Glitch Busters

April 2020

AMA #197

FROM THE EDITOR

What a month this has been. The Covid-19 virus has businesses, parks, even entire states closed. R/C events across the country are being cancelled or postponed.

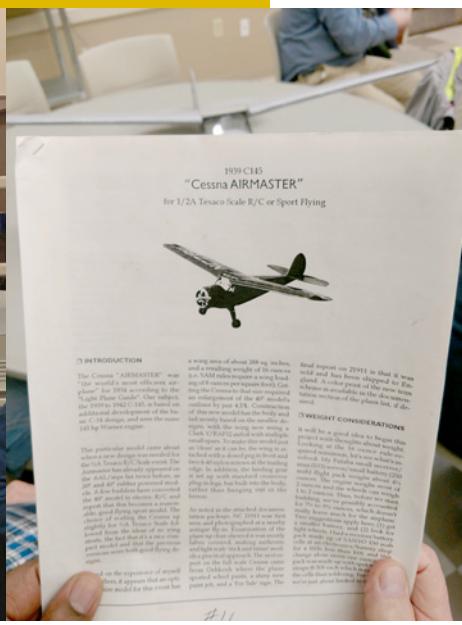
Delaware is under a stay-at-home order till May 15, or until the emergency is over, although Delaware state parks, including our flying field, currently remain open. The situation is changing rapidly. If you plan to fly, we recommend you check destateparks.com/Covid19 first.

Club members who wish to continue to use the field are encouraged to practice social distancing. Don't touch your face. Wash your hands or use hand sanitizer often. Do everything you can to keep yourself and others safe.

The general membership meetings are cancelled until further notice. In May, the board hopes to have a better idea of when we can get back to business as usual.

The May Fun Fly planned for May 15 will be rescheduled. All other event dates are subject to change.

MARCH MEETING NOTES AND PHOTOS - by Tom DiCuirci



3 March 2020 General Membership Meeting
The meeting started at 7:00 PM
16 people in attendance

Show and tells

- James Schlapfer showed off his Cessna Skymaster kit he built. Really nice plane
- Mike Denest showed off a scratch built contender. It was also impressive
- Thanks to both of them for sharing your projects

Events for 2020

- The filed clean up was moved up to 15 March, 2020.
    - A special thanks to the following for helping clean up after the winter weather.
    - Greg Shock
    - Victor Pugarelli
    - Paul Bryk
    - Ron Becker
    - Vinny Damaini
    - Tom DiCuirci
- The field was cleaned up, the plastic wrap removed and the field was rolled.
- The field was fertilized by Tom DiCuirci & Greg Shock on the 14th of March.
- Due to COVID-19, these events are questionable, based on Federal and local government guidance
    - Club Fun Fly & build contest, 16 May 2020
    - July Warbirds Over Delaware July 8 - 11 2020
    - National Model Aviation Day is 15 August 2020
    - Club picnic September 5th 2020
    - Lums Pond IMAC Challenge is 12 & 13 September 2020
    - Delaware R/C Club Swap Meet 7 November 2020

Safety Corner from Mike Watson

- As always, we try to put a safety note in every newsletter.
- It is always a good practice to review the AMA safety code and be familiar with the do’s and don’t.
- If you are flying 3D, please remember to do it over the tall grass areas as to not impeded the pattern for others.
- NO SMOKING IN THE PITS!

Grass cutting

- The club voted on the contract for grass cutting, after we received bids.

- The winner has been notified and the contract is completed, just need to provide him with a start date

Membership

- Brian was present and is still accepting applications, spread the word

Treasurer

- Ron was unable to make this meeting due to business travel.
- Gregg Shock provided the report

Stickers and License plates

- Tom DiCuirci was not present to provide any updates

Toledo Show

- This event was scheduled for in April 3 – 5, 2020
- Due to the COVID-19, this is now cancelled
- FYI, Balsa USA is doing a promotion for that weekend. I believe it is TOLEDO2020 for a 10% off discount. Again, it is only during the time of the originally scheduled event

New Garden Giant Scale Warbird & Jet Rally 12 – 14 June 2020

- This event is on, but we will see what happens with the COVID-19

LITHIUM POLYMER BATTERY STORAGE TIPS - UTE RC website

We published this article a few years back. Since so many of us are not flying, I thought it was worth reposting the article. It contains some valuable suggestions for keeping your lipos in top condition.

