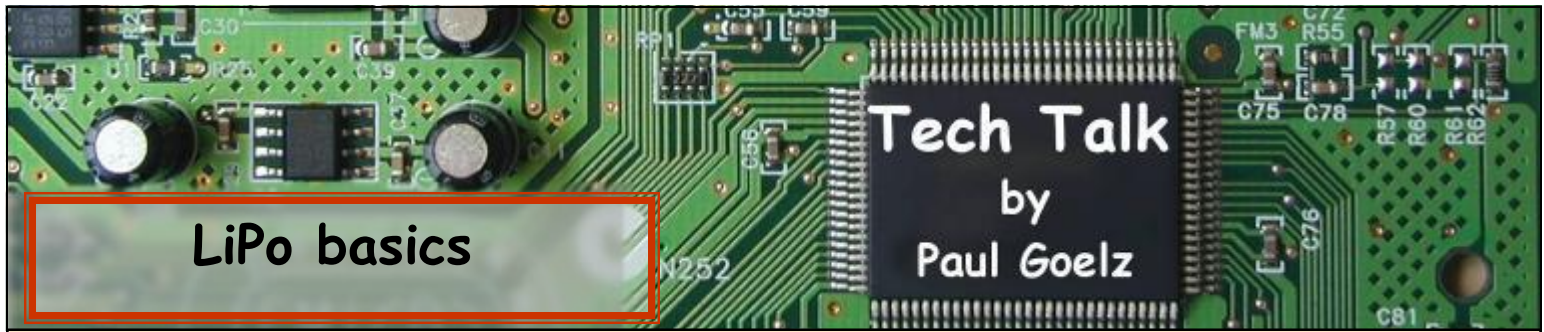
In a similar manner, a bunch of RC folks who have nothing better to do with their time began to make an open source version of transmitter software and hardware. It began small (still is mostly) but is growing steadily. Right now, a user of open source RC radios must be willing to do installs, sometimes complex configurations, and once in a while actually do some programming if no one has created a program for a special mix desired. The promise is that major functionality and capability is available in inexpensive hardware. Like Linux though, I still believe it is too early for mainstream users like most of us sport fliers.

The point here is that as more development and experience occur with this open source transmitter/receiver software (and hardware), a huge disruption in the RC radio world beckons. I have no idea where it will lead, but I feel confident that the R/C radio business will be noticeably different within the next few years.

With each disruption in our hobby there are some who lament the loss of what was - I often hear complaints that no one builds anymore, no one flies glow, etc. - This is a natural occurrence of disruption. Remember that the benefits of the technology behind the disruption are the cause of the change. If the new technology does not produce a significant advantage over the status quo - it dies a silent death. Yes we are losing the number of builders but building a kit or the even bigger challenge of from scratch is still certainly possible and even has gained in stature because of the increasing rarity.

These disruptions have brought us more choices. We can spend our time with ARF's and electrics and fly right away, or we can dedicate a non-trivial portion of hobby time to crafting up a glorious ship - this is a good thing in my mind, not a loss. The disruptive genie is out and won't go back in the bottle any time soon.

Now, finally back to my initial point as to how this disruptive thought came about at the swap shop I attended a short while back (Northville, November 8). While standing at my table and mostly not having any potential customers, I started looking around and it occurred to me that I was looking mostly at the remnants of all of the disruption in our hobby. This constant disruption in our hobby shows up on every swap shop table. Given the nature of how complex our planes and equipment are we will always be in the cross hairs of those who wish to disrupt us - I for one welcome it. **Joe Finkelstine**



LiPo basics

Tech Talk
by
Paul Goelz



This is a reprint of my very first TechTalk column. I thought it bore repeating as we swing into the indoor season.

There is a lot of confusion and mis-information surrounding LiPo cells. Some of the mis-information is rooted in fact and some is not. Some is the result of the way information

propagates on the internet. Here is my contribution ;)

Charging (general)

To charge any battery, we pass current through it in order to affect the internal chemistry and replace energy that was removed during discharge. Exactly how this is done depends on the battery chemistry. Since the charge reaction and the charger are not 100% efficient, charging must replace the energy removed during discharge PLUS any charging inefficiency. Typically, if you removed (for example) 1000mAh (one amp hour) during discharge, you would have to charge until the total power replaced was about 1200-1500mAh.

