

Cathay April 2014

www.cathayradio.org

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Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM Local Time/PST, Frequencies: 146.67MHz -600KHz PL85.4 and 442.70 +5MHz PL 173.8. The repeaters are linked only during the CARC Monday night net.

Update: Link to repeater 442.70 is currently not active until further notice.

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

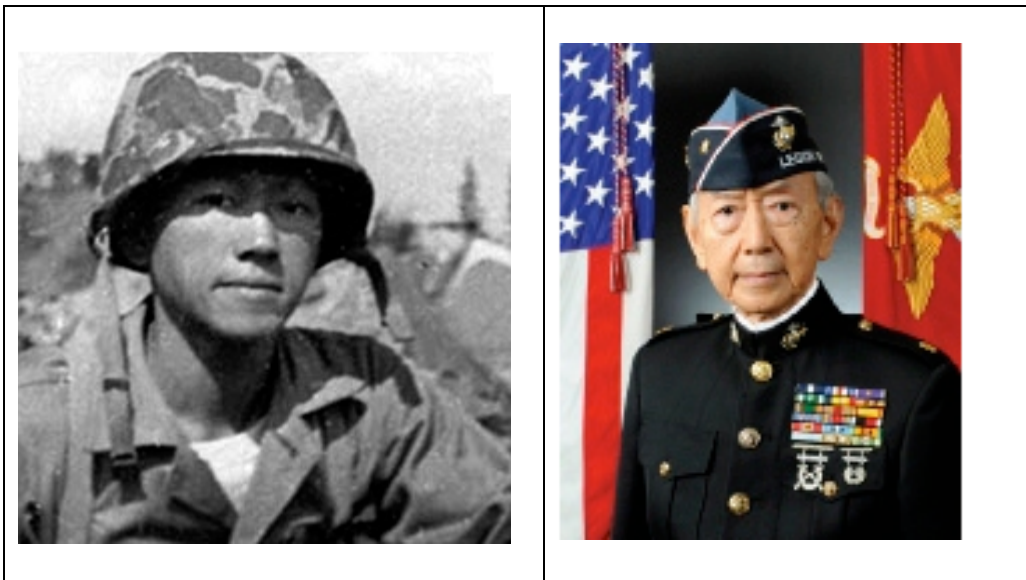
Message from the President: George Chong, *W6BUR*

Hello CARC Members and Friends;

I know everybody is very busy during this income tax season! However, I hope you take the time to read this April 2014 issue of the CARC newsletter as it has special meaning to me as a WWII veteran and the fact our club was founded by Asian American WWII veterans.

Major Kurt Chew-Een Lee (ret.)

In 1946, our radio club was originally founded by returning Chinese American WW II veterans. Therefore; it is only a fitting tribute to our US Chinese American Military Veterans, that I mention the passing of Major Kurt Chew-Een Lee (ret.).



Lee passed away at his home in Washington D.C. at the age of 88 years old on Monday March 3, 2014. Lee has the distinction of being the first Asian American commissioned as an officer in the US Marine Corp. He was recently in the Bay Area serving as the Honorary Grand Marshal in the San Francisco's Chinese New Year Parade that was recently held on February 15, 2014.

As a 24 year old Marine Corp Lieutenant, Lee distinguished himself in the Korea War during the 1950 Battle of the Chosin Reservoir between the Chinese Communist Army and the surrounded and outnumbered US Marines.

Lee with his shot up right arm in a sling, he personally led a 500 man relief column in the dead of night using only a simple compass to guide him over treacherous mountain snow laden terrain. Two previous attempts to send the relief columns by road had failed; this was the US Marine's last chance. Carrying very heavy combat loads, they had to fight an entrenched enemy blocking their way to relieve Fox Company that was barely holding onto a vital and strategic Tokton mountain pass. In the 5 days of constant heavy fighting the 220 men of Fox Company were reduced to 82 men.

Once the Tokton mountain pass was secure, it open the way for the 8,000 men of the First Marine Division a means of conducting a successful retreat instead of facing complete destruction by the enemy. For Lee's military actions and his combat leadership style of leading his men from the front, he was awarded the following medals: Silver Star, the Navy Cross and the Purple Heart medals.

Featured Tech Article

This month's article is about the new application of an appliance that we all have in our homes. I am referring to our home microwave ovens operating at the 2.45 GHz frequency or in large industrial/commercial microwave ovens operating at the 915 MHz frequency.

