

PCC NEWSLETTER

PENINSULA CHANNEL COMMANDERS INC

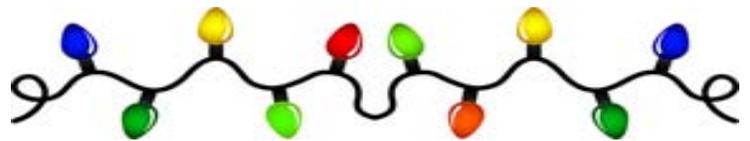
December 2014 Next Meeting: December 17th, 2014 AMA Chartered Club # 139

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

Field Phone: 650-712-4423

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WHAT'S HAPPENING @ PCC



Holiday Party!

Ray Squires

The holiday party will be held on **January 24th 2015** at **Harry's Hofbrau**, 1909 El Camino Real, in Redwood City. The tickets will be same as last year **\$30.00** per person, each ticket is also a raffle ticket. The raffle prizes will be over \$2000.00 this time! Don't miss out! **No host cocktail starts at 6 PM and dinner starts at 7 PM.** Tickets will be available at the *December* and *January* meetings also at the door. **PCC will provide dessert this time, don't get dessert at the line.**

Contact Ray Squires for tickets, 650-575-4273.

NOVEMBER MEETING MINUTES

Dennis Lowry

November 19, 2014

Call to Order: By Mike Solaegui, PCC President.

Raffle: Bind N Fly Horizon Sport Cub from J&M Hobbies.

Thanks to J&M for these raffle prizes that they provide at cost and gladly take upon return for exchange at face value. J&M has been a club supporter year after year from the beginning. Thanks Cliff and Pam!

New Members: George Shoblo a flier at Brisbane Yatch Club. And Jeff Obertelli, a past President and long missed friend who will re-join this year.

October Minutes Were Approved.

SAM21 Old Timers club are building a Single design **Benny Box Car** Competition.

Everybody builds the same thing. They've sold 22 short kits. Most everything is built the same, but you cannot change the outline at all.

Treasury Report:

All is good.

Membership Report: At least 11 paid for 2015.

Safety: All has been good.

New Business:

Harry's Hofbrau Holiday Dinner January 24th, 2014:

Tickets are \$30.00 each

No host Bar at 6:00

Dinner at 7:00

Old Business: None

Hits and Misses: none

Ken lost his Playboy due to miscommunications at launch. He's still looking for it with help from Matt's quad.

Sad Stories:

Ray G. watched the Bomb and not his FW190. The bomb hit, then the FW190 hit.

Show and Tell:

Ray S. showed a microfly for \$40.00.

Ken showed his Zero with retracts. Has ailerons. He will get a Magnum 28 for it. He's taken 2 oz of balsa out of it with a hole saw, and it should fly great.

Ray Showed the FW190 after he reassembled the multiple pieces. It took two nights to reassemble. He used a big pot of hot water to reshape the foam. Then he just re-glued it

together and it fits together like a glove. When super gluing, accelerate one side, then glue the other side.

Nominations were made. There will be one last opportunity to nominate in December, and then we will hold the election.

Adjourned

Dennis

UPCOMING EVENTS

December

17 **PCC Meeting, 7:30 p.m., Dave Chetcuti Rm, Millbrae**

25 **Christmas Day.**

31 **New Year's Eve**

January 2015

1 **New Year's Day, Happy New Year!**

9-11 **AMA Expo, Ontario, Ca**

21 **PCC Meeting, 7:30 p.m., Dave Chetcuti Rm, Millbrae**

24 **PCC Holiday Banquet.**

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

NOMINATION OF PCC OFFICERS

It will happen at the December General Meeting. Come to nominate and vote for your favorite person, or to defend yourself! Don't miss out!

DUES ARE DUE

Hope you have already sent in your AMA and PCC dues, if not, you better come to the meeting to pay or no flying till you get both done!

Dues can also be sent to,

PCC Treasurer
1779 Woodland Ave., Ste. #28
Palo Alto, CA 94303

Send a check of \$125.00 with a copy of your 2015 AMA Card.

Better yet, come to the meeting and pay in person and nominate yourself to become an officer of the club!