LiPo

Lithium Polymer cells are similar to NiCd and NiMh in that they use a chemical reaction to store and release energy. However, there are several CRUCIAL issues that we must be aware of to avoid cell damage and/or fires. Lithium cells also begin to degrade the moment they are manufactured. This degradation continues until they are discarded. It can be accelerated and moderated but it cannot be totally prevented. Unfortunately, some of what I am about to present is based on experience rather than hard data since hard data from the actual cell manufacturer is not available to us in the modeling community.

LiPo charging

A LiPo charger limits the charge current to (typically) 1C (i.e., 1X the cell capacity in mAh) until the pack voltage reaches 4.2V/cell. At that point, the charger limits the

voltage to 4.2V/cell and the current gradually decreases until it reaches a small fraction of the normal charge current. At this point the cell is considered fully charged and the charger shuts off. IMPORTANT.... You CANNOT charge a LiPo pack using a NiCd or NiMh charger, and especially not using a continuous "trickle charger" like common wall wart chargers. If you do, the pack will be overcharged and could ignite.

LiPo maximum voltage

The absolute maximum allowable cell voltage for a lithium polymer cell is 4.2V. This is the end of charge voltage, and is usually very accurately controlled by the charger (but see the section on cell balance). Note that I have found some data that suggests that cell degradation increases very rapidly above 4.2V and also suggests that cell degradation actually begins to increase slightly below 4.2V/cell.

LiPo minimum voltage

A lithium cell must never be discharged below 3V per cell under any circumstances (**INCLUDING under load**). This has always been the published discharge limit for LiPo cells, but recent experimentation and "street wisdom" suggests that a higher voltage may be more appropriate if long cell lifetime is desired. I am currently using 3.5V/cell as my absolute minimum discharge voltage. Unfortunately, it is not easy to monitor cell voltage under load unless you have either an ESC that records flight data (such as the Castle Creations Ice series) or in-flight telemetry. By the time you land and power down, the cell voltage(s) will rebound and will not reflect the actual minimum cell voltage in flight. Difficult to monitor or not, it is my belief that excessively low cell voltage *under load* is one of the major contributors to premature cell failure.

Cell balance

Per the above two paragraphs, LiPo cells degrade rapidly if the voltage is below 3V or above 4.2V for **ANY** reason. So lets look at what happens in a three cell pack where two cells are at 3.7V and one of the cells is at 3.6V when charging begins. When charging commences, the voltage

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of all three cells rises slowly. However, one cell is 0.1V lower than the other two and remains so during the charge. A non-balancing charger only senses total pack voltage, and will limit the charge voltage to $3 \times 4.2V$, or 12.6V. With one of the three cells 0.1V lower than the other two, this means that when the charger senses a total pack voltage of 12.6V, two of the cells have in fact been driven above 4.2V and have been damaged. Because most balancers have a very limited discharge current rating, this can happen even when using an external balancer unless the balancer is used before charging. A balancing charger eliminates this issue completely, since it senses all cells individually and ensures that no cell is overcharged.

LiPo storage

Remember I said earlier that LiPo cells are continuously degrading? Unfortunately, this degradation continues even in storage. It increases with increasing voltage and/or temperature. Cells that are stored at or near full charge and / or at elevated temperatures will degrade faster than cells that are stored at reduced voltage and temperature. Brand new cells are typically shipped at 50% charge, since this is the best compromise between degradation due to high cell voltage and degradation due to cell damage below 3V. However, it is not always practical to store cells at exactly 50% charge, so what I do is store them anywhere between 20% and 80% charged. When my flying day ends, and cells that are discharged below 80% are stored as-is. Any that are still fully charged are flown for a few minutes to drop them below 80% so they can be stored.

Since cell degradation is reduced at lower temperatures, I also store my packs in a small refrigerator if they will be un-used for more than a few days.

Note: The safe maximum voltage for a LiPo cell is 4.2V at room temperature. However, that maximum safe voltage is 4.1V at reduced temperatures. In other words, a fully charged pack is in fact OVERCHARGED and subject to higher degradation if it is then placed in a refrigerator. Another reason to store LiPo packs at 80% charge or below.

Safety

To be blunt.... LiPo cells are great but they can be dangerous. They can ignite if severely over charged (due to operator error or charger malfunction). Once ignited, they can be difficult to extinguish since the combustion produces its own oxygen. They can also ignite if they are damaged in a crash... sometimes minutes or hours later. There are horror stories on the internet and in

our club of serious fires due to damaged or over charged packs. Please **PLEASE** always charge in a safe place and be extra cautious with crashed packs. I rarely charge in the house and when I do, the packs are in the basement, in an ammo can with the lid closed loosely to act as a flame arrester. I never charge in the car under any circumstances. And I always store my packs in an ammo can.

