

Carrier Wave

Newsletter of the Phantom Flyers R/C Club

<http://phantomflyersrc.com>

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October 2005

Upcoming Events/Important Notices

October 19, Club Meeting at Senior Center
November 16, Club Meeting at Senior Center

Notes from the Editor

Not as much news this month. Apparently the Helicopter Fly In was not well attended, no pictures.

Articles, pictures, and tech notes for publishing in the Carrier Wave are always appreciated. If you need photographs, I have the photo equipment and will gladly volunteer to help as will several other club members.

Thanks,
Dave Evans



Phantom Flyers RC Model Airplane Club Minutes – 21 September 2005

The meeting was brought to order at 7:00 by club President Herb Johnson. There were 18 members in attendance. One new member, Tom Clark was present.

Secretaries Report: The Secretaries report was approved as written.

Treasurer's Report: The report for Aug was approved. The Pattern Contest made a slight profit.

Recreation Report: Larry reported that Recreation has inquired if we would be interested in adding a "Plastic Modeling" sub group to our club. This subject was discussed and the general consensus is that there is not enough common interest in that type of modeling and RC modeling to warrant this change.

Larry also reported that most of the hourly shop folks do not know that the club even exists. The feeling is that the web page is not being accessed by many of these folks. Comments were solicited regarding how to better publicize our club's activities.

GSLMA Report: There was no report provided this month.

Field Manager's Report: Options for concreting the pavilion floor were discussed. The general feeling is that this work should be contracted out to a professional. Al Grossman volunteered to try and identify companies that would be willing to do this work.

Spot crack filling and sealing of the runway was also discussed. Mitch Galatioto was volunteered to work with Bill Ahrens to coordinate this effort.

Boeing has two additional shipping containers that the club may be able to obtain for free. The club may have to pay to move the container(s) to the field. The club indicated that we should pursue getting at least one of these containers. A motion was made to spend up to \$200 for delivery of the container(s) to the field.

Safety Report: Emery reported the field has been pretty safe lately. Please continue to follow all club safety rules.

Activities Report: Upcoming events include the Christmas Party. The Pattern Contest was reported to be a real success. Thanks to everyone who worked to make it happen. A drawing was held for everyone that helped at the contest. The primary prize for the drawing was a Venus 40 ARF which was won by Emery Kattelman.

Old Business: Mark Twain has requested a copy of our club roster to add to their mailing list. The members in attendance were asked if they had any objections to having their home address provided to Mark Twain for this purpose. No one at the meeting had any objections.

New Business: None.

The club meeting was adjourned at 8:00 p.m. Next months meeting will be at the St. Peters Senior Center on 19 October.

FAA and Model Aviation

by Dave Brown

(Reprinted from the AMA Website)

Why are we hearing so much about the Federal Aviation Administration (FAA) lately? Many modelers are asking this question, so I'll try to give you an explanation that you can share with other members.

The FAA's recent interest in our activities is coincidentally coming from two separate areas within the FAA. The first issue at hand is airspace used by model airplanes. Their attention is focused on us because of technological growth within model aviation and the use of unmanned aircraft for myriad commercial and governmental purposes. The FAA is wrestling with the best way to safely integrate these operations into the national airspace, which will be a daunting task.

Another reason the FAA is focusing on model aviation is because many of these commercial and government activities are being conducted with model airplanes that have been modified to make them suitable for these tasks.

In the eyes of the FAA—or at least within the current thinking of the FAA—a model airplane ceases to be a model airplane when it is used for any commercial purpose, regardless of its size. What it becomes and what regulations it is subject to is still up in the air. Although the FAA is discussing this topic, it seems to be adamant that the aircraft are no longer model airplanes, and should not be operated under the guise of the unregulated—or perhaps more appropriately, self-regulated—sport of model aviation.

Unmanned aircraft or UAs are the latest moniker for these non-model airplanes, replacing the earlier RPV and UAV. At the root of the difficulty is the basic philosophy of the FAA, which separates model airplanes flown for sport and recreation from UAs. It is one of its uses rather than one of its descriptions. Within the aeromodeling community, we tend to differentiate between UA and model airplanes on the basis of equipment and technology, and this difference in philosophy creates a few misunderstandings.

As you can imagine, this transitional period, while they develop regulations to apply to these unmanned aircraft, will be full of turmoil as each local office of the FAA applies its own interpretation to the situation.

