The Coastside Communicator

Vol. 53 No. 9 September 2021

WWW.COASTSIDEARC.ORG

The September Meeting will <u>not</u> be held at the Firehouse, despite what may be disclosed herein. It will be held on Zoom. A separate Announcement will be distributed ahead of the meeting with details. Thank You! Paul Atkins/AI6BB Editor

President's Column

President's Column – September 2021

I'm looking forward to seeing everyone at the Linda Mar Firehouse on September 8th for our first regular club meeting since the pandemic began!

We will also be doing Zoom at the same time for those who can't make it in person (provided Jon/N6SJF and Steve/KN6ORM get their Ubiquity wireless connection going).

If you do plan to attend in-person, please bring a mask in case it is mandatory to wear one at the site.

I have really enjoyed seeing everyone at our 2 recent pizza meetings. It was surely nice to get out and have food and drink with you all! It makes me more excited to be able to plan our November Election Dinner at Nick's. And I want to thank Frank N6NFG for taking the initiative and setting up all the details for us. This is a really fun and tasty event! Hope to see you there!

Thanks to Mike WB6JKV who was able to get up to the hill and effect repairs and improvements to our repeater equipment. TOW sounds so much better now. If I can only remember how to turn off the RX tone option on my HT! I'll have to crack open that user guide again (or maybe just go to YouTube?) Anyway, please read on further in this issue what was done on the hill.

And thanks also to Steve/KN6ORM and Jillian/KN6PIV for contributing an article in this month's Communicator on Connecting Pacifica to The San Francisco Wireless Emergency Mesh that I hope you find interesting. Maybe we can have them make a presentation at a future club meeting.

Lastly, I will have a slate of candidates ready for club members to review for our officer elections in November. If you have any thoughts, ideas, aspirations, or dreams about becoming an officer of the club, please contact me directly. This club needs you!!

73's Dave Lawrence KF6TWW.

CARC AUGUST 11, 2021 Meeting Minutes

Call to Order

The August 11, 2021 meeting was called to order at 7:30pm by: President, Dave Lawrence-KF6TWW at the Round Table Pizza in Linda Mar and on Zoom Video Conference hosted by Jon Lancelle-N6SJF.

Self-introductions

Introductions by members in attendance.

Minutes

Motion made by Walt Long-KE6EDY and seconded by Jon Lancelle-N6SJF to approve the July minutes as posted in The Coastside Communicator. Motion was passed by unanimous vote of the membership present.

TREASURER'S REPORT

Funds

No report given.

MEMBERSHIP

Received one membership renewal and one will be mailed.

Bills needing approval.

None

Correspondence

None

COMMITTEE REPORTS

CURRENT REPEATER

1. Update on status of WA6TOW repeater from Dave Rinck-K6DMR: Still working
2. APRS – Frank-N6FG stated he believes it is still working.
3. Emergency Services – Discussion on status of Emergency Services in Pacifica and who has access to the equipment – DCPD & Pacifica CERT.

Replacement Repeater
1. Update on Replacement Repeater: Dave will coordinate with Casey on getting access to the storage locker.

FIELD DAY – Reported on last month

FOG FEST – Cancelled until 2022

NEWSLETTER – Published - Paul included pictures from Field Day in the newsletter

WEBSITE – Paul-AI6BB uploaded pictures to the website Gallery, thanks to Jillian-KN6PIV for the pictures. He needs to work on the orientation of some. The Newsletter was uploaded also.

UNFINISHED BUSINESS

A. Frank-N6FG stopped at the Linda Mar Fire Station and spoke to them about holding meetings again. We are on their calendar and have permission to meet in-person. The next meeting is September 8th at the Linda Mar fire station starting at 7:30pm. The doors will be opened at 7:00 PM.

New Business

A. Nominations: Dave announced that he will not run for president next year.
B. We should look to generate a slate of officers for 2022 and announce that anyone interested in an officer position for next year should let Dave know before the next meeting.