LiPo summary

- ◆ Never discharge below 3V/cell *including under load* and recent experience suggests that 3.5V/cell may be a more reasonable voltage limit.
- ◆ Never charge above 4.2V/cell and always use a balancing charger
- ◆ Never store fully charged... store between 20% and 80% charged. *It is NOT necessary to discharge to exactly 50% before storage. Anywhere between 20% and 80% will do unless you plan on storing for years.*
- ◆ If possible, store in a refrigerator (at less than 80% charge)
- ◆ Never charge unattended
- ◆ Always charge in a flame proof container when you have to charge indoors

OK, that's it for this month. Please feel free to ask me any questions this article stirs up. I'm available at the field or at paul@pgoelz.com

Paul

"Drones" are everywhere!!

This huge display was spotted by the front door at Microcenter!



Indoor is BACK!

Click anywhere in the collage to view the entire photo album on the Skymasters web site



November 12th Meeting

November 12th was our annual election. You can read the full results in the President's Message on page one but basically the membership decided to re-elect the current board. We also had a special guest who had lots of interesting anecdotes about life in the military. He also presented us with a special flag that we will fly for special events.

Click anywhere in the collage to view the album on the Skymasters web site.



Flightline Sailplane Seminar

We had our Sailplane Seminar today at the store. Nice crowd. Barney did a great job, he had a lap top presentation and covered many aspects of soaring with an emphasis on Thermals. A lot of Q & A Jack Iafret brought a beautiful big bird in as well and shared the radio set up and flight modes he uses in soaring. Next week we have our final fall seminar focusing on electric flight. Brian will be giving the talk. A very interesting seminar, usually with a good turnout. Hope to see you at the store! *John Hoover*



Flightline Electrics Seminar

Brian did an excellent job with his electric basics talk today at the store. He came up with a nice presentation shown on our new mo-betta TV screen in the middle. Turn out was OK, a little down from last year but the snowy weather was pretty icky. There were many good questions and we focused on batteries for awhile defining "C" ratings and charge/storage considerations. Customers gave me a lot of good feedback on the talk. Thanks Brian for a great job!

John Hoover



NOT EVERYONE CAN BE HOME FOR CHRISTMAS
Skymasters RC Club with TROOPS NEED LOVE TOO™
IS COLLECTING CHRISTMAS GIFTS FOR OUR DEPLOYED TROOPS.



Suggested Items to donate:

Uno card game, playing cards, Dominos, small puzzles, puzzle & Sudoku books, yoyo's, small nerf balls, socks, hats, gloves, Candy Canes, Christmas Candy & Cookies, and Gingerbread house and cookie kits.

See their website for a lot more ideas!

www.troopsneedlovetoo.com

Hello,

I am SpecialistXXXXXXXX from 16th XXXXXXXXXXXX. Currently, my unit is deployed to XXXXXXXXXXX, located in XXXXXXXX directly south of the Iraqi border. I first learned of Troops Need Love Too while XXXXXXXXXXXXXXXXXXXX located here on base. To begin, please allow me to express my deepest gratitude for your service to our nation's fighting men and women. No matter their contents, care packages offer the most sublime lift to our moral and my appreciation for your organization's mission cannot be overstated.

That being said, I am writing to learn more about your services and to see whether I can request that care packages be sent to my unit. As we are small unit, we do not receive the support that other larger companies may receive. With the holidays approaching, I would love to be able to make an arrangement that would raise our soldiers' moral as they are far from home. Thank you so much for your time and, again, for the selfless manner in which your organization supports America's troops.

My contact information is listed below. I look forward to hearing back from you and wish a very happy holiday season.

Special (Christmas) Challenge for Skymasters RC Club...

We are going to make an effort to help this organization collect gifts to be sent to troops overseas **by December 5th**. John Hoover at Flightline Hobby Shop has generously agreed to be the gathering spot for our clubs donations. **WWW.troopsneedlovetoo.com** is a locally run organization and 100% of all donations; gifts and money, go directly to the troops overseas. They collect items and ship year round but have a special push on to get stuff out to make it by Christmas. **I said we can help!** Our club is typically very generous and since we are not doing the trees for troops project this year, this is our challenge. The letter above is an actual letter Jill shared with me from a unit deployed. Let's do our best and get what we can to Flightline Hobby Shop by December 5th. Items collected after that date will still be sent but may not make it by Christmas. If you can help the group wrapping and boxing the donated items on December 5, see their website for that information or contact Jill at Troops Need Love Too!

www.skymasters.org & www.troopsneedlovetoo.com



Skymasters R/C Club

Indoor Electric Flying

at **Ultimate Soccer Arenas**
867 South Blvd., Pontiac, MI 48341

Tuesdays from 10 AM to 1 PM
November 3, 2015 thru April 19, 2016
26 – 3 Hour Flying Sessions

Season Pass \$100 – 78 Hours of Flying!

