

TAILSPINNERS

Volume 52 Issue 11

August 2007

Editor: Anthony Puca



August MEETING

PLEASE NOTE!! The August meeting will be held at Ridge View Academy on August 7th, 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 August MILE HI RC CLUB MEETING

1. Mile Hi R/C Members Meeting 8-7-2007
2. 7:08 called to order
3. Visitor Introduction - Dick ?
4. Minutes have been posted as usual - approved and seconded
5. Treasurer: Mile Hi Madness concessions \$147 for profit of \$38 with \$285 in registration fees, so total profit of \$323. Checking is \$4,137.58. Expenditures were normal bills.
6. Dawn Patrol event was brought up by Dave - Ballman thinks it broke even but didn't have the exact numbers here. Ballman will bring the numbers for the next meeting.
7. Investment report: balance \$49,792 Slight loss this month
8. Membership report: 139 members current - 123 voting members - Reminder about renewals due October 1st. Forms will go out September 1. Stickers for cards will go out again this year.
9. Dave wants to have jackets and shirts available, at least samples. Bob Bergin was in charge of this and it was difficult to stock. There had to be a certain number of jackets/shirts in a batch, and they didn't sell. Some were given away at events.
10. Contest/Event report: member appreciation day is the 25th, pig roast is on, will be a potluck as well.
11. Reunion demos - John N. got an e-mail from City of Reunion on Kites and Flights annual event. John and Bruno discussed doing demos over a 52 acre park. The street will be the runway. Members were informed they're welcome to bring out some models for static display. Reunion wanted to donate \$350 to Mile Hi, but John recommended they donate it to CP of CO. A check is on the way. 104th and E-470 at Tower Rd. www.reunionco.com Roman, Rich Dix, and Robert Plant are doing demos.
12. Sept. 22nd is Y.E. Banquet. Not gonna happen at Ridge View. White Fence Farms was suggested...need to call around to see what we can get. Took a vote to do it on Sept. 22nd, George proposed 5 o'clock. White Fence Farms was proposed. We will send out RSVP letters. The club has paid 50% of cost for member and 100% of cost for guests. Larry will send out e-mails/mailers and get the prices.
13. CP event is 15th of Sept. with rain day of 16th only if it's actively raining. Sandy went over details about media coverage, silent auction donations, etc. George wants to get the sign-up sheet up on the web site. Sandy said they're already \$300 over last year's total (over \$3,000). Sandy needs volunteers for silent auctions, help with media, etc. Sandy has flyers available.
14. September 8th will be a work-day at the field starting at 8 o'clock. This is also the Reunion demo day. Plan on getting a couple more carpports for shelter. Only using the E/W runway and putting the shelters and car

ports in the grass straight out from the pits. CP web site www.cpc.org & go to Aeroworks section.

Jeppeson is a sponsor. She will e-mail it to George and he will post it. Bob Bergin has Dan Daru's (Fox 31) number and will call him because he won't call Sandy back.

15. 7:41 - Check it out, BALLMAN JUST WALKED IN! ;)
16. John N. will see if we can get overflow parking @ Arapahoe County FG and he asked for volunteers with vans to shuttle visitors.
17. Wings Over Rockies - meeting next week. Event will be Feb. 9th. Dave Teich and Walt Streiss? Will be on the committee for the event. George has already submitted it to the AMA so it should be on their calendar. Letters need to be sent out to the other clubs in the metro area.
18. George - Combat meet last Saturday. Had a good time. Sponsored in total by Air Scharnell. A guy came up from Texas, and another was injured. New class in demo stage is 36/96. 36 inch wingspan with 9x6 prop. Warbirds. 6 pilots did that and a 6-year-old won the 36/96 class! Open B had 8 pilots with a few no-shows. Flew 8 rounds and top score was 1960. Jan thanked all the volunteers because there were a large number that especially showed up last-minute. She said the club made the event. Jan handed out gift certs to volunteers and has some in case someone left before she got them out to the volunteers.
19. Dave commented that the Dawn Patrol wasn't a success and we should come up with new ideas for next year.
20. Field maintenance: other than work day on 8th, not much to report. Chuck says it needs mowed now. An e-mail reminder to maintenance volunteers would help!! (John will talk to Gary) Be careful of rattlesnakes and prairie dog holes. Chuck says rattlesnakes are huge.
21. Field Acq. Need to get the site plan done (we'll try to shoot for Sept. 25th - member appreciation day to get together - let's setup this meeting ASAP). Fair is over so hopefully we can get in touch with our contacts. Need to get a map layout of the fair, George or John N. will e-mail Jim over there.
22. Unfinished Business: No time and nothing different to report. 501c3 designation (Marvin hasn't been around) and were postponed.
23. New business: Tonight nominate new board members for 2008. Sign-up sheets passed around.
24. Nominations so far:
25. President=Larry Ellis
26. Vice= Mark Johnston
27. Sec=Puca
28. Treas=Ballman
29. Open=Roman
30. Open=Robert Dyess
31. Open=empty - NEEDS FILLED!!!
32. Non-elected (board appointed) positions:
33. Maintenance=Gary Brady
34. Investment=
35. Safety=
36. Vote will be next meeting. We really need that open position filled and we'll do written nominations at the next meeting.
37. No more new business.
38. Drawings:
39. Scharnell=Robert Plant
40. Colpar=Bill Robinson
41. Bruno (Remote Control)=Chuck
42. Carmine Leonardos=Ballman
43. Fuel=Roy Olson
44. Announcements= Aug. 22nd next board meeting @ Rocco's
 - i. Sept. Board Meeting need volunteer for house/location.
 - ii. Club meeting will be Sept. 4th. Still need a program.
45. Program - Robert Dyess
46. Meeting Adjourned

