SKYMASTERS RADIO CONTROL CLUB OF MICHIGAN November 2010

AMA SINCE 1936
Academy of Model Aeronautics

Chartered Club #970
10 Year Gold Leader Club

Skywriter

Skymasters Holiday Party!

Come join us at the Skymasters Family Christmas Celebration at Larson Middle School on Wednesday December 8th. Appetizers start around 6:30 and dinner at 7:00PM. Please come join the fun!

SKYMASTERS RC MICHIGAN

2010 Club Officers & Appointees...

President:	David Wendt	4549 Sedona	Clarkston	48348	248-969-8738
Vice Pres:	Paul Zabawa	PO Box 138	Metamora	48455	810-678-3332
Secretary:	Dan Stolz	1311 Pondview Ln.	Oxford	48371	248-236-0206
Treasurer:	Bob Donohue	3323 Baldwin Woods	Orion	48359	248-915-9791
Editor:	Pete Foss	562 Tanview Dr.	Oxford	48371	248-236-0676
CFI :	Ron Sokacz	40714 Matlock	Sterling Hts	48310	586-977-1404
State Park:	Bill Stark	1010 E. Clarkston	Lake Orion	48362	248-693-8639
Membership:	Gary Weaks	2512 Red Fox Trail	Troy	48098	248-540-8358

PRESIDENT'S MESSAGE…

It is Thanksgiving morning and time to do one last President's message. I can't help getting a little nostalgic as I compose my thoughts into a meaningful message. I joined Skymasters in 2000. I always wanted to learn how to fly but the means to do it as a kid was out of my reach. When I learned to fly in 2000, I did it with a Sig Kadet MK II that I built in the early 90s. I remember Joe Finkelstine saying it flew squirrelly but it didn't matter to me because I built it myself and I was having a ball finally learning how to fly. Some days I look at that same plane hanging in my shop and I smile because I now think it flies squirrelly too. I thought about selling it and maybe I will, but most people can find better options with modern ARFs, so for now it remains in the basement.

Building is one of my favorite winter activities and I am looking forward to spending some of my newly acquired spare time in the basement finishing up my projects. However, the point I am trying to make is not really about building or my free time. My point is this club does a great service to the members and you should think about giving some time back to the club. I enjoyed building the Kadet and getting it ready to fly, but I could never have learned to fly it without help from club members.

In the past five years, I have spent most of my spare time working for the club. I think it was a good decision to get involved. I learned a lot about how the club operates and made a lot of friends. What amazes me the most is how people in the club always step up to the plate and get things done. I have a great appreciation for the people who attend the BOD meetings. Every event and winter meeting was successfully planned and executed. None of the events in 2010 could have been done without the help of key individuals in the club. There are so many people in the club who volunteer their time and make a big impact for the members. I cannot stress enough how important it is to have the help.

I have heard people say that the BOD is an exclusive group and it is not true. You do not have to be an officer of the club to attend BOD meetings. I have never seen anybody turned away who offered to help out. This year, Paul Goetz offered to create a new helicopter event and it turned out to be one of the biggest events of the year. The helicopter event was probably the biggest event we have ever seen at our field. I think if you asked Paul, he would agree it was worth his time to volunteer.

Skymasters is a great club and we really work hard to give the members some unique benefits. We promote the hobby in so many ways. We do winter symposiums, bringing in manufacturers and top names in the industry. We have weekly indoor flying at Ultimate Soccer, and some great outdoor events in the summer. We have a monthly newsletter, and we have a very nice well maintained flying site. None of the benefits of being a Skymaster would be possible without support from the members. If you have ever thought about running an event or helping out in some small way, I encourage you to take the leap and give it a try. Nobody on the BOD will shut you down for volunteering. To all who helped me this year, I give you my personal thanks! I appreciate everything from cleaning up after events to the sacrifice of taking ownership of an officer role.

Thank you!