Single Flying Session \$10.00

5 - Session Punch Card \$35.00

Largest Indoor Flying Venue in the Tri-County Area with an average of 75 Pilots per session. Note: Ultimate Soccer Arenas expanded our flying time to 3 hours per session.

All Pilots must have proof of current AMA Membership

Schedule Subject to Change.

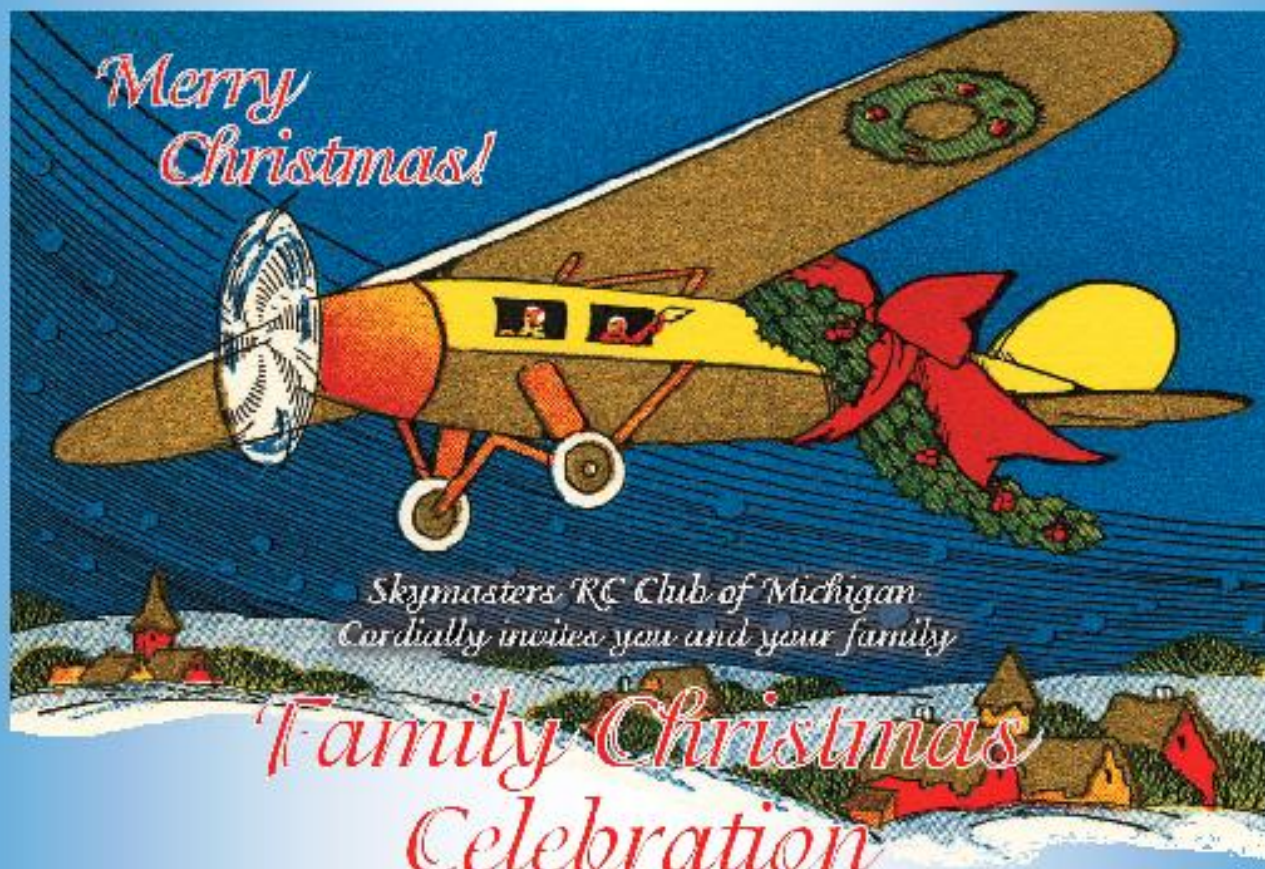
Sport, 3D, Micro, Heli & Quads flying concurrently in different areas of the arena. See rules for size and weight limits.

