

Propbusters

NEWSLETTER

Publication of
Rapid City Propbusters
Radio Control Club

AMA Charter 591 - Rapid City, South Dakota and the Black Hills Area

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News & Notes

The Propbuster's Warbird Fly has been changed to Sunday, October 9th and the location has been changed to The Promised Land. Remember that all our events are run-what-you-brung events. If you don't have a warbird come out and fly with us anyway.

The Propbuster's last Racing Event has been changed to Sunday, October 14th at the Promised Land.

You should be receiving your AMA ballot by mail. Consider Dave Mathewson for AMA President as you return your ballot. Also, Mark Smith is up for re-election as District IX Vice President

LiPo Battery Basics

From the Monmouth Model Airplane Club, Keansburg, NJ
by Paul Gentile

The popularity of electric-powered aircraft has soared (pun intended) over the past few years. Part of the reason behind the recent popularity has been the advent of Lithium Polymer (Li-Poly) batteries.

Li-Poly batteries pack a high energy-to-weight ratio when compared to their Ni-Cad and NiMH battery cousins. This stored energy has good and bad potential, and we will touch on both here.

Li-Poly cells are 3.7 volts, as compared to Ni-Cad and NiMH batteries which are 1.5 volts per cell.

When Li-Poly batteries are wired in parallel, they do not discharge like other batteries. In addition, when you wire cells in parallel, each cell only sees half the total current, or amp draw.

Total current is very important for Li-Poly batteries and is identified with a C rating. You may see Li-Poly batteries advertised as 3C, 6C, 8C, 10C.

This means that a 3C 1500 mAh (1.5 amp) Li-Poly battery pack should never be discharged at a rate higher than 3 x 1500 mAh or 4500 mAh (4.5 amps).

Discharging a Li-Poly beyond this rating could cause damage to the cells or even fire. A very serious concern.

Changing a propeller on your airplane can change the current draw and cause higher than expected discharge rates. So it is beneficial to have a current meter on hand. The manufacturer's specifications for the motor, speed control, and propeller combination you are running also come in very handy.

The other letters on Li-Poly packs refer to S for serial wiring of cells and P for parallel wiring of cells.

A 3S pack would be 3.7 volts x 3 cells = 11.1 volts. A 3P pack would mean three parallel cells, or 3.7 volts and a higher C rating. A 3S 3P pack would have 3 cells in serial (11.1 volts) and 3 cells in parallel.

Li-Poly batteries also do not require cycling, or discharging like other batteries. In fact, you never

want to cycle down Li-Poly batteries. You should always leave a partial charge, to avoid damage.

Chargers and speed controls should always be rated for Li-Poly use. Do not attempt to use your Ni-Cad or NiMH equipment. An improper charge rate could cause a Li-Poly pack to explode and burn at over 2000 degrees. A non Li-Poly rated speed control could cause over discharge and cell damage.

Here's some do's and don'ts for your Li-Poly packs:

- Never put your Li-Poly packs in water and never put water on the packs.
- Don't leave your Li-Poly batteries unattended while charging. See www.modelaircraft.org for this year's list of cars and houses burned down while leaving packs unattended during charging.
- Don't puncture or short out Li-Poly batteries.
- Don't fully discharge your Li-Poly packs, this will damage the cells.
- Don't put the Li-Poly battery in your car, or leave it in your airplane after a crash. If the battery is damaged internally, you may not notice. According to the AMA, several members' cars have already burned up this year due to this scenario.
- Do use common sense and respect the energy that is stored in that little package.
- Do follow all manufacturer ratings and specifications for use and storage.
- Do store your packs in a fire-proof container.

Li-Poly batteries are used everyday safely in cell phones, laptops, consumer electronics, and iPods. In our hobby, we are pushing these batteries to their limits, charging and discharging them at high rates and sometimes smashing them into the ground at high speeds. We need to respect their potential and keep it safe.

Enjoy the power and convenience of electric flight with Li-Poly batteries; I do. Just respect the energy stored in that little Li-Poly package and it will reward you with some of the fastest, 3-Dest (if that is a word), most fun flying you will have.



Propbuster Meeting Minutes

September 11, 2007

Meeting was called to order at 7:30 PM in the Beanery in the Creamery Mall.

Officers present: President- Doc McGuigan, Vice President- Darrell Cassidy, Secretary- Ken Corrin, Treasurer- Denny Bernal

Members present: Bob Olson, Rod Renz, Zac Roller, Jim Tiller

Guest: Pat Corbin

Minutes of the August meeting will stand approved as distributed.

