# THE FLYING MACHINE NEWS

Volume 26 Issue 6 A GOLD LEADER CLUB June 2010

The Newsletter of the Rocky Mountain Flying Machine AMA Charter Club #2229


## Presidents Message

Last months meeting was a bit light which means we did not get to see a lot of you at the meeting and we missed you. Pat Tritle came and showed us all his secrets about making those bright orange props look like scale ones as well as some others. I love to have Pat come to talk to us when he can because he is a wealth of information and his building experience is second to none. A BIG THANKS to Pat.

Last month we had the Community day event with ARCC that went pretty well and we have some follow up to do on some of the folks that went to the event. Eric Brummett is working that along with the final report to AMA for the TAG program.

Jeff Hill and John Gayer ran the 25th Annual Roadrunner pattern meet at Maloof airpark and even though attendance was down the event was still a success and everyone who went had a great time. Thanks to Jeff and John for running the event.

Jerry Jones and Kent Paul have been out at the field putting more nails down to fix the seams in the runway, Thanks to Jerry and to Kent!! We have purchased some more nails and washers for the rest of the runways and are going to put together a date for us to put down the east west runway. Please plan on coming out to help.

I want to thank David Haygood for all of his hard work in finding programs that we all are interested in. If you have any ideas or have something that you would like to present to the club please let David know.

Bill Jacklin has been working the bylaws updates and hopes to have something to the board by the next meeting we may have a presentation on them in July but we will see how that update goes. Some of the things that are being added are the ability

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## Vice Presidents Message

Hello members,

The winds have been some what up and down for the past couple of weeks. Hope to see good weather soon. The program segment this month will be a surprize.

The give away is $60.00 dollars and as always a great gift drawing.

We hope to see you at the meeting!

David Haygood

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**Advice given to RAF pilots during WWII: When a prang seems inevitable, endeavor to strike the softest, cheapest object in the vicinity, as slowly and gently as possible.**

**There is nothing more useless to a pilot than the sky above him or the runway behind him.**

**Author unknown**

## NEXT MEETING

Thursday June 17, 2010, 7PM at Cutter Aviation at the Sunport

**Program:**

Sujrprize Program???

**Raffle Prizes:**

Bonanza Kit

Tool kit

Modeling knife set

**Roster Give-Away:**

$60 (must be present to win)

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to conduct business via electronic means, IE Email and conference calls. Another is the changes to the number of board members incase we do not have enough volunteers we can scale back if necessary for that year.

By now everyone should have received raffle tickets for the Standard J-1, please do your best to sell them. The plane is hanging at Big Boys Toys for now. We will take it to the ARCC scale meet if they allow it, as well as the Labor day event. We have gotten some of the tickets back but the sooner we get them in the better. If you need more please let one of the board members know they should all have some to hand out if you need them.

Our summer picnic will be held at my house again on August 21st at 4:00pm for food and visiting. We had a good time last year and hope for the same this year. Please put this on you calendar, if the date needs to change we will let everyone know in advance.

As you all have seen the emails and photos I sent out I received a donation of R/C airplanes, Sailplanes and Helicopters. The sailplanes were given to ASA, the models we got were split between ARCC, RMFM and AOK. The board was presented with an idea for distributing these to our members in the following manner. Everyone's name would be drawn from the roster using lotto balls to determine an order in which everyone would come to my house and pick a model in which they would want to build and fly. Once chosen the cost on the model would be a donation to RMFM of 10% which is an outstanding deal if you find something you like. Most all of them are electric ARFs but a few are nitro and a few are kits including one that the instructions are in Italian. I will be out of town going back to Ohio to bring my daughter back from School until the 16th and we will pick back up on the order after that. After everyone has picked once, the board agreed to allow everyone to pick again if you want. However, based on some requests family members will pick together. IE The Haygoods, Dustin and Theron, etc. We should all be thankful for the donation that we received as everyone will have a new plane or two to fly for next to nothing. The rest of the planes we have gotten will be used for our monthly raffles for the rest of this year and all of next year. ——>

I would like to ask everyone to think about what the board has done so far this year and let us know if you like what we have done so far. Also if you see one of the board members, thank them for the work they have been doing so far. It will help get them thru the rest of the year. Remember that we are all volunteers and are in this for the joy of the hobby, whether it be building and flying or just the flying. So we hope to see you at the field.
Happy Landings!!

**Mark Johnston**

## May Meeting

**Photos by Jerry Jones and Vic Newton**

**The Cub is the safest airplane in the world; it can just barely kill you.**
**— Attributed to Max Stanley, Northrop test pilot**

# Secretary's notes

**May Meeting Minutes**

By Jerry Jones

Meeting called to order 7:10 pm. 11 members present, 1 guest (new member application).