David Wendt

Skymasters Meeting Minutes

November 1, 2010
Attendance: 31 Members

Dave Wendt called the meeting to order at 7:00PM

David Wendt reported the following:

- Indoor flying at Ultimate Soccer Arena is being led by Roger Schmelling with the help of Ron Sokacz and Fred Engelman. There will be a special flying session on November 26 from 2-6PM for $15. David is also working with Ultimate Soccer for a special end of the year flying session with the exact date TBD.
- The club recently purchased a used (excellent condition) Kubota diesel tractor for $8,600. The current market value of this tractor is estimated to be approximately $20k. Thanks go out to Steve Fredericks and Marv Middleton for researching and acquiring the tractor. Thanks also go to Marv for storing the tractor this winter. David also reported the old tractor is being sold for $1,500.
- A review of the financial statements was given by David Wendt. The review included our 2010 financial year expenses and compared them to the budget. In summary, when the purchase of the tractor is considered, the club broke even for the year. Joe Hass made a motion to accept the financial statements as read. It was seconded and approved.

The elections for the 2011 year were conducted and your new officers are:

- President – Greg Cardillo
- Vice President – Neil Krohn
- Treasurer – Bob Donohue
- Secretary – Dan Stolz

Show-N- Tell included some interesting subjects.

- Champ w/floats – Pete Foss showed his Parkzone Champ with a pair of 10 gram floats from Dan Schwartz at foamfly.com. Pete has increased the control throws of the rudder and elevator to get it to work smoothly. Pete reported it flies well off water.

- Spitfire by Kyosho – The finish on this plane is great. Joe Hass showed us a beautiful Spitfire weighing 29 grams. It is available as a Ready-To-

- Micro jet F-15 – Joe Hass showed us a 1.7 oz. foam F-15 from Teerific Jets. It contains a Spektrum micro receiver with two servos. One servo controls one side of the elevator and ailerons with the other servo controlling the other side of the elevator and ailerons giving him elevons.

Fly for $130 or Plug-N-Play for $99. Both include an extra prop and spinner. Also included is a 325 mAH 2 cell battery. Joe reported it flies very scale like.

- eMoth from Retro RC - Greg Cardillo shared a very interesting aircraft that was recently featured in a review which appeared in the December 2010 issue of Flying Models. It has a 32+" wingspan and weighs 17.2 ounces with battery, Rimfire 370 motor and four servos. Greg modified the hatch to better allow him access to the battery and the 6 channel Airtronics Parkflyer receiver. The wings have a unique characteristic which includes being able to quickly adjust them for either sport flying or a more gentle "float" flying. The tail feathers are removable and the landing gear is shock absorbing. Greg reported she is a great flyer.

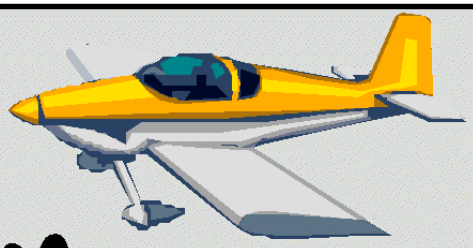
- 1913 Curtis Flying F Boat – John Hakala discussed his very unique scratch built airplane that has the ailerons between the two wings. John has three flights on her using either wheels or floats. Based on his experience with the floats and water spray, John is going to install some chines to help keep the fuselage and radio equipment dry. John is using an eFlite 46 motor, 75 amp esc and a 4500 mAH 5S battery.

- F-86 by Hobby Lobby – Greg Brausa showed us his foam F-86 with a couple of modifications. Greg has put a skag on the nose so he can do take offs from the ground. He has also installed rudder control and an 1800 mAH Hyperion battery. Very nice job Greg.
- 38% Great Planes Extra 330 – Wow, BIG and Beautiful describes this aircraft! Greg Brausa discussed one of his latest aircraft. It includes a DA-150 engine with custom headers and exhaust, Hitec servos except the rudder which has a JR DS8711. The Extra 330 is controlled by a new JR 11x transmitter using the four aileron option on the 11x. This feature alone saves about $140 because it eliminates the need for a MatchBox.

