



## Cathay Newsletter December 2007

[www.cathayradio.org](http://www.cathayradio.org)

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**Treasurer:** Vince Chinn, W6EE

**Mission:** The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses

Monday Night Net Time: 9PM PST Frequency: 146.67MHz -600KHz PL85.4 and 442.70 +5MHz PL 173.8 The repeaters are linked. The Monday night net is the best way to find out the latest club news. All check-ins are welcome.

**Message from the President:** Edison Fong, WB6IQN

December is the month for Christmas. We have the Christmas Party December 8. We are looking for candidates for all the offices since elections are in January. If you would like something new in the Club, please either run for office or make a suggestion to one of the officers. All inputs are welcome. Also, if you have anything for the newsletter you would like to share, just email me or call me. Thanksgiving is coming up and that is the weekend of the CQ World Wide for CW. This is a great way to work extra countries since you don't have to be one of the big guns on CW. With my 250 watts on a dipole, I can usually work everyone I hear. Have a great holiday!! I will be off for two weeks during the holidays so if you need a radio tuned or for minor repairs, come on by.

On another note, I'm curious if anyone has visited our WEBSITE at [www.cathayradio.org](http://www.cathayradio.org). We are paying \$50 a year for the site and was wondering if we should renew this service. Drop me a quick line if you have visited our website. WB6IQN

## **2008 Election of Officers**

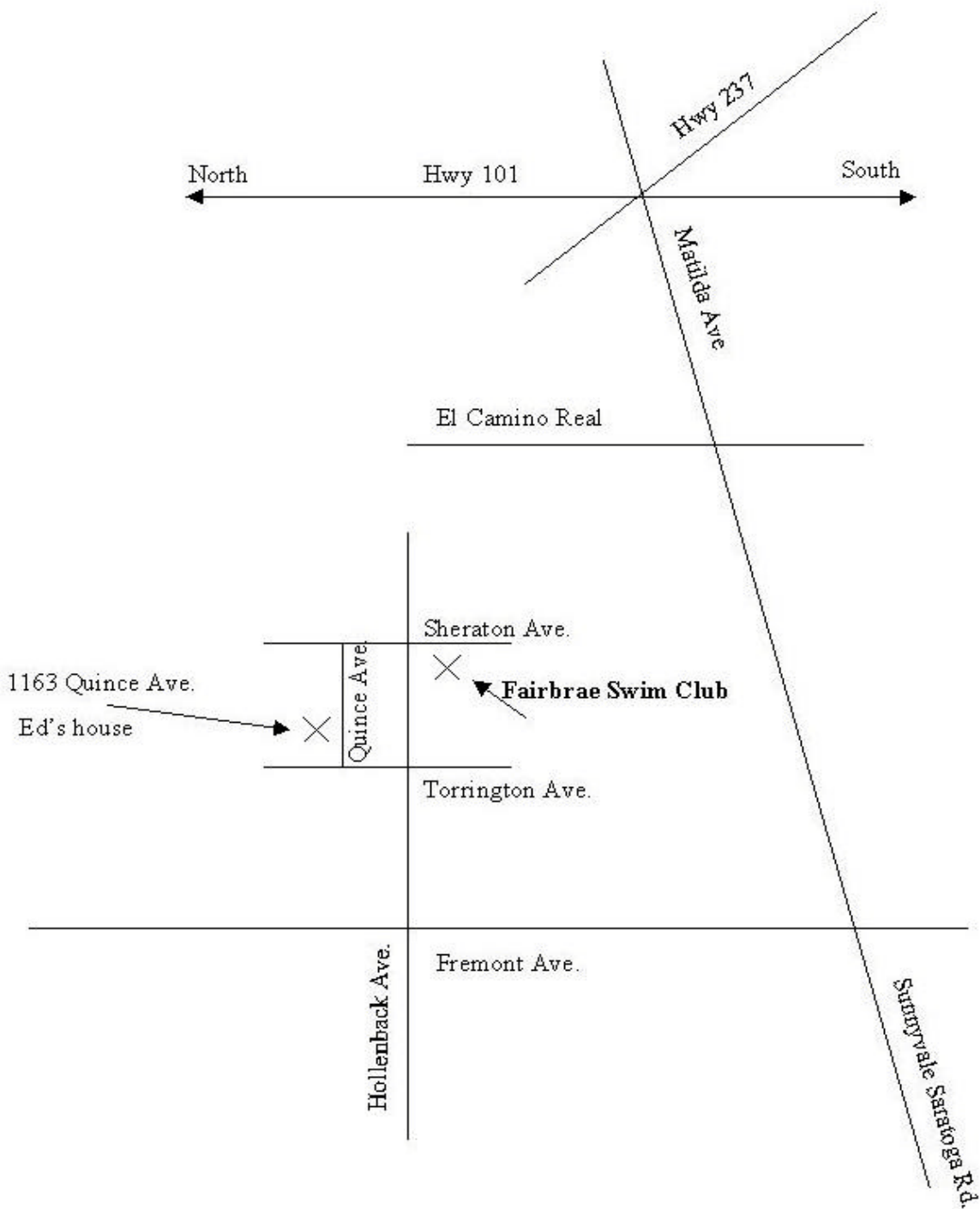
Hey, it's the end of the year and yes it's time to elect new officers. If you like to nominate a person for a position, just email me ([edison\\_fong@hotmail.com](mailto:edison_fong@hotmail.com)). Give the name and position. Any member can nominate another member. Just make sure that the person you nominate has your approval. We can use help with activities, newsletter, tech sessions, mentoring, etc. To me, it is always satisfying to see that people are enjoying the club activities and it is the leadership of this club that determines those activities. The positions available are President, Vice President, Vice President South, Treasury, Secretary (membership).

