


The Transmitter

Suburban RC Barnstormers - P.O. Box 524, Bloomingdale, IL 60108

AMA CHAPTER 640

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March 2006

<http://www.suburbanrcbarnstormers.com>

Coming in March and April

- March 13th, Club Member Meeting, 7:00pm, Bloomingdale Library
March 16th, Dome Fun-Fly, Free Admission, Free Pizza! - 11:00pm - 1:00am
March 18th, Dome e-Night Fly, 11:00pm - 5:00am, Vendors, Demos, Food, Fun, and MORE!
March 27th, Board of Directors Meeting, 7:00pm, Bloomingdale Library
- April 10th, Club Meeting / Static Contest, 7:00pm, Bloomingdale Library
April 13th, Dome Fun-Fly, Free Admission, Free Pizza! - 11:00pm - 1:00am
April 15th, *** Swap Meet *** DUPAGE COUNTY FAIR GROUNDS
April 24th, Board of Directors, 7:00pm, Bloomingdale Library

March Entertainment PYLON RACING PHASE 1

By Scott Hurley

For everyone who signed up for pylon racing, don't miss the March meeting! With the help of Jim, Jeff, and P.J. all of the planes will be ready for the March Meeting. Those of you wishing to decorate your planes need to do the following:

- 1) Bring your \$20.00
- 2) Bring scissors, razor knives, and a straight edge if you have them,
- 3) Bring a sketch of your idea to help Jeff get the vinyl cut quickly.
- 4) Try to arrive at 6:00 P.M. if possible.

I will have several colors of vinyl available to choose from. We will be building 25 planes. This should leave 7 extra planes for any club

members who are up to the challenge but did not sign up yet. Any extra planes that are left can be purchased as backups.

This event is off to a great start! I want to personally thank Jim, Jeff, and PJ for all of the hard work that has gone into this project. These guys have given about 4 days of their time to get all of these planes built, so give them a big thank you when you see them. I also want to thank all of the club members who are participating. This is what keeps a club alive, active, and most of all fun. See everyone at the March meeting.

Scott Hurley

April Entertainment – Static Aircraft Display

Just a brief reminder. The annual static display and competition will be held at the April meeting. So get those ARF's, dome

flyers, and sport planes ready for show! There will be fun, prizes, and Planes, Planes, Planes!! More to follow...

2006 Fuel Sale

By Bob Elsner

Al's Hobby Shop is having their annual fuel sale and once again I'm taking orders for anyone who wants to save a few dollars on fuel for the 2006 flying season. I passed around an order form at the February meeting and will do the same at the March meeting. If you're unable to be at the March meeting and would like to order, you can do so by sending me an email at srcbarn@aol.com or send it to our P.O. Box. I must receive your order no later than 3/31/06. All quantities are in gallons. There are four gallons to a case, so if you

want 1 case, please indicate 4 gallons, two cases put 8 gallons, etc. If you only want one or two gallons, that's fine too. I'll have the fuel for delivery at the April meeting. I will bring any remaining ordered fuel to the Swap Shop and you can pick it up there. I'll send an email to all who order with the final price for their order. Prices include sales tax. Please pay when you pickup your order. Thanks.

Bob Elsner
Treasurer

Cool Power or Omega	Regular Price	5-Case Price	12 Cases or More Price
10%	\$12.99	\$10.99	\$10.79
15%	\$14.99	\$12.09	\$11.79
Wildcat			
10%	\$13.99	\$10.79	\$10.59
10% Extra	\$13.99	\$10.99	\$10.69
15%	\$14.99	\$12.49	\$12.09
15% Extra	\$14.99	\$12.69	\$12.29

Fun Fly Score: Balloons 11, Pilots 9

By Mert Mischnick

Return with me to the days of yester week when the nighthawks of the Suburban R/C Barnstormers plied their skills against the Helium Hellions. To those times when the Knights of the night sallied forth to conquer the Demons of the Dome, only to be beaten down time and again by the horrendous Helium Stalwarts who stood their ground (actually were tied to barrels). In the end, our side (the good guys) had only busted 9 balloons, while the Helium Hellions snatched 11 planes from the air.



Can you imagine, Balloons tied to barrels by flimsy ribbons brought down more planes than the planes brought down balloons! In one heat there were three, count them, three planes at the feet (barrel) of one balloon, and the balloon was still standing in defiance! (floating on it's tether). **Andy Petlack**, is a brand new member and an experienced 3D flyer, but the Helium Hellion took him down on his second pass.

