The Transmitter

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

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http://www.suburbanrcbarnstormers.com

Coming in June and July

June 13th, Member Meeting, 7:00pm, Bloomingdale Library
June 18th, Fun-Fly # 2, **SATURDAY 9:00am Trim flights, 10:00am Start, Pratt's Wayne Woods**

July 11th, Member Meeting, 7:00pm, Bloomingdale Library
July 15th-17th, SPAD Fest 2005, Rantoul Airport
July 17th, Fun-Fly #3, 9:00am Trim flights, 10:00am Start, Pratt's Wayne Woods

Photos from the May 15th Fun Fly #1

By Mert Mischnick

The "Osprey" model is an electric conversion of the model that Scott Hurley donated to the last fun-fly at the Dome on Apr 30. "Converted" by Mert Mischnick, test flown after the fun-fly by John Howe. Not a speed demon with the current motor, but a good, stable, predictable, and maneuverable plane. This and many more can be seen at SPAD Fest 2005 (page 2).

It was cold and rained some but that did not stop us from having a good time. The Hot Dog grill was a welcome hand warmer. Other shots show the flight line, pilots meeting, raffle awards.

In this issue...

SPAD Fest 2005

By Jeff Peca

Coming up July 15-17 is Spadfest '05 in Rantoul, Il. Our club is again hosting this event. As with all club events its success will depend on help from the members. Everyone is encouraged to help in any capacity they can. Even one day or even a few hours is appreciated. If anyone is planning on flying at SF '05 now is the time to pre-register. By pre-registering we will have a better idea of how many pilots we expect at SF '05. This will help us make decisions such as how much food for the BBQ is needed and how many Port-O-Potty's are required. Pre-registering will also save you $5.00 off the registration fee.

In addition, anyone who pre-registers by May 31 will be entered in the "Pre-registration Raffle". The raffles prizes include 2 LiPo battery packs from Dan at True RC, an RC Reporter from Dave West and a Talon from Plastic Concept Planes. The 2 Lipo's from True RC (http://truerc.com/) are 3-cell, 1500 mah and 2100mah. These will be great for flying in the hanger in the evenings. I am not sure but I would guess the value of these packs are in the $30.00-$40.00 range.

Dave West from Winged Shadow Systems (http://rcreporter.com/) has donated an RC Reporter for the pre registration raffle. Retail value of $24.95.

Plastic Concept Planes (http://www.plasticconceptplanes.com/) has donated a Talon. Value is listed as $79.99.

To pre-register on line, please go to the Spadfest website at http://spadworld.net/spadfest/ and follow the links to the registration page. This website can also be accessed from the club website. In addition to registering on line, you can register by calling Jim Scahill or Jeff Peca by May 31. Payment can be made at the next club meeting.

Jim Scahill (815) 439-8522
Jeff Peca (630) 305-0018

Example of a SPAD owned by Mert Mischnick

Notes of the Barnstormers Meeting

May 9, 2005

Attendance

Thirty-three members were in attendance, which included three visitors, Timothy Johnson, William Feil and Ilias (Lou) Gagas.

Officer Reports

President: Jim Scahill called the meeting to order at 7:05 PM.

Vice President: Orvil Fluharty displayed the rollover prize of a Thunder Tiger ARF. He also had the door prize, which was a hat from the Sun and Fun event.

Secretary: Ruth Egging handed out the membership cards to members present. .

Treasurer: Bob Elsner stated that there is $4,126 in the bank. He brought the fuel from the fuel order to pick up from his car. He also had extra fuel if anyone wanted to purchase a gallon or two. He also reminded us about the "Meet the Club" event at Al's Hobby Shop. He passed around a sign-up sheet for anyone that wanted to participate in this event. All Saturday's from June through September are available.

Committees

Safety: Mike Cannata reported that on Sunday they had to put the cones out so that pilots would fly into the wind.

Scott Taylor brought in an airplane that he was refinishing. After he had taken the covering off he found that the stabilizer was cracked. This could happen to any airplane at any time and it is a good idea to check your airplanes thoroughly prior to flying them, not just when you re-cover the plane.

It was also noted that when charging lithium batteries for airplanes it is possible that a fire could start. It is recommended that when charging batteries to do so while someone is

present and/or in a fireproof container such as baked ceramics or a pyrex dish.

Giant Scale: Jeff Peca reported that the May 1st Giant Scale was fun. However, it was a cold and windy day. Thanks go to Jim Scahill for cooking.

Fun Fly: Jeff reminded us that the first Fun Fly at Pratt Wayne Woods was this weekend. Hopefully there will be a good turn out.

Flight Instruction: Jim Scahill stated that flight instruction was on Saturday last year and will be on Saturday again this year. However, if anyone wanted something other than Saturday to contact him and he would try to arrange for instruction.

Jim is also working on another club plane that was donated by Steve Dietrich. The plane needs a new receiver, etc. Scott Taylor reminded us that he has the other club plane in his car.

Old/New Business:
Spad Fest: Scott Hurley announced that pilots could pre-register for Spad Fest that will be held on July 15, 16, and 17. The pre-registration will help pay for expenses so that Scott Hurley can manage his money better. Pilots can pre-register on the web page at http://www.SuburbanRCBarnstormers.com

Miscellaneous:
Dome Flying: Over for the year.

Slope Flying: Slope is still closed. It is expected to open in 2006.

Airplanes
Jeff Mrachek brought in his first kit built airplane. He stated that he received help from several members and some good tips. It looked like he did a good job.

