

PCC NEWSLETTER

PENINSULA CHANNEL COMMANDERS INC.



March 2015

Next Meeting:

March 18th, 2015

AMA Chartered Club # 139

Web Site: <http://flypcc.org/>

Field Phone: 650-712-4423

President	Mike Solaegui	415-314-6261	mikes@perfectedgecutlery.com
Vice President	Rich Symmons	650-712-0471	rsymmons@aol.com
Secretary	Dennis Lowry	415-285-4496	dennis.lowry@groupdelphi.com
Treasurer	Greg Romine	650-736-7230	gsromine@stanford.edu
Field Safety Officer / Webmaster	Matt Abrams	415-370-3323	matt@matt-abrams.com
Flight Proficiency Chairman	Ray Granz	Looking for it....	geriray15@aol.com
Editor	Brian Chan	650-867-8813	pcceditor@gmail.com

WHAT'S HAPPENING @PCC

PCC Open House

@ Richardson Field.

10 a.m. till Sun down

March 22nd, 2015

All are welcome, bring your friends, bring airplanes to fly. Food will be served at 2 p.m. Hamburgers, Chips and Drinks.

PCC Richardson Field is located at Hwy 1 south of Half Moon Bay. If you come out to HMB via Hwy 92, turn left on Hwy 1 and head south. Richardson Field is about 4 miles south of Hwy 92. The field is on the East side of the Hwy. DO NOT TURN LEFT onto the field. Go another 3/4 mile to Verde Road, make a left turn to Verde Road and make an U-turn while it is safe. Go back North on Hwy 1 to Richardson Field. Park off dirt road where space is available. Speed Limit at the field is 5 MPH. If you see dust behind your vehicle, you are going too fast.

FEBRUARY MEETING MINUTES

February 18, 2015

Call to Order: By Mike Solaegui, PCC President.

Raffle: Horizon Hobby Sport Cub Bind N Fly. The Raffle Masters boosted the budget with a donation to the general fund recouped from the Banquet and from the Raffle. Thanks Guys!

New Members:

Christian a young man flies Micro and crashes his dad's Piper Cub.

Aniket is interested in RC.

Ernie Quillio got a new plane at Christmas and wants to fly with his son.

Mike Germano wants to fly U-Control and is a friend of Skip.

January Minutes: Approved.

Treasury Report: All is good.

Membership Report: At least 73 paid to date for 2015.

Old Business: Gliders on the hill is now OK to do. SW wind is usually the best to fly with. There are lots of shrubs up there, so stay in the air. Light slow flying will be best at first. Watch out for the ticks. Be careful if you drive; and a 4 wheel drive is suggested.

New Business: The Web Cam was down for a day or so.

OPEN HOUSE: PCC will host an open invitation Burger Slap Down on March 22. Invite regional club members to come out, see our field, enjoy spinning a yarn with us, and watch us fly our "high wing trainers". They're also welcome to fly anything they are able to keep within the fly zone.

Events: March 22 is a PCC Open House!

Give Invitations at:

Bayfront Marsh Road
Baylands
SacRats
Sam 21
J&M Hobbies
Tomcats
SF Vultures

Moving the storage shed is an imminent activity we need to undertake.

Safety: All has been good.

Flight Proficiency:

Field: The gate needs work. The rope is the wind buffer. Make sure you loop it over the top. The chain cuts through the gate in a high wind if the rope is not in place.

Hits and Misses: none

Sad Stories: Ken's Playboy is still lost; although the bushes are getting higher!

Show and Tell:

Mike showed a \$50.00 no instruction kit. 7lb 1800 watt 6 cell electric. It looked great for the price.

Dave showed a skeleton Benny Boxcar in the bones. He also had a Great Planes Spirit, a nice sailplane. He updated it to be more advanced. Put cog back a little. He increased stabilizers 50% and sheeted the wing tips; made a stronger nose; used carbon fiber Mono Coat; and has flown it nicely.

Ken brought in a speed 400 Benny Boxcar. It's very delicate and breaks easily. 45" wing span. He's using Polyspan and dope. Pull, Pull and a Push Rod Elevator.

Greg had a foamy GWS BNT Islander. 4 channel. 2 cell 1300 watt battery with trike gear. He has a P38 as well. They're almost ready to fly.

Adjourned

Mike won the Pole Cat.

Minute by Lowry.

Dennis

UPCOMING EVENTS

March

- 8 Daylight Saving Time begins, move clock forward.
18 PCC Meeting, 7:30 p.m., Dave Chetcuti Rm, Millbrae
22 PCC Open House,
10am till Sun down, Burgers at @ 2pm
28 Spring Swap Meet, R/C Flyers Unlimited, Oakdale, Ca

April

- 1 April's Fool Day!! No foolin'
4 SCCMAS Spring Swap Meet, Morgan Hill, Ca
15 PCC Meeting, 7:30 p.m., Dave Chetcuti Rm, Millbrae
Mail in your Tax return before coming to the meeting!!
26 Pacific Coast Dream Machine Event, HMB Airport.

