



Cathay Newsletter

March 2006

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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 link. The Monday night net is the best way to find out the latest club news. All check-ins are welcome

President's Message

Greetings to all,

As I begin the 2006 term as club president, the first person whom I should like to thank is Louis Brill, NQ6S, who is a Silent Key. If not for Lou, who became my sponsor into Cathay (and also my wife's sponsor), I might never have had more than a moment's interest in joining. But Lou, being the person he was, said, "Come meet these people, they're good people", and so here I am today. Looking back, the VE team when I took my Technician and Technician Plus exams (same day) included Dan K6GOW and Shew AD6DM. The VE team when I took my General exam was George W6BUR, Vince W6EE and Jim KO6QT. Jim gave me the 13wpm code test. Dan K6GOW was the VEC at my Advanced license exam. From my first day as a member with Cathay until today, I have never had a bad experience at a Cathay function. I've always been able to take at least one good memory home from each get-together. I've won prizes, met uncountable new friends and learned more than I can describe in this limited space. This is the philosophy and tradition my predecessors in Cathay have taught me, by example. Whether they have held office or not. Maybe it wasn't even a club member on that particular day that gave me a special memory. It could have been someone's spouse, asking if I needed a drink of water, or one of the children laughing at goodness-knows-what. It brought a smile

to my face, and it was at a Cathay event. That's what I want to continue this year with the present Board and membership. I want everyone to look forward to attending our events. I want the word to spread to good people who will add to the smiles, laughter and the anticipation of a wonderful time. Embroiled as my wife (Connie, KF6WEA) and I are in Emergency Communications, it's a breath of fresh air each time we look at the calendar and see a Cathay event approaching. I want others to feel the same way. I want everyone to know that my door is open to all suggestions that will make Cathay more fun and more entertaining. Email me. Phone me. Better yet, let's meet on the air. I will not say to the club, "This is the only way because I said so". This club belongs to the membership, and I am at your service. But we all need to contribute together. The club cannot continue forever with only a small group doing all the work. So please, if you have an idea, or if you are willing to help by chairing or joining a committee, or if you are willing to make a few phone calls because time is short and the word needs to get out, please, pitch in and let us know that you are available; there are a million and more things that a club can do that a few people cannot. This isn't my club, it's our club. Let's all join in and make it even better!

73

Tony Halog, KR6EG

From the Editor – Edison Fong, WB6IQN:

Welcome to the first issue of the Cathay Amateur Radio Newsletter for 2006. First of all I wish to welcome our new President Tony Halog. Tony has been with the club at least 6 years so he knows many of you. He is an avid ham and contributes endless hours to disaster services. Please give him your warm support.

We had a great Banquet at the Royal Garden Court Restaurant on January 17, 2006. The food was great and there was plenty of it. The restaurant owner, Bert, gave us superb accommodations. I counted 80 adults and 6 children. I also saw a lot of new and old faces. I like to thank Margaret who so diligently collected the money and organized the seating. The overall value of \$28 per person and no charge for children was a great deal. Where else can one get a ten course Chinese banquet dinner, complete with Peking Duck, for that price? Burt, the manager and owner of the restaurant, made extra dishes like egg rolls and a chicken dish for the kids and did not even charge us. I wrote him a thank you card since he went out of the way to accommodate us. I saw a lot of visitors so maybe the people that invited them should ask them to check in on the Monday night net. The annual Chinese New Year dinner is not the only event we have. We have the annual picnic, ARRL Field Day, tech day, and annual field trip. If we show these people what we do, eventually these people may want to join us.

The raffle again was very popular at the banquet. We ended up with a \$49 surplus from the raffle sales. That was after we paid for the laysee's for the ladies, and the repeater fund (total \$220). So thanks, you all help contribute. Maybe it was the cute girls selling the tickets (see photos)? Thanks to the generous donation of the Motorola GM300 from Bob Fishman (K6FSH).

So who won the great prizes? First Prize went to Bill Chin (KC6POF). He is now a proud owner of Yaesu FT817FD (shucks, I always want one of those). What a radio. 2000 memory channels, all mode from 160 meters all the way up to UHF. It will do SSB, AM, FM, CW, etc. Well, second prize went to my wife (Sharadon). It was a Yaesu VX2. Maybe now she might get her license (wishful thinking). The other second prize went to George MacWilliams (KM6RR). He had a choice of either a VHF or UHF Motorola GM300. He chose the UHF one since he has a repeater on UHF in San Francisco. You can see the happy folks below with their prizes. Howard (N6MNV) took the photos.

There was about \$1500 in prizes and this time many of the winners went to visitors so I didn't even get many of their names.



Grand Prize winner of the Yaesu FT817, Bill Chin KC6POF. He bought 4 tickets. What an investment?



The 2006 President, Tony Halog KR6EG, and his wife Connie KF6WEA.