## **Christmas Party at Ed's House, Saturday, December 8, 2008**

My wife Sharadon and myself (Ed Fong) will host our annual Christmas Party on the Saturday 8<sup>th</sup> of December. Party starts at 6PM or so and usually last till about 10PM. Bring your kids and friends. No need to find a baby sitter. This is a kid friendly event and of course FREE to Cathay Radio Club Members. Bring a dish if you wish, but not required. In the past we have had Italian dishes, barbecue chicken, salmon, Chinese dishes, Korean dishes, all kinds of salads, etc. Not to even mention the various gourmet deserts. If you want great food, plan to come. If you are on a diet, stay home. It's a great way to enjoy ethnic foods for the Holidays. About 1/3 of the people are licensed hams and other 2/3 are just darn nice people. See the pictures of last year's event. My wife Sharadon will bake a ginger bread house for the kids to take apart. You can also bring your radios for minor repairs (no charge) and feel free to use my service monitor and HP9594 spectrum analyzer for adjustments. The address is:

1163 Quince Ave.  
Sunnyvale, CA94087  
Phone number: 408-245-8210

If you need precise directions from where you are coming from, go to [www.mapquest.com](http://www.mapquest.com). They seem to give the best directions or give me (Ed Fong) a call on the phone (408-245-8210). I have included a general map to our house once you get into Sunnyvale.



**Light Emitting Diodes - LED's 101 - continued** *Ed Fong WB6IQN*

Last month, we reviewed the history of the LED. It has been a long arduous effort and perhaps taken for granted the resources and time it has taken to get to where we are today with LED's. Basically, the practical LED was invented in the 1960's. There are no exact dates since there were many groups working on the technology. Initially these LED's were only used in high end equipment. An example being the HP35 scientific calculator introduced in 1972 by Hewlett Packard. The calculator retailed

for \$395, so using the expensive LED display was justified. Initially, a single red LED cost \$10, but as the years went by, one could purchase red LED's for about \$0.10.

By the late 1990's, the white LED was making its mark. The early ones were not very efficient nor were they very bright. As time went on, they became competitive with incandescent bulbs. By 2002, white LED's were selling for about \$3.00 each. Today, standard white LED's go for about \$0.25 each.

White LED's take about 3.5 volts to overcome the energy barrier. This is unlike red LED's which take a little over 1.5V. Thus white LED's take several batteries to run. They will not run on one AA battery. Typically when you take apart a cheap white LED flashlight, it usually requires 3 batteries. This is cumbersome and costly not to mention that it is not very efficient.

