



SMAC Thrustline

The Newsletter by and for the Springfield Model Airplane Club

June 2003

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President's Corner

Dave Snyder is to be congratulated for "tilling" the new section of ground. Now if we can only get Mother Nature to cooperate the ground can be seeded.

Wayne Ullery is to be congratulated for bringing his "Wright Brothers' Flyer" to the big tent during the SAE AeroDesign program on 3-4 May 2003 south of the Air Force Museum. His enthusiasm kept the spectators interested in the Wright Brothers' accomplishments.

The Tall Fescue Seed I purchased is not all "Kentucky 31" because my options were running out. The computer said that the Shepard Grain Co. had a sufficient supply yet the stock was not there. I went to their Companies in Thackery and Fletcher, Ohio. I found additional "Kentucky 31" fescue at Landmark in Springfield, Ohio. The situation was discussed with Randy Bishop. He said he only wanted the color to match. If the seed purchased is well mixed together (4 parts Kentucky 31 with 3 parts of Fawn Tall Fescue) the color should be uniform. I found out two weeks later that the "Big Dealer in Kentucky 31 is KMART Big K".

Meeting Minutes

There was no Meeting Minutes submitted from the May meeting.

Care and Feeding of Sealed Lead Acid Batteries

By RED SCHOLEFIELD

Lead acid gel cells should be charged with a constant potential charger specifically designed for these batteries. These chargers can be referred to as Constant Voltage Chargers (CVC). You can charge them with a constant current charger, but you must terminate the charge when the voltage reaches 14.7 volts. You should not exceed the C/10 charge rate. If you have a 7 Ah battery in your field box, the maximum constant current charge rate should not exceed 700 mA. It takes about 14 hours to charge from a fully discharged state (voltage less than 12 volts.). A CVC is exactly what the name implies. It is clamped at a certain voltage and puts out all the current it can until the battery reaches the clamp voltage, usually around 14.5 volts. Then, the current drops off to maintain this voltage. A CVC is characterized as one having a current capable of supplying a fixed voltage to whatever load is applied. A constant current charge on the other hand will provide whatever voltage is necessary to force a fixed value of current through a load. Constant current charges have a much higher internal resistance than the load so that any variation on the load will not change the current being supplied. Constant voltage charges have a very low resistance as compared to the load and will supply whatever current necessary to maintain a given voltage at the load.

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Calendar of Events

CELINA FLYING SPORTSMEN CLUB

June 3, 2003

SMAC Board Meeting 6:00 PM
SMAC Club Meeting 7:00 PM
At the Flying Field

June 6, 2003

Come Fly with us "Public Day"
Sponsor
Mad River Flying Association

June 8, 2003

Invitational Fun Fly
SMAC Field
10:00 AM Til ??

July 12th & 13th

Celina Big Bird Fly In

Celina, OH Site: Bunge Park. Free tailgate swap both days. Sunday the 13th will be open flying, all aircraft are welcome. No landing fee both days. Sponsor:

July 1, 2003

SMAC Board Meeting 6:00 PM
SMAC Club Meeting 7:00 PM
At the Flying Field

August 5, 2003

SMAC Board Meeting 6:00 PM
SMAC Club Meeting 7:00 PM
At the Flying Field

September 6th & 7th, 2003

Helicopter Fun Fly

Sponsor

Mad River Flying Association
Night Flying on the 6th

November 28, 2003

SMAC Swap Meet
Details Later

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Many inexpensive chargers used for sealed lead batteries are what are called taper chargers; these are set up so the voltage tapers off as the full-charge voltage is reached. True constant potential chargers can be quite expensive so a compromise is made in the design to control costs.

We have used the term sealed lead battery in this discussion. These batteries are not truly sealed as cylindrical Nickel Cadmium (Ni-Cd) batteries are. They have a gelled electrolyte system where there is a modest recombination of the oxygen in overcharge in some designs. All require venting of the oxygen and hydrogen byproducts of charging and discharging. You should never totally seal these in a field box where these gasses can accumulate. Mixtures of oxygen and hydrogen can cause a spectacular "event" if a spark is provided (from an electric fuel pump motor).

How much charge is there in the battery? Unlike Ni-Cds, you can read the remaining capacity quite easily with a voltmeter. After the battery has been on rest for a few hours, read the voltage (no load). A reading of 12 volts is essentially fully discharged while 13 is fully charged.

This is a fairly linear relationship so a reading of 12.4 volts means you have 40% of the capacity remaining. Never leave a lead acid battery in the discharged condition or sulfation will result. The sulfuric acid in the electrolyte reacts with the sponge lead active material and forms lead sulfate. It is a poor conductor. This, coupled with the H₂O left after you take all the S out of H₂SO₄, is also a poor conductor, so trying to charge requires a lot of voltage to push the current through to convert the active material back to the charged state. Sometimes they just cannot be brought back from the sulfated state.

The good news is that sealed lead batteries retain their charge much longer than Ni-Cd; at room temperature, it's well over a year. All you have to do is make an occasional open voltage check to see if you need to charge it.

from Hear Ye!

Valley Forge Signal Seekers

Marilyn Ayres, editor

Glen Mills PA

Via AMA National Newsletter May 2003 issue.