Support your local hobby shops:



Visit Skymasters web site at www.skymasters.org AMA web site at www.modelaircraft.org

For more information email: indoorfly@skymasters.org or call Fred E. at 248-770-3239



Thursday, December 10th

*The Orion Center, 1335 Joshyn Road
Lake Orion, MI 48362*

*Appetizers at 6:30pm, followed by
dinner at 7pm. Please bring a dish to pass.*

*Please RSVP to Pete Foss at
petefoss@skymasters.org or 248-420-5316
with what your dish to pass will be.*

*Please let Pete Foss know the names and
ages of children under 13 that will be
attending. Call Pete or email
santa@skymasters.org*



The 7th Annual Holiday Gift Drive

Once again the staff at Ultimate Soccer Arenas, Skymasters, the Indoor Pilots and our Sponsors are helping the needy children of the community with a Christmas toy collection. Join us on Tuesday December 15th and bring a unwrapped gift or a wrapped gift-with a label indicating the gender and age.

For each gift (wrapped or unwrapped) having a value of \$10.00 or more the person making the donation will receive a pilots drawing ticket.

Make Christmas at Ultimate Soccer Arenas
even more memorable for those in need!



100% of Your
Donation
Goes To The
Salvation
Army

Pilots bring your gifts on Tuesday, Dec. 15th
& Fly for a Bonus Hour



HOLIDAY BREAK

INDOOR ELECTRIC FLYING FUN

Tuesday, Dec. 22nd from 10AM-1PM

&

Wednesday, Dec. 30th from 10AM-1PM

at Ultimate Soccer Arenas

867 South Blvd., Pontiac, MI 48341

All Pilots must have proof of current AMA Membership

**Take a vacation from work and enjoy 3 hours of flying of indoor flying
for \$10 at the best indoor flying site in the Tri-County Area.**



**Visit Skymasters at
www.skymasters.org**



Open To
The Public



Skymasters RC Club

Krazy Snow Fly



Thursday December 31, 2015

Flying begins at 10:00 a.m.

Scripps Road Flying Field

field is 4.8 miles north of the Palace of Auburn Hills on West Scripps Road
1 miles west of M-24 and 1 mile east of Joslyn Road



**NEW
YEAR'S
EVE**

- * open to the public | come and see this exciting hobby!
- * flying open to AMA members—pilot prizes
- * refreshments & Paul's world famous chili
- * bonfire | restrooms available
- * contact: [Paul Zabawa 810-678-3332](tel:810-678-3332) for more info
- * www.skymasters.org



LOOKING FOR SOMETHING TO DO THIS WINTER? A NEW HOBBY? LEARN A NEW SKILL!

Learn to build...



an RC model AIRPLANE from scratch & fly*!

Flightline Hobby Shop & Skymasters RC Club of Lake Orion are joining together to offer an exciting and new experience to anyone who is interested in *building a model airplane* from scratch. Everything is provided, just (register) show up, and experts in the hobby, will show you *how to build* a model airplane that can really fly*. Register now— space is limited to 15 participants.

Beginning Monday January 25, 2016 — 6:30-8:30 p.m. for ten (10) consecutive weekly sessions, you will be provided with everything you need to complete the build of a 48" low-wing trainer aircraft. All sessions held at the **Orion Center**, 1335 Joslyn Road, Lake Orion, MI 48360.

provided: laser cut balsa and plywood; glues and adhesives; instruction(s); covering materials; & building board —everything needed to complete the build

****not provided:*** electronics [motor, speed control, receiver (transmitter), & servos etc.]*

Open to everyone ages 14 and above. Cost is \$110. Contact: Joe Rubinstein 248- 882-2221; or John Hoover 248-814-8359 for more information. Email: kitbuild2016@skymasters.org.



www.skymasters.org



electronics required to fly your airplane by remote control are not provided as part of this building project ;special pricing will be offered through Flightline Hobby

Skymasters RC Club of Michigan presents:

Airplanes, boats, gliders, helicopters, quadcopters, rockets, cars, trucks and lots, lots more!