Joe Hass was the winner of a gift certificate for Show-n-Tell while Ed Saumier won $31 in the 50/50 drawing.

Submitted by:
Dan Stolz, Skymasters Secretary

BLADE WASH...



Joe Finkelstine

HI All,

Well, this month I continue with explanations of RC helicopters and how we can get along somewhat peacefully with them. Last column we looked at the rear of the heli and talked about the tail; This time we will look at the main blades and how they work.

The main blades of an RC heli provide the primary lift for the heli and also are used to control all of its motion not directly related to yaw control (that is primarily the tail blade's job). The main blades certainly create forces the tail needs to coordinate with, but we will essentially ignore that portion for this article. I also would like to talk about what the main blades do, rather than how they are mechanically controlled. An article on main blade control (swash plates, mixing levers, etc. could be a separate article in itself!). For now, let's just talk about what the main blades do to control our heli.

Let's review our airplanes for a minute. We have pitch (elevator) that controls our up/down attitude, aileron controlling our roll, and rudder controlling our yaw. Further we have a prop on our planes producing lift (thrust) with the total thrust based on a combination of RPM, pitch, and diameter. If your remember, we describe our airplane props with 2 numbers, one being diameter, the other being pitch. For example, a 14-8 prop (something I used to run on my O.S. 91 Surpass before I sold it to Chris Hall) can be thought of in this way. the "14" in 14-8 refers to the diameter of the prop from tip-to-tip. the "8" in 14-8 refers to the theoretical pitch. I say theoretical, because the pitch for our props refers to how far forward our prop would move in one revolution if it had no slip, or drag. In our example, the 14-8 prop would move forward 8" in one revolution. It is also helpful to think of our airplane props as moving a disc of air in one revolution. the 14-8 prop would "make" a cylinder of air 14" in diameter and 8” high in one revolution. Different props change either diameter (more diameter usually means more acceleration at the expense of top end speed) or pitch(more pitch means higher top end speed at the expense of acceleration). Also, to conclude my airplane discussion, the lift (thrust) vector of the prop is always aligned out from the prop and 90 degrees to the blades (on the engine crankshaft line). We change the direction of the plane using elevator, rudder, aileron, which causes the airplane to rotate about its CG - The thrust from the prop though, is always orthogonal to the plane of the blade pointing away.

Now why did I spend so much time on the plane example above? - These same forces and controls all happen with the heli, just in a different way. The main blades in our helis supply the lift (wing), but also supply the rotation forces equivalent to elevator and aileron (tail blades get the job of the rudder). How they accomplish this is the rest of the story.

The first thing to discuss is a term used in the heli world called collective pitch, or more often just collective. This is somewhat equivalent to the pitch of one of our propellers, but with one key difference. On a heli (except for small fixed pitch electric helis) the pitch of the blades is variable. On a airplane prop, the pitch is fixed. On a heli both blades can have their leading edge raised relative to horizontal, giving the blades positive pitch, and they can also be given a pitch pointing below level (negative pitch) Both blades are given the same lift (i.e. "collectively") and this collective pitch of the blades provides the primary lift of the blades when they are spinning. Just like an airplane prop, the faster we can spin the blades (keeping pitch constant) the more lift they will produce (up to a point).

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Most heli blades are symmetrical or have a small camber to them. With an airplane with a symmetrical wing, it is necessary to rotate the plane to a positive angle of attack to get enough lift to fly. Likewise, with most helis; it is necessary to give our heli blades some positive angle of incidence to overcome the weight of the heli (upright flight for now!). For many helis, our main blades need to be at about 5-6 degrees positive incidence to hover upright. If we want to fly inverted, we give our blades about negative 6 degrees pitch and we can hover inverted (maybe you can, but not me yet!).

So collective pitch is analogous to the pitch on our airplane props, but how do the main blades mimic elevator and aileron forces? - Well, our main blades have another trick up their sleeves and it is called cyclic pitch.