May

- 2 WWI Fly-in, SCCMAS, Morgan Hill, Ca
10 Mother's Day. DON'T FORGET!
20 PCC Meeting, 7:30 p.m., Dave Chetcuti Rm, Millbrae
30 South County Wing Of History Museum Open House.

See <http://www.ncrcs.com/> for more detailed information.

→ → → → → →

PACIFIC COAST DREAM MACHINE

April 26, Saturday

PCC is invited to provide a flight demonstration at the event. The tentative schedule is between 11:00 to 11:30. Mike Soleagui and Ray Squires are going to the event meeting to find out more details and fielding a team to fly in the flight demo. We will need volunteers to "person" a display booth, we need planes for displays. It will be an all day event due to the traffic on Hwy 1. You get there in the morning and pretty much stay all day, unless you want to fight the traffic to get out of HMB. Contact Mike or Ray for more details.

MA. VS. MAH

*Wiggle
Candle Power Forum*

I just wanted to post an explanation of some of the terms related to batteries, charging and electricity in general that are used. I've noticed there seems to be some confusion among even more experienced users in these terms:

mA - *Is a measure of electrical current. 1 mA is one-thousandth of an ampere. This refers essentially to how much charge is moving through the wire per unit time. In a physical analog you could consider it like the flow rate of water through a pipe. The "m" in "mA" is always lower case and the "A" is always upper case.*

mAh - Is a measure of charge. 1 mAh is the amount of charge transferred by moving 1 mA of current for a period of one hour. It would be how much water has flowed through the pipe over a period of time.

A battery is a "holding tank" for charge, so it has a capacity in mAh. Remember current is instantaneous (like speed) while charge (mAh) is cumulative (like distance).

C - C is a rate of charge or discharge. It has a unit of h^{-1} (which can seem a little confusing and it doesn't really matter for our purposes). It is current at which a battery will be fully discharged from full in exactly one hour. So for example, if you had a 3000 mAh cell and drained it at a rate of 3000 mA it would take 1 hr and this rate would be **1C**. If the cell was drained at a rate of 1500 mA this would be **0.5C**.

This value is important to know because different cell chemistries have different levels of charge and discharge they can safely endure. For example if you take two li-ion based cells of the same chemistry and one is a 14500 cell with 800 mAh capacity and the other is an 18650 with 3000 mAh capacity they will not have the same ideal rates of charge or discharge. Pretend we are charging at 2A (2000 mA). This would represent a rate of 0.67C for the 18650 but a rate of **2.5C** for the 14500. Therefore both are li-ions of the same chemistry being charged at the same current but the 14500 is more "strained" by the high charging rate and could suffer damage.

AC/DC CIRCUITS 101

James Reimholz

A simplified look at the internal resistance of Lipo Batteries and it's effect on battery selection.

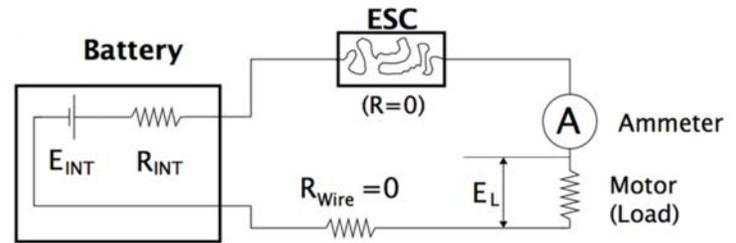
Most of us follow the motor manufacturers suggestions for battery rating selection. Then we might buy an increased C rating so we can charge it faster. But we usually don't notice the slightly larger dimensions and weight increase of the higher C rated battery. If it fits, we will use it!

Another factor we usually fail to take into account is the Internal Resistance of the battery. The higher the C rating, the lower the battery internal resistance.

If we put a Wattmeter in the battery circuit, we can read the value of Watts delivered by the battery to the load (motor) at various power settings set by the ESC, as well as the voltage and current values. This is a very useful instrument because it will tell us if we are overloading the battery, ESC, and motor with different size propellers.

A look at the simplified DC circuit makes it easier to understand the effect of the battery internal resistance in our model application, and why the NO LOAD voltage rating of a battery is higher than the FULL LOAD rating of the battery.

(The advertised voltage rating of batteries is at NO LOAD!)



In the diagram I have separated the voltage producing segment (chemical reaction) and the internal resistance (chemicals) of the battery. The voltage producing segment produces a constant voltage at any current passing through it, but the internal resistance produces an increasing voltage drop with increasing current. Thus the LOWER output voltage at the battery terminals with increasing current(load)!