Super Swap Meet 2016

Saturday February 20, 2016 | 9:00-1:00



Lake Orion Community Schools — CERC

Community Education Resource Center

455 East Scripps Road — Lake Orion, MI 48360

4.5 miles north of the Palace of Auburn Hills

Take I-75 to exit 81 (Lapeer Road) go north 4.2 miles turn right on East Scripps Road for 1/4 mile-destination will be on left

- ✦ \$5.00 entry fee
- ✦ Over 100 tables
- ✦ Food and Refreshments
- ✦ Dealers and Vendors welcome
- ✦ Tables: \$20 / \$25 outer wall, incl. 1 entry
- ✦ Set up at 8:00 a.m.
- ✦ Active military, women & children (under 12) free
- ✦ Website: www.skymasters.org

Call: 248-805-1404 or email: superswap@skymasters.org

Navy Design Contest

Sponsored by John Hoover / Flightline Hobby

Goal: To design a fixed wing aircraft to compete in a club level fun fly. Can be finished as any Naval power. Scratch build, Kit or ARF design does not matter as long as the model is powered only by motor type below.

"Must have" to meet Navy design specs and compete in this event:

- Rimfire .32 Electric \$89.99 Contest = \$69.99 GPMG4700
- (or) Magnum .52 4 stroke Glow \$159.99 Contest = \$119.99 Hobby People 210851
- Great Planes 1-FLZA6611 Bomb drop \$5.00 and 1-FLZA6607 Bomb \$6.00
- Airplane Max span 72"
- Safe onboard place to fit GPS "Big 5" unit (1x2x3") Can be pocket or in a hatch

Models will be judged on:

- Fit and Finish
- Creativity
- Mystery Category
- Peoples choice

Note the flying contest will be broken into 2 classes based on skill. If you have ever placed at a fun fly 1-3rd you are in the expert category. If not you can fly in the Novice category.

Flying day events:

Round #1—Carrier Landing

A good Navy design has to make it back on the ship. 3 shots. Note the carrier is based on yellow rope pinned to the ground with rings in the corners. If you land outside the carrier you get you are: "Feet Wet" and get a zero for the round. If you land on the carrier but taxi off: zero for the round. Points are 20, 15, 10 each landing. You get 3 possible tries. Novice class has a 5 point the whole mowed area bonus. Hint: if you are next to a rope declare "Dead stick" and get the points so far versus zero for taxing off. A try is when you line up over the end of the runway. At that point you are committed for a pass. You can "Wave off" but this will count as a try. After 3 landings, or tries, you will take back off and climb for 20 seconds. Chop your throttle and land near to the spot landing ribbon which is graduated 1 point every foot for 25'. This will break the ties. You can not move the throttle after "Chop" is declared. If you do then there is a zero for the landing part but you will still get your flight points. Note: if you hook your tail wheel on the carrier rope it can damage your plane. Sorry, part of the game. (Don't do that J)

Round #2—Aircraft Performance

To be a good Navy design she has to perform. The model will be "proven" during this trial. With the GPS unit attached the model will take off from the carrier and climb to tree top height after passing through 360 degrees from takeoff past the flag person they will wave and then you will make a pass over the carrier at full speed. Speed will be recorded form "Big 5". Then land on the next pass (Does not have to be on the carrier). Next model will climb from takeoff for 30 seconds and then chop the throttle and glide. Max Altitude attained will be recorded by "Big 5". Try to hit the spot for extra points. If you move the throttle at all you get a zero for the glide part.

Round #3—Bombing Accuracy

You need to be able to hit the target with your high explosive Flyzone ordnance. Take off and do two 360 orbits. On the 2nd pass drop the bomb. The target is the landing spot. We will use a 50' tape. You get 2 attempts so land after drop and rearm.

Round #4—The Limbo

Ok Maverick, fly under the limbo 3 times 20 first try 15 points the second and 10 for the third. After the limbo climb and do the spot landing. Same rules with landing as round # 1 For the hot dogs, double points any limbo pass inverted. For the Novice group 5 points for flying over the ribbon but between the poles (Judged from downfield)



2016 Club Meetings

SKYMASTERS RC CLUB – LAKE ORION, MI



EOC MTGS = 1ST THURSDAY/MONTH

CLUB MTGS = 2ND&4TH THURSDAY/MONTH

January 2016

Thursday January 14– Club Meeting Orion Center 6:45 p.m. – Room A

Thursday January 28– Club Meeting Orion Center 6:45 p.m. – Room A

February 2016

Thursday February 11– Club Meeting Orion Center 6:45 p.m. – Room A

Thursday February 25– Club Meeting Orion Center 6:45 p.m. – Room A

March 2016

Thursday March 10– Club Meeting Orion Center 6:45 p.m. – Room A

Thursday March 24– Club Meeting Orion Center 6:45 p.m. – Room A

April 2016

Thursday April 14– Club Meeting Orion Center 6:45 p.m. – Room A

Thursday April 28– Club Meeting Orion Center 6:45 p.m. – Room A

May 2016

Thursday May 12– Club Meeting – *Scripps Road Flying Field 7:00 p.m.