Zoom Setup
Jon Lancelle-N6SJF and Paul Atkins-AI6BB gave brief report on the technical used for the Zoom Meeting. An attempt will be made to do a zoom meeting from the Firehouse next month using Ubiquity power beams provided by Steve Austin - KC6ORM and Jon Lancelle-N6SJF. They also intend to describe this equipment at the meeting.

Adjournment
Motion made by Paul Atkins-AI6BB and seconded by unanimous consent to adjourn the meeting at: 8:00 PM. Meeting adjourned.

Present at the Meeting
Officers: President: Dave Lawrence-KF6TWW, Vice-President: Paul Atkins-AI6BB, Secretary: Absent, Treasurer: Frank Erbacher-N6FG

Members:
In-person: Georgia Grant-KE6KRT, Ted Niemira-W6SY, Walt Long-KE6EDY, Gary Barnes-KE6HIG, Ralph Kugler-KC6YDH and Jon Lancelle-N6SJF

Via Zoom: Bill Lilly-N6BCT, Steve Austin-KC6ORM and Jillian Alderson-KN6PIV

Submitted by: Tom Oliver-KJ6OGL, Secretary
Note: Minutes taken from recorded zoom meeting

GARAGE SALE

There will be a Garage Sale on Saturday September 18th 2021 in Pacifica held by K6BV and W6AER from 9:00 AM until 4:00 PM. The address is 663Imperial Drive (off of Firecrest). Items include Amateur Radio Accessories & Parts as well as Games, Stereo Components, Computers and Components, DVDs & etc. Contact Lucas

(650) 219-4617 or Tony (650) 483-4917 for additional details.

PACIFICON 2021 IS ON!

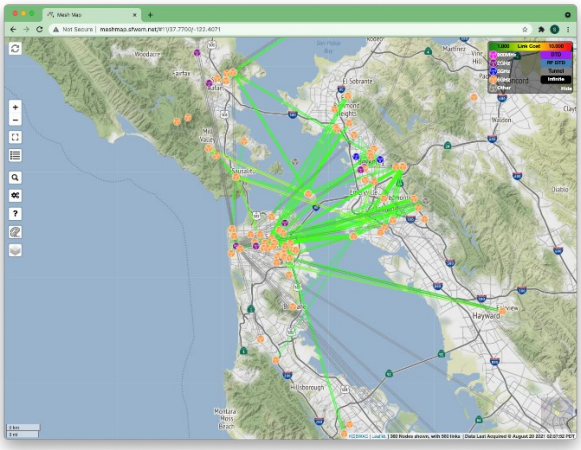
Pacificon will be held Friday through Sunday Oct. 15 – 17 2021 at the San Ramon Marriott, 2600 Bishop Drive in San Ramon CA. Registration is currently Open. Visit the Pacificon.com website for additional information.

WA6TOW REPEATER SILENT?

If at some point you find that you are unable to hear the WA6TOW repeater check the setting of your tone options. It is very important that you make sure your tone options are only set on TX and not on TX/RX, otherwise you may see meter deflection from the repeater, but will not hear anything.

CONNECTING PACIFICA TO THE SAN FRANCISCO WIRELESS EMERGENCY MESH

Contributed by Jillian KN6PIV and Steve KN6ORM



Amateur Radio Emergency Data Network and the San Francisco Wireless Emergency Mesh

In ham radio land, a wireless mesh is a collection of radios that have line-of--sight connection and which run software that self-organizes into completely wireless IP networks. IP networks are computer networks which provide services such as HTTP and SSH. The Internet is an example of an IP network, but not all IP networks are connected to the internet.

The Amateur Radio Emergency Data Network (AREDN) is an organization that provides software to run wireless IP networks on commercial off-the-shelf wireless networking equipment. You can find everything at https://www.arednmesh.org/. It operates in the ham portion of the 5.8 GHz band on channels 170 to 184 and the AREDN firmware converts off-the-shelf hardware, such as the Ubiquiti PowerBeam M5 or MicroTik hAP, from FCC Part 15 (commercial) to FCC Part 97 (ham) devices. There is no Facebook and Google on these IP networks as they are intended for public service use, such as coordinating emergency services in a disaster or providing support for public events such as a bike race. If by some trickery you manage to route commercial traffic from the Internet, you will earn no friends and maybe a visit from the FCC. It is illegal to route commercial traffic, including music on ham networks.