If we decrease the internal resistance of the battery, it will produce a higher voltage at the battery terminals at any load.

Remember, it's the voltage level that pushes current through the motor. Therefore, at the Max Setting of the ESC, the higher voltage at the battery terminals will produce more voltage, thus more current, and watts input to the motor, more power out!

Of course, the max current has to be kept under the max rating of each of the components to prevent overheating and damage.

This all came to light for me when I wanted more power for aerobatics in my Katana 30.

I was using a 3 cell 2100 mAh Battery. When I connected a Wattmeter to it and commanded the ESC to advance towards full power, I noticed a big drop off of voltage and Watts.

I paralleled two 2100MAH Lipos (reducing the battery internal resistance to half) and the voltage didn't drop as fast, allowing more current, watts, to be delivered to the motor. I then had enough power for unlimited vertical maneuvers for the Katana!

Sometimes a selection of a higher C battery will reduce the internal resistance enough to give you the performance you want. The foam Sukoi I'm currently flying has limited space for the battery.

I purposely selected the highest C rating battery that would fit to get the most power out.

Hopefully this will make it easier to understand the performance of batteries and their selection for our models.

Warning: Your mileage may vary.

KNOW YOUR CURRENT DRAW!

*Bruce De Visser
Brian Chan*

Do you know the current consumption of your airborne system? If you don't, how do you know how long can you stay airborne without landing with a dead battery? You need to find out how much current the RC system uses to figure out how much flight time you can get out of the airborne battery before you need to recharge it. This is especially important for the electrically powered aircraft using a BEC (Battery Elimination Circuit) whether it is part of the ESC (Electronic Speed Controller) or a dedicated BEC.

With *NiCad* or *NiMH* batteries, a 2000 mAh battery pack can support 10-15 Amps current draw without too much trouble, for a short time. With the BEC, when the current draw is more than the rated current capability of the BEC, the voltage starts to drop and can cause a "brown out" situation, and you might end up losing control of your plane. This can also happen if you use a LiPo battery with a voltage regulator. You need to make sure the voltage regulator has a Continuous Rating to source the amount of current your system draws. One point about regulators – when the battery voltage drops below the minimum Input Voltage needed to maintain the Rated Output voltage, the regulator output voltage will reduce, but you may not notice until the aircraft response becomes too sluggish to control – so you still need to know the current draw of your airborne system to calculate safe flying time.

There are a few simple ways to find that out. You can use two DMMs (Digital Multi-Meter), one set to measure the current draw and one to measure the voltage. Or there are a few pre-packaged systems available on the market.



The meter shows 50 ma with rx and servo at idle.

I have used the Hangar 9 Digital Servo and Receiver Current Meter. It is very simple to use, just plug it in between the battery and receiver, starts wiggling the transmitter sticks to move the servos, read the number on the display, then you get

the current of your system. There is a switch on the unit to switch between the current and the voltage. A standard receiver will draw 10-50 mA, and a standard servo will draw up to 300 mA. You can check that by just running a receiver by itself or a servo without any linkage on the servo.



The meter shows 390 ma with rx and servo in operation.

The Servo and Receiver Current Meter also allow you to find out if you have a binding control surface on your aircraft. Put the meter between the receiver and the servo, operate the servo and see if it is drawing excessive current. Then adjust the control surface so the servo will have the lowest current draw. Repeat on all control surfaces to ensure all the control surfaces are binding-free! You can also compare two similar functions (left and right aileron for example) to be sure they draw similar currents – a noticeably higher current on one of them indicates binding.

If you are old school and have an analog Multi-meter (if you know what a Simpson 260 is maybe you shouldn't be flying any longer – oops, that means me!) you can use that instead of the digital variety.

LAKE HENNESSEY FLOAT FLY

Jake Chichilitti

Date line: Feb. 21, 2015

The weather was predicted to be sunny and mild, but was rather chilly in the morning. My friend Eric and I arrived at the lake about 9:15 and saw some of the fellows already setting up at the old location. While it is a great place to fly from, the hill from the parking lot to the lake is steep and not well maintained. Eric and I started setting up at the area just to the left of the parking lot and boat launching area. While not ideal from the stand point of being close to the boat launching ramp, it is much easier to access the lake. There were more fishing boats and kayaks in the lake than I have ever seen before and we have been using this lake for twenty years plus. We were very careful not to overfly the boats and I don't think there were any conflicts with them. So unless something changes, we plan to fly from the area to the left of the boat launching ramp.

There were about sixteen pilots from several clubs, PCC, LFE, SACRATS, TOMCATS, Wine Country Flyers and Liberty Flyers. Other than the chilly morning the weather was great and there was plenty of good flying. There was everything from a large scale gasoline powered Beaver to tiny foamy Cubs.