ALWAYS CHECK CLUB WEB SITE FOR THE LATEST INFORMATION AND CHANGES!! THIS INFORMATION SUBJECT TO CHANGE PLEASE REFER TO WEBSITE FOR CURRENT INFORMATION

Orion Center 1335 Joslyn Road – Lake Orion, MI 48360



2016 CLUB EVENTS

SKYMASTERS RC CLUB – LAKE ORION, MI



February 2016

Saturday February 20 – Swap Meet - CERC Building; Lake Orion

April 2016

Saturday April 30* – Involvement Day – Bald Mountain, Main Park

May 2016

Saturday May 14 – Field Opening/Work Day – Scripps Road Flying Field; Lake Orion

Sunday May 22 – Spring Float Fly [Chet Brady] – Bald Mountain Lake; Lake Orion

June 2016

Wednesday June 1 – Student Flight Training & Potluck begins – Scripps Road Flying Field; Lake Orion

Wednesday June 15 – Fish Fry Dinner & Member Appreciation – Scripps Road Flying Field; Lake Orion

Saturday June 25-26 – Electric & Night Fly In – Scripps Road Flying Field; Lake Orion

July 2016

Saturday July 16 – Open House - [Recreation 101] with FS helicopter landing – Scripps Road Flying Field; Lake Orion

August 2016

Sunday August 7 – Warbirds and Scale Fly In - Scripps Road Flying Field; Lake Orion

Sunday August 28 – Corn Roast and Top Gun Flying - Scripps Road Flying Field; Lake Orion

September 2016

Sat & Sunday September 10-11 – Midwest Regional Float Fly – Island Lake State Park; Brighton

Saturday September 24 – Skymasters Fun Fly - Scripps Road Flying Field; Lake Orion

November 2016

Tuesday November 1 – Indoor Flying Season Begins – Ultimate Soccer Arenas; Auburn Hills

December 2016

Thursday December 8 – Christmas Party – Orion Center; Lake Orion

Saturday December 31 – Krazy Snow Fly - Scripps Road Flying Field; Lake Orion

all dates subject to change – PLEASE always consult current information on website: www.skymasters.org



Skymasters – Red Olive Breakfast Schedule 2015-16



All flyers are welcome to join us at the Red-Olive Restaurant, 1194 Walton Blvd., Rochester – 9:00am for breakfast and talk R/C. The restaurant is located directly across the street in the strip mall from Crittenton Hospital on Walton Blvd. just east of Livernois.

Want'A Be's Breakfast

Monday, October 5, 2015

Monday, October 19, 2015

Monday, November 2, 2015

Monday, November 16, 2015

Monday, December 7, 2015

Monday, December 21, 2015

Monday, January 4, 2016

Monday, January 18, 2016

Monday, February 1, 2016

Monday, February 15, 2016

Monday, March 7, 2016

Monday, March 21, 2016

Monday, April 4, 2016

Monday, April 18, 2016

Monday, May 2, 2016

Monday, May 16, 2016

ON THE WING

Skymasters Breakfast

(Everyone is welcome)

First and Third Monday of each month
through May

9AM

Red Olive restaurant
In the strip mall on Walton
across from Crittenton Hospital
Rochester MI

Skymasters Indoor Flying

Every Tuesday through March

See the Skymasters web site for details

10AM to 1PM (Yes, three hours)

At Ultimate Soccer,
Opdyke and South Blvd
Pontiac, MI



December Skymasters Meeting

(THE CHRISTMAS PARTY)

Thursday, December 10th

6:30PM

at the Orion Center, 1335 Joslyn Road

(on the east side of Joslyn, just south of Clarkston Road), Lake Orion, MI

Other local area indoor flying sessions

Premiere Sports Center

14901 23 mile, Shelby Twp, MI
(northwest corner of 23 mile and Hayes)

Every Thursday, 9AM to 3PM (yes, that's 6 hours)

Electric planes and helis (separate heli space)

\$10/session, AMA required

Info: Steve Durecki 586-246-4203 (text or voice)

<http://www.stevesindoorflying.com/>

Legacy Center

9299 Goble Dr.
Brighton, MI 48139

(Off of Winans Lake Road, between Rickett Rd. and M23)