RANGE OF YOUR RADIO

Dr. Greg Romine

A few years ago I started buying the Orange receivers from Hobby King because they were “cheap”, and compatible with the Spektrum equipment I was using. They cost me approximately ten bucks apiece. I put one in a GWS Tiger Moth I was flying at the time to check its range, and found out the hard way that at about a hundred to 200 yards out flying northeast the plane lost the signal and went in. (It checked out OK in the pits.) The receivers had a satellite port, so I added satellite receivers to the original receivers, and had no more range problems. The problem was solved by increasing the sensitivity of the receiver.

A few weeks ago I went to a swap meet at the Tomcats flying field. As usual, I found something I couldn't live without. It was a 38 inch Maxford Jenny biplane, fully rigged and with lots of scale details. Beautiful! So, I bought it. It had a Spektrum park flyer receiver in it, so All I had to do was add a battery and set it up to fly. I took it out to the field and performed all the checks, and put it up. I kept it close and trimmed it out, then started flying a bit further out. Again, just like the Tiger Moth, it lost the signal at about 100 to 200 yards out to the northeast and went in. The damage wasn't significant and after bringing it home I was quickly able to repair it. But could I trust the receiver now? What was causing my lack of range? There was no apparent problem with the “park flyer” receiver. Maybe a “park flyer” receiver had inherently limited range, and had to be flown in close. I had to find out to get any peace of mind before flying the Jenny again.

I was able to find something on YouTube where the Spektrum receiver in my Jenny was range tested against five or six other brands of receiver, both 2.4 gig and 72 megahertz. In the test, a receiver was connected to a servo waving a flag. The receiver was then placed in a car, and driven away from the transmitter until the flag began to glitch. A pole was placed beside the road where the servo started glitching, and the distance from the transmitter to the pole was the range. Of the six receivers tested, the Spektrum receiver had the best range of about a quarter mile, or over four football fields away. At that distance, the Jenny would be a barely visible speck, if at all. So the problem wasn't with the receiver.

I've got two computer transmitters. One is a Spektrum DX6i, and the other is the six channel Orange transmitter that's compatible with the Spektrum equipment. Both transmitters have a power function. So, I went back to the internet to try and find out about it. Seems that there are two settings I can choose for the power output of my transmitters. There is a European setting of 100 milliwatts, and a US setting of 200 milliwatts. Both of my transmitters were

factory set to the lower European 100 milliwatt power output. I found out that with my “park flyer” Spektrum receiver, a plane would fly out of range at about the distance I lost the Tiger Moth and the Jenny. From the information on the internet, the Spektrum receiver became “full range” (whatever that means) when the US power option of 200 milliwatts was chosen. I set up both of my transmitters to broadcast at 200 milliwatts of power, and took the Jenny back out to the field. This time she flew well and with all the range my eyes could take!

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PREFLIGHT CHECKLIST (FROM AMA GUIDELINES)

1. Mechanical and Visual: The first pre-check is mechanical. Thoroughly inspect the exterior of the aircraft; look for loose, damaged, or torn covering or structural damage. Pull-test the wheel collars to make sure they are secure. Ensure that the wheels roll freely. If you find any damage, take the model back to the pits and complete any needed repairs. You will be happier for doing so. Make sure that all bolts and screws—engine bolts, muffler bolts, wheel collars, wing-mounting bolts, screws holding the landing gear, and servo mounting screws—are tight. Torque the propeller nut as tight as you can get it with a 6-inch wrench or one of the four-way wrenches to keep the propeller from spinning off during the starting process.

2. Control: Do the controls for the aircraft move easily, without binding? Do they go the correct direction when you move the control stick?

Pay particular attention to the ailerons since they are easily reversed with modern radios. Stand behind the aircraft. If you move the aileron control stick for a right turn, the right aileron should travel in the upward direction and the left aileron should travel in the downward direction.

Pull on the control surfaces to check the hinges' integrity. Sometimes a hinge will break or pull out of the slot where it was glued because of vibration or rough treatment.

3. Battery: Inspecting the battery can be done two ways. You can measure its voltage with a voltmeter that places a load on your receiver's power circuit and confirm that the power indicator on your transmitter registers more than 80%. The other way is to verify that the transmitter *and* receiver batteries are charged for 12 hours the night before you fly. For you electric power flyers, the flight battery needs the same attention and many are charging real time for multiple flights at the field.

4. Radio: Item 1 of the AMA Safety Code for RC flight states, “ I will have completed a successful radio equipment

ground range check before the first flight of a new or repaired model aircraft.”