Winner of the 2nd prize, a Yaesu VX2, was Sharadon Smith.



These were the 3 finalist for the Yaesu FT817, Bob Lai KM6QP, Jose Reyes KO6HT, and Bill Chin KC6POF holding their potential tickets.



How could you not buy a raffle ticket from these 3 young ladies, Mei-Lin, Katherine, and Violet?



One of 8 tables at the banquet. Here we have George Chong W6BUR, Bill and Linda Tom KN6QD, Bill and Florence Chin KC6POF, Mike Habib WA2JDO, Jose Reyes KO6HT, Bob Lai KM6QP, George MacWilliams KM6RR, Paul Kitagaki W6NDA, and Judson Chu W6WTY?

The Motorola HT220 Installment 1 By Edison Fong WB6IQN

I have had a lot of inquires and curiosities in regards to my affinity for the Motorola HT220 handie talkie. What are these little GEMS anyway? Well, I will have several installments in this newsletter and describe what these little GEMS are all about. Many of the stories will be taken from the HT220 website. (www.batnet.com/mfwright/HT220.html). I understand that the website is temporarily down but will be back up soon. This website is managed by Mike Wright K6MFW. In this first installment, I will share some of my personal experiences. Later issues of the Cathay Newsletter will feature inputs from other enthusiasts.

When I was growing up in high school 35 years ago, the Motorola HT220 revolutionized the world with this little marvel. Prior to that time, portable radios were bulky, and consumed exorbitant amounts of battery power. There was nothing I would call a pocket walkie talkie until the HT220. Motorola had the HT200 which was introduced in 1963, but it was huge. They didn't nick name it the "brick" for nothing. It weigh in at 3 lbs. Hardly what I would call portable. So there I was a 14 year kid back in the 1969 with my mouth drooling at the newly introduced Motorola HT220. There was only one thing that was stopping me from personally owning one, the cost, \$1800 in 1969 dollars. That is like \$5000 in today's terms. Totally out of the question for my budget. When I ran into George (W6BUR) back in about 1972, he had one of those. As I recall, it was a short omni. The details I don't remember but all I could say that it was some radio. The other thing I remember was that George could not even afford to buy the special NiCad battery but had the one time use mercury battery. I believe the nicad battery was about \$60 at the time. This radio was clearly the talk of the town back then. If you had one on your hip at the monthly club meetings or swapmeets, all others were envious of you.

So what is so special about this radio? Just right off the bat here are some notable features. Using specially design circuitry, the radio only drained 3.5 ma on receive. Even today's radios cannot match that performance. Both the receiver and transmitter out performs virtually any hand held transceiver today. This is because the HT220 does not use PLL synthesizers in generating its oscillators. All oscillators are generated with crystal oscillators which contribute virtually no phase noise. The transmitter also uses all carefully tuned narrow band circuits, thus making the receiver and transmitter very efficient and quite immune to spurious signals. With 1.8 watts output with the 15 volt battery, the current drain was only 300ma. Most 2 watt handhelds today drain on the order of 700 ma due to their inefficient broadband power amplifiers. Off course current radios are synthesized. The audio was also loud, really loud. The audio could blast through in a noisy environment like no other radio, even by today's standards. Remember those noisy riots back the 1960's. Police and fireman demanded loud audio.

The HT220 was clearly the most versatile hand held for its time. Weighing in at only 20.5 ounces, it was clearly the premier HT of its day. The previous HT200 was 3x the volume as can be seen by the photo below. One could configure it from 1 channel to 6 channels with or without PL. Unfortunately, one had to buy a set of crystals for each channel. A set of crystals would about \$30 per channel; one crystal for receive and one for transmit. So for 6 channels, one had \$180 invested in crystals alone. So this was definitely not a cheap radio. Just think what type of handheld one could purchase for \$150 these days. The HT220 was available in 2 watt and 5 watt versions. There was an option for an external speaker microphone, but not on all models. The radio even had a choice of a collapsible whip antenna to give that extra gain (about 3db) without increasing the transmit power. This was the radio Inspector Erskine used on the FBI and Steve McGarriet used on Hawaii Five-0 . It was even used by Angie Dickinson in Police Woman.

Motorola devoted a complete integrated circuits team for the development of two custom IC's for the HT220. One was for the entire FM modulation section and the other IC for the IF receiver. No other radio manufacturer had working IC's in a VHF/UHF FM transceiver at the time.

Next month we will feature some of the more unusual models such as those used by the Secret Service and Emergency Medical Service (EMS).

The one shown in the picture here is the smallest of the line. Also known as the slimline, this one sports two channels and a programmable PL from the front panel. The programmable PL is an aftermarket ComSpec SS-32 board which is sandwich between the main circuit board and the front case. In order for the PL board to fit, about 2mm of the front must be milled down so that the board can fit inside the radio. This is a modification I came up with several years ago.