Thursdays 12PM—2PM November 5th through April 30th

\$10/session

Sponsored by the Hamburg Flyers RC club

December 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		<p>1 Indoor Flying 10AM-1PM Ultimate Soccer</p>	<p>2</p>	<p>3 Indoor Flying 9AM-3PM Premier Sports Center, Shelby Twp Indoor Flying 12PM-2PM Legacy Center, Brighton</p>	<p>4</p>	<p>5</p>
<p>6</p>	<p>7 Skymasters Breakfast 9AM Red Olive, Rochester</p>	<p>8 Indoor Flying 10AM-1PM Ultimate Soccer</p>	<p>9</p>	<p>10 Skymasters Christmas Party 6:30PM Orion Center Indoor Flying 9AM-3PM Premier Sports Center, Shelby Twp Indoor Flying 12PM-2PM Legacy Center, Brighton</p>	<p>11</p>	<p>12 Indoor Flying 6PM Tri-City Sports Complex, Bay City</p>
<p>13</p>	<p>14 Tim Jesky AMA Update 7PM Ultimate Soccer</p>	<p>15 Indoor Flying 10AM-1PM Ultimate Soccer</p>	<p>16</p>	<p>17 Indoor Flying 9AM-3PM Premier Sports Center, Shelby Twp Indoor Flying 12PM-2PM Legacy Center, Brighton</p>	<p>18</p>	<p>19</p>
<p>20</p>	<p>21 Skymasters Breakfast 9AM Red Olive, Rochester</p>	<p>22 Indoor Flying 10AM-1PM Ultimate Soccer</p>	<p>23</p>	<p>24</p>	<p>25</p>	<p>26</p>
<p>27</p>	<p>28</p>	<p>29 No flying at Ultimate... session moved to Wednesday</p>	<p>30 Indoor Flying 10AM-1PM Ultimate Soccer</p>	<p>31 Krazy Snow Fly 10AM Scripps Road field Indoor Flying 9AM Premier Sports Center, Shelby Twp Indoor Flying 12PM-2PM Legacy Center, Brighton</p>		

Skymasters Information...

[The Skymasters field is located in Lake Orion, within the Bald Mountain Recreational Area](#) on Scripps Road, between M24 and Joslyn (see map). A recreation passport or sticker is required and can be obtained from the Park Headquarters located on Greenshield Road or you can check the box on your tab renewal for a "Recreational Passport".

Flying hours:

QUIET ELECTRICS ONLY from 8AM to 10AM and 8PM to 10PM.
The noise limit is 80dBa at ten feet.

Regular flying is permitted between 10 AM to 8 PM. **The noise limit is 94 dBa at 10 feet.** These noise

limits are enforced.

Wednesday evening (through August) is Family Night with flying and a pot luck buffet. Bring something for the grill & a dish to pass.

Wednesday 5PM to 8PM is also Student Night (through August) Meet the instructors and arrange for more instruction time together on other days. Our Chief Flight Instructor is Ken Gutelius, 248-892-2943, cfi@skymasters.org

From June through August, club meetings are held at the field, on the second and fourth Wednesday of the month at 8 PM. A great chance to fly and socialize. **Winter meetings**

(September through May) are held at the Orion Center, 1335 Joslyn, in Lake Orion. Check the calendar here or on the [web site](#) for specifics. Bring a model for Show and Tell, enjoy coffee and donuts and listen to the speaker of the evening.

The Skywriter newsletter is available online at the Skymasters web site and is free to all. It may also be printed from the web site if desired. All contributions are welcome. Please send photos and articles to newsletter@skymasters.org If you know of anyone who may be interested in R/C Aviation, please give them a link to this newsletter or give them a copy of an AMA magazine. It may spark their interest!



2015 Club Officers & Appointees...

President:	Bob Chapdelaine	Lake Orion	president@skymasters.org
Vice Pres.:	John Billinger	Troy	vicepresident@skymasters.org
Secretary:	Pete Foss	Oxford	secretary@skymasters.org
Treasurer:	Phil Saunders	Rochester Hills	treasurer@skymasters.org
Editor:	Paul Goelz	Rochester Hills	newsletter@skymasters.org
Membership:	Jim Satawa	Lake Orion	membership@skymasters.org
CFI	Ken Gutelius	Lake Orion	cfi@skymasters.org
EOC at large	Mike Bard	Oxford	at.large2@skymasters.org
EOC at large	Gary Wells	Oxford	at.large3@skymasters.org
EOC at large	Paul Goelz	Rochester Hills	at.large1@skymasters.org

Newsletter Submissions

Please send all articles, photos and announcements to the Skywriter editor at:

newsletter@skymasters.org
 Deadline is the 20th of each month.

The Skywriter newsletter is published monthly by the Skymasters Radio Control Club of Michigan

www.skymasters.org