To perform this inspection, have someone watch the aircraft while you stand 30 paces—roughly 100 feet—from it with the transmitter antenna collapsed. Hold the transmitter in a horizontal position with both hands so the control sticks point straight up and the antenna stub is pointing directly at the model. This configuration will give the worst signal reception, which is what you want for this test. Move the controls to activate the servos while your observer verifies their proper operation. The controls should move freely, smoothly, and with no jitter.

HINGES

From Buzzard Droppings, Barnyard Buzzards RC Club, Duvall, Washington

Another area that brings modelers' opinions to the forefront is hinges. Many use the hinging techniques that become familiar. This is all right if you are building models in the same class (size, weight, power, capability, etc.).

When you migrate from Peanut or .40-size Sport Scale to other types of models, different choices must be made.

Many kit manufacturers include or at least recommend the type and number of hinges to use. Lately, the larger 3-D type ARC/ARF kits do not include any reference to hinging (or control linkages). They leave it up to the modeler to use the components he or she likes.

There are several new tools available to make hinging easier. The idea is to provide a strong connection between parts that have no slop, small or no air gap, no friction or binding, and are simple and repeatable in use.

CA: Many vendors make these glues, but they are not all equal. I have seen many hinges installed with CA fail. When they do, it is tough to fix, often involving cutting the control surface off and rehinging. Still, some modelers swear by them and not at them.

Non-CA: Most hinges are installed with epoxy or white glue. If you use the hinges with a metal hinge pin, before gluing these in, it is a good idea to put oil or Vaseline on the hinge-pin area to prevent glue from migrating to these areas. Pinning the hinge is a very good idea and may save your model someday.

One of the more difficult and time-consuming tasks in constructing a model aircraft is the installation of hinges on the control surfaces. Although the recent use of "CA" type hinges, tape and iron-on film hinges has made the job a bit easier, which types are best for a particular model?

Before we go much farther I suggest you read Don Hart's review of the various hinge types, here; <http://users.colfax.com/dhart/prr/Ri...2003/Mar03.htm>

There are also suggestions for installation, adhesives, and links to more information.

Exactly WHAT are we looking for when we hinge a surface? Well, the simple answer is "movement", flexibility, smooth operation, right? But, there's more. First priority, I'd say "FREE MOVING" They should not put undue strain on the servos, they must move easily. They also must be "STRAIGHT", not off-center, no binding or warping, in alignment with each other. They must be "STRONG", the attachment cannot pull out or loosen, no slop. For aerodynamic purposes they should have a "MINIMAL GAP", large spaces between the fixed and moveable surfaces create unnecessary drag. Last, it would be nice if they were "EASY TO INSTALL" but this rarely happens!

The five main types we'll be discussing here are;

1. TAPE
2. IRON-ON FILM
3. 1 PIECE MOLDED
4. CA HINGES
5. 2 PIECE MOLDED (Pinned Hinges)

For ease of installation, Tape hinges win, hands-down. Align the surfaces with a very small gap, apply "hinge tape" or packing tape, household clear tape. Done! They also have the advantage of being fairly aerodynamic, as the tape covers the gap. There is a method of using tape on BOTH sides, starting with a slightly larger gap, then pressing (with a playing card or other thin object) the two sides of tape into the gap, until they adhere to each other. In effect, this forms an "X" of the tape from the side view. Much stronger, but the "seal" of tape over the gap line is lost. Tape hinges stick well to smooth iron-on, not so well to rough surfaces like bare foam or balsa. They are fairly strong but eventually the tape will loosen, needing replacement. Unless great care is taken to insure an absolutely straight line while attaching, it is easy to build in a "warp" or mis-alignment. They are mainly used on lightweight, low-speed models, and Slope or Combat models, where the "off-color" look, raised ridgeline and (fairly) short life expectancy aren't critical.

Iron-On hinges are one step up from Tape, but slightly harder to install. They can be made to match the existing covering color, don't require slotting or extra adhesive, and are sufficient for small-to-medium models. Here's a photo-and-text description of the technique from Paul K Johnson;

<http://www.airfieldmodels.com/inform...nges/index.htm>

As you can see, like tape hinges, these form a continuous hinge "line" along the surface, resulting in a large contact surface. They are alignment-critical, the technique for adhering the top and bottom sections evenly into the gap requires practice and patience. It is also possible, especially with heavily loaded flight surfaces and/or high speeds, to loosen the covering on the vertical part of the surface, increasing the gap and

eventually loosening the hinge completely. Like tape hinges, iron-on hinges have a finite lifespan, and are difficult to replace completely. The act of pulling the "hinge" off will loosen the actual covering, resulting in more work.