We had 20 barnstormers out for the February 16th Fun-Fly so we had 4 teams of 5 pilots. Each team tried to break all 4 balloons within the 5-minute time limit. The only team to finish the job in less than 5 minutes was team #1. **Carl Barshop** was the hero, flying a Blue Stick (the Dec. club meeting project). He finished off the last 2 balloons by himself, after the rest of team #1 was out of commission. The team #1 time for 4 Balloons was 3:50.06. The other 3 teams had 5 minute max times with only 1 or 2 balloons busted. Hats off to team #1: **“Smitty” Smith, Tom Lyons, Carl Barshop, Dan Batteryman, and Mert Whatzizname.**

The night started off with Pizza, Pop, and Chips then some open fly time. Next, the seemingly simple task of 5 planes trying to bust 4 tethered Helium balloons. The grand finale was a super free raffle with goodies like a BP12 brushless electric motor with a 25 amp speed control, both donated by True RC, a high speed zip cutter (a small hand held router-like electric cutter), and a folding work bench with a built in vise. We have some good goodies! If you are not into this late night flying, you are missing a lot! This month we had 20 members who thought the festivities were worth the lost sleep. Food, Fun, and Freebies...what a terrific combination.

March 16 Dome Fun-Fly – Get ready!

By Mert Mischnick

Here come da indoor DOME PYLON RACING. Lotsa speed ? Lotsa action ? Lotsa FUN fer sure, fer sure good buddy!

Rules:

1. Any/all of the following rules are subject to change without prior notice...per precedent set at prior funflys -
2. Model - Blue Stick / Slo-Stick / Yard Stick / Ugly Stick / Match Stick
3. Battery – 2 cell LiPo (or 7 cell NiCd/NiMh)
4. Prop – 10 x 4.7
5. Must R.O.G. (Rise off ground, no hand launch)
6. Two Heats of 10 laps
7. Top 5 point scores run off in the final race, which will be a FIGURE 8 around the pylons.
8. Scoring - 10 points for first place, 9 for second etc. in each heat. 1 point deducted from score for each cut pylon.

9. The decision of the Contest Director is final...unless he can be talked out of it.
10. In case of bewilderment, confusion, disorder, mix-up, perplexity, uncertainty, mystification or puzzlement, refer to rule #1

No excuses. We built 25 of the Blue Sticks at the Dec. '05 meeting. They should be trimmed out by now and ready to fly. This is about as close to a 'one design' race as it is possible to get. We have an incredible number of identical models, and they all fly very well. Beginner or Hot-Shot has an equal chance in this race. We had loads of fun with a large turnout at the last Pylon Race, and we expect a super time again.

As usual – Pizza, Pop, Prizes, FREE DOME FLYING TIME, and FUN. Mark your calendar, March 16, charge your batteries, set your alarm, take your nap and be there!

DOME E-NITE FLY - March 18, 2006

11:00 PM – 5:00 AM

White Pines Golf Dome

By Jeff Peca

The plans for our first AMA sanctioned indoor Fun Fly are almost complete. Help is going to be needed for setup, registration, admission, frequency control and refreshments. We plan on arriving early in the evening to put up sponsor banners and tables. We will begin registration in the restroom building. It is important that we are not a distraction for the

golfers. At registration there will be participation signup sheets for anyone interested in combat, lights out fly, pylon etc. The events will be determined by level of participation. There will be time allotted for scale or other valuable/fragile planes as well as 3D and helicopters. This fly-in is an event for

PILOTS. Most of the time will be open flying with a few demos thrown in.

A couple of the sponsors have requested a table to sell supplies. If you need parts during the fly-in, one of the vendors should be able to help. Whether you come out to help, watch or fly, you are guaranteed to see some great flying and interesting aircraft.

The following is a list of our sponsors. Please keep them in mind next time you need supplies:

Al's Hobby Shop
His & Hers Hobbies
Hobbytown USA
PitsBros.com
Strictly RC
True RC
Venture Hobbies

The cost will be \$15.00 for flyers and \$5.00 for spectators. The price will include food and beverages.

Notes of the Barnstormers Meeting

February 13, 2006

Attendance

Thirty-six members were in attendance, and three visitors, **Greg and Josh Ostdick** and **Jim Hansen**.

Officer Reports

President: Jim Scahill called the meeting to order at 7:25 PM and welcomed new members and guests.

Vice President: Orvil Fluharty showed the door prize and the roll-over prize was not won last month, which is a complete electric kit, which includes kit, engine, speed control, battery, etc.