Ray Squires brought his kayak for retrieving models that couldn't make it back to the shore on their own. Of course there were a couple of dunking's, but not real harm was done. The only real excitement was when Ken Martinez's twin engine combat model had one engine quit and it did a great imitation of a falling leaf and splash.

We flew until about 2:30 or so and Ray loaded up the kayak and headed back to Redwood City. Without Ray's willingness to haul a boat to the lake we would have not float flies. Thanks from all of us.

Safety is foremost when we fly at the lake. Please remember that even though we are not flying at an AMA sanctioned flying site we should follow AMA's safety code. Unfortunately we have had a few incidents where a spinning propeller contacted a person. Don't be afraid to ask for help with your model, either starting it or carrying it to the shore for launching.

Don't fly low over boats that are in the water, especially the boat that is retrieving a downed model. It is a scary feeling to have a model fly near you when you are retrieving a model. There is no place to hide if something goes wrong.

Please fly a left hand or right hand pattern depending on wind direction so everyone is going in the same direction when there are multiple models in the air to avoid a mid air collision.

So our first float fly for 2015 is in the books. I hope we can have more as the year goes by.



Jake's? Chee Photo.



Ray's arsenal. Chee Photo.



Lew's hardware collection at the Lake. Chee Photo.



Beaver on floats, beautiful! Chee Photo.

SLOPE SOARING AT PCC

Dave Santana and Lew Chee walked up the east hill to try to fly his Spirit. They also affixed a ribbon on a pole up on the hill so we can tell the wind condition from the pit.

The condition is the best when the wind is from the north-west.



Dave is flying the Spirit. The wind was from the East, so this is the view from the top of the hill looking towards the east. Chee photo.



Dave posed with the wind indicator. PCC field is on the Center left. The light green stripe is the runway. Chee photo.



The view from the hilltop looking towards HMB. Chee photo.

HALF MOON BAY REVIEW VISIT PCC

The HMB Review contact Ray Squires wanting to come to the field to take some photos and write up about the club to be published in the April issue of the Half Moon Bay magazine, coincide with the Pacific Coast Dream Machine event.



The photographer from Half Moon Bay Review with Greg. Quite a few members showed up and a great variety of airplane. Solaegui photo.

Half Moon Bay magazine March issue link:

http://issuu.com/wickcommunications/docs/half_moon_bay_march2015/1?e=0

GLOW FUEL GROUP BUY

A member, Nils Pederson sent an email to Mike Solaegui, asking if the club is interested on buying glow fuel in volume. He is looking to get some 30% glow fuel. There are available from Byron Fuels, minimum purchase is 8 gallons.

Nils is asking if anyone interests in joining him to get some glow fuel. You can take a look at the web site.

<http://www.byronfuels.com/pages/products.html>

The fuels are available on a per case basis (4 gallons). The order needs to reach a minimum order of 8 cases. There are additional price breaks at 15 and 30 cases. He think the price will be \$20-\$25 per gallon depending on the nitro content.

His phone number is 719-649-3607 and email is gnils@qwest.net

Contact him if you are interested.



Dave and Ken talk to our guests about flight instruction.



Then onto flying with a buddy-box system.



Phil's new toy, a G-28 powered TL-2000 Sting.

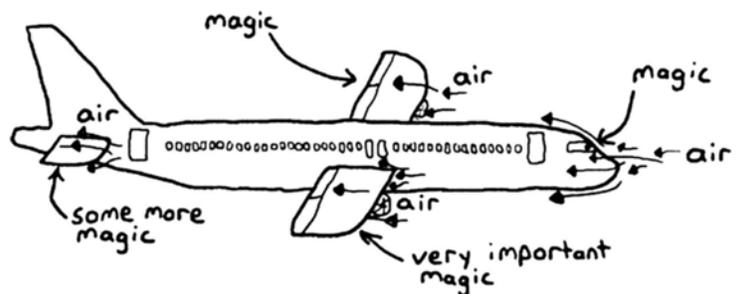


Ken's Benny Boxcar takes to the air.

→ → → → → →

JUST ONE MORE!

how planes fly





Peninsula Channel Commanders

113 Starlite Drive,
San Mateo, Ca 94402
<http://flypcc.org>

Next Meeting: Wednesday, March 18th, 7:30 p.m.

J&M

**1660 LAUREL ST.
SAN CARLOS, CALIF. 94070
(650) 593-5019
FAX (650)593-5164**

**CRAFTS
PARTS
ACCESSORIES
SERVICE**

**CLIFF WHITE
PAM WHITE**

**HOURS
WEEKDAYS 11AM-6PM
SAT. 9:30 AM-5:30 PM**