At this point I should mention a technique I've tried that does work on lightweight models and results in a very clean and smooth hinge. That is to cover the entire surface, both fixed and moving, with one piece of film. For example, let's say we're ready to cover and hinge the fin/rudder of a small model. Cut a piece of iron-on (I've used *MiroLite* and *SoLite* for this technique) large enough to cover the entire (2) pieces, and a little extra, about 1/2" oversize. Lay the fin on your bench, with the intended hinge line flush along the edge of the bench. Tack the covering onto a few places around the perimeter of the fin. Now, hold the rudder in it's correct position (in relation to the fin) but with a 1/8" gap, I use a scrap of 1/8" strip balsa for alignment here. Tack/cover the rudder with the same piece. Run the iron around the outside edge of both pieces but don't shrink. Trim the excess, flip it over and cover the other side the same way, "eyeball" the same 1/8" gap. Now, with the tip of the iron, "push" the 1/8" gap material into the hingeline, sticking it to the material on the other side. Keep flipping the piece over, so as to get an even hingeline, the material should meet IN THE MIDDLE of the pieces. In effect, this is like the "two-piece tape" method, an "X" of iron-on material. When you finally shrink the covering the hinges will pull tighter, creating a narrow but flexible hingeline.

Next, 1 piece molded hinges. These are made from stiff plastic with a thin groove in the middle, the actual "hinge". A slot is cut into the surface of the hingeline, the piece inserted halfway and glued, a matching slot in the other surface, inserted and glued. Obviously, all the slots must be cut first, and everything ready when the second piece is attached, all the hinges are glued at the same time. Since the plastic is smooth it helps to scuff it slightly before attaching. These can be used on most models but are somewhat stiff, resulting on a greater load on the servo. It is hard to be sure they've adhered properly and are nearly impossible to replace or remove without damaging the surface. Since they are stiff, they have a self-centering tendency.

CA Hinges are made to be installed with Cyanoacrylate adhesive. Similar to 1 piece plastic hinges, they have a rough surface and are slightly thinner. After a slot is made and the hinge inserted, CA is "wicked" into the hole, binding the hinge to the surface. They are strong, fairly easy to install, although they do require a slot, it is smaller and can generally be made with # 11 blade instead of a special "hinge-Slotting" tool. If done correctly, they are suitable for small to medium sized models.

2 piece molded hinges (pinned hinges). These are about the strongest hinges available (besides composite molded "living" hinges) and are used on many high-stress and

medium-to-large models. They are made from 2 molded plastic pieces with a wire "pin" connecting them. Generally the plastic part has holes, fins or small barbs to aid adhesion. Somewhat heavier than the other types, they are (if properly installed) the most free-moving, and have a very small gap. They usually require a larger slot and a small "channel" or groove cut to hide the pin housing.

Adhesives; My suggestion is to use the strongest adhesive that will work on the surface(s). For example, CA (normal formula) will attack foam, so a "foam safe" formula or epoxy should be used. Epoxy is, in my opinion, the best all-around adhesive for hinges, with the added advantage of a slower "setting" time.

Slotting; For all but the thickest hinges, a sharp # 11 blade is fine. There are several "hinge-slotting" tools available but most seem to be more trouble than they're worth. A good eye, sufficient lighting, sharp blade and steady hand will serve you well. At first a guide line along the center of the hingeline may help, but this is pretty hard to draw!

Installation; My favorite tip is to have a box of round toothpicks handy; When the slots are all cut, use one or two toothpicks to hold the slot open wider, then another one to "drip" epoxy into the hole. Slide in the hinge and have a wet cloth (water) ready to clean up the excess. For pinned hinges, a drop of *Vaseline* on the ends of the pin will help prevent binding.

Well, those are my tips and suggestions for hinging, anyone with more info or opinions, please add it here!

Good Luck

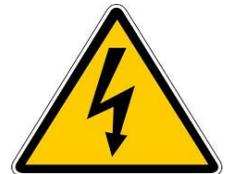
ELECTRICALLY SPEAKING...

What is a "Kv"?