Secretary: Ruth Egging handed out membership cards and badges.

Treasurer: Bob Elsner said that there was a \$2,889 balance in the bank. He had applied for the AMA Insurance Certificate and seven field permits with the Forest Preserve. AMA is requesting the GPS coordinates of the field.

Fuel Sale: Fuel will be \$.30 - \$.40 per gallon higher than last year. Bob will take orders through March 31st.

Committees

Fun Fly: Dave West state that the Fun Fly's are on track.

Swap Shop: Debbie Howe stated that 34 tables had been reserved. A sign up sheet will be sent out at next meeting. Volunteers will be needed at 6 AM the day of swap shop as well

as in the evening prior to swap. It was decided to serve Hot Dogs this year without using the kitchen. No additional insurance would be required.

Dome Flying: Mert suggested a special event. This would be an all night dome flying event on March 18th from 11PM to 5AM. **Jeff Peca** suggested that hobby shops sponsor the event. Special events will happen throughout the night, such as combat, fly in the dark, etc. The cost per pilot would be \$15 and spectator would be \$5. Members with season passes would be \$5 for food.

The upcoming dome fun fly will be a team balloon bust.

Ralph Niedzwiecki wanted to thank Jeff Peca for all his training efforts for Ralph.

Flight Instruction: Flight Instruction will start in May and will be 11AM to 2 PM on Sunday's. Should anyone require another time to let **Jim Scahill** know or there are pilots at the field that will be glad to help.

Old/New Business:

Debbie Howe suggested that we have Cindy come in to talk regarding the changes at Al's Hobby Shop.

Pylon racing: Scott Hurley said that the airplanes are nearly ready and planning on decorating them at the next meeting.

Spad Fest is right on schedule.

Glen LaRocco recommended that when planning on purchasing the higher priced items that Venture or other hobby shops may be less expensive than Al's. Always a good idea to check out prices before buying.

Special Guest Speaker: Dan Naumowicz
Dan had an informative discussion regarding lithium batteries which included charging, storing and disposing. We all learned a lot.

Airplanes

Ron Hilger brought in a Cub that used to belong to Hugo Mosquera which he had rebuilt. **Jerry Jeske** had a Freshman 19 control line airplane and a Douglas Dauntless with a Cox 09RC.

John Howe brought in a Twin Star ARF.

PJ McNiece won the door prize and **Tom Lyons** won the turkey.

From the Albuquerque Radio Control Club, Albuquerque NM

Basics of Electric Flight

by Pat Tritle

I really enjoy getting together with clubs and speaking to the group about the basics of electric power. However, because there is so much information that needs to be passed along, it would be difficult, if not impossible, for those attending to remember much of the pertinent information. For that reason, it's better to write up the basic guidelines so that those who are interested in getting into electrics would have the information available for reference at a later date.

OK, here's how it all shakes out. The basic power required to fly an electric model is as follows:

Direct Drive Systems 60 watts/pound
Gear Drive Systems 50 watts/pound
Mild aerobatics 70-80 watts/pound
For all-out aerobatics 100-110 watts/pound
3-D performance 150 watts/pound or more

The above numbers are based on models with wing loadings from 8-16 oz/square foot. As with gas models, higher wing loadings require more power since they must fly faster to support the added weight. By the same token, a lightly-loaded model with a wing loading in the 3-5 oz/square foot range will fly very well at 25 -30 watts/pound.

What's a 'watt'; and where can I get some? Wattage is the term used in electric flight to relate the level of power that an electric drive system will produce. To relate it to terms we're familiar with, 746 watts = 1 horsepower. To calculate the wattage delivered by a given system looks like this: amps x volts = watts. So

where do these numbers come from and how do I know how many volts and amps are needed to fly a given model?

Okay, let's say you want a mildly aerobatic sport model with a 14 oz/square foot wing loading that will weigh in at 2 pounds. We already know that the power requirement for a model like this is about 70 watts/pound, so we're going to need to generate about 140 watts. Let's assume that you are going to use an eight-cell Ni-Cd battery. At 1.2 volts per cell, eight cells will deliver 9.6 volts. To arrive at the necessary current draw to achieve 140 watts, simply divide 140 (watts) by 9.6 (volts) and you arrive at 14.58 amps.

Now, let's assume that you have a three-cell Li-Poly battery for the model, which is rated at 11.1 volts. The formula is the same; 140 (watts) divided by 11.1 (volts) = 12.6 amps. As you can see, as the available voltage increases, the lower the current draw needs to be to deliver the necessary wattage.