AMA is working with the FAA in an attempt to keep the sport of model aviation alive and well, while the FAA grapples with the difficult task of defining the regulatory climate for UAs. In the meantime, we as aeromodelers need to become familiar with the national airspace system. We may end up in a situation in which limits on the airspace we are allowed to fly in will be determined by the class of airspace in which we are flying. You may want to make a small investment in a book called *2005 FAR/AIM Book* and study the airspace section.

The second arena in which there have been many questions raised lately has to do with our use of airports for model airplane events. The real question is not the use of airports for model airplane activities—that has not been challenged—but rather the “total closure” of federally funded airports for model airplane activities. The FAA has many policies that regulate the management and use of airports in general, and even more regulations apply to airports that receive federal funding. Among those regulations is a provision which prohibits the “total” closure of a federally funded airport for “non aeronautical activity.”

This regulation has existed for a long time, but it has been interpreted differently by different regions of the FAA. It may have been the basis for some refusals to allow modeling events to take place in the past; we have certainly been refused the use of airports, but I am not aware of this regulation being stated as the reason.

In the current situation, a modeling group wanted to use an airport for a jet fly. With the support of the airport management and the local chamber of commerce, the group applied to the local FAA office to close the airport

for the duration of the event.

The local FAA office rejected the request, deciding that model airplane activity constitutes a “non-aeronautical” use of the airport. The local club, as well as the local politicians and chamber, pushed the question “upstairs” to the FAA in Washington, and the FAA supported the local office’s determination.

At that point, the decision was still local, but when it was pointed out to the FAA that similar situations in other parts of the country were not being made subject to this rule, the FAA issued a letter which “clarified” the situation to all regions. This letter effectively defined model airplane activities as “non-aeronautical” activity for purposes of this rule.

This would seem to shut us out of some airports, but even that is not the final word. Because the term “total closure” isn’t defined and is used only in one paragraph of the entire document dealing with airport regulation, what constitutes “total closure?” Is closure of the only runway at a single runway airport for 10 minutes a “total closure?” How about closing it for four hours, opening it up to full-scale traffic for an hour, and then repeating the schedule?

Another obvious question is why would model airplanes be non-aeronautical activity in the eyes of one part of the FAA, while another part of the FAA considers us a being subject to its rules? Again, AMA is working with the FAA to resolve this issue, and we seem to be making some progress. In the meantime, I would recommend that you not change the way in which you do business. This ruling would seem to affect only those situations in which we are proposing to close the entire airport or the only runway of an airport that receives federal funding.

That narrows the effect of this ruling considerably, and I would not let this ruling stop me from making the request for any airport that you would have considered before this ruling because it may still be subject to interpretation. Or perhaps it may be changed by the FAA as a result of our efforts to have it changed.

Fortunately, while the FAA initially presented a firm reaction to our questions, they are now becoming more receptive to our position that we should be allowed this access.

That’s how my month as president has gone; how has yours gone?



from the Prop Masters RC Club, Downers Grove IL

Tips and Hints

by Larry Dudkowski

This column is a collection of things I learned while looking up other things. Sometimes I run across hints, tips, or articles that aren't big enough for a whole column but are interesting enough to pass along, so here they are.

- Voltage is a critical factor in determining propeller speed in an electric model. I tried to fly my A-10 using a two-cell Li-Poly pack (7.4 volts 1200 mA). It promptly floundered into the ground. I switched to a six-cell Ni-Cd pack (8.4 volts 600mA) and found that I had a good performing aircraft. The same was true for my Tiger 400. Just switching from a two-cell (7.4 volts) to a three-cell (11.1 volt) Li-Poly made all the difference in the world. Simply put, it is battery voltage that determines the propeller speed and therefore causes aircraft speed. It is battery capacity (mA) that determines the flight time.

- The next time you out grocery shopping check out the stationary section of the store. Look in the section where the rulers and protractors are. Pick up a set of small triangles. They usually come in a set with a 45° and 60° angle. They work great for squaring up the fins and rudders against the stabilizers and elevators (or any other spot where you need to have a 90° angle). You may find that they will work a little better if you cut off about a ½-inch of the 90° corner of each triangle. I also like to use them to position the control horns in relation to the servo arm.

For constant cord wings, set the base of the triangle along the control surface. Slide it along until it aligns with the servo arm and mark the spot on the control. The same is true for the rudder and elevator.

- Here's one for you builders out there—if there are any left. When I have wing-mounted servos, I make some paper tubes to use as guides for the servo wires. Just roll up some stiff paper (typing or printer paper will do) into a tube slightly larger than the servo connector. You want to make sure the connector will pass through the tube easily.