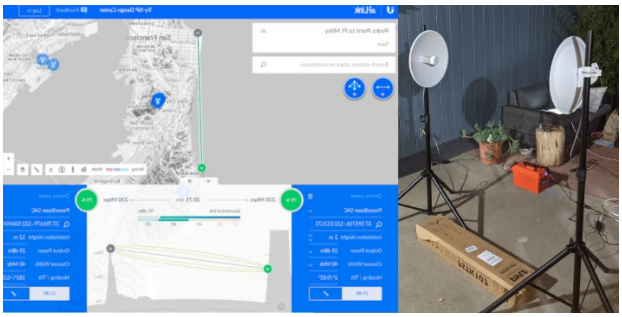
An AREDN mesh grows and shrinks as connections are made and broken. So long as there is one path (via any number of mesh nodes) from your local node to the IP resource you want to access, the mesh network will dynamically route your packets via the best path. If there is only a single path and a critical connection in that path is broken, you cannot access the IP resource and you have two disconnected mesh networks.

An active AREDN mesh network is the San Francisco Wireless Emergency Mesh (SFWEM) which is at https://www.sfwem.net/ and maintains a mesh that spans much of the Bay Area, but not Pacifica and points south. You can see the current state of SFWEM at http://meshmap.sfwem.net/ and if you click on a node it will show you the GPS coordinates of the mesh node, channel, antenna direction and everything else needed to make a connection to the that node of the SFWEM.

If you look at the snapshot of the mesh map above, you will notice that there are no wireless mesh links extending into west San Mateo County and Pacifica. Connecting to the SFWEM is difficult because the mountains east of Pacifica block line-of-sight to most of the San Francisco Bay. It is difficult, but not impossible. We would like to help extend wireless SFWEM coverage into Pacifica and perhaps Half Moon Bay and parts south. Also, connecting Pacifica to the SFWEM may help connect the Marin coast to the mesh. Areas like Muir Beach also have no current coverage but do have line-of-sight to Pacifica (if a signal can make it through fog).

The Minimal Mesh

Transmitting a signal into empty space is useless (unless you are attempting to contact aliens), so a minimal mesh consists of two nodes, which will chat between themselves. We built two AREDN nodes out of Ubiquiti Powerbeam M5 radios. We mounted them on Pyle DJ PA Monitor Tripods, using a bit of duct tape so that the U mounting bracket can get a grip.



The mesh hardware that you can purchase from web sites like Amazon is not provisioned for ham use but can be flashed with the AREDN firmware so that the hardware transmits on ham frequencies in the 5.8 GHz band. The firmware, instructions for flashing the firmware, as well as all documentation is at the AREDN Mesh web site. The trickiest thing for us is that you need to enter the Setup admin screen to change the channel, which can range from 170 to 184 for hams. You need to be on the same channel as the radio you are trying to connect to, to have any success. Otherwise, making a connection is as simple as turning on the radio and pointing it in the right direction at the other radio.

The radio acts as a DHCP server. The Powerbeams need POE which we supply by a 12V to AC Inverter. You can also operate the equipment with 13.8V with LiFePO2 battery with only passive connectors.

The node supplied DNS and DHCP and can be accessed at the URL *http://locanode.local.mesh/* - there are buttons on this page to configure the radio and examine mesh connections and connected devices. One handy feature is that you can allocate fixed IP addresses to your favorite devices and allocate symbolic names and simple URLs such as http://meshcam01/ that are accessible from the whole mesh.

Snooker shot from Pedro Point to Ft Miley

Our search for a connection to Ft Miley lled us to look up Olympian Way on Pedro Point in Pacifica. There is a short trial at the end of the road and we set up our equipment wearing badges with our names and callsigns. We had some interest from passers-by, so we had an elevator pitch prepared that explained what we were doing.

