

TAILSPINNERS

Volume 52 Issue 4

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Editor: Anthony Puca



November MEETING

PLEASE NOTE!! The February meeting will be held at Ridge View Academy on February 6th, 2007 at 7:00pm.

If the gate is closed, drive to the right of the small building and press the button on the speaker box and when prompted state your name and state that you are with Mile Hi RC and are coming in for the club meeting. When you get to the main building, you will have to sign in, turn in your car keys, and get a visitors badge. They will then direct you to the meeting room. Come a little early to get through the security routine.

RIDGE VIEW ACADEMY IS A NO SMOKING FACILITY. SMOKING IS NOT ALLOWED ANYWHERE ON THE PROPERTY.

FLIGHT LOG FOR THE JANUARY MILE HI RC CLUB MEETING

Ridge View Academy Library - 7:00pm, January 9th, 2007

Puca, Johnston, Ballman, Warrington, Fyler, Kerr

- 1) Meeting Called to Order
- 2) Welcome and introduction of Guests or new Members
- 3) Quorum (Must have 14-15 members present, which represents 10% of voting members). Quorum met
- 4) Read & Approve previous meetings minutes - *Anthony Puca, Secretary*
- 5) Treasurers Report - *John Ballman, Treasurer*
 - a) \$xK in checking
 - b) Expenditures include toilets and trash
- 6) Investment Report - *Jerry Warrington, Investment Officer*
 - a) 49K in investments - Annualized 42% gain
- 7) Membership Report - *Mark Johnston, Vice President*
 - a) 130 members including life members
 - b) Anonymous member who donated snow blower was voted on and approved to be a life member
- 8) Contest/Events Committee Report
 - a) *Polar Fly report - \$175 net. 22 registered pilots. 10 were preregistered.*
 - b) February 10th, Wings Over The Rockies - *Bob Bergin*
 - i) *Simulators for RC flying*
 - ii) *Tour Guides lead by Tony Zang*
 - iii) *22 guys signed up*

- iv) *Guy from Boulder Aeromodelers is coming to demonstrate his radial engines he builds and will be running them*
- v) *Mark Dennis will be doing electric flying to music*

9) **Field Maintenance Report - Gary Brady**

10) **Safety Report - Chuck Brant, Safety Officer**

11) **Field Acquisition Report - George Kerr /John Neumeier**

- a) *Relocation to Fairgrounds - George Kerr*
- b) *Unanimous vote for moving to ACF*
- c) *Board needs to discuss how to get members to facilitate with field transition*

12) **Unfinished Business**

- a) *Club Guest Policy - Chuck Brant*
- i) *Members have to sign in guest and vouch for their AMA membership*

13) **New Business**

- a) *Old Tail Spinner flyer form 1990: \$519 in Savings and \$338 in checking. Balance was \$1848. Christmas Party location burnt down the day after the Mile Hi RC party.*
- b) *Awaiting a sufficient number of Spectrum radio owners before we pay to get a new set of slots setup in the radio impound.*

14) **Announcements**

- a) *Board Meeting - January 29th , John Neumeier's home*
- b) *Next Club Meeting - February 6th, Ridge View Library*

15) **Drawings (Hobby Store Gift Certificates & Fuel)**

- a) *Air Scharnell - Ballman*
- b) *Colpar - Bill Robinson*
- c) *RC Hobbies - Teisch Jr.*

16) **Program - Jan Scharnell, "Model Covering Tips"**

17) **Meeting Adjournment**

=== END OF MINUTES FOR THE JANUARY CLUB MEETING ===

FLIGHT LOG FOR THE JANUARY MILE HI RC BOARD MEETING

Mile Hi Board meeting - January 29th 2007

1. Treasurer xxxx.xx in checking printer purchased Xerox 8550DN \$1300.xx with \$500 rebate. Ink cartridges purchased as well. Going to Anthony, John will have it tomorrow and will deliver. Normal toilet and trash removal costs.
2. Investment report, John read statement: \$xx,xxx.xx current balance
3. Polar Fly made \$150.08 Profit
4. Membership report 131 member including everyone
5. Discussion about John Martinez - we did everything to make it right. No one has heard from him since.
6. Contests and events: Wing over Rockies Feb. 10th. Aircraft have to be in there before 10 am.
7. John and George need to do lease agreements for fairgrounds and George needs to do sanctions.
8. Field maint. Checks went out to those involved in keeping it cleared.