Treasurers report:
Club \$ 5096.16
Maintenance Fund \$ 2580.76
Total \$ 7676.92

Old Business:
Ken reported that a new BBQ grill for the club was purchased at Wal Mart.

Our 20 year renewable field lease will come due in 2011. The runway is in need of repairs but before we invest in major repairs we should have a new lease beyond 2011. Doc will talk to the Jensens before the October meeting to see if we can renew the lease early for another 20 years.

The grass at the field has not been mowed lately due to dry weather. Now that the rains have come, everybody should try to do some mowing when they are out to the field. Don't leave an empty gas can in the shed.... take it into New Underwood and refill it.

Air races are scheduled at The Promised Land on September 23rd but Doc will be out of town then. Motion by Darrell and seconded by Zac that we reschedule the races on Sunday October 14th. Motion carried.

A Warbird fly is scheduled for October 7th. It will be held at The Promised Land field with the longer runways and crosswind runway.

New Business:
Doc received some Sport Flyer magazines in the mail and he distributed them to everyone at the meeting.

The Prop Restoration Fund was won by Jim Tiller.

The Black Hills Air Rally is scheduled for Sunday September 16th in Sturgis at the Buffalo Chip. Doc, Jim and Zac met and discussed some concerns Doc had about the Air Rally. Doc has decided not to attend.

Meeting adjourned at 7:52 PM.

Some of life's little mysteries:

If a person with multiple personalities threatens suicide, is that considered a hostage situation?

Why don't they make mouse-flavored cat food?

Why do they sterilize needles for lethal injections?

Why do banks charge you a non-sufficient funds fee on money they already know you don't have.

Why do they call it the Department of Interior when they are in charge of everything outdoors?

When I erase a word with a pencil, where does it go?

Did Roman paramedics refer to IV's as 4's?

Tips and Tricks

Covering from Balsa Sheeting

Removing covering from balsa sheeting can be tricky. If you cut too deeply, you can compromise the wood's integrity. By placing the blade in the knife handle as shown in the photo, you can easily adjust and control the depth of the cut.

To set the blade's depth, use it on a scrap piece of sheeting and make test cuts before you make the actual cuts on the model.



Cheaper Small-Parts Storage

Here is a suggestion for easy storage of small screws and bits. All you need is an ice cube tray. The advantage of this idea is that ice cube trays can be bought at low prices unlike professional parts organizers.

Efficient, Glow-plug Igniter Cleaner

Oil residue can prevent glow igniters from working properly. If you carry yours in your pocket, even the lint in there can cause your igniter to malfunction. A good way to clean igniters is with alcohol and an old electric toothbrush. A clean tip on the igniter will allow more current to reach the glow-plug element for more reliable starting.

Clear Canopy Polish

Here is a good canopy polish tip, use toothpaste on the canopy. Smear a liberal amount of toothpaste on the canopy and use toilet tissue to buff the canopy to a glossy finish that will not scratch at all. Then use alcohol cleaner to remove any residue left by the toothpaste. It works very well!



Forensic Accident Investigation

by Zac Roller

I'm sure all of you do some post-crash analysis to determine what happened. Here's a case just bizarre enough that you may find it interesting.

I just finished my Pitts Model 12 from Cox Hobbies. (<http://www.coxmodels.com/prodinfo.asp?number=006107>)

This is a great looking ARF that went together with little trouble. I found the quality, fit and finish to be outstanding.

At any rate, I flew it for the first time recently. Everything was going along according to plan and then a terrible noise, abrupt motor stop and pieces

flying in every direction. With my heart in my throat, I found I still had control and was able with some effort to get the Pitts back to the field for some semblance of a landing.



On examination, the round cowl had somehow gotten into the prop and caused both to shatter.

As with most accidents there was a couple of things that happened. First of all

the plywood keepers for the cowl fastener blind nuts were not glued in. (see photo). Cox was great about this problem and replaced the entire plane for me, not just the cowl. They



informed their supplier and are recalling other kits with the problem.

The second cause of the accident is a little harder to figure. Why did the unfastened cowl move forward into the prop? Vibration.

Maybe, but I think there may be another answer.

Many of you know that there needs to be more outlet area than inlet area in a cowl -- mostly to provide adequate air flow for good engine cooling.

The optimum ratio is 4 times outlet to inlet. With the large spinner on the Pitts, I calculated the inlet area on the Pitts to be less than 20 square inches. The outlet area was just over 60 square inches.