We connected to Ft Miley on channel 179 with no problem. The above illustration shows this connection in simulation on Ubiquiti's link web site. The simulation allows you to set the height of the radio, which we set to 2 meters. Obviously, if you get the radio higher, you have a better chance of getting a good connection. Below we can see the connection screen on the node that can be accessed *http://locanode.local.mesh/* - the homepage of the node.

Our goal was to get 15 dB SNR, but we fell a little short at 11 dB. We did run a speed test on W1TJT-speedtest that indicated 0.35 Mbps upload and 0.58 Mbps download.

Meshcam

We wrote a simple web server called Meshcam that can be installed on a Raspberry Pi 4 with a connected inexpensive USB webcam and will deliver JPG images at the rate of 1 Hz to the viewer via a web browser. The source is at *https://github.com/virtigex/meshcam* and you can configure the AREDN software to give it a fixed IP and unique, simple URL. We used this to transfer a single JPG image from Pedro Point to Rob in Marin, but it took a long time to do so.

Next Steps

We (the ham community) should work with organizations, such as Paficia CERT and the City of Pacifica, to explain and demonstrate the benefits of connecting Pacifica to the SFWEM and ideally eventually install permanent mesh nodes along other Paficia public service infrastructure, on ham volunteers' property and at the sites controlled by other interested entities.

Constructing and operating field nodes is fun. These temporary mesh networks have been used by ham clubs such as MARS and SFRC to provide IP network support (not necessarily connection to SFWEM) to events like bicycle races that happen in areas that may not have good cellphone coverage. As well as connecting Pacifica, we would need to establish connections within Pacifica in order to improve the capacity and reliability of the mesh.

We would welcome any help. Remember, the more mesh connections the better, because it adds network capacity and increases network reliability in case other connections are disrupted. Please email *kn6orm@gmail.com*if you would like to be involved.

NEWS

Sailing Vessel with Ham Radio History Marks 100 Years

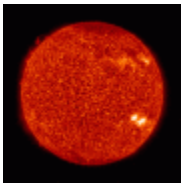
08/19/2021 ~ *The schooner* **Bowdoin** *is a century old this year. Now owned by the Maine Maritime Academy (**MMA**) as a training vessel, the ham radio history of the 88-foot (LOA)* Bowdoin *is often neglected. Constructed in Maine specifically for Arctic exploration, the vessel relied on amateur radio for communication during explorer Donald B. MacMillan's Arctic Expedition of 1923 and on the MacMillan-McDonald-Byrd Expedition of 1925 — thanks in part to ARRL co-founder Hiram Percy Maxim, W1AW. The venerable vessel, the official vessel of the State of Maine and the **flagship** of Maine Maritime Academy's Vessel Operations and Technology Program, recently underwent a complete hull restoration and refitting and has done a little touring to mark its centenary. Its home port is Castine, Maine.*

The longwave transmitters MacMillan used on his earlier missions had proved "unable to penetrate the screen of the aurora borealis," then-ARRL historian Michael Marinaro, WN1M (SK), explained in his article, "Polar Exploration," from the June 2014 issue of QST. *In 1923, MacMillan turned to ARRL for help in outfitting his next expedition with better wireless gear. Marinaro recounted, "It was enthusiastically provided." Maxim and the ARRL Board recruited Donald H. Mix, 1TS, of Bristol, Connecticut, to accompany the crew as its radio operator.*

M.B. West, an ARRL Board member, designed the gear, which was then built by amateurs at his firm, Zenith Electronics. The transmitter operated on the medium-wave bands of 185, 220, and 300 meters, running 100 W to a pair of Western Electric "G" tubes. Earlier exploratory missions had used gear that operated on longwave frequencies. The shipboard station on board the Bowdoin *was given the call sign WNP — Wireless North Pole.*

"WNP transmitted weekly 500-word press releases and listings of stations worked and heard," Marinaro said. "Once received by amateur stations, these reports were delivered to local affiliated newspapers of the North American Newspaper Alliance; from there, they were distributed syndicate-wide by telegraph."

