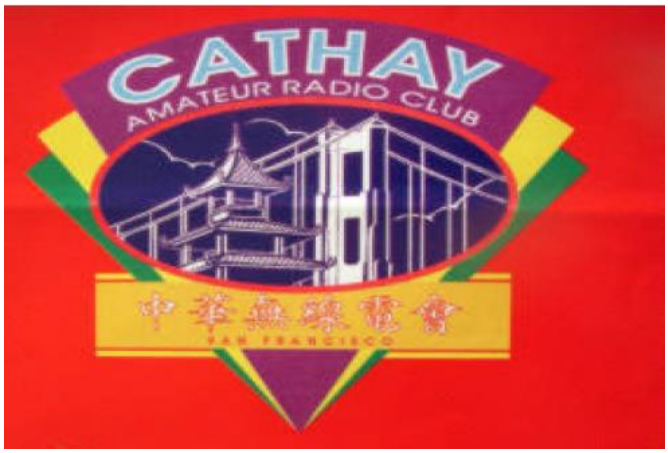

Cathay October 2022

www.cathayradio.org

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Web Master: Edison Fong – *WB6IQN* - **email:** edison_fong@hotmail.com
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, Repeater: WB6TCS - RX 147.210, TX 147.810, Offset +0.6 MHz, CTCSS/Tone PL100 Hz

Please note: Repeater: N6MNV UHF 442.700 Mhz, Offset +5MHz, CTCSS/Tone PL 173.8 Hz in South San Francisco is cross linked every Monday Night Net at 9 p.m. to WB6TCS 2-meter repeater.

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;

This month of October 2022 is a turning into a beehive of activities as we slowly and carefully emerge out and under from the shadow of COVID-19. Some of the Bay Area activities that are taking place in October 2022 are the following:

- Pacificon
- Fleet Week
- Open House as SFFD Station House.
- MARITIME 2022 Symposium--October 5-6, 2022

Additional information about the fore-mentioned events are contained in this newsletter.

Many thanks to Mr. Denis L. Moore – WB6TCS for the use of his repeater for our CARC Monday Night Net.

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

Tech Article Introduction:

This article discusses a novel solution of using a passive method of separating oxygen gas during the electrolysis of water in the low gravity of space.

Please read the **Tech Section** of this newsletter for additional information.

Chat sub s'em to all you CARC members! - George W6BUR, CARC President.

Public Service Announcements

SAN FRANCISCO FIRE DEPARTMENT

NEWS RELEASE

Released: 7:30 a.m. on October 1, 2022

San Francisco, CA – Fire Prevention Month events, October 2022

We are happy to announce that we will be holding open houses at all San Francisco Fire Stations Francisco Fire Stations on Saturday, October 15 th, 2022, from 1 PM to 5 PM to kick off Fire Prevention Week (FPW) 2022.

This year's FPW campaign, "Fire won't Wait, Plan your Escape!" works to educate everyone about the importance of having an escape plan and practicing that plan. Today's homes burn faster than ever. You may have as little as two minutes (or even less time) to safely escape a home fire from the time the smoke alarm sounds. Your

ability to get out of a home during a fire depends on the early warning from smoke alarms and advanced escape planning

The San Francisco Fire Department also encourages our youth and local schools to participate in National Junior Fire Marshal Day on October 11 th, which will feature fire safety education delivered virtually to students at home and in classrooms all around the country. It will be streamed live at www.juniorfiremarshal.com and will take about 30 minutes. There is no cost to register: www.juniorfiremarshal.com/register.

ADDITIONAL FIRE SAFETY SITES

1. https://sf-fire.org/safety-resources-and-information
2. https://www.ready.gov/plan
3. https://www.nfpa.org/Events/Events/Fire-Prevention-Week/About

For more information, please contact:
Lieutenant Jonathan Baxter
Public Information Officer
(415) 558-3404
firepio@sfgov.org

Yes, it is Fleet Week and the Blue Angels will be flying over the San Francisco Bay Area.

For more information see: https://fleetweeksf.org/

Sealift Symposium Registration Link

Please don't hesitate to contact us if you have any questions or concerns. Thank you, and hope to see you there!

Rev. Gerry Caprio, President of the Marin County Council
Navy League of the United States
P. O. Box 10812
San Rafael, CA 94912-9516
e-mail: marincountynavyleague@gmail.com
national website: www.navyleague.org

PACIFICON℠ 2022

San Ramon Marriott
2600 Bishop Drive
San Ramon, CA 94583

IN PERSON!
Friday through Sunday
Oct. 14-16, 2022

For more details see: https://www.pacificon.org/

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:
http://www.arrl.org/find-an-amateur-radio-license-exam-session

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) is a unit of trained professionals who supply communications support to the agencies of the City and County of San Francisco, particularly during major events/incidents. ACS goals are the support of gathering and distribution of information necessary to respond to and recover from a disaster.

The ACS Net begins at 1930 hours (7:30 p.m. PT) 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 perform Net Control duty on a regular basis
On the second Thursday of each month, the net is conducted in simplex mode on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz.

ACS holds its General Meetings on the third Tuesday of each month from 1900 hours to 2100 hours local time. Currently meeting are exclusively conducted over Zoom during the COVID-19 pandemic, ACS looks forward to meeting in person again as soon as possible.

Upcoming meeting dates in 2022 are:

- Oct 18. 2022
- Nov 15, 2022

Location of in person future ACS meetings are yet to be determined as the regular location is under reconstruction until January 2023. All interested persons are welcome to attend. For further information, contact Corey Siegel KJ6LDJ <kj6ldj@gmail.com>.

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

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).

http://sf-fire.org/calendar-special-events

TBD

+ Recertifications - Coming Soon!

Pre-register here!

https://www.eventbrite.com/e/are-you-a-nert-graduate-looking-to-recertify-pre-register-here-tickets-228380330717?aff=odcleoeventsincollection

This is not for a specific date or location.

San Francisco Fire Department NERT is collecting information from NERT Graduates to help us plan for the new year. By signing up here, you will receive priority notification about upcoming recertification opportunities. This is for any NERT graduate, regardless of when you graduated or whether your NERT certification has expired. Thank you so much for your commitment to NERT and for providing us with information about when you last trained, etc.

Sign Up For Training Classes

This is not for a specific date or location.

San Francisco Fire Department is collecting contact details from prospective students so we can let you know when classes are available. We will email you when classes become available. We plan on holding multiple trainings for new NERTs in 2022 and the information you provide will help us plan. Thank you!

https://www.eventbrite.com/e/never-taken-nert-before-let-us-know-you-are-interested-in-2022-trainings-tickets-125825993935?aff=odcleoeventsincollection

***SFFD DOT** is the Fire Department Division of Training. All participants walking, biking or driving **enter through the driveway gate on 19th St.** between Folsom and Shotwell. Parking is allowed along the back toward the cinderblock wall.

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

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 no longer need to complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into two 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.

SFPD ALERT Training (New Members)

The next SFPD ALERT training class has been scheduled for: TBD

* Class date indicated are only for new members

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 a training class by contacting the ALERT Program Coordinator, Marina at sfpdalert@sfgov.org, or by telephone at 415-401-4615.

SFPD ALERT Practice/Training Drill

All active/trained ALERT members are asked to join us for our next training drill, via scheduled for on

TBD

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

For additional information on the web please refer to:
https://sfgov.org/policecommission/alert

Tech Article

WARWICK
THE UNIVERSITY OF WARWICK

Warwick University

Making Oxygen With Magnets Could Help Astronauts Breath Easy

https://warwick.ac.uk/newsandevents/pressreleases/making_oxygen_with

New study involving University of Warwick chemist demonstrates method of using magnets to generate oxygen from water

Making oxygen in low gravity environments, such as aboard the International Space Station, is challenging and resource intensive

This method could aid the development of technology for future long-term space missions

A potentially better way to make oxygen for astronauts in space using magnetism has been proposed by an international team of scientists, including a University of Warwick chemist.

The conclusion is from new research on magnetic phase separation in microgravity published in Nature's affiliated *npj Microgravity* journal by researchers from the University of Warwick in the United Kingdom, University of Colorado Boulder and Freie Universität Berlin in Germany.

Keeping astronauts breathing aboard the International Space Station and other space vehicles is a complicated and costly process. As humans plan future missions to the Moon or Mars better technology will be needed.

Lead author Álvaro Romero-Calvo, a recent PhD graduate from the University of Colorado Boulder, said: “On the International Space Station, oxygen is generated using an electrolytic cell that splits water into hydrogen and oxygen, but then you have to get those gasses out of the system. A relatively recent analysis from a researcher at NASA Ames concluded that adapting the same architecture on a trip to Mars would have such significant mass and reliability penalties that it wouldn’t make any sense to use.”

Dr Katharina Brinkert of the University of Warwick Department of Chemistry and Center for Applied Space Technology and Microgravity (ZARM) in Germany said: “Efficient phase separation in reduced gravitational environments is an obstacle for human space exploration and known since the first flights to space in the 1960s. This phenomenon is a particular challenge for the life support system onboard spacecraft and the International Space Station (ISS) as oxygen for the crew is produced in water electrolyzer systems and requires separation from the electrode and liquid electrolyte.”

The underlying issue is buoyancy.

Imagine a glass of fizzy soda. On Earth, the bubbles of CO_2 quickly float to the top, but in the absence of gravity, those bubbles have nowhere to go. They instead stay suspended in the liquid.

NASA currently uses centrifuges to force the gasses out, but those machines are large and require significant mass, power, and maintenance. Meanwhile, the team has conducted experiments demonstrating magnets could achieve the same results in some cases.

Although diamagnetic forces are well known and understood, their use by engineers in space applications have not been fully explored because gravity makes the technology difficult to demonstrate on Earth.

Enter the Center for Applied Space Technology and Microgravity (ZARM) in Germany. There, Brinkert, who has ongoing research funded by the German Aerospace Center (DLR), led the team in successful experimental tests at a special drop tower facility that simulates microgravity conditions.

Here, the groups have developed a procedure to detach gas bubbles from electrode surfaces in microgravity environments generated for 9.2s at the Bremen Drop Tower. This study demonstrates for the first time gas bubbles can be ‘attracted to’ and ‘repelled from’ a simple neodymium magnet in microgravity by immersing it in different types of aqueous solution.

The research could open up new avenues for scientists and engineers developing oxygen systems as well as other space research involving liquid-to-gas phase changes.

Dr Brinkert said: “These effects have tremendous consequences for the further development of phase separation systems, such as for long-term space missions,

suggesting that efficient oxygen and, for example, hydrogen production in water (photo-)electrolyser systems can be achieved even in the near-absence of the buoyant-force."

Professor Hanspeter Schaub of University of Colorado Boulder said: "After years of analytical and computational research, being able to use this amazing drop tower in Germany provided concrete proof that this concept will function in the zero-g space environment.

- 'Magnetic phase separation in microgravity' is published in *npj Microgravity*, DOI: 10.1038/s41526-022-00212-9 Link: https://doi.org/10.1038/s41526-022-00212-9