Tom Lyons brought in a foam airplane. He was pleased at how well the kit was prepared and the detail of the instructions.

Tips: Mike Cannata stated that he had used a battery cycler and it stated the battery was charged, but when testing it the battery could not even start the airplane. Mike then used the Triton cycler and has received much better results.

Ray Rhode won the Turkey and Jim Reed won the door prize.

Battery Failure

by Doug Gifford, Robert Braham, editor
from the Indianapolis RC South club, Indianapolis IN

Whether you are a seasoned pilot or a new flier, we all share the risk of experiencing a crash due to battery failure—the most common RC equipment failure. Let's face it, rechargeable batteries die, and they often don't give us much warning. If the application is critical (such as with our glow-powered model aircraft) the trick is to stay ahead of the game and detect the pending failure before your prized creation goes down.

If you are not paying attention to your batteries you will probably not see the signs of pending failure. Most glow aircraft use a four-cell series connected pack of AA Ni-Cd batteries to power the radio flight pack in the aircraft. The series connection of four cells gives a nominal voltage of 4.8 volts (approximately. 1.2 volts per cell), and usually can produce 600 to 700 milliamperes per hour (mAh). Six hundred mAh means a healthy pack will supply a current flow of roughly 600 milliamperes (mA) for about one hour at near its rated voltage. Drawing an average current less then 600 mA will result in longer endurance time.

Our transmitters often use eight of the same cells in a series resulting in a nominal 9.6 volts (1.2v per cell x 8). Transmitters usually draw a constant current level of approximately 150 to 250 mA while transmitting.

Flight packs typically draw 30-60 mA when idle, but when flying the servo motors are in constant use drawing higher currents. Two standard servos can draw peaks of more than 400 mA. If a flight surface is a bit stiff, servo current draw can increase considerably.

The wall chargers supplied with typical radios do a fine job. They charge at a relatively constant current of 50-70 milliamps. This is one-tenth of the battery capacity specification. These chargers are known as one tenth-C, or slow chargers. This is the most reliable and simple

arrangement, because almost all Ni-Cds can tolerate considerable overcharge (days or even weeks) if the charge current is one tenth-C or less.

Higher charging schemes need charge-end detection and automatic shutdown in order to prevent overcharge damage.

Sounds complex? It's not so bad. There is much you can do to enhance your reliability without spending money on extra equipment. For starters, here is a list of good practice items:

1. Protect the battery pack from excessive vibration by wrapping a layer of foam around it.
2. Make sure you have a good charge before flying—a full 10-12 hours. If you know your batteries are low give them a full 18-24 hours.
3. Avoid using a wall socket controlled by a switch. It might get turned off. Confirm charging by making sure the LEDs are lit.
4. Batteries self-discharge slowly over time. Batteries can differ in this area, and older batteries can lose charge more quickly. If you charged your batteries immediately after last week's flights, and you plan on flying tomorrow—charge them again. You want them at their best.
5. Keep connections clean and in good shape.
6. Typical transmitters have a battery meter, display, or LEDs to help monitor the transmitter. Learn how yours reacts when batteries are new. What does a normal full charge look like? How about after a half hour of use? If it begins to behave differently, have it checked out.
7. Batteries that are in their third flying season deserve more attention. With fourth and fifth season batteries you can almost expect a failure. Typically it will be a single-cell failing, but do not trust the other cells unless the pack is new. Individual cells can be replaced, but it's typically not worthwhile. A four-year-old pack with one bad cell replaced will probably give trouble again very soon.
8. With a full charge, how do the servos act? Are they responsive and quick? If you ever develop a sluggish servo get it checked out.
9. Consider four to five flights maximum if you don't have a way to check the batteries, and be sure to turn your equipment off between flights.
10. If for any reason you think you might have a problem, ask another flier for assistance. Many experienced fliers have battery checking and field-charging equipment onhand and would be happy to help.

If you are thinking about purchasing extra equipment, I would recommend buying a digital voltmeter with an internal load specifically designed for RC use (I use a Hobbico. It cost about $25).

Before digital became popular, there were analog Ni-Cd checkers. Expanded Scale Voltmeters (Hobbico still makes these at around $12) provide a scale expansion that allows more accurate reading around the voltages of battery packs (the 4.8 and 9.6 volts). Why expanded scale or digital? NiCads (and also Nickel-Metal Hydrides - NiMH) are known to have a relatively flat voltage-discharge curve. In other words, as they progress from fully charged to fully discharged, the voltage decreases very little.

For this reason it is difficult to measure the battery's charge state without an accurate meter where you can see the small differences between the two. You also must have some knowledge of what the battery usually measures to see the change. The load feature puts a brief 75 to 200 mA load on the battery. Always measure battery voltage under some load in order to see how voltage holds under typical discharge load.

The best defense against the battery failure, and/or the inadvertent "fly until discharged" crash, is frequent checking under load with an accurate voltmeter.

You will hear fliers talk of cyclers that test and exercise batteries. These are good, but not necessary. A cycler will discharge a battery and count how many milliamperes per unit time (milliamperehours) the battery will supply while maintaining voltage above a certain voltage (typically 1.1 volts per cell). I use a cycler sometimes, but it basically is detecting early loss of voltage during discharge. Occasionally checking batteries under load with a simple voltmeter essentially accomplishes the same thing.

Know your battery's voltage history. Know that they are fully charged for the start of your session. Check the voltage before your first flight, maybe after the third, and any other subsequent flights. You will be doing the most you can to avoid the third most common cause of pilot error—the error of not paying proper attention to your equipment.

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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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