9. Looking at a generator and solar battery setup. John is still researching photovoltaic options.
10. Need to determine what to do about the cooking area (missing roof section) if we don't go to Arapahoe. Will play by ear.
11. Safety: Nothing to report
12. Field Acq. Not much to report, George sent e-mail to county and hasn't had a response. We want an 800x800 runway with 80 degree azimuth nearest point of runway needs to be 125 ft. from spectator area, etc. John will send an e-mail to "gang up on them".
13. Need to send an e-mail to the club to find someone who can help out with the blacktop costs.
14. Anthony, track down Devon's last name from the last member meeting roster
15. Sam's club donated \$1,000, so we made more money than last year
16. New Business:
17. Volunteer point system: Mark would like to offer more points, but we're unsure if that would help. Trying to get more club member participation. This is unfinished business for the net meeting. We're considering using the \$150 for a pig roast or something to give back to the members. Giving back to the members has appeared over the last year to improve member participation. Need to come up with more ideas for member appreciation.
18. Brian O'Meara proposal for Warbirds Over The Rockies. See attachments. Jeffco's still going to do an event, but it will be scaled-down. The event cannot grow @ Jeffco, so Brian is moving the event. Brian has contacted the sponsors and Zap is already on-board. Brian is recommending Sept. 21-23 for the event.
19. We will have to discuss with Arapahoe County what our potential plans are and whether they can provide a facility. We can use things like the county charging for RV hookups, sharing parking funds, etc. as negotiating tactics. Brian wants this to be the premier warbird event in the country, and we need to find a way for the event to make money as opposed to how it was at Jeffco.
20. Brian needs a decision fairly quickly since there is national advertising (Model Airplane News) publications that will need the ads ASAP. George and John N. are going to step-up their communication with the county over the next week or so to see if we can come closer to guaranteeing a facility for such an event.
21. We will continue trying to get more solid runway costs. John and I will try to make some connections.
22. Jeffco auctions coming up.
23. New hobby shop in Longmont
24. Club meeting is the 6th
25. Tues. Feb. 27th is next board meeting at George's house
26. Program will be "Ridge View Robotics" by Chuck Brant & Ridge View Athletes.
27. We need to collect digital versions of the board member responsibilities. We'd create two separate binders with all of the club responsibilities and have it organized in a logical fashion.

=== END OF MINUTES FOR THE JANUARY MILE HI RC BOARD MEETING ===

NEWS

Polar Fly was a huge success!!! Pictures coming soon.

Basics of Electric Flight – Notes from the August Program - Roman Fyler and Electrics Basics...

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 aerobatic performance 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: rpm x pitch (in inches)/1056 = 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 $60 \text{ (minutes per amp hour)} \times 0.1 = 6 \text{ minutes}$. 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.

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.

CLASSIFIED

Mile Hi R/C Official Wear - Winter Jackets

Prices are as follows: S-XL \$60.00; 2XL \$61.50; 3XL \$63.00; 4X\$64.50; 5XL \$66.00 Prices do not include tax.

Winter jackets have your first name and AMA number on the front and the club logo on the back. The jackets appear to run on the small size so we recommend ordering one size larger than you normally wear.

Do you have other embroidery needs, Contact Phil, He can take care of all of your customized embroidery needs.

Contact Phillip Kenney
(303)369-7044
fargophil@comcast.net

Mile Hi R/C Official Wear

- ✚ Hats: Summer Edition (Mesh on top for venting) Blue, Club Logo up front \$12.00 Winter Edition (full twill) Blue with Club Logo up front \$12.00
- ✚ 3" Patches \$5.00
- ✚ All Items sold at Club Meeting!!

Editor's note

My email address for any submissions is Puca_Anthony@emc.com. If you have a new plane picture, a building tip, an item to sell, or anything else that might be of interest to your fellow club members, please let me know! Also, if you have sold any of the items or want to update any of the items currently shown in the classifieds, please let me know so I can make the appropriate changes.

These local businesses support our club through donations and discounts on material for the club. Please show your appreciation of by giving them your business.

 The logo for Air Scharnell features the name in a stylized, blue, cursive font. To the left of the text is a graphic of a propeller and a wing.	<p><i>Air Scharnell</i> 6276 East Pine Lane Parker, CO 80134 (303) 617-9777</p>
 The logo for Colpar Hobbies shows a black and white line drawing of a model airplane in flight, positioned in front of a stylized mountain range.	<p><i>Colpar Hobbies</i> 804 S. Havana Aurora, CO 80012 (303) 341-0414</p>
 The logo for Rocky Mountain R/C Hobbies has a blue background. It includes the text 'Rocky Mountain R/C HOBBIES' in white and red, with a small graphic of a model car. Below the text is the website 'mrchobbies.com'.	<p><i>Rocky Mountain R/C Hobbies</i> 700 South Buckley Rd. Aurora, CO 80017 (303) 671-5300</p>
 The logo for Metrolink Realty features the company name in a white, serif font on a dark blue background. Below the name is a small graphic of a pulse line and the website '.com'. At the bottom of the logo is the phone number '303-699-8577'.	<p><i>Metrolink Realty</i> (303) 699-8577</p>