



The Transmitter

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

AMA CHAPTER 640

IMAA CHAPTER 194

August 2009

<http://www.suburbanrcbarnstormers.com>

Coming in August and September

August 10th, Member Meeting, Bloomingdale Public Library, 7:00pm

August 16th, Fun Fly #4, Pratt's Wayne Woods, 9:00am trim flights, 10:00am First Pilot

September 13th, Barnstormer/Propmaster Fun Fly, 9:00am, Spring Brook, Naperville

September 14th, Member Meeting, Bloomingdale Public Library, 7:00pm

September 20th, Fun Fly #5, Pratt's Wayne Woods, 9:00am trim flights, 10:00am First Pilot

September 27th, Giant Scale Fun Fly Pratt's Wayne Woods, 9:00am

September 28th, Board Meeting, Bloomingdale Public Library, 7:00pm

Event for Barnstormer/PropMaster Fun Fly Selected

This year the interclub fun fly between the Barnstormers and the PropMasters will be held on September 13th at the Springbrook Forest Preserve in Naperville. Each year, we alternate between our flying field and the PropMasters flying field. To help balance the advantage of flying at a club's home field, the visiting club is allowed to select the event.

After bouncing some suggestions around the Board and discussions with the Fun Fly

chairmen, we have decided to go with the "Glass Ceiling" event. This event utilizes the Winged Shadow altimeters with the objective being to fly as close to 400 feet without going over.

The PropMasters have been notified, so get your altimeters connected and start practicing. This should be the year we take home the interclub plaque!

Vice President, Mike Maciejewski, Recovering from Motorcycle Accident

You may have wondered why you haven't seen our Vice President, Mike Maciejewski, lately. The bad news is that Mike had a serious motorcycle accident on June 20th in Peoria that has left him with serious recovery issues and a long stay in a rehabilitation facility.

The good news is Mike is progressing and has even had the opportunity to go home for short

stays. On the member's behalf, the Barnstormers have sent Mike a nice plant to give him something more than the four walls to look at. Please keep him in your thoughts and if you would like to contact him, ask Mert or one of the other Officers for contact information.

Barnstormer David Klassman INSPIREs High School Students at NASA

By Scott Taylor

When asked, "How did you spend your summer vacation?" Barstormer David Klassman can say he spent it cavorting with rocket scientists!

David was chosen as a NASA intern and leader assisting in a program that provides High School students with an opportunity to experience what it is like to design, analyze, predict, and verify through testing, the flight performance of model aircraft.

The students proceeded through a series of technical reviews, safety analyses, development of mission rules and flight operations before conducting actual data-collection flights. After their arrival at the NASA Dryden research center on June 8th, the students began 2 ½ weeks learning aerodynamics, systems engineering, safety, and Dryden's flight approval process. They also measured the geometry of the model aircraft selected for the project, and used their new knowledge to estimate its performance.

INSPIRE is an acronym for Interdisciplinary National Science Project Incorporating Research and Education Experience, a multi-tiered year round program designed for students in ninth-to-12th grades who are interested in science, technology, engineering, and mathematics education and careers. According to Kendra Titus, Student & Faculty Programs Coordinator at NASA Dryden's Office of Education, the INSPIRE summer internship program provides direct project experience for students who are interested in engineering careers and who will be entering their senior year in high school or their freshman year in college in the fall.

David can be seen in the picture below leaning over the airplane on the ground. David was the pilot for the performance flight tests.

For more information on the program David has been participating in, see the full NASA article at

http://www.nasa.gov/centers/dryden/education/09-23w_INSPIRE.html



A modified ElectroStik RXR radio-controlled model aircraft climbs into the morning sky during test flights in NASA's INSPIRE student internship program summer flight project. (NASA Photos / Tom Tschida)



Students in the INSPIRE internship program at NASA Dryden check out one of the two radio-controlled model aircraft before flight tests on Rosamond Dry Lake. (NASA Photos / Tom Tschida)

Notes of the Suburban RC Barnstormers Membership Meeting

June 8, 2009

ATTENDANCE

There were 28 members and three visitors present for our membership meeting held at Pratt's Wayne Woods. Visitor Bob Sarley said he is waiting for August to join at the 1/2 price rate! Other visitors were Tom Nelson and Kimi Jo Marsico.

OFFICER REPORTS

President: Mert Mischnick presided over the meeting.

Mert had a number of quick items to cover. He started by thanking **Stan Warden** for purchasing the megaphone. It was used at the last Fun Fly and saved a few voices.

Scott Barrie printed and installed the 2009 SRCB schedule of events on the flight stand. Thanks Scott!!

Mert also passed along a number of comments he had received from members. **Dave Downing** read in the newsletter about a field shelter and commented it would be nice, but didn't seem worth the price.

Brian Rolnicki sent an update on the RC Track and Hobby opening. There were 6 from the club. The area is a bit small for bigger park flyers but great for vapors with about 5000 square feet and an 18-foot ceiling. He would like to make 5p to 11p on Thursdays the regular flying time, but said members are welcome anytime, activities permitting. The charge is \$7 for 6 hours.