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

FLIGHT LOG FOR THE August MILE HI RC BOARD MEETING

1. Mile Hi Board Meeting 8/27/2007 Rocco Mariani's Home
2. Meeting begun 7:16pm
3. No board minutes to approve since there was no meeting last month.
4. Chuck Brant was a not present.
5. Treasurer's Report : \$xxxx in checking. George picked up two car ports and dropped them off in the big container. Tents and membership appreciation were primary expenses. No expenses foreseen for CP event at this point, though we'd like to get some bleachers somehow.
6. Investment: ??
7. Membership: 139 members plus one John picked up on Sunday and he's paid for next year. Two renewals already in. Mark handed out SASE's and membership forms at Membership appreciation day.
8. Membership appreciation: Ric Emerson, John N., Paul Novashenki, Larry Ellis, John Ballman, Bob Bergin, Jan Scharnell, Laurie Limbough (James' wife), George Kerr
9. Field Cleanup on 9/8. Same day as demos for kite & flight event. 350ft. runway. Gary Brady will spearhead Field Cleanup . Front hood on mower has broken off.
10. Safety: Mark Olsen has agreed to be safety officer for next year. He will get us a better first-aid kit as well...something far more substantial than band-aids.
11. CP Event Sept. 15th: Need more volunteers - trying to find a group of kids to help out such as CAP or JROTC. Links are set up on the CP site for sign-up sheet, flyer, etc. Auction list is ready and contains many great items. Looks like potentially 300 attendees at this point, as a rough guesstimate. Need to pick up more caution tape for parking. So far we're \$3,500 committed for the event from sponsors. We need another regular port-o-potty and a handicapped one as well. Need more instructors. We'll call our members and consider calling instructors from Crosswinds to see if they'll volunteer. Roman will be happy to help buddy-box. Need to pick up a few gallons from Scharnell for the buddy-boxes.
12. September 22nd Banquet: Maybe move it to Oct. 6th so John can be there. We may use membership appreciation day instead of year end banquet.
13. No one has stepped forward to be Investment Officer.
14. Still need to do site plan.
15. Unfinished business. Manuals are on John's desk. We will continue the board manual with the next board.
16. New board members: Doug (?) Kiel will fill third open slot. Still need investment officer. Board can handle it until/unless someone comes forward.
17. Next club meeting is 9/4 at Ridge View
18. Board meeting is 9/24 at John N.'s home (both boards) Larry Ellis will host the October meeting
19. We need to get Larry's signature submitted to the bank to sign checks.
20. Larry is trying to get White Fence Farms reserved for 30-40 ppl for the year-end-banquet. Larry and John will put together an invitation/flyer for it as well to collect RSVP's.
21. September program: Elections - maybe nothing. Larry Ellis may do an update on the Mars mission launch.
22. Meeting adjourned 8:40pm

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

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 (minutes per amp hour) x 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.

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, suggesting aviation.	<p><i>Air Scharnell</i> 6276 East Pine Lane Parker, CO 80134 (303) 617-9777</p>
 The logo for Colpar Hobbies shows a black silhouette 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' and the website 'rmrchobbies.com'. There are also small icons of a car and a plane.	<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 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'. The phone number '303-699-8577' is printed in white below the logo.	<p><i>Metrolink Realty</i> (303) 699-8577</p>