The term cyclic pitch derives from the behavior of the blade pitch during one cycle of rotation. Cyclic pitch is caused by each blade changing pitch during one rotation (cycle) to impart a fore-aft (elevator) or left-right (aileron) to the heli. As each blade revolves around the main shaft, cyclic pitch control causes the blade to change its pitch, which cause a change in lift while it goes around. If the blade was kept at constant pitch during the whole cycle, it would not produce any rolling or fore-aft forces. So to impart a roll (aileron) or a pitch (elevator), we change the pitch during each cycle. The change in pitch is maximum 90 degrees from the desired force to be created. Let's say that the pilot pushes the right stick on his radio to the right (right roll for a plane). This will cause each blade to go to maximum pitch (assuming clockwise rotation) when the blade is right over the tail boom (90 degrees before the desired rotation).

The reason the blade changes to maximum pitch 90 degrees before the desired rotation force is from your old high school physics class. A gyroscope will respond to a force by reacting 90 degrees to the force (for those of you who are not satisfied with my explanation, remember the torque on a rigid body is usually defined as the radius vector crossed into the Force vector at the point of force application).

Now, while one blade is moving to maximum positive pitch, the other blade is going to maximum negative pitch (acting like ailerons). The net effect of this stick movement is to create a rotational force that causes the heli to rotate about its CG to the right. So the equivalent elevator (nose up or down,) and aileron (left right roll) commands are all done with cyclic pitch.

As you might imagine, the mechanics of getting the blades to do cyclic pitch, along with collective pitch are complex and are the domain of the swash plate and all those crazy arms and levers you see whirling around.

Often, when discussing heli set up, a pilot will be asked what his/her collective range is. This is referring to the maximum positive and negative pitch, measured from level. For many helis, this range is typically around 10 degrees positive and 10 degrees negative for aerobatic flight. In addition, the cyclic pitch is also discussed as a measurement. Often the cyclic (maximum) pitch is an additional 6-8 degrees. If we think of the extremes of all these measurements, we can come up with a single number sometimes referred to a pitch window - in my above example the maximum theoretical pitch of the blade would be full collective and a full cyclic command 10+8 degrees. This is a window of 18 degrees (some might say the window is actually twice that because of the inverted equivalent, or 36 degrees)

So the main blades on a heli take the place of the wing, elevator, and the prop (remember the tail rotor handles the "rudder" chores).

To recap, when both blades have their pitch set together, that is called collective pitch and it affects the total amount of lift the blades are producing. Collective pitch is analogous to the pitch of your airplane prop, although one big difference is that we can make the blades reverse pitch and provide "negative" list to allow us to fly inverted. In addition to collective pitch, the blades individually have their pitch changed during rotation (or cycle) that impart pitch and roll forces, and that is referred to cyclic pitch, or just cyclic. Our main blades are quite busy holding and changing pitch whilst whirling around at near 2000 RPM.

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Now that I just spent all that time talking about collective and cyclic pitch, let's look at some examples of when they are not both present, or at least not controlled in the same manner.

Many of you fly the small fixed pitch helis, typically the coaxial heli (Heli with 2 main blades that rotate in opposite direction). In coaxial, the pitch is fixed and the total lift is set by rotor speed. To hover one of these, you have to spin the blades at the right speed to generate just the correct lift so it will hover. If you add more throttle, the coaxial will lift because the blades generate lift by rotating faster. Collective pitch is fixed on this type of heli. Incidentally, these coaxial helis also use a different method of "rudder" control. The coaxial uses a completely different mechanism since they don't generally have tail blades. By spinning the two main rotors in opposite directions, the net torque on the heli is effectively canceled and the heli will not rudder left or right. When you initiate a rudder command on a coaxial, it actually slows one of the two rotors down (or speeds one up) to create a net torque which then turns the heli. They are stable and fun helis to fly. I particularly enjoy flying them at our indoor field, especially when I get to borrow it from someone else!