Kv is the motor voltage constant. It indicates approximately how fast the motor will rotate when appropriately connected to a battery. Allow me one little equation:

$Kv = \text{RPM/volt}$ or, stated differently, $\text{RPM} = Kv \times \text{volts}$

In other words, if you power a 1000 Kv motor with a three cell 11.1 V battery, it will run at 11,100 RPM. If you run that same motor with a four cell 14.8 V battery, it will run at 14,800 RPM. Like most things in real life, this is not exactly true, but it is a starting point.



Determine the battery size that will best fit your model, the prop speed you want and use them to determine the motor Kv. You can try various battery voltages (number of cells) in searching for a suitable Kv that will produce the best prop speed.

BUILDING TIPS

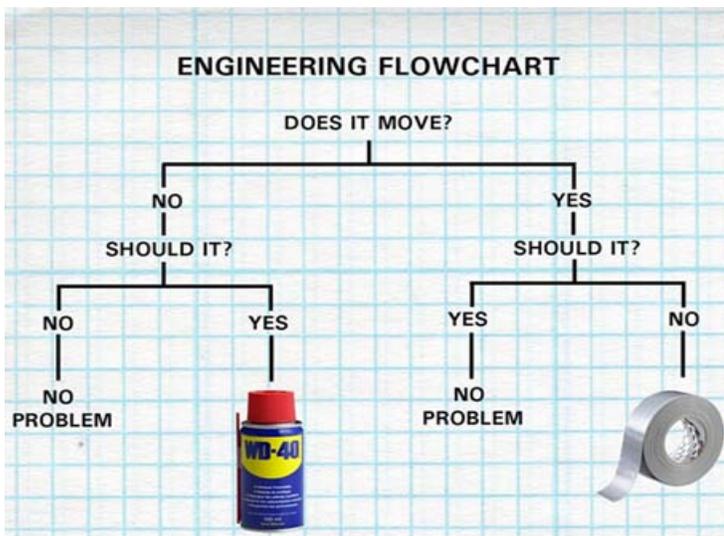
*From Blue max R/C Flying Club,
Buffalo Grove, IL*

Poke a hole in your covering

Gee why would anyone want to make a hole in your nice new covering job. Well holes for wing bolts, switches, hatch screw holes, pushrod openings, etc come to mind. Sure you could cut the hole/opening with a Xacto, or razor blade, but then you have to adhere the fresh cut covering to the surrounding wood. The solution; get an old soldering iron tip (pointed one preferably) and cut the hole/opening with it. I use a 25Watt Weller, and it cuts through the covering with ease, and makes a perfect seal. Once you try this you won't want to do it any other way. One word of caution, clean the tip after each cut. I use a wet sponge like that used for soldering, but use a different sponge as to not foul the clean tip used for soldering. If you don't clean the tip regularly the burned covering will cake on, and not only smell really bad, but will inhibit the cut, as you will not have maximum heat. I thoroughly clean the tip with a wire wheel after each use. After it completely cools of course.

Cutting covering

When cutting sheets of plastic shrink covering nothing beats glass for a surface to cut on, it will not dull the knife or slow it down when cutting. The covering material will kind of stick to the glass if the backing is removed all by itself for easy cutting. You can also use low heat to make it stick even better for critical cutting. You can use solvent to put together large panels of covering without it sticking to the work surface. The best place to find a suitable piece of glass is at the flea market. Look for an old glass top coffee table. The rectangle ones work super if you have the room. Stay away from non-safety glass it breaks too easy...Saw this one somewhere....



I don't think this one requires a caption, correct?



It must have been a hell of a storm at the field. The windsock had been shredded to pieces! Have no fear, Ken M. is already on the job to replace it.



Ray S's new toy, an Eflite UMX Pitts S-1S.



Here is a good size comparison, the Pitts is a little bit bigger than the transmitter, and very small compares to Ray!



John S's E-flite P-51D, flew beautiful on the maiden flight.



This is what Greg was flying, a Mountain Models Lucky Ace.



Ray G's Hobby Zone Sopwith Camel.



This is Ray, the story is not about him, but the weather. This was taken on Thanksgiving Day. It was beautiful and warm, he only had a t-shirt on!



Your Treasurer enjoys a good day flying at Richardson Field. The weather is sunny and warm, low wind while part of the country is under a blanket of snow!

JUST ONE MORE





Peninsula Channel Commanders

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

Next Meeting: Wednesday, December 17th, 7:30 p.m.

PCC and AMA dues are due!

J&M

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