Now here's something to consider when selecting your system: the higher the current draw, the shorter the flight duration on any given battery. Therefore, the ideal setup would be to use a higher-voltage battery with lower current draw for maximum duration. On the downside, when using Ni-Cd and NiMH batteries, as the cell count goes up, the weight will increase significantly as well. It works that way with Lithium too, but Lithium batteries are dramatically lighter than the old "round" cells.

Okay, let's say we're going to use an 11.1 volt Li-Poly battery. All we need to do now is select a motor that will swing enough propeller at 12.6 amps to fly the model at a top speed of around 40-45 mph and we're in business. Now that you know the parameters, visit your local hobby shop and select a motor that fits that description.

Gear Drive vs. Direct Drive: Why is one better than the other? Well, it all depends on the kind of performance you're looking for. If you're looking to go fast, go with direct drive. Going fast requires a high-pitch propeller turning high rpm. The formula to calculate propeller pitch speed is an easy one; it looks like this: $\text{rpm} \times \text{pitch (in inches)} / 1056 = \text{mph}$.

Let's say that you are turning a 7-6 propeller at 14,000 rpm. $14,000 \times 6 = 84,000 / 1056 = 79.55$ mph.

Now, let's assume you are setting up a slow, relaxing park flyer with about a 5 oz/square foot wing loading. If we swing a 9-7 propeller at about 3,500 rpm, we'd be looking at a top speed of roughly 23 mph. To swing that much propeller with a small, light drive system, we would use a gear drive unit at a very low current draw and a small, light battery.

Again, to make a known comparison, we can relate all this to riding a 10-speed bicycle. A gear drive swinging a big propeller is like riding your bike in low gear. You pedal like mad with little effort, you don't go very fast, but you can climb steep hills with ease. The direct drive system could be compared to riding the bike in high gear. It'll really go fast, and even though you're pedaling slower, it requires considerably more effort.

What all this boils down to is "propeller disc loading." We all know what wing loading is: it's the amount of the model's weight that each square foot of wing must carry. Prop disc-loading works the same way. A large propeller will be more lightly loaded, thus delivering more torque than a smaller propeller turning high rpm. The tradeoff, of course, will be speed.

One more thing to cover and we'll give you a rest. Batteries are rated in "voltage" and "amperage." Voltage dictates the amount of

power the battery will deliver. The amperage rating dictates for how long the battery will deliver that power. To relate that to glow fuel, consider the voltage as nitro content. High voltage (nitro) means more power. The amperage is related to the quantity of fuel, or simply the "size of the tank."

To figure the size of battery needed, let's go back to our 140-watt sport airplane. If we're pulling 14 amps from a 1400 mAh (1.4 amp hour) battery, we will have full power duration of five to six minutes. In the real world, with proper throttle management, you'll see flight times of approximately eight minutes. These are common flight times, even with liquid-fueled models.

To arrive at that number, divide the battery amp rating by the current draw: $1.4 \text{ (amp hours)} / 14 \text{ (amps)} = 0.1$. Then take 60 (minutes per amp hour) $\times 0.1 = 6$ minutes. Now, to double the duration, you must either cut the current draw in half (to 7 amps), or double the battery size (to 2800 mAh or 2.8 amp hours)—again we see tradeoffs. To reduce the current draw, we can use a larger, higher-pitch propeller turning slower with very little weight penalty. If we double the size of the battery capacity, the weight penalty is quite high unless we go over to the new Lithium batteries in which we will discover we have benefited from a tremendous weight reduction, but at a higher price than conventional batteries.

Okay, I promise I'll quit before we all end up in "system overload." Once again, there's a tremendous amount of information here for a newcomer to electrics to digest, so let's do this: if you have specific questions about setting up an electric model, please feel free to drop me a line and I'll do what I can to steer you in the right direction. For now, I'll offer up one last piece of advice. To get started, work with a known good design, and use the recommended equipment that has been proven to work. Talk to the people who are successful and copy what they're doing. The one thing I do know about modelers is that they are always willing to share their knowledge with those interested in what they are doing.

Ed. This article is available on-line at http://www.modelaircraft.org/insider/06_03/05.html

The Transmitter

This newsletter is published monthly by the Suburban RC Barnstormers, Inc.

We reserve the right to edit all information forwarded to us. Permission is hereby given to reprint any article that we publish as long as proper credit is given.

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Articles must be received by the 4th Saturday of the month to be included in the following month's newsletter.

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