There are also some smaller helis that have fixed pitch main blades like (just one set though), and a motor driven tail (I think the original Blade was like this. *My original Piccolo was as is my Blade MSR. - Pete*). Just like the coaxial, these fixed pitch single rotor helis generate lift as a function of rotor speed. Obviously, since the pitch is fixed, it is not possible to hover inverted with one of these types of helis, as the pitch can't be made to go negative. Another interesting behavior of these helis is that the lift sometimes falls off quickly as the main blade speed decreases. If you drop the throttle too fast on these helis, they often respond with a very rapid descent. The main blades of a heli and their control are actually a very interesting study in mechanical engineering. See you at the field!

Radio Control Club of Detroit
Presents their

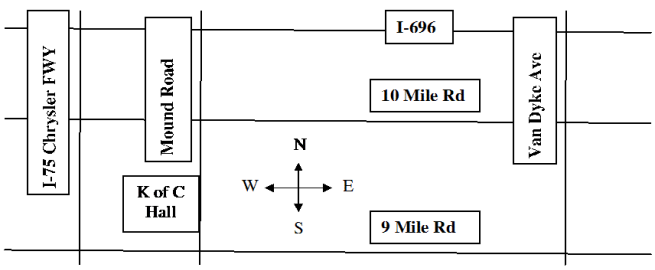
"15th Annual Swap Meet"
Sunday January 23, 2011

Time: Open 9:00am – 1:00 pm
Location: Same as Last year!!!!
Knights of Columbus Hall
23695 Mound Rd
Warren, MI 48091
[1/3 mile North of 9 mile on the west side of Mound Rd]
(See map)
General Admission:
Adults - $3.00,
Children under12yrs old - $1.00
Children under 5 – FREE!
Free Parking
Door Prizes drawn every ½ hour
50/50 Drawings, Special Raffles all day

Food and Refreshments: Waffle Breakfast 9:00 – 10:00. $2.00
Lunch to follow

Contact: To reserve tables or for any other inquiries contact: Bob Hunt – 313-920-2329 or rahuntbuilders@gmail.com

Vendors: Tables $20.00 each **(includes 1 admission per table)** $18.00 if payment is received by Jan. 9th. Table setup at 8:00 am. Vendors requested to stay until noon.



More Info: www.rccd.org

From The Editor

Well guys it's been fun doing the newsletter for the last 5+ years but it's time for me to let someone else take over. Mark Smith has agreed to take the newsletter back as of January to free me up to do other things for the club.

I'd like to thank the past presidents and secretaries for their input over the years (Joe Hass, David Wendt and Dan Stolz), Joe Finkelstein for Prop Wash and Greg Cardillo for gigabytes of great pictures to work with. Finally, I can't forget Carolynn for all the proofreading, folding, taping, stapling, stamping, putting up with me, etc…..

Pete

PS. See you all at the Christmas Party, indoor flying, Crazy Snow Fly, etc.

PPS. If you are into rock and roll and would like to support Toys for Tots, come out to the Oakland County Sportsman's Club on Dec 5th. My band plays at 6PM.

http://www.myspace.com/urbannomadsmichigan

http://www.ocsc-mi.org/images/flyers/toysfortots2010pdf.pdf

Skymasters R/C Club

We'll Teach you to fly!

Join the Skymasters Radio Control Club for an R/C Aircraft Event

Krazy Snow Fly!