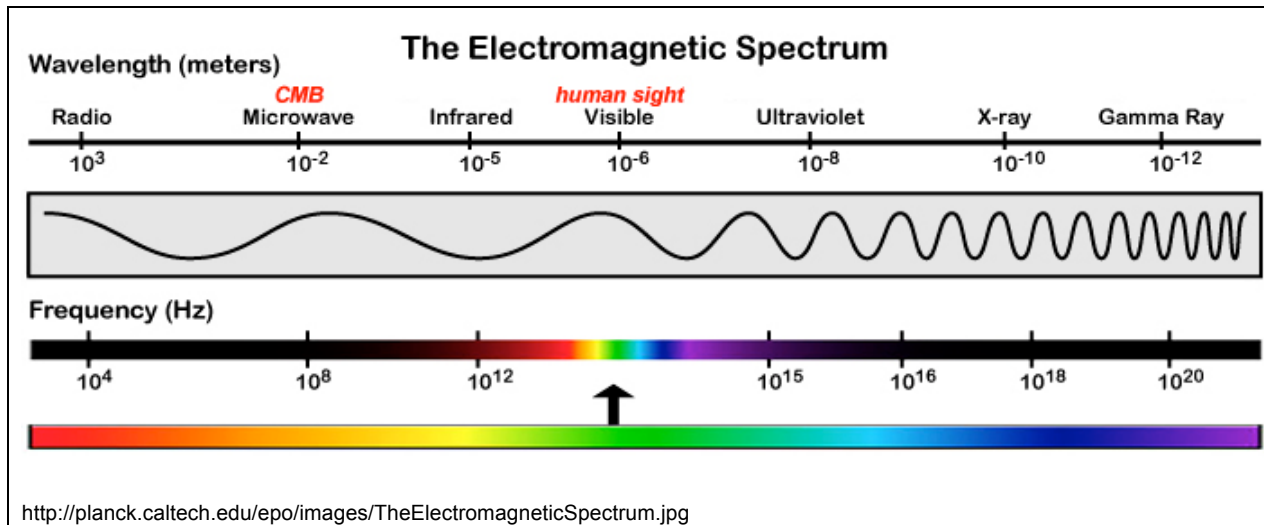
The depth of penetration of microwave energy at 915 MHz is about three times as great as that at 2.45 GHz. However; the size of magnetrons and wave-guides for a 2.45GHz system has a much lower cost and is considerably smaller than those used in 915 MHz units, thus making them more suitable for home use (<http://www.industrialmicrowave.com/faqs.htm#six>).

Some of the industrial use of large commercial microwave ovens:

- Preheating rubber before molding
- Heating of raw materials for cosmetics and pharmaceuticals
- Processing of ceramic materials
- Drying and curing of products
- Food processing

A company called MicroZap has developed a microwave device that can be used for sterilization to kill mold spores and bacteria. The MicroZap device uses microwaves in the same frequency as commercial units, but introduces different types of microwaves using a slotted radiator that provides a homogeneous signal thus eliminating the hot and cold spots common in kitchen microwaves ovens.

A little background about microwaves; they occupy the electromagnetic spectrum between the upper radio frequencies and the infrared frequencies. That is with wavelengths from 1 meter to 0.1 centimeter which is equivalent to the frequencies between 300 MHz and 300 GHz (300,000,000 Hz to 300,000,000,000 Hz).



For more information please refer to: <http://en.wikipedia.org/wiki/Microwave>

A refresher on HAM Radio Frequencies:

HF is "High Frequency" – Amateur Bands:	VHF is "Very High Frequency" – Amateur Bands:
160 meters (1.8 MHz – 2.0 MHz)	6 meters (50.0 MHz – 54.0 MHz)
80/75 meters (3.5MHz – 4.0 MHz)	2 meters (144.0 MHz – 148.0 MHz)
60 meters (5.3 MHz – 5.4 MHz)	1.25 meters (219.0 MHz – 225.0 MHz)
40 meters (7.0 MHz – 7.3 MHz)	
30 meters (10.10 MHz – 10.15 MHz)	UHF is "Ultra High Frequencies" – Amateur Bands:
20 meters (14.00 MHz – 14.35 MHz)	70 centimeters (420 MHz – 450 MHz)
17 meters (18.068 MHz – 18.168 MHz)	33 centimeters (902 MHz – 928 MHz)
15 meters (21.00 MHz – 21.45 MHz)	23 centimeters (1240 MHz – 1300 MHz)
12 meters (24.89 MHz – 29.99 MHz)	
10 meters (28.0 MHz – 29.7 MHz)	

Now armed with this background of knowledge, please enjoy this month's featured technical article: **"Bread That Lasts For 60 Days Could Cut Food Waste"**.