The HT220 with its predecessor, the HT200 by its side.

Meeting on Saturday April 8 at Harry's Hofbrau – in Redwood City

Our first meeting of the year will be held at Harry's Hofbrau in Redwood City. This will be after the DeAnza College swap meet. So about 12 noon, we can start gathering there. The primary purpose of the meeting is to solicit suggestions from members on what we wish to do for the year. Just give us suggestions, the officers and the board will do the rest. We promise not to "volunteer" you for anything.

Directions to Harry's Hofbrau in Redwood City (1909 El Camino Real – 650-366-3733):

From 101 in Redwood City take the Woodside Road exit. This is also known as Highway 84. It only goes towards the mountains and not towards the Bay. Go about 1 mile on Woodside and you will approach El Camino Real and Woodside. Harry's Hofbrau is on the corner of Woodside and El Camino. Woodside Road will be an overpass over El Camino so you can either exit before or after the overpass. Either way will get you back to the corner of El Camino and Woodside Rd. The meals are great and the sandwiches are between \$4-6. You can choose from roast beef, baked ham, turkey, pastrami, etc. The breads include white, wheat, rye, onion roll, French, Kaiser roll or Dutch Crunch.

Or if you prefer, you can order ½ sandwich of your choice and a cup of home made soup for \$5.49. They have all types of desserts if you still have room after their great sandwiches. The atmosphere is great. They give us the meeting room free so it is no cost to the club.

We will have a raffle but this year it will be different. How many of you have dreamed of having a “real radio”? That is, not some \$150 consumer grade Yaesu, Icom, Alinco etc. Please don’t misinterpret me, these are great radios for the price. However, these radios could never qualify themselves as “commercial grade” radios for use by law enforcement and fire departments. Police and fire departments demand much more rugged radios both electronically and physically. Their receiver overload protection is far more demanding. Also, the audio needs to be much louder (like 10 watts), especially on a firetruck or ambulance. The spurious transmissions must exceed -60dB. Well, as you can see by the picture below, this will be our main raffle prize. Thanks to Robert Fishman, N6FSH who has kindly donated this radio to the club. It is a Motorola GM300 25 watt 16 channel mobile, complete with all accessories. The winner gets their choice of VHF or UHF. Programming can either be performed by Howard N6MNV or myself (Ed Fong). You will never regret owning one of these. The GM300 retails for about \$400. Of course there will be other smaller prizes. Hope to see you there.



This is the grand raffle prize for the April meeting, a Motorola GM300. Don’t miss it.

The Anatomy of the Avian Flu Virus – Bill Tim kn6qd

Influenza (Flu) virus comes in three types, identified as A, B and C. Type C affects only human, causing trivial symptoms. Type B is a serious infection, infecting humans and pigs. It causes an epidemic (regional) out-breaks. Type A, of the Avian variety, is the most serious that can cause a pandemic (world-wide) infection, with high mortality.

Type A influenza viruses are categorized and defined as proteins that are identified by the use of the terms, H and N. The principle proteins involved are Hemagglutinin (H), which is the outer shell of the virus, covered by a lipoprotein, to enclose the inner Neutraminidase (N). The neutraminidase helps to release the newly created viruses from the human cell and it also contains the RNA (ribonucleic Acid), which acts as the genome ‘architect’ to replicate more viruses.

The Hemagglutinin shell penetrates a human cell wall, to release its RNA to force the human cell to reproduce more viruses. The new viruses then burst forth from the cell to enter other cells to reproduce more viruses, in an unending chain-reaction to overwhelm the body's immune system. Avian Flu viruses are normally not transmittable to humans. But, sometimes, in a reassortment action, also known as a "gene swap", the RNA could interweave a pig gene, for example, into its structure to produce a mutant form of the virus that is more easily transmitted to other humans. There is also a process known as "genetic shift" that produces mutant strains by exchanging an Avian virus segment with that of a regular human influenza virus to enable it to transmit from human to human to start the pandemic cycle. The antibodies developed by the immunizing vaccine would not be able to cope with the new mutated forms. However, more recently, an Avian Flu virus was able to transmit directly to humans from sick chicken that ultimately mandated the killing of millions of chicken.

The virus of the Spanish Flu has been cataloged as H1N1. The latest Avian Flu virus is known as H5N1. To date, researchers have identified sixteen strains of Influenza Viruses, from H1 – H16. The more pathogenic strains, so far, are named H5 to H7. So far, the known human flu viruses are H1 to H3 that can be transmitted from person to person.

It is known that wild ducks and geese carry all the necessary ingredients stored in their intestines to produce every strain of known Avian Flu viruses. When these birds fly south during their routine annual migration, their fecal discharges randomly pollute the waterways, ponds and lakes to infect chicken, domestic ducks, pigs, and horses. These migratory birds freely empty themselves immediately on taking off from the water and throughout their flight to lighten their weight as they fly over the Asian Continent. It was calculated that one gram of duck feces in the water could infect one million birds or animals.

Immunization

The H portion of each virus becomes the antigen in the blood stream to cause our immune system to produce antibodies that are keyed only to that virus. Our immune system does not have eyes, ears or nose to search out the viruses. It can only sense the shape and profile of the virus to create an antibody in a reverse shape, as though a key is fitted to a door lock. The antibody has to fit that shape exactly to disable the virus. If the shape of the virus is changed however slightly, the antibody cannot be effective.

The process of producing vaccines to immunize our population is fraught with problems. Our medical people felt that a shot in the dark is still better than no shot at all. The immunizing virus was collected over a year prior because it takes that much time to produce a harvest of the vaccine, hoping that the virus had not mutated. The current flu vaccine cannot protect you against the Avian Flu, but it could block the regular influence virus should you be infected with both types at the same time.

To create the vaccine, the flu virus must be incubated in a fertile chicken egg. The primary problem is that the H5N1 virus kills the chicken embryo, which is the growth medium. To offset that problem, the vaccine must now be made by using a patented procedure called, "reverse genetic technology", which is an even slower process to avert a raging spread of a pandemic.

The Taoism of Averting Pandemic Avian Flu

Currently, there is no curative treatment for Avian Flu. The two known drugs we have, Tamiflu and Relenza, are for symptomatic relief. The Tamiflu is an herbal drug made from the Chinese anise,

which is now in short supply. The better option is to beef up your internal strength to overcome the virus you do pick up. I offer you the following suggestion.

One of the four philosophical sages of China was Lao-Tzu (The Old Master, about 600 BC), who lived prior to Kung-Tzu (Confucius 500 BC), Mo-Tzu (400 BC) and Meng-Tzu (Mencius 400 BC). Lao-Tze did not have an anglicized name, but he was most famous for his profound theory of the Tao (pronounced 'Dow'), in which Ying and Yang were its most well known precepts.

The Ying and Yang principle actually means "dark and light" (dark and light must co-exist), but it is applicable to "no and yes", "down and up", "in and out", "left and right", "off and on", and "antagonist and agonist". It truly defines the reality in nature. For example, the most complicated computer programs are run by a series of zeros and ones, zero meaning ying (off) and one is yang (on). Our body is operated by the sympathetic (yang) and parasympathetic (ying) nervous systems. Our entire being is based on creating the normal by adjusting the ying and yang in our body.

In keeping with Taoism ('Dow-ism'), the most profound system of Chinese medicine is the "heat and cool" principle used by most Chinese families for thousands of years. Heat is described as the acid status of your body system and the cool is the alkaline mode. It is assumed that if your blood is slightly too acidic, you are more prone to have infections. The acid (heat) factor (ygit hey, in Chinese) is the over-consumption of proteins, especially fried meats. The alkaline factor (leong) is contained in the vegetable you consume. If your blood level is maintained at the normal alkaline pH of 7.4 level, you are in good vibrant health because your immune system and enzymes are at their maximum potential at that pH level.

Your hands are the transmitter of most infectious diseases. It must be presumed that other people do not routinely wash their hands. If you touched what they had touched, you have picked up what they had. If an infected person coughs or sneezes in close proximity, you could avoid him, but you may not if he coughed or sneezed into his hands.

In a recent survey, it was found that the shopping carts at the supermarkets are the most contaminated items you touch regularly.

We should have concerns about the Avian Flu, but be not paranoiac. The best defense is not to catch the virus. The drug Tamiflu is an herbal medication manufactured from Chinese anise seeds, and is effective as a treatment for early flu symptoms, but it had never been tried against Avian Flu. The best defense is to wash your hands before you eat or touch your mouth, nose and eyes. Carry a bottle of Purell (hand sterilizer). Get enough sleep, exercise regularly and eating immune-boosting foods. Remember that heat kills the Avian Flu virus.

It was reported that shitaki mushrooms have been proven to have a high concentration of polysaccharides that could enhance the body's immune qualities. It is 40 times richer in antioxidants than blue berries. They are effective fresh or dried to kill bacteria, viruses and some forms of cancer. Other reports also suggest eating fewer proteins, more vegetables. Plan to drink 6 to 8 glassfuls of liquid each day to keep your mucous membrane moist and free from cracking. The skin is our first line of defense against invading bacteria and viruses. Dr. Andrew Weil, MD, recommends taking the Chinese herb, Astragalus, as a daily tonic, as well as drinking green tea. While chicken and eggs are

safe to eat, they should be well cooked. Avoid egg 'over easy' for this period, since flu virus can survive in raw eggs.

To our health!