Tape or glue the tube so that it doesn't unwind. Then simply glue the tube to the wing ribs so that you have a conduit between the servo-mounting hole and the points in the wing. Being paper it's easy to cut the excess tube.

Now even with the wing covered you should easily be able to thread the servo leads through the wing to the exit points.

- You want to put a little thought into when you mount your on/off switch. This is especially true for hand-launched models such as Combat airplanes. You want to place the switch in a location that won't be accidentally hit during the launch.

For Combat models, probably the best spot would be on the top of the fuselage just aft the wing. There have been a few instances where the switch was accidentally turned off during the launch. This caused the model to go out of control and crash at full throttle.

If you use a push/pull switch, try this little bit of advice. Set it up so that pull is on and push is off. That way, if anything hits the tab during transport it will not turn the model on and discharge the batteries.

When flying I use a small piece of fuel tubing to hold the switch in the on position. Simply cut a

small piece of fuel tubing about the length of the push/pull rod in the on position. Then cut the tubing lengthwise, and you can slip it over the rod.

When ready to power up your airplane, pull the rod out and slip the piece of tubing over the rod between the fuselage and the tip. This will prevent the rod from accidentally being pushed in during handling. This little lesson cost me my Ultra-Stick last summer when the model powered itself off in flight. Believe me there is nothing scarier than flying a model you can't control.

from the Woodland/Davis Aeromodelers, Woodland CA

Power Switch Design

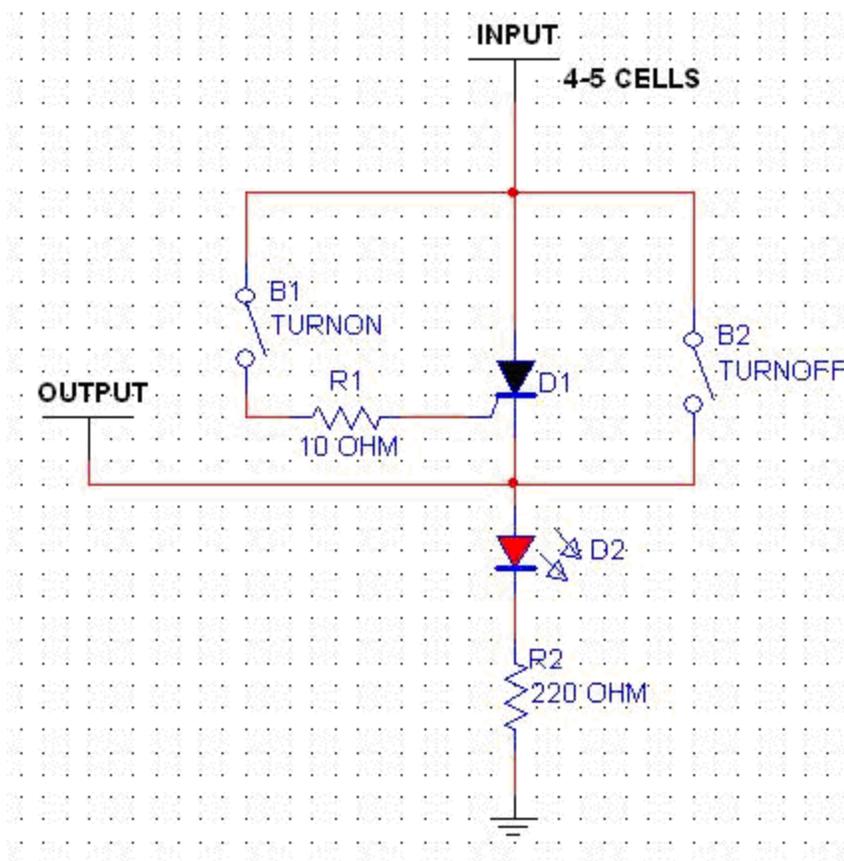
by Ken Anderson

The power switch of your model is a critical aspect of the models electronic system; if it fails you are in trouble! The switch we have designed is much more reliable than a standard mechanical switch because it has no mechanical elements that can fail resulting in a no-power situation, and thus could prevent a major crash.

The switch is based on a silicon-controlled rectifier, or SCR. Basically it is a controlled diode that only allows the electric current to flow in one direction, and it has to be triggered to do so.

There are three leads on an SCR, the gate, anode, and cathode. The anode and cathode are just like a normal diode, but the gate allows it to function as a switch. After it is triggered, it will continue to allow current to flow until the load is removed, at which point it will reset.