CARC Final Wrap-up News

Chat sub s'em to all you fantastic and dedicated CARC members! - George W6BUR.

Public Service Announcements

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:

<http://www.arrl.org/find-an-amateur-radio-license-exam-session>

Bart Lee – K6VK

California Historical Radio Society (CHRS) SEEKS DONATIONS FOR NEW LOCATION IN CENTRAL ALAMEDA

TODAY'S CASH TOTAL BUILDING FUND DONATIONS = \$1,022,700!

The Purchase and Sales Agreement has been signed by CHRS to buy 2152 Central Avenue in Alameda. New home of the Bay Area Radio Hall Of Fame, the Maxwell Communications Library, the Society Of Wireless Pioneers Archives, the CHRS Vintage Radio Museum and so much more

WE ARE NOT DONE! – CHRS has done something that most non-profits only dream about. We have raised enough money to buy a permanent home. But, we can not let up. A big push to the end of this campaign is vital. And this is why...

It does us no good to have just a building stuffed with radios because we do not have the funds to create our Museum, Hall Of Fame, Library, etc. Chairman Mike Adams says, "We will have a Million dollar warehouse." Director Tom Bonomo says, "The CHRS team has marched 99 yards down the field and is on the 1 yard line. The last yard is the most important." Our \$1.15 Million dollar goal lets us buy the building, start necessary repairs and construction and most importantly gives CHRS an emergency fund. That is why we still need \$127,300 to complete this drive. We feel that this a wise approach.

We are still looking for an angel who would like the building named after them. A \$500,000 donation would do it. What a legacy it would be for someone.

CHRS NEWS... Well it's been an exciting 2014 for CHRS. But now, we are on hiatus. We have left KRE and don't own Radio Central... yet. We are taking a break. (Except for fund raising... of course!) So relax,

watch your emails for updates on fund raising and activities, gather up your energy and be ready to start building the New CHRS 'Radio Central'! Our next scheduled event is our May 3rd Swap Meet at the College of San Mateo.

OUR MOST SPECIAL ANGEL - As you notice, our total has gone up drastically recently. Some people realize the importance of owning our own building including long time CHRS Member and supporter Norman Leal, who in late 2012, donated \$75,000 to our brand new building fund. Well, Norm has come through again with a whopping \$200,000 donation! Thank you Norm! This will allow CHRS to purchase 'Radio Central'. We members of CHRS are grateful to Norman for securing the future of CHRS for generations to come. So when you see him, give Norm a huge Thank You!

THANK YOU DONORS! – You have made your favorite vintage radio organization, CHRS... Millionaires! \$1,022,700 is cash in the bank, and will increase as your pledges are fulfilled and new donations come in. We must keep up the fund raising momentum as we only have 20 days left in escrow and then 15 days to be fully funded. Please notice the notations in red next to the donor list below. These supporters continue to amaze us with their generosity and confidence in our efforts. Thank you!

We would like to share a note from a longtime CHRS member. We hope it will inspire you to donate or fulfill your pledge:

"I am just floored at the amount of support that the CHRS team has generated to date. Back when you first began this effort it just looked like such an insurmountable task you were faced with, that I just couldn't bring myself to chip in; I felt like it was wishful thinking that a building could be purchased to house the club's collection for proper display and preservation. I'm now so embarrassed for about my attitude. I'll send my check in post-haste to help you reach your goal. Knowing that all will turn out positively, I plan to donate several items from my collection to your exhibits. It is uplifting to see that so much has been accomplished by your team. Just outstanding and amazing progress." \$1,000 Donor, San Jose, CA

\$15,000 CHALLENGE - Longtime CHRS Member George Patterson, who has already donated \$25,000 is now challenging you to match his additional amount. For every dollar you donate up to \$15,000, George will match. This challenge is potentially worth \$30,000! This is a timed challenge and will expire on April 14th. Thank you George! [CLICK HERE TO DONATE](#)

PLEDGES DUE NOW! – We have about \$18,300 in outstanding pledges and not much time left. Not so good... If you or your organization has pledged to help purchase a permanent home for CHRS, we

need your pledges Now. Honoring your pledge is your commitment to insure the preservation of radio history. We kindly ask you to please fulfill your pledge... Now. As time is not on our side.