The typical white LED consumes around 20ma. This will obviously vary depending on the intensity of the LED. If one wants to run a white LED off of a single 1.5V cell what is needed is a voltage converter. That is, some type of switching supply. This would require active components such as transistors or an integrated circuit. In its basic form, it there would be an oscillator to form a charge pump. High current pumps almost always rely on an inductor to boost the voltage.

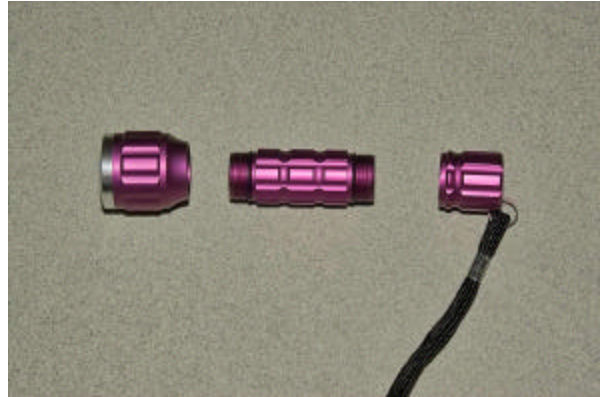
Practical white LED flashlights started appearing in the high end catalogs (Sharper Image, Brookstone, etc) around 2001. Initially, they were not very bright consisting of 1-3 LEDs. Their cost ranging from \$30-50. Most did not even have built DC-DC converters. But here we are 6 years later and one can purchase a single AA cell white LED flashlights with 12 LEDs that will last for 20 hours. What progress?

When I look around, I now see dozens of excellent LED flashlights. One particular LED flashlight that impressed me is marketed by LEDwholesaler.com. It is enclosed in a water tight three piece aluminum machined enclosure. It comes in various colors that are anodized into the case. The cheaper brands will just use spray paint to achieve the various colors. Within a few months, the paint will begin to chip off. Anodized paint is applied using an electrolysis process which will ultimately stay on for the life of the product. It is almost impossible to scratch off. It has a built in voltage converter and will operate with the AA battery going down to 0.7 volts. Typical end of life for an AA battery is usually define to be 1.0 volts. This flashlight really drains the battery until it is totally empty. The nice thing about having a DC-DC converter is that as the battery wears down, the output voltage can still stay constant until the battery is truly dead. The LED's will not dim even if the battery is wearing. The DC-DC converter will make up for the voltage by drawing more current as the battery voltage drops.

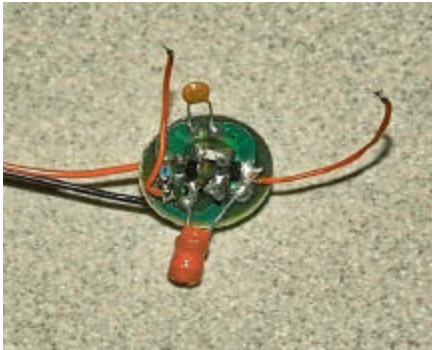
This miracle flashlight is shown in the figures below. It has nice rubber gaskets to minimize moisture penetration. It's not waterproof, but it is certainly water resistant. A flashlight of this type was just a pipe dream just a decade ago. A flashlight of this caliber retails for about \$20. **But if you renew your membership, the Cathay Radio Club will send you one absolutely FREE** or you can pick yours up at the New Year's banquet. You can forget about buying dozens of AA batteries. Just one cell will last you for years under typical use.



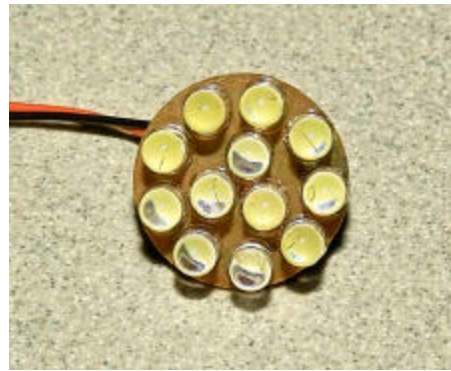
The complete flashlight that runs on one AA battery. The purple color is applied using an anodized process. Remember, renew your membership and receive this hi tech flashlight **FREE**.



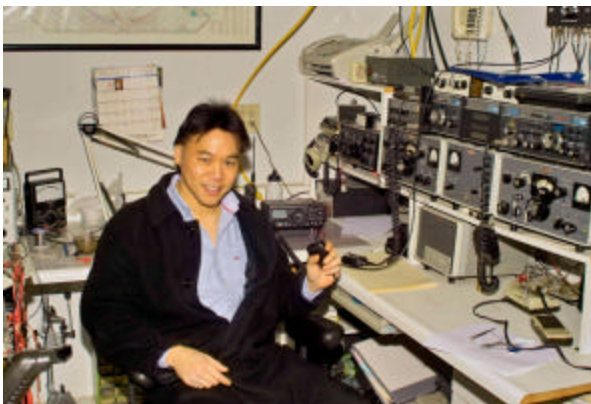
It consists of 3 pieces that are machined, not stamped. Notice the rubber gaskets that make it water tight.



This is the DC-DC converter board which converts the 1.5 volt AA cell to 3.5 volts to run the LED's.



This is a close up view of the 12 LED's.



Here is Sheldon Mah KD6MNZ at last year's Christmas Party.



This was the ginger bread house the kids enjoyed at last years party.

## ***PROBIOTICS – Bill Tom KN6QD***

Probiotics are live microorganisms (bacteria) that confer health benefits to your body. There are at least 500 species of microorganisms in the intestines, mouth vagina and on the skin. At least 85% of them are friendly good bacteria. The other 15% include yeast, fungus and hostile bacteria that are the bad guys.

From the time you were born, you have eaten dust, mud-pies, dirt, worms and bugs that you might have pick up from your floor, lawn and yard. Your body's immune system is programmed to retain those bacteria that are friendly to you, and to induce diarrhea, stomach ache, and vomiting to rid those you did not need.

Over the years of refined living eating processed foods, sterilized Chlorox environments, and antibacterial soaps to reduce infections, you have also eliminated the good bacteria that you need to survive. Indeed, you need both friendly and unfriendly microbes to maintain the normal functioning of your intestines' else there would be an overgrowth of one particular type. Each species will produce its own antibiotics to control the proper balance of every other species. Otherwise, you would have diarrheas, constipation, gas, and infections by overgrown pathogenic microorganisms.

In special instances, particularly if you have taken an antibiotic, it might be necessary for you to ingest friendly bacteria, such as lactobacillus and bifidobacterium to maintain an acid intestinal environment to reduce the overgrowth of yeast and fungi. It was said that the bulk of fecal material is comprised of 50% bacteria. These bacteria are to breakdown the residue of food material into much simpler chemical forms, such as carbon dioxide, methane and low molecular weight substances into a natural recycling system and for ease and comfort of elimination.

For your health, it might be wise for you to consume some form of yogurt that has been fortified with acid-producing lactobacilli and bifido bacteria. Take a lactase enzyme tablet if you are sensitive to milk lactose. Probiotics are not recommended for people who are immunosuppressed. However, it is a very cost effective way to treat diarrhea and to prevent traveler's diarrhea complications. *kn6qd*

## Ham Cram -EARN YOUR RADIO LICENSE IN ONE DAY!

**Sunday, January 20, 2008**

**8:45AM SHARP! - 3:00PM**

San Francisco County Fair Building Hall of Flowers – Rec Room  
9th Avenue and Lincoln Way

There will be a General cram for Techs same place & time.

Ample free parking. Great lunch restaurants nearby.

Bring 2 IDs (one with picture), a pencil and

\$20 cash for Technician study materials and test **OR**

\$40 cash for General study materials, lecture and test **OR**

\$14 cash for testing only (general, extra, Morse tests available too)

**8:45AM Study checkin, Don't be early or late. Drop ins OK.**

**Test only 1:30PM.**

8:50 Beginners' tips, donuts

9:00 Self-study starts, coffee

1:30 Exams begin

No advance preparation needed for beginners, we do it all in 6 hours. General exam class at 9:15AM (if you are already licensed).

Questions? **hamcrams.com**

Next test date March, 2008

Passing this test will get you a ham radio license from the FCC good for 10 years. You will be able to use:

- local repeaters for Bay Area communication
- Echolink for Internet-based radio
- satellite and moon-bounce
- international shortwave frequencies for global communication!

Come and join the great world-wide community of ham radio.