Friday December 31, 2010

Bald Mountain Scripps Road Fie

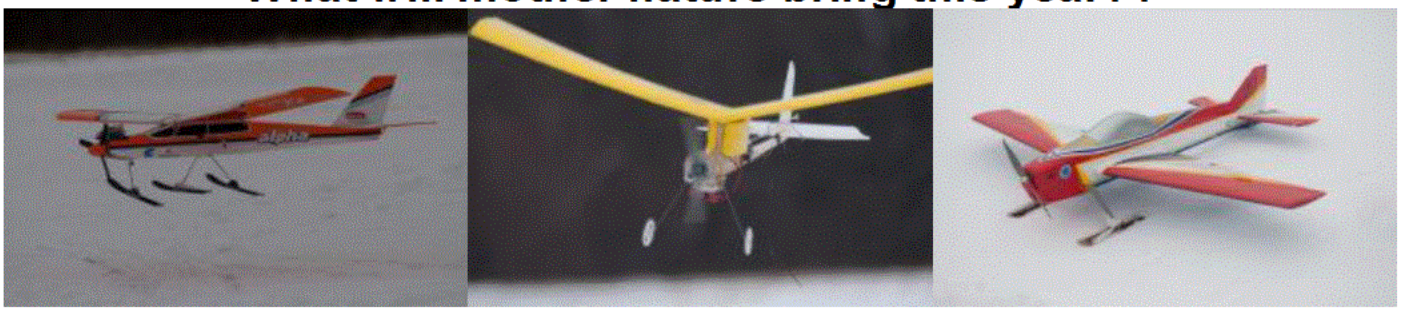
Event Flying starts at 10am

Flying open to AMA members.

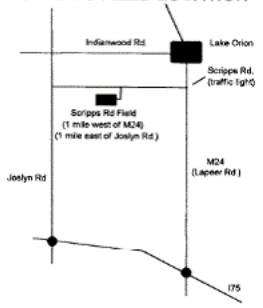
94dBa at 10 feet enforced.

Public Welcome!

What will mother nature bring this year??



SCRIPPS FIELD LOCATION



- Lots of Parking
- Refreshments available at event
- Toilet located at field
- Great chance to see this exciting hobby!

No Landing Fee
Pilots Prizes!

Flying field is located within the Bald Mountain Recreation Area, about 5 miles north of the Palace of Auburn Hills on Scripps Road between Lapeer Rd (M24) and Joslyn Rd.

All cars need annual/daily State Park sticker – available at event.

For more information call Paul Zabawa 810-678-3332

Visit our website at www.skymasters.org

UPCOMING SKYMASTERS EVENTS

Winter Weather Reminder

Our meetings are dependent on the status of the Troy School District. If Troy Schools are closed - or cancel after school activities, our events are cancelled as well. Please check local radio and TV stations for status. We will update the site as soon as possible in the event of a cancellation.

Winter Indoor Flying! - Tuesdays Thru the Winter

Ultimate Soccer Arena, 867 South Blvd, Pontiac, MI - 11:00 AM

Located just west of Opdyke, on the north side of South Blvd - a 365 ft by 260 ft facility with ceilings from 45 to 75 ft available for indoor flying from 11am to 1 pm!! Ample room for concurrent flying of 3D, Heli, and Sport. Purchase 5 sessions for just $30 or season pass for all 23 sessions for just $100(available at event) Single sessions available for $15. Temperature controlled, well lit. Restaurant on site.

Retiree and Want'A Be's Breakfast - Monday, December 6, 2010

The Red-Olive Restaurant, 1194 Walton Blvd, Rochester - 9:00 AM

First and third Monday of each month throughout the winter - Join us for breakfast and R/C talk. (located in the new strip mall directly across the street from Crittenton Hospital on Walton Blvd. just east of Livernois.) Restaurant features a $3.59 breakfast special and all of their omelets are $3.95 on weekday mornings. Contact Sherman Dickson or Fred Engleman for more information.

Skymasters Christmas Party - Wednesday, December 8, 2010

Larson Middle School. 2222 E. Long Lake Road, Troy - 6:30 PM

Our annual Christmas Party. Bring the family for food, fun, and a visit from Santa with gifts for the kids!Social time with Appetizers starts at 6:30. Pot Luck Dinner at 7:00.. Santa visits after dinner!!