This is 2152 Central Avenue, Alameda – The New CHRS Radio Central



For additional information see: <http://www.californiahistoricalradio.com/>

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) was organized by the San Francisco Office of Emergency Services (OES) following the 1989 Loma Prieta Earthquake to support the communications needs of the City and County of San Francisco when responding to emergencies and special events.

The Auxiliary Communications Service holds General Meetings on the third Tuesday of each month at the San Francisco Emergency Operations Center, 1011 Turk Street (between Gough Street and Laguna Street), from 1900 hours to 2100 hours local time. All interested persons are welcome to attend.

The ACS Net begins at 1930 hours (7:30 p.m.) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills, practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in. ACS Members should perform Net Control duty on a regular basis. On the second Thursday of each month, the net will be conducted on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz, simplex.

For more information, please attend an ACS meeting or check in on a net, or call 415-558-2717.

Upcoming meetings: Tuesday 7pm, Apr 15, 2014
Tuesday 7pm, May 20, 2014
Tuesday 7pm, June 17, 2014
Tuesday 7pm, July 15, 2014

Gilbert Gin (KJ6HKD)

Free Disaster Preparedness Classes In Oakland:
<http://www.oaklandnet.com/fire/core/index2.html>

CORE is a free training program for individuals, neighborhood groups and community-based organizations in Oakland. The underlying premise is that a major disaster will overwhelm first responders, leaving many citizens on their own for the first 72 hours or longer after the emergency.

If you have questions about the recertification process, you may contact the CORE Coordinator at 510-238-6351 or core@oaklandnet.com.

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department

RSVP to sffdnert@sfgov.org or call 415-970-2024 to register.

Visit www.sfgov.org/sffdnert to learn more about the training, other locations, and register on line.

April

12th: **NERT Citywide drill - Register!** Everett Middle School, 17th Street near Sanchez, 8:30am-3:00pm

Friends of NERT who want to volunteer to be a victim, click [HERE](#). When you open the link, please read instructions carefully before registering.

May

3rd: SFPD ALERT Training

[Pre-registration required](#)

10th: Intro to NERT Communications Team (NCT) 101-103, 8:30 a.m. - 3:30 p.m., SFFD DOT*

Newly licensed or planning on getting your own HAM call sign? This introductory class has something for everyone—from HAM radios to cables to antennas and more.

No HAM License required to attend. NERT Field Teams will communicate to NERT Staging Areas using HAM radios. Any HAM operators wanting disaster communication instruction are welcome after lunch.

[Register](#)

14th: NERT Communications 201: Messaging 6:30pm-9:30pm, SFFD DOT*

Improve your communications and messaging skills. Learn how to write a short, effective emergency message using scene size-up. A valuable skill for every NERT. Emergency messages include five key elements: Identify, Location, Condition, Action, and Needs—become familiar with I.L.C.A.N. Class open to all NERT Grads! (No Ham license or radio required to attend.)

[Register](#)

20th: NERT Communications 301-303: Hands-on buttons & knobs & antennas, 6:30pm-9:30pm, SFFD DOT*

Get hands on help with using your radio. Assistance will be provided with programming, changing frequencies, setting tones etc. J-pole? We'll cover that and mag-mounts and more. You must have completed pre-requisite: NCT101 or have approval to take this class

[Register](#)

21st: NERT Communications 401: Hands on message passing and Scribing, 6:30pm-9:30pm, SFFD DOT*

Talk, talk, talk, listen, listen, listen, write, write, write. Practice sending and receiving radio messages.

Improve your communications and messaging skills. A valuable skill for NERTs. Ham license required.

[Register](#)

22nd: NERT Communications 501: NET Control for NERT staging area, 6:30pm-9:30pm, SFFD DOT*

Learn Net Control procedures and avoid "cross-talk" in a Staging Area. A Ham Operator, acting as Net Control, regulates the flow of radio traffic coming from multiple NERT Field Teams into a Staging Area. This is a skill that must be learned and practiced. Join us for this new addition to the NERT Communications training. Ham License required. Join us for this new addition to the NERT communications training.

Prerequisites: NCT 101-401

[Register](#)

28th: NERT Coordinators and Leaders Meeting. 6:30pm-8:30pm, SFFD DOT*

[Register](#)

June

5th: NERT Communications 601: Social Media and NERT, 6:30pm-9:30pm, SFFD DOT*

[Register](#)

7th: Leaders Workshop: N is for Neighborhood, Location TBD, 8:30am-12:30pm

Fun focus on NERT Leadership in your neighborhood

Registration not yet open

18th: ICS Forms workshop. All NERT grads welcome. 7:00p-8:30pm, SFFD DOT*

Review each NERT ICS Form. The forms are crucial for safety and accountability.

[Register](#)

21st: Staging area drill, 8:30am-12:30pm, SFFD DOT*

Put your neighborhood command center ICS to practice

[Register](#)

29th: SF PRIDE Parade

[Register](#)

*** SFFD DOT is the Division of Training @ [19th Street/Folsom](#). (enter through yard on 19th and park along back wall) Division of Training classroom is in the 1-story building directly next to the Fire Station on the corner.**

San Francisco Police Department: Auxiliary Law Enforcement Response Team(ALERT)

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will first complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into an 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

Upcoming ALERT Training

ALERT training class will be held at the San Francisco Police Academy, in the parking lot bungalow, from 8am-5pm (one hour lunch break). A new class is schedule as follows:

- **Saturday May 3, 2014**

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register for the **May 3, 2014** training class by contacting the ALERT Program Coordinator, Mark Hernandez, at sfpdalert@sfgov.org, or by telephone at 415-401-4615. To register by email send your request to sfpdalert@sfgov.org with your NAME and PHONE NUMBER.

ALERT Training Drill (TBD)

Future (TBD) drills will be held in the Police Academy (350 Amber Drive) parking lot from 9am-12pm. Details will be emailed to active ALERT members, prior to the date of the exercise. Participation is not required, but strongly encouraged.

ALERT Public Informational Meeting (TBD)

For more information on the San Francisco Police Department ALERT Program, email us at sfpdalert@sfgov.org, or call Sergeant Mark Hernandez (SFPD, Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:

<http://sf-police.org/index.aspx?page=4019>

Skip Weiss – KG6SCE

American Cancer Society: Relay For Life – Daly City

Relay Walking Event: Westmoor High School - Sport Stadium
Event Date: Saturday, June 21, 2014 - June 22, 2014

For more information: www.RelayForLife.org/DalyCityCA

Featured Tech Article:

Bread That Lasts For 60 Days Could Cut Food Waste

By Matt McGrath Environment correspondent, BBC

November 30, 2012

<http://www.bbc.co.uk/news/science-environment-20540758>



An American company has developed a technique that it says can make bread stay mold-free for 60 days.

The bread is zapped in a sophisticated microwave array which kills the spores that cause the problem.

The company claims it could significantly reduce the amount of wasted bread - in the UK alone, almost a third of loaves purchased.

The technique can also be used with a wide range of foods including fresh turkey and many fruits and vegetables.

World of waste

Food waste is a massive problem in most developed countries. In the US, [figures](#) released this year suggest that the average American family throws away 40% of the food they purchase - which adds up to \$165bn (£102bn) annually.

Bread is a major culprit, with 32% of loaves purchased in the UK thrown out as waste when they could be eaten, according to [figures from the Department for Environment, Food and Rural Affairs](#) (Defra).



The machine uses similar technology to a home microwave

One of the biggest threats to bread is mold. As loaves are usually wrapped in plastic, any water in the bread that evaporates from within is trapped and makes the surface moist. This provides excellent growing conditions for *Rhizopus stolonifer*, the [fungus](#) that leads to mold.

In normal conditions, bread will go moldy in around 10 days.

But an American company called MicroZap says it has developed a technique that will keep the bread mold free for two months.

At its laboratory on the campus of Texas Tech University in Lubbock, chief executive Don Stull showed off the long, metallic microwave device that resembles an industrial production line. Originally designed to kill bacteria such as MRSA and salmonella, the researchers discovered it could kill the mold spores in bread in around 10 seconds.

"We treated a slice of bread in the device, we then checked the mold that was in that bread over time against a control," he explained.

"And at 60 days it had the same mold content as it had when it came out of the oven."

Question of taste

The machine the team has built uses much the same technology as found in commercial microwaves - but with some important differences, according to Mr. Stull.

"We introduce the microwave frequencies in different ways, through a slotted radiator. We get a basically homogeneous signal density in our chamber - in other words, we don't get the hot and cold spots you get in your home microwave."

The company's device has attracted plenty of interest from bread manufacturers - but it is worried that it could push up costs in an industry where margins are very tight.

And there is also a concern that consumers might not take to bread that lasts for so long. Mr. Stull acknowledges it might be difficult to convince some people of the benefits.

"We'll have to get some consumer acceptance of that," he said. "Most people do it by feel and if you still have that quality feel they probably will accept it."

Mr. Stull believes that the technology could impact bread in other ways. He said that bread manufacturers added lots of preservatives to try and fight mold, but then must add extra chemicals to mask the taste of the preservatives. If bakers were able to use the microwave technology, they would be able to avoid these additives.

While a wholesale change in the bread industry might be difficult to achieve, there may be more potential with other foods, including ground turkey.

In 2011, food giant Cargill had to recall 16 million kg of the product after a salmonella outbreak. Mr. Stull believes that using microwaves would be an effective way of treating this and several other products ranging from jalapenos to pet foods.

The only fruit that his device was unable to treat effectively were cantaloupes.

"We've used our tumbler machine to treat them, he says "but you can't tumble cantaloupes because they damage."

Additional Information From MicroZap Company

<http://www.microzap.net>

MicroZap – Process



Adding Micro Zap's technology to a clothes dryer or washing machine kills MRSA on fabrics.

MicroZap utilizes pulsed power of radio frequencies in the microwave spectrum. This unique process of pulsed power and multiple RF sources creates a targeted signal density to allow food to be pasteurized without damaging or changing the quality of the food.

This novel and unique approach is currently patent pending. Research and commercial testing are conducted in a BSL 2 lab space on the main campus of Texas Tech in the Experimental Sciences Building.

The unique MicroZap technology utilizes a combination of thermal and non-thermal effects to destroy bacteria at lower (colder) temperatures, thus creating “cold pasteurization” of fresh foods and eliminates deadly pathogens.

MicroZap's technology has been adapted to commercially available washers and dryers made by three different manufacturers. The MicroZap technology has shown significant scientific reduction well in excess of 99.999% (5.48log reduction).

MicroZap has expanded its technology and now kills the deadly superbug MRSA in hospitals and healthcare facilities, locker rooms and homes.

Testing by Texas Tech University has shown that a MicroZap treatment in a dryer reduced MRSA significantly (over 99.999%) on typical cotton linens and towels.

Testing also confirmed that standard washing and drying do not kill MRSA. Even worse, standard washing cross contaminates everything in the washer, including the rinse water which is drained into the public system.

A MicroZap equipped washer and dryer allows customers to sterilize their laundry by killing MRSA without destroying the fabric, all without changing how they do laundry.

A MicroZap washer and dryer can be placed in every home, doctor's office, nursing home, locker room, health club and day care center to protect families and patients. These washers and dryers include GE and Speed Queen.

Currently, CDC guidelines do not render laundry safe from MRSA and in fact, doing laundry in the same old way will actually spread MRSA and introduce it into the public sewer system.

Food Safety:

MicroZap's technology makes food safe by killing E. Coli, Salmonella, and Listeria. Tests have shown scientifically significant reduction of Salmonella in such food products as peanuts and jalapenos without a reduction in quality.

MicroZap treated raw turkey trim can be used to make fresh ground turkey free of salmonella. Pathogens were reduced without cooking the food so that it retained its fresh nature.

MicroZap's technology has treated dry pet food and pet treats as well. In addition it has been working with a pet food manufacture that is currently experiencing an FDA recall. Currently they must treat their products with expensive and less desirous irradiation.

MicroZap's technology can be placed onsite and replace the radiation treatment and can help control Salmonella and save companies from costly FDA recalls.

MicroZap - Solutions

MRSA in Healthcare, Homes and Athletic Facilities

MicroZap's technology has been adapted to commercially available dryers made by two manufacturers. The MicroZap technology has shown scientific reduction well in excess of 99.999% (5.48log reduction).

Salmonella & E. Coli in the Food and Food Processing Industries

MicroZap technology tests have shown scientifically significant reduction of Salmonella in such food products as peanuts and jalapenos without a reduction in the quality. Salmonella was reduced without cooling the food so that it retained its freshness.

Salmonella in Pet Food

MicroZap's technology has shown scientifically significant reduction in treating dry pet food. In addition MicroZap has been working with a pet food manufacture that is currently undergoing an FDA recall.

MicroZap is working with them on treating their pet food and treats. MicroZap can help control Salmonella and save companies from costly FDA recalls.

Future Solutions

Studies are in process to treat bed bug infested linens and comforters found in homes and hotels. The MicroZap technology is planned to be studied for its use in mutagenesis for seed development.