Lithium polymer batteries (lipos) power our electric model airplanes. With sizable inventories of packs that represent a fair investment, getting the longest life out of our lipos is in our best interest. Two words: proper storage.

The bulk of a packs lifetime is spent in “non-use”. The conditions packs see during the cumulative days, weeks, months and even years of storage takes its toll. A unique characteristic of lipos is their life span is dependent upon aging from time of manufacture and not just on the number of charge/discharge cycles. An older battery will not perform as well as a new one, due solely to its age. This drawback is not widely publicized or

know by the typical user.

As lipo batteries age, their internal resistance rises. This causes the voltage to drop under load, reducing the maximum current that can be drawn. Additionally as lipos age, usable capacity is lost. Typically once a battery has lost 20% of its rated capacity it considered at the end of its useful life. It's a fact, lipos age and degrade even during non-use. What can we do to minimize these effects? Manage two factors that are totally in our control: cell storage voltage and storage temperature.

Storage Voltage:

A fully charged lipo cell is approximately 4.2 volts. Lipos are different from other battery chemistries as they should never be stored fully charged. Lipos should be stored approximately "half full". Many of the newer lipo balance chargers have a "Storage Mode" which charges the pack to the proper reduced voltage state for storage purposes. The popular FMA CellPro charger charges cells to 3.85Vdc in Storage Mode. Check your charger manual, some chargers can both discharge the pack and then charge up to the storage level, while others can only charge up to the storage level. The later type charger requires you to discharge the pack below the storage level to take advantage of the storage feature. Storing your packs at the proper voltage level is the simplest thing you can do to lengthen their usable life span (assuming proper application and use). Storage is not just "over the winter". If you only fly on the weekends, your packs are technically in storage all week, week after week during the entire flying season. Those cumulative hours can add up slowly degrading your packs.

Temperature:

Lipo batteries function via a chemical reaction that occurs inside their sealed foil envelopes. Providing power is a chemical reaction, while the aging/degrading process is another chemical reaction. If you remember back to high school chemistry, a chemical reaction doubles its speed for every ten degrees increase of ambient temperature. This is why lipos don't perform as well in cold weather. The cold "slows down" the chemical reaction process. But this fact can work in our favor when it comes to lipo storage. Reducing the storage temperature slows the chemical reaction of the aging/degrading process. There is a limit as to how cold is OK. Lipos don't want to be frozen solid, but keeping them cool during storage is most certainly in our favor. It turns out the typically household refrigerator (37 to 40 degrees) is the perfect storage place.

Put lipos in plastic zip top storage bags and place them in the fridge when not in use. When you take them out leave them in the bags, to prevent any atmospheric moisture from condensing on them as they warm. After they're at room temperature, use them as you normally would. To see it all in black and white look at the table below…it tells the whole story.

Permanent Capacity Loss versus Storage Conditions

Storage Temperature	40% Charge	100% Charge
0 °C (32 °F)	**2%** loss after 1 year	**6%** loss after 1 year
25 °C (77 °F)	**4%** loss after 1 year	**20%** loss after 1 year
40 °C (104 °F)	**15%** loss after 1 year	**35%** loss after 1 year
60 °C (140 °F)	**25%** loss after 1 year	**40%** loss after 1 year

PHOTOS FROM THE FIELD

PHOTOS - by Mark Anthony DaBaldo

Glitch Busters
is a monthly publication of the Delaware R/C Club:
www.delawarerc.org

President: Freddie Butts fbuttsjr@aol.com
Vice President: Greg Schock dadschock@msn.com
Treasurer: Ron Becker ronfbecker@gmail.com
Secretary: Tom DiCuirci tomdrcpilot@gmail.com
Newsletter Editor-in-Chief: Roger McClurg roger@mcclurgstudios.com
Newsletter Photo Editor: Scott McClurg scott@mcclurgstudios.com