Vice President: Mike Maciejewski was absent.

Treasurer: Bob Elsner was absent.

Secretary: Scott Taylor said he was expecting **Ed Perez** to send an order of nametags very soon. Hopefully, they will be available at the next meeting.

OTHER BUSINESS

Dome 2010 – Mert reported that the dome is currently closed! But that he had passed along the comments from members. The biggest issue seemed to be where and when the ball washing was taking place.

Fourth of July Report – Stan Warden reported on the 4th of July at the Green Valley preserve. About 12 members arrived at 8pm. Visibility was limited and the Chicago fireworks could not be seen, but the surrounding communities of Woodridge, Bowling Brook, and Lisle put on a great show. There was food to share and viewing went until about 11pm.

Information on 6-volt receiver packs – There was an article in the June newsletter that was taken from the AMA National Newsletter. It discussed manufacturer recommendations to use 6-volt rather than 4.8-volt packs for 2.4Ghz receivers. **Dave West** had prepared some information about batteries and discussed the reasons the manufacturers were probably saying this. Dave's provided his opinion and recommendations to the members. His discussion has been summarized in the August newsletter.

Potential New Field Nearby – Scott Hurley had done some digging into a planned flying field at a former garbage dump not far from Pratt's Wayne. It sounds like Waste Management is looking for someone to adopt the field for flying, but there are currently no takers. If a field does get developed it will likely be years in the future. But if it does, we would need to coordinate frequencies to prevent conflicts. These days, the most likely solution would be to require the new field to use 2.4 Ghz transmitters only.

RAFFLES

There were no raffle prizes at the July meeting, so extra prizes and two turkey winners will be drawn in August meeting.

Six-Volt Battery for Your Spread Spectrum Receiver?

By Scott Taylor

A number of members have asked questions about using a 6-volt receiver pack for spread spectrum receivers as a result of the AMA article that was published in the last Transmitter. So at the last members meeting, Dave West shared his knowledge of electronics and batteries to help them better understand the issues and solutions.

First, if you are flying an electric powered plane that uses a speed controller with a BEC, this issue does not apply to you. That is because a BEC would always be putting out a voltage of about 5 volts.

However, if you are flying a gas/glow power plane with a spread spectrum receiver, you would normally be powering the receiver with a 4-cell NiCad or NiMH pack. These packs have a nominal voltage of about 4.8 volts but the AMA article inferred the manufacturers were recommending a 5-cell pack, with a nominal voltage of 6 volts.

Understanding a little about how the voltage changes throughout the discharge cycle of a battery will make it easier to understand which pack is best for your application.

A fully charged 4-cell NiCad or NiMH pack starts with a voltage of about 5.6 volts. As the battery is discharged, the pack quickly drops to about 4.9 volts. For the greatest part of the discharge cycle the voltage would remain about 4.9 volts. Finally, as the battery charge is used up, the voltage can drop below 4.8 volts.

So why is voltage a particular concern for spread spectrum radios? To help answer that, let's look at how these radios work. When turned on, the original Spektrum radio receivers would search for the transmitter and lock to the frequency, once found. This search process can take up to 5 seconds. As long as there is no loss of signal, this would not affect the control of the aircraft.

But if the battery voltage is even briefly pulled down to 3.5 volts or less, either because of high current draw on the pack, a bad cell, or an old or undercharged pack, then the receiver would reset and start a new scan. The 5 second scan time would now seem like an eternity and could result in loss of control and a crash before the receiver can lock on.

Spektrum has modified its receiver firmware so it will attempt to reconnect to the last locked channel (quick connect feature). If it doesn't find that channel, then it will begin a new scan. For most situations, this should prevent loss of control.

If you have a Spektrum receiver, you can test if you have the latest firmware by unplugging the receiver from the battery pack, then plugging it back in and see how long it takes to re-establish a connection.

So, should you use a 6 volt pack? Besides helping to prevent a channel rescan, there can be other benefits to using a higher voltage pack. For example, regular servos will produce more torque and respond quicker at higher voltages. However, this may come at the cost of reduced servo life.

On the other hand, digital servos, can be destroyed by a fully charged 6-volt pack which could reach 7 volts. Also, despite the extra cell, a higher voltage battery pack will actually discharge faster because of higher current draw.

Perhaps the answer to this question is not a higher voltage pack, but a higher capacity pack. Given the same load, the voltage of a higher capacity pack will not be pulled down as easily as a lower capacity pack.

So, there you go. You are now armed with all the information you need to pick a spread spectrum receiver pack. Happy Flying!

The Transmitter

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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.

Material can be submitted for publication: (1) at a meeting, (2) by mailing to Suburban RC Barnstormers, Inc., P.O. Box 524, Bloomingdale, IL 60108, (3) sending it to the email of the editor, Scott Taylor, at taylorstr@core.com

Articles must be received by the 4th Saturday of the month to be included in the following month's newsletter.

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