MacMillan's subsequent attempt at the North Pole centered around wireless. The objectives supported by the Navy and the National Geographic Society were to determine the full capabilities of radio north of the auroral belt and to explore the northern reaches by air. The outstanding accomplishment of the 1925 expedition was in the sphere of radio. Utilizing shortwaves, the expedition was in consistent contact with the outside world throughout the journey, to the delight of the amateurs who were able to work them. The phenomenal success proved to the Navy that shortwaves were definitely superior to the longwaves and ultra longwaves that fleets had been using.



The K7RA Solar Update

08/20/2021 ~ *Tad Cook, K7RA, Seattle, reports: Weak solar activity persists, but Friday, August 13, was the sole spotless day in the current August 12-18 reporting week. Last week we reported 4 days with no sunspots in the previous 7 days. Average daily sunspot number increased from 9.9 last week to 17.7 during this week. Solar flux was the same, with the average inching from 73.7 to 73.8.*

Geomagnetic indicators were also stable. Average planetary A index was 6.1, compared to 6.3 last week. Average middle latitude A index moved from 7.6 to 7.

Predicted solar flux is 75 on August 20; 73 on August 21 – 23; 72 on August 24 – 26; 73 on August 27 – 29; 74 on August 30 – September 1; 73 on September 2 – 11; 74 on September 12; 73 on September 13 – 17; 72 on September 18, and 73 on September 19 – 25.

Predicted planetary A index is 5 on August 20; then 8, 8, 10, 14, 12, and 8 on August 21 – 26; 5 on August 27 – September 1; 8 and 12 on September 2 – 3; 5 on September 4 – 10; 8 on September 11 – 13; 5 on September 14 – 18; 8, 12, and 8 on September 19 – 21, and 5 on September 22 – 28.

*On August 14 **Spaceweather.com** reported that there were no sunspots, and that so far in 2021 there have been 56 days with no spots. "That might sound like a lot, but it is in fact a sharp reduction from hundreds of spotless days observed in 2019 and 2020," Spaceweather.com observed. "Despite today's blank sun, solar activity is intensifying compared to previous years."*

Here's the geomagnetic activity forecast for August 20 – September 14 from J.K. Janda, OK1HH. He reports that the geomagnetic field will be:

- *quiet on August 20 – 21, 28, September 1, 5, 10, 14*
- *quiet to unsettled on August 22, 25 – 27, 31, September 2, 4, 6 – 9*

- *quiet to active on August 30, September 3, (11 – 13)*
- *unsettled to active August (23 – 24, 29)*
- *active to disturbed: Nothing predicted*

Remarks:

- Parenthesis means lower probability of activity enhancement.

- The predictability of changes is very low because there are not enough indications.

Ken Brown, N4SO, reported hearing a new 10-meter beacon, N5TIT/b on 28.209 MHz. Signal was weak, and the path was 520 miles.

*I've noted that the relatively low solar activity has depressed 10-meter signals, and my practice of using remote SDR receivers to hunt for beacons turns up little activity latelyAt the end of July, I spent 8 days in hospital for neurosurgery and managed to use **kiwisdr.com/public/** to hunt for 10-meter beacons. I used the list at **https://www.gsl.net/wj5o/bcn.htm** to help identify them, and sent reports to the beacon owners.*

*Here's **the latest** from Tamitha Skov, WX6SWW, the Space Weather Woman.*
Sunspot numbers for August 12 – 18 were 11, 0, 47, 23, 14, 13, and 16, with a mean of 17.7. The 10.7-centimeter flux was 73.6, 72.9, 72.6, 74.6, 74.4, 73.1, and 75.3, with a mean of 73.8. Estimated planetary A indices were 4, 6, 5, 10, 7, 5, and 6, with a mean of 6.1 Middle latitude A index was 6, 9, 4, 13, 8, 7, and 6, with a mean of 7.6.