Show and tell was first on the agenda. Dave brought a Newport 11 electric kit he had built for his son, Mathew. Of course, he had modified it a bit with a new firewall and a Super Tiger 400 out-runner. It should fly real well.

The regular program was presented by Pat Trittle on painting and finishing different kinds of props to look scale. He used different techniques such as magic markers and brush strokes with paint to get a wood grain look. He also had a tool for doing rivets on War birds using a modified schring using wood glue.

Mark introduced John Chaney who is a new pilot and would like to join the club and learn to fly.

Treasurer's report presented by Eric: $1404.64 in the bank. So far we have taken in $1959.00 in dues and assessments. We had budgeted $800. So far we are at $794.00, so we are close to breaking even with the monthly drawings to this point.

With the TAG money we received from AMA , we can make the repairs to the trainer and cover the food expense for Kids day.

The Roadrunner contest had taken in $83.88, but quite a few bills were submitted at the meeting, so the amount spent will change quite a bit.

On the raffle plane, we have spent $587.97. So far have received $118.00 for tickets sold, which leaves a balance of $469.97.

Report was accepted and passed as read.

The Secretary's report was sent out in the monthly newsletter. The report was accepted as printed, and passed.

Mark noted that the Raffle plane will go to Big Boys Toys next week for display, and hopefully we

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**A pilot who doesn't have any fear probably isn't flying his plane to its maximum.**

**Jon McBride, astronaut**

**If you're faced with a forced landing, fly the thing as far into the crash as possible.**

**Bob Hoover**

# The Contest Scene

**April Fun-Fly**

By John Gayer

I was out of town flying in an IMAC contest up in Colorado during the funfly this month. It was windy up there but apparently not as bad as it was here. The new Yak that some of you have seen fly is no more. It was another victim of the complete power failure gremlin. I flew in the contest with a borrowed airplane.

Vic once again stood in for me and ran the contest. This was a simple one designed to increase participation but the weather did not cooperate.

Rules:

This is going to be a simple one. All I want you to do is takeoff and fly around. When the timing person says "NOW", the clock will start. You will then have to land as close to one minute elapsed time as you can. You cannot use a watch or any other device to help you determine elapsed time. The following rules apply:

1. There is a 15 second penalty for being under one minute.
2. The clock stops when the main wheels first touch the ground. However this must be a landing, not a touch'n'go. If you do not complete the landing, the clock will be turned back on.
3. Missing the runway(geotex) is a 30 second penalty. At least one wheel must be on the geotex at touchdown to qualify as a runway landing.

The penalties will be added to your delta time from one minute. It will not be added to your overall time. Result = |60 – landtime| + penalties.

According to Vic, everyone did a great job of landing on the Geotex.

There were no takers for a second attempt as the wind just kept picking up. Thanks, Vic, for running the show in May. I could use some suggestions on contest formats to use this summer.

**Results**

| | | Points |
|---|---|---|
| Jerry Jones | 1:10.78 | 4 |
| Dave Haygood | 1:32.44 | 3 |
| Vic Newton | 1:48.57 | 2 |
| Norm Elliot | DidNotFly | 1 |
| Chuck Haygood | DidNotFly | 1 |

## The 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.

Here goes. I'll keep the numbers as simple as possible to avoid unnecessary confusion.

The numbers in Table 1 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 lightlyloaded model with a wing loading in the 3-5 oz/square foot range will fly very well at 25—30 watts/pound.

**TABLE 1**
Basic power needed to fly an electric model:

**Direct Drive Systems**
60watts/pound

**Gear Drive Systems**
50 watts/pound

**Mild Aerobatic Performance**
70-80 watts/pound

**All-out Aerobatics**
100-110 watts/pound

**3-D Performance**
150 watts/pound or more

**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

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"I won't be coming into the office today. I'll be out in the field doing research."

## After-run oil

Use after-run oil between sessions and when you store your engines. This is another must-do because of the nature of the fuel we use. When nitromethane or any nitroparaffins burn they leave acid and water behind in your engine along with the water carried in partly by the alcohol. When these things get together they eat your bearings and other parts.

Good quality after-run oil is easy to get. If you can't find a good after-run at your local hobby shop, try air tool oil. Marvel makes an excellent air tool oil called Marvel Air Tool oil. Air tool oils can be used as an afterrun oil because they are designed to fight corrosion in metal air tools and this is exactly what we are looking for. Look for them in home-supply stores where they carry air compressor and paint guns.

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as well. It works that way with Lithium too, but Lithium batteries are dramatically lighter then 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 then the other?**

Well, it all depends on the kind of per-formance 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 x 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 then 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 (amp hours)/14 (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 then 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 (patscustommodels@ aol.com) 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. ☺

**It occurred to me that if I did not handle the crash correctly, there would be no survivors.**

**Richard Leakey, after engine failure in a single-engine aircraft, Nairobi, Africa, 1993**

**If you want to grow old as a pilot, you've got to know when to push it and when to back off.**

**Chuck Yeager**

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will sell more tickets there.

Community Day had a fair amount of kids and adults on the buddy box. It was a good day, except for the windy conditions. We lost about 3 or 4 planes due to wind. One problem with getting kids out is the Scouts and Boys and Girls clubs all have events planned for the same Saturday. We may be better off moving to a different time to get better attendance.

The Pattern Meet only had 11 Pilots, so they completed the entire contest on Saturday, Sunday was canceled. Some of the out of town pilots did not show, so it was mostly the club fliers.

Work day was scheduled this Saturday, May 22nd at the field to try and fix the seams that are catching tail wheels and also may get worse if the wind gets to it. We need to find something to seal the seams other than the tar we have used.

Jerry found some large 5/16 spikes which might work well , Raks has four boxes in stock at $66.88 a box, about 300 per box. We can also order the same spikes we are using, but with a washer built on for $39.99 a box, but they are only in 25 lb. boxes instead of 50 lb. like the others.

Our money ball drawing was won by Jim Swart, who wasn't present, so the prize went up another $20. Hopefully, someone will be present next time!

Next on the agenda was new business: Monthly drawings were for electric kit, and a tool kit, (did not get the names of winners sorry about that.) Vic gave a report on the repairs needed to the Electric trainer. It seems the wiring and plug connections were all bad, so it needed to be re-wired. He can use the same motor and controller, but needs to buy two new Li-po batteries and voltage protector. With these changes, it should be ready to fly.

Brass monkey breakfast will be Sunday morning May 23rd, with contest to follow.

Meeting adjourned 8:20

Next month.

**Jerry Jones**

*I have flown in just about everything, with all kinds of pilots in all parts of the world -- British, French, Pakistani, Iranian, Japanese, Chinese -- and there wasn't a dime's worth of difference between any of them except for one unchanging, certain fact: the best, most skillful pilot has the most experience.* - *Chuck Yeager*

# SAFETY CORNER

Hi, it's me again, the safety dude!

I am rather positive, every-one was missing my article in the last newsletter!

Well – I spent 2 weeks on Hawaii and constantly thought about how to improve safety for our club. The outcome is this article covering another letter of the alphabet. Next is "Q"!!

"Q"…..hmm "Q" like quality. Here we go. I don't want to become entangled in complicated definitions. Let's keep it easy.

Are we responsible for the quality of the models we fly? Well- if we bought one ready to fly we need to rely on the manufacturer and whether he tested the product and eventually built it in such a way that it does not fail. No need to mention that each model must be operated within its design limits. Weeks ago I went to the Balloon Fiesta Park and observed a guy flying an Easy Star. This small electrical glider is made out of a special foam and it is more for the beginners, being easy to fly due to its slow speed. Anyway-the pilot at the Balloon Fiesta Park had his Easy Star equipped with a brushless motor and whatever battery set. The outcome was a high speed model with unlimited climb capacity. Believe me-it was very fast! Needless to say that this model was never made for this purpose.

Back to the above question: if we build the model ourselves we bear full responsibility for its airworthiness. This responsibility does not end after the maiden flight. We constantly need to make sure that our models are fit for flight. This constitutes the need for preflight and postflight checks. Check items are screws, bolds, hinges, mechanical links and the proper function of the radio.

I cannot highlight it often enough: we are fully responsible for what we do and for what we don't do! There is no difference between the 747 captain and the pilot of the Easy Star.

See you at the field!

Rudi Stein

P. S.: We need to keep an eye on the motorized paraglider pilots from the field nearby. On the Memorial weekend a lot of them were cruising around in the early morning hours. Some of them came close to our field, so close that I felt very uncomfortable about it and I felt distracted.


Nothing said I had to crash..... - R.A. Bob Hoover, after hitting a telephone wire and losing two feet of wing in his P-51

## Pulling oil out of wood

**Sometimes the firewalls and engine areas of older airplanes get soaked with oil from the fuel. This weakens glue joints to the point where an aircraft could fall apart in midair. Try using CyA kicker (catalyst). You just have to spray it on and wipe it off. It pulls the oil right out of the wood. Several treatments may be necessary. This also works if a fuel tank develops a leak, and the fuselage gets soaked with fuel.**

**from Evergreen Flyer**
**Evergreen Radio Modelers Association**
**Tim Shea, editor**
**Marysville WA**



## RMFM CALENDAR

| | |
|---|---|
| **June 11** | **Indoor Flying - Montgomery Church of Christ, 6:30-10PM** |
| **June 17** | **RMFM Club Meeting - Cutter Aviation, 7PM** |
| **June 18** | **Indoor Flying - Heights Cumberland Presbyterian Church, ARCC 6-9PM** |
| **June 20** | **Brass Monkey Breakfast - Western View Restaurant, 8AM** |
| **June 20** | **Monthly Fun Fly - Henry Wood Memorial Field, 9AM** |
| **June 26-27** | **Scale Fly-In, Maloof Air Park, sponsored by ARCC, 9AM** |
| **July 9** | **Indoor Flying - Heights Cumberland Presbyterian Church, ARCC 6-9PM** |
| **July 15** | **RMFM Club Meeting - Cutter Aviation, 7PM** |
| **July 16** | **Indoor Flying - Montgomery Church of Christ, 6:30-10PM** |
| **July 18** | **Brass Monkey Breakfast - Western View Restaurant, 8AM** |
| **July 18** | **Monthly Fun Fly - Henry Wood Memorial Field, 9AM** |
| **July 24-25** | **Competition Fun Fly, Maloof Air Park, sponsored by ARCC, 9AM** |
| **Aug 19** | **RMFM Club Meeting - Cutter Aviation, 7PM** |
| **Aug 20** | **Indoor Flying - Heights Cumberland Presbyterian Church, ARCC 6-9PM** |
| **Aug 22** | **Brass Monkey Breakfast - Western View Restaurant, 8AM** |
| **Aug 22** | **Monthly Fun Fly - Henry Wood Memorial Field, 9AM** |
| **October 23** | **RMFM Scale Fun Fly and the Raffle Plane raffle.** |

**HELP KEEP OUR FIELD CLEAN. WE HAVE A TRASH CAN, BUT SOMETIMES WE HAVE MORE THAN IT CAN HOLD. PLEASE TAKE YOUR REFUSE HOME. THANK YOU!!!**

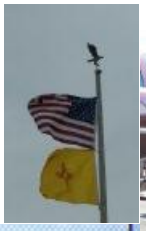
# Why do engines lean out and quit?

1) The high-speed needle valve is too lean.
2) The muffler pressure line came off.
3) The fuel filter has opened up (the halves are loose).
4) There's a split in the fuel line, usually at the fuel tank.
5) The fuel tank is foaming, causing air bubbles in the fuel line.

from *Flight Lines*
St. Croix Valley R/C Club
Lea Rasmussen, editor
Scandia MN















Charles Healey Day
ca: 1917

# Enter to WIN...
# a piece of History
# The Standard J-1

Pat Tritle
2010

*The Standard Aircraft co. J-1 was a two-seat primary trainer used by the U.S. Army air corps to supplement the JN-4 Jenny.*
*Standard developed the J-1 from the earlier Sloan and Standard H-series aircraft designed by Charles Healy Day. Four companies- Standard, Dayton-Wright, Fisher Body, And Wright-Martin - built 1,601 J-1's. The government cancelled about 2,700 more J-1's after the signing of the armistice in November 1918.*

J-1

Technical Notes:
Engine: Curtiss OXX-6 of 100hp
Max speed: 72MPH
Range: 235 miles
Ceiling: 5,800 ft
Span: 43ft 10in
Length: 26ft 7in
Height: 10ft 10in
Weight: 2,100lbs (loaded)
Cost: $6,000


Model

Technical Notes:
Motor: Tower Pro 2409-18
Tower Pro ESC
Max speed: Slow
Span: 60in top
42.5in bottom
Length: 39 in
Wing area: 810sq in
Weight: 23.3oz
Cost: $1 raffle ticket

**NEED NOT BE PRESENT TO WIN!**

**Master designer/builder, Pat Tritle has brought this historic airplane back to life.**
**This aircraft is designed, built, and autographed by Pat Tritle.**

**The J-1 will be raffled off by the Rocky Mountain Flying Machine on October 23, 2010 at the RMFM Scale Fly-in.**

*The J-1 is ready to fly with all hardware installed, and includes a Spectrum DX6i transmitter.*

**Tickets are $1 ea. and can be purchased from any RMFM member**

**VISIT OUR WEBSITE**
**AT**
**www.rmfm.org**
**WEBMASTER**
**Vic Newton**
**webmaster@rmfm.org**

**AMA Vision**

We, the members of the Academy of Model Aeronautics, are the pathway to the future of aeromodeling and are committed to making modeling the foremost sport/hobby in the world.



**BRASS MONKEY BREAKFAST**
**SUNDAY**

***June 20, 2010***
**8:00 AM**

**WESTERN VIEW RESTAURANT**
**(6411 Central Ave NW)**


The Rocky Mountain Flying Machine
PO Box 50262
Albuquerque, NM 87181-0262