Retiree and Want'A Be's Breakfast - Monday, December 20, 2010

The Red-Olive Restaurant, 1194 Walton Blvd, Rochester - 9:00 AM

First and third Monday of each month throughout the winter - Join us for breakfast and R/C talk. (located in the new strip mall directly across the street from Crittenton Hospital on Walton Blvd. just east of Livernois.) Restaurant features a $3.59 breakfast special and all of their omelets are $3.95 on weekday mornings. Contact Sherman Dickson or Fred Engleman for more information.

***NO Meeting* - Wednesday, December 22, 2010**

School Closed - Christmas Break

Krazy Snow Fly - Friday, December 31, 2010

Scripps Road Field, Lake Orion - 10:00 AM

Our last event of the year! Whether snow and ice; or maybe a sunny day - one of our most popular events. Come join us for some hot chili and weather permitting - flying to end the year.

Skymasters Apparel

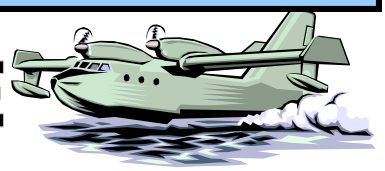
To order Skymasters hats, shirts, jackets, etc. please call Creative Embroidery at (248) 628-9351 or creativeemb@att.net

SKYMASTERS RADIO CONTROL CLUB OF MICHIGAN

Pete Foss
562 Tanview Dr.
Oxford, MI. 48371

Web site: *www.skymasters.org*
Email: *newsletter@skymasters.org*

PHOTOTOGRAPHY by
Greg Cardillo and Pete Foss

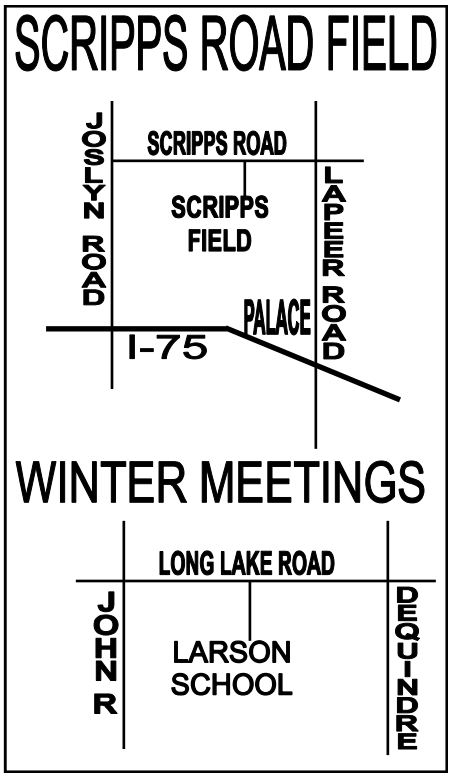


HOME OF THE "MIDWEST REGIONAL FLOAT FLY"

Skymasters Information……

Skymasters field is located within the Bald Mountain State Park on Scripps Road (see map). State Park Permits are required and can be obtained from the Park Headquarters located on Greenshield Road or at club events. Flying is permitted from 10 AM to 8 PM. The noise limit is 94 dBa at 10 feet—this noise rule is strictly enforced.

In the summer, Wednesday evenings are Student Nights and there are usually instructors around all night is also a pot luck buffet, bring something for the grill & a dish to pass. Meet the Instructors and arrange for more instruction time together on other days. Our Chief Flight Instructor is Ron Sokacz (586) 977-1404.



From June to August, Club meetings are held at the field, on the second Wednesday of the month at 8 PM . A great chance to fly and socialize. Winter meetings—September to May—are held at Larson Middle School (on Long Lake just east of John R—see map) on the second and fourth Wednesday of the month at 7:00 PM. Bring a model for Show and Tell, enjoy coffee with donuts and listen to the speaker of the evening.

The Skywriter newsletter is sent to members, local hobby shops, and other R/C clubs in the area and around the country. All contributions are welcome. Please send articles to the Editor. If you know of anyone who may be interested in R/C Aviation, please give them a copy of this newsletter or a copy of an AMA magazine. It may spark their interest!