*For more information concerning radio propagation, **visit** the ARRL Technical Information Service, **read** "What the Numbers Mean…," and check out **this propagation page**.*
*A propagation bulletin **archive** is available. For customizable propagation charts, visit the **VOACAP Online for Ham Radio** website.*
***Instructions** for starting or ending email distribution of ARRL bulletins are on the ARRL website.*
Share your *reports and observations.*

September Puzzler

Paul Atkins, AI6BB

U R U G I N T E R M E D I A T E Q G R T
R A D I O C O R O N A L H O L E S E H C
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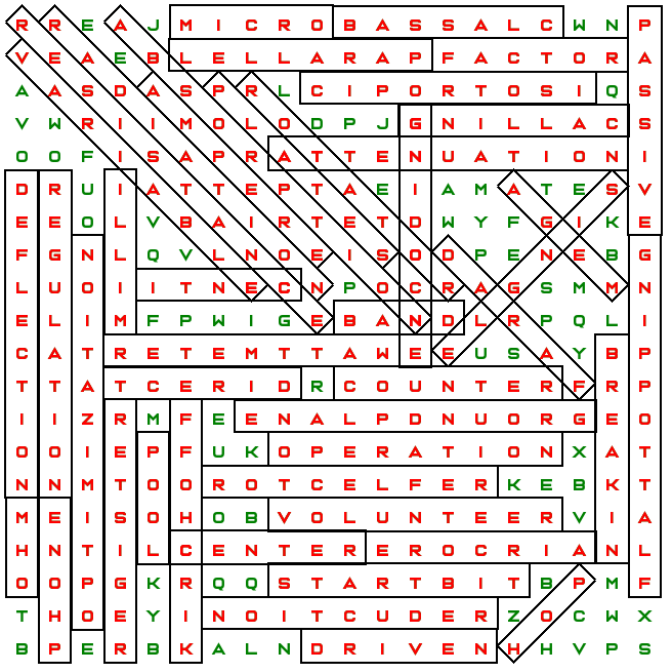
Answer to August's Puzzler



Coming Events

Pacifica CERT (Community Emergency Response Team)
For training and information
https://pacificacacert.samariteam.com/RequestInfo.aspx
email: mailto:cert@pacificapolice.org

QCWA NorCal Chapter 11 - Lunch at Harry's Hofbrau
3rd Wednesday of every month
1909 El Camino Real, Redwood City, CA.
No host. 11:00AM to 1:00PM (approx).

ASVRO Silicon Valley Electronics Flea Market
Please see the website below for up-to-date information
http://www.electronicsfleamarket.com/schedule

DATE	EVENT
Jan 13th	Zoom Meeting ~ 2021 Agenda Planning
Feb 10th	Zoom Meeting ~ 2021 Agenda Final
Mar 10th	Zoom Meeting
Mar 14th	Daylight Savings Time Starts
Apr 14th	Zoom Meeting
May 12th	Zoom Meeting ~ Field Day Planning
Jun 9th	Zoom Meeting ~ Final Field Day Planning
Jun 25th-27th	Field Day ~ Details TBD
Jul 14th	Pizza Dinner Meeting – Linda Mar Round Table 7:00 PM Social 7:30 PM Meeting
Aug 11th	Combined Pizza Dinner/Zoom Meeting – Linda Mar Round Table 7:00 PM Social 7:30 PM Meeting
Sep 9th	Regular Meeting
Sep 18th	W6AER/K6BV Garage Sale (9AM-4PM) 663 Imperial Dr, Pacifica
Oct 13th	Regular Meeting, 2022 Officer Nomination
Nov 7th	Daylight Savings Time Ends
Nov 10th	Regular Meeting
Nov 20th	2022 Election Dinner, Nick's Restaurant
Dec 8th	Regular Holiday Meeting

www.smcready.org
cert@pacificapolice.org

62 years of Service

52 years Affiliation

CARC, P.O. Box 1106, Pacifica, CA 94044

Coastside Amateur Radio Club

The Coastside Amateur Radio Club (CARC) is affiliated with ARRL and meets the second Wednesday of each month at 19:30 hrs. in the Linda Mar Fire Station Community Room, on Linda Mar Blvd. in Pacifica. Visitors are welcome.