We use a standard radio power switch (B1) to control our failsafe switch. The radio switch turns the SCR on; the pushbutton (B2) turns it off.



In **Figure 1**, your battery's positive input is connected where the input is designated, and the negative end of the battery goes to the ground, represented at the bottom of the schematic. The output (positive switched voltage) to your receiver is connected to the left, and the ground is again connected to the negative output lead.

The switch works quite simply. When B1 is switched on, a current flows to the gate of the SCR, because the closed radio switch creates a circuit delivering voltage to the gate through limiting resistor R1. When the SCR sees this current, it turns on and allows current to flow through the SCR, and the LED will turn on. The LED circuit is required because it presents a small load on the SCR (-20mA) keeping the

SCR activated. The LED also tells you when the circuit is on and delivering power to your model. When B2 is pressed and B1 is no longer closed, the SCR is bypassed and current flow is interrupted through the SCR while the button is down This stops the SCR from conducting current and your model will now be off, and the LED will turn off as well.

This unit should be more than what is needed by even the International Miniature Aerobatic Club model I designed it for (a 27% EXTRA 300S model with six digital servos). Be advised that having a high-current power switch is no longer needed since there is no significant current flowing through the mechanical switch, less than 20 mA or so.

How to use the completed unit:

- Turn on the main power switch (radio switch)
- Make sure LED is ON and that radio functions correctly
- Fly normally knowing that even if you turn off the radio switch or it fails into an open condition, the radio equipment will remain on until current is interrupted though the SCR by B2.

To power down, simply turn off the main radio switch and momentarily press the N.O button (B2) to turn the radio off. The LED should turn off confirming the radio is now off.

Parts List:

- 2 x N.O SPST Pushbuttons - RS 275-1547
- SCR - RS 276-1067 (Good for 8 amps + and 75 amps surge)
- Red LED - RS 276-330
- 220-Ohm Resistor - RS 271-1313
- 10-Ohm Resistor - RS 271-1301
- Heatshrink Tubing - Preferably clear
- 18 Gauge wire (or larger depending on your needs)
- Radio Switch (to match your radio gear plugs)

We hope that this project proves popular and useful; it is a much more reliable alternative to the outdated mechanical power switch. For more information please visit www.Anderson-Aurand.com.

All circuits presented are designed by Ken Anderson and are 100% original work they may be published and reprinted at any time.



GSLMA MINUTES

October 5, 2005

MEETING OPENED: 7:00 PM

ATTENDANCE: Laf. Esq., Lone Eagles, River City Flyers, Signal Chasers, Thermaleers,
Whirley Birds, St. Louis Rocketry Assn.

MINUTES: Approved as published

TREASURER'S REPORT: Old Balance \$8432.85 New Balance \$8766.01
Buder Permits Issued in Sept. – 15 (YTD: 326)

OLD BUSINESS:

- Extravaganza: Net income after all expenses (including a \$200.00 donation to the County Parks Scholarship Fund and \$75.00 to the City of Manchester for the use of their tents) is \$510.41.
- Dates for Extravaganza 2006: Clubs are asked to consider May 20-21 and Sept. 16-17 as possible dates and give feedback at the November meeting.
- New Pilot Assist Program: Steve Mizerany passed out an outline of ideas on how to implement the concept. Clubs are asked to consider these ideas and give feedback at the November meeting.
- The Fly Buder web site (www.flybuder.com) is updated again – take a look.
- Our current meeting place will not be available to us in 2006. However, since the October meeting, Steve Mizerany has secured a meeting room at Grand Glaize Library for the first Wednesday on the month at 7:00 PM. So, for 2006, it's the same day, same time, but different place.

NEW BUSINESS:

- Nominations: A motion was made and seconded to retain all existing GSLMA officers for 2006. This motion was not acted upon pending other nominations that may be made at the November meeting. If no other nominations come forth, the motion to retain existing officers will be voted.
- The Control Line Contest of Sept. 24-25 was a success in spite of the rain on Sunday.
- Coming Events;
 - ◆ October 15-16 – Swap Meet at Buder 8:00 AM to 1:00 PM – Field Closed
 - ◆ October 16 – “Old Time” Control Line Contest at Buder
 - ◆ October 23 – Four Star 40 Pylon Racing at River City Flyers field (Model Aviation info on this is incorrect). Call John Bruno 314-428-2847.

MEETING ADJOURNED: 8:10 PM

NEXT MEETING: Wednesday, November 2, 2005, at 7:00 PM in the East Room of St. Louis County Library on Lindbergh Blvd.