What I think happened to the Pitts was that with the lack of exit space in the cowl, enough pressure built up in the cowl to force the unfastened cowl forward into the prop.

Quick Guide to Acro

Your 30 Second Lesson in RC Acrobatics



The Rudder, Again by Zac Roller

Last time I talked about the mastering the rudder in the vertical. I'm sure you practiced like crazy in the last few weeks and now are sick of using your rudder thumb and are ready for something else.

Guess what, we are going to talk about the rudder again. But now that you are confident of its use in the vertical, let's talk about using the rudder in rolling maneuvers.

Your goal is the same as it was in the vertical -- keep the airplane following a straight line. This time it should be a horizontal straight line at the same altitude and the same distance

from the runway as the plane travels the length of the runway.

The first maneuver is knife edge flight.

Start two mistakes high, down wind from your pilot station. Turn into the wind and establish a horizontal line. As begin your pass, roll the airplane ninety degrees so the canopy is toward you. Try to hold the line the length of the runway feeding in top rudder (lifting the nose) when the airplane starts to drop. Your goal is to maintain a constant altitude and keep the horizontal line straight.

Many trainer-type airplanes

will pitch toward the canopy or the belly in knife edge. It is OK, in the beginning, to allow this to happen. Remember you are trying to master control of the rudder in this exercise, but try to keep the plane going in as straight a line as possible.

Once you are comfortable with canopy up knife edge, reverse it. Do the same pass into the wind the length of the runway with the belly toward you.

Practice these until the amount of the rudder input becomes second nature to you. Even the best acro pilots spend time practicing these basic maneuvers. It is that important.

The next maneuver is the 4-point roll. Once you establish your canopy-up knife edge for a short distance, then roll to inverted. Use the elevator to keep your

level horizontal line. Then roll to belly-up knife edge. Then back to upright.

If you do this right, you should be rolling out of inverted to belly-up knife edge as you pass in front of yourself. In other words, use one quarter of the flight line for each point in the roll.

After you mastered the 4-point roll, go on the one that will be the most difficult and the most satisfying -- the slow roll. To do this, just slow down the roll rate as you make your pass and transition smoothly from one attitude to the next. You can start faster, but eventually you want only one complete roll in the length of the runway.

The slow roll is the test of your mastery of the rudder. It is also the benchmark that allows you in the ranks of the true acrobatic pilots.



Propbuster Picture Album



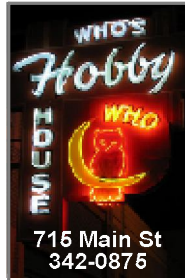
Zac Roller's 1/4 Scale Cub



Since no one sent me a caption, Ill give you mine:

'Diem Carpe. Sometimes the day seizes you.'

If you have a better one, send it to me.



List: \$199.99
One Left at: \$159

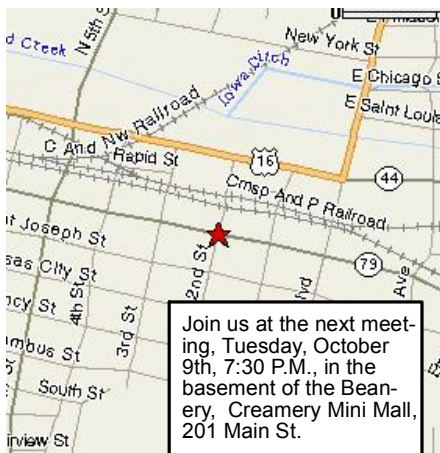


The Blade CP has be replaced with a new model. If you've been waiting for the right time to get into helis, here's a great one at a rock bottom, close out price.

Coming Events

- 10/07 - Warbird Fly. 8:00 A.M. Everyone welcome. Moved to the Promised Land. This is a hotdog event.
- 10/09 - October Meeting. 7:30 P.M. Everyone welcome.
- 10/14 - Last Season Racing 8:00 AM. Everyone welcome. At the Promised Land. This is a hot dog event.
- 10/27 - Halloween Fly. 9:00 A.M. Everyone welcome. This is a hot dog event.
- 11/04 - Campaign Fly. 9:00 A.M. Everyone welcome. This is a hot dog event.
- 11/13 - November Meeting. 7:30 P.M. Eveyone welcome.
- 11/18 - Turkey Fly. 10:00 A.M. Everyone welcome. This is a hot dog event.

PROPBUSTERS MONTHLY NEWSLETTER



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