The CARC has been organized since 1959, serving Bay Area amateurs, and providing emergency communications services to the City of Pacifica. Membership dues are $20.00 per year for the administration of the Club and the publication of the Communicator.

CARC supports two repeaters, WA6TOW/R (VHF and UHF); a Packet Digipeater, WA6TOW-1; and an APRS Digipeater, WA6TOW-2. Users of the machines provide repeater support and maintenance strictly through donations.

VHF: 146.925 MHz –offset 600 KHz PL 114.8
UHF: 441.075 MHz +offset 5 MHz PL 114.8

PL Tone: 114.8 Hz is used on both repeaters, as needed, for noise suppression.

Packet Digipeater: 145.050 MHz, Packet Node: PAC
APRS Digipeater: 144.390 MHz.

CARC/Pacifica OES VHF Simplex: 146.535 MHz
PL Tone: 114.8 Hz is used, as needed, for noise suppression

VHF Net

The club sponsors a VHF net each Wednesday, with the exception of meeting nights, at 20:00 hrs. for membership check-ins, notices, and QST's. Note: The WA6TOW repeater on 441.075 MHz may be used as an alternate if the WA6TOW VHF repeater is down.

HF Net

The club sponsors a HF rag chew net on 3.852 MHz, or the first clear frequency up/dn, on Saturday at 09:00 hrs. with an alternate frequency of 7.228 MHz.

◄►

The Coastside Communicator is a monthly publication of the CARC. All articles contained herein are the opinions of the authors and not necessarily those of the club members or editor.

This newsletter contains material from The ARRL Letter as permitted by the American Radio Relay League

COASTSIDE NETS

Monday

7:00 PM on WA6TOW
146.925 MHz, PL 114.8
Pacifica CERT Net

7:30 PM on WA6TOW
146.925 MHZ, PL 114.8
San Bruno ARC Net

Tuesday

7:30 PM on WA6TOW
146.925 MHZ, PL 114.8
Daly City ARES Net

8:00 PM on WA6TOW 146.925 MHZ, PL 114.8 and KC6ULT 146.865 MHz, PL 114.8 simultaneously, but not linked.
San Mateo County ACS Net

Wednesday

8:00 PM on WA6TOW
146.925 MHz, PL 114.8
Coastside Amateur Radio Club Wednesday Night Check-in.

Saturday

9:00 AM on 3.852 MHz, or the first clear frequency up/dn.
(alt freq of 7.228 MHz.)

Coastside Saturday Morning Group.
10:00 AM on WA6TOW
146.925 MHZ, PL 114.8

Sunday:

7:00-7:45 AM on WA6TOW
146.925 MHz, PL 114.8
Knights of the Megahertz Net

Note: All 2m repeater traffic is recorded and may be replayed at audiostickerbur.net.

CLUB OFFICERS				
Office	**Name**	**Call**	**Phone**	**E-Mail Address**
President	Dave Lawrence	KF6TWW	(650) 595-2827	kf6tww@gmail.com
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Secretary	Tom Oliver	KJ6OGL	(640) 488-0704	toliver0557@gmail.com
Treasurer	Frank Erbacher	N6FG	(650) 464-3870	n6fg@arrl.net
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Control Operator	David Rinck	K6DMR	(650) 355-1778	k6dmr@arrl.net
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Trustee of Club Call	David Rinck	K6DMR	(650) 355-1778	k6dmr@arrl.net
Website	Paul Atkins	AI6BB	(415) 810-9152	ai6bb@arrl.net
	R. Scott Sutor	KM6SCD		

MEETING NOTICE:

SEPTEMBER 8, 2021 7:30 PM
WATCH FOR INVITATION VIA E-MAIL OR CONTACT CARC_INFO@COASTSIDEARC.ORG TO BE ADDED.

COASTSIDE COMMUNICATOR
EDITOR
P.O. BOX 1106
PACIFICA, CA 94044

FIRST CLASS

TO: