



RF



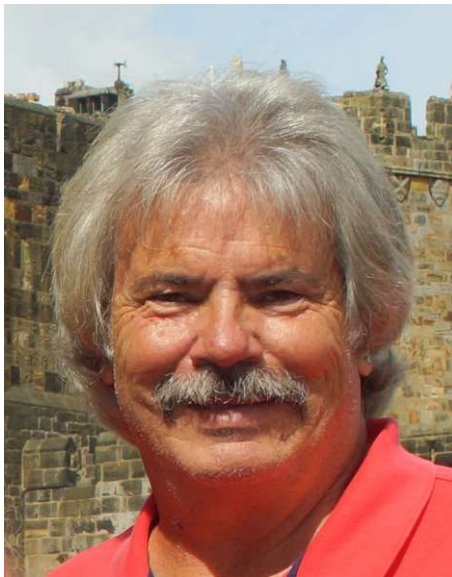
ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. LXIV NO. 5

PO Box 3454, Tustin, CA 92781

May 2023

The Prez Sez... by Chip K7JA



May greetings to all from your OCARC President!

Plans for the W6ZE 2023 effort in ARRL's Field Day, which comes up at the end of June, are going well.

Tim, N6TMT and Nicholas, AF6CF are doing a superb job of fitting all the moving pieces together (yes, it's like herding cats), and I have to say that I am very, very proud to be the President of a club like OCARC, where people step up and volunteer to do things because everyone knows how well it's going to go.

As an added bonus, our friend Gordon West, WB6NOA will be joining W6ZE this year on our VHF/UHF Station. It will be great fun to have Gordo along with us—he very much is looking forward to being able to play on FD for a change!

Our May Speaker, Dennis W6DQ, is an interesting and engaging speaker (there's additional information about the program on page 3 of this OCARC RF Newsletter - Editor). Don't miss his Zoom program, because I can guarantee that you'll learn something.

The rain seems to have finally let up, so get those antenna cleanup projects organized so you'll be ready for the great conditions we'll have this Fall.

But first—set aside those tools and double check your coax for Field Day! And by all means, remember to work our Rover Tim, N6GP, in the June VHF QSO Party. He needs your Q!!

73,

Chip Margelli, K7JA
OCARC President

NEXT GENERAL MEETING

IN-PERSON + ZOOM PRESENTATION

Speaker:
Dennis Kidder W6DQ
presents
Can Anybody Hear Me?

When: May 19th, 2023

Time: 7:00 PM

Where:

American Red Cross
600 Parkcenter Drive
Santa Ana, CA Room 208

NEXT BOARD MEETING

Saturday, June 3rd, 2023

Held at: Streamliner Café & Lounge
183 N. Atchinson St (at train station)
Orange, CA 92866

In This Issue

The Prez Sez	1
Club Information	2
May General Mtg Announcement	3
Can Anybody Hear Me	4
RadioActivity Rpt., Ron W6WG	5
Website Ramblings, Dan KI6X	6
Summertime is Upon Us, Chip K7JA	7
Voice Keyer, Nicholas AF6CF	8-10
OCARC April General Minutes	11-12
OCARC May Board Mtg Minutes	12
OCARC Cash Flow Report	13
Honorary Announcement.....	14
CARA 50 Years of Service	15-20



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Monthly Events

General Membership Meetings*

Time: 7:00 PM (begins promptly)

When: 3rd Friday of each Month

Where: American Red Cross,
600 N Parkcenter Dr, Santa Ana
Room 208 (take elevator to 2nd floor)

Note: *Held in-person (+ ZOOM at times) Check www.w6ze.org for updated information.

Board Meetings (In-Person)

Held the first Friday of each Month.
Board will handle Club business primarily IN-PERSON.

OCARC Nets (Listen for W6ZE)

10M ~ 28.375 MHz SSB

Wed- 7:30 PM - 8:30 PM

Net Control: Corey KE6YHX

Alternate Net Control: AJ KN6WNO

2M ~ 146.55 MHz Simplex FM

Wed- 8:30 PM - 9:00 PM

Net Control: Corey KE6YHX

75M ~ 3.883 MHz LSB

Tue @ 8:00 PM

Net Control: Corey KE6YHX

Other Nets:



Catalina
Amateur Repeater Association
COME JOIN US

9 AM & 9 PM Monday – Friday on CARA Repeaters:

2m: 147.090 MHz (+0.600 MHz) No PL

**1.25m: 224.420 MHz (-1.600 MHz)
PL 110.9**

**Echolink *CATALINA*
Allstar #51597**

9:00AM & 9:00PM

(Twice and day, x10 a week)

MONDAY – FRIDAY

Program Director: Tom W6ETC

OCARC 2023 DUES:

Membership period is:

1 January to 31 December

Individual New or Renewal: \$30

Family New or Renewal: \$45

Teen New or Renewal: \$15

*New Member Dues are prorated
quarterly and includes a badge:*

Additional Badges¹ \$3

Use one of our interactive online forms
to calculate current prices, join, renew, or
order badges:

<https://www.w6ze.org/FormsShortcut.html>

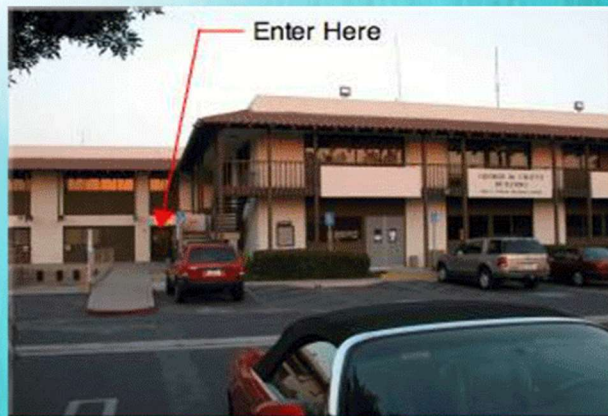
¹ \$3 or less + mailing. See form.



IN-PERSON GENERAL MEMBERSHIP MEETING

COME JOIN US
FACE-TO-FACE QSO

American Red Cross
May 19th, 2023 at 7:00pm



**600 Parkcenter Drive
Santa Ana, CA 92705
George M. Chitty Building
2nd Story, Room 208**

*Please come before 7:00 PM, as the door locks automatically to entry at that time.
OCARC membership is automatically sent Zoom instructions.*

Graphic by Tom W6ETC



Can Anybody Hear Me?

a Presentation by Dennis Kidder W6DQ at
the Next OCARC General Membership Meeting

How do we determine how well our Amateur Radio "System" is actually working? Counting the Q's is one way. How well we do in a pile-up is another. But these are subjective. What about some 'real-world' empirical measurements? How can we accomplish this?

Our guest speaker via Zoom for our May 19 meeting, Mr. Dennis Kidder W6DQ, will present various tools that exist and are freely available to see just how well you are getting out, to virtually any inhabited location on the planet (well, almost). These are freely available for use literally all the time.

Dennis, W6DQ, began his foray into Amateur Radio back in the 60's with the help of his neighbor, Bob Martin, W6QJU (SK). Going from his Novice (WN6NIA) to his Advanced (WA6NIA) in short order, he eventually got his Amateur Extra and granted the call of another of his Elmers, Chek Titcomb, W6DQ.



Dennis' interests in Amateur Radio are many, including propagation and improving how he radiates his signals.

Following retirement from a long career as a System Engineer, he, along with his wife Lisa, KF6QNG, moved to the California High Desert town of Inyokern.

There he is able to steadily increase his presence on the Ether ... with 5 acres to raise antennas and a 1500 square foot radio shack!

At various times, Dennis has been found from 160 meters all the way up to 24 GHz.

Join us Friday, May 19, 7PM PDT, to see how YOU are getting out!

Dennis' presentation will be by Zoom, but we hope to see you in person at the American Red Cross, 600 Parkcenter Dr, Room 208, Santa Ana. Zoom connection information will be sent to you before the meeting, and a lively discussion of Field Day will take place after the program as we get ready for our big push during our June meeting for that event.

73 de Janet Margelli, KL7MF
Vice-President, OCARC



May

- **His Maj. King of Spain Contest:**, CW 1200 UTC Saturday May 20 through 1200 UTC Sunday May 21
- **Baltic Contest:** 2100 UTC Saturday May 20 through 0200 UTC Sunday May 21
- ***CQ World Wide WPX Contest/CW:** 0000 UTC Saturday May 27 through 2359 UTC Sunday May 28

June

- **** ARRL International Digital Contest:** 1800 UTC June 3 through 2359 UTC Saturday June 4
- **Asia-Pacific Sprint SSB:** 1100 – 1300 UTC Saturday June 10
- ***ARRL June VHF Contest:** 1800 UTC Saturday June 10 through 0259 UTC Sunday June 12.
- **ARRL Kids Day:** 1800 UTC through 2359 UTC Saturday June 17
- **Field Day:** 1800 UTC Saturday June 24 through 2100 UTC Sunday June 25.

* Indicates club entries are accepted

** Indicates team entries are accepted

Note: When submitting logs for ARRL Contests indicate your club affiliation as "Orange County ARC"

State QSO Parties:

- **Indiana QSO Party:** 1500 UTC Saturday May 6 to 0300 UTC Sunday May 7
- **Delaware QSO Party:** 1700 UTC Saturday May 6 to 2359 UTC Sunday May 7
- **New England QSO Party:** 2000 UTC Saturday May 6 to 0500 UTC Sunday May 7 and 1300 UTC Sunday May 7 to 2400 UTC Sun. May 7
- **Arkansas QSO Party:** 1400 UTC May 20 to 0200 UTC Saturday May 21
- **Kentucky QSO Party:** 1300 UTC Saturday June 3 to 0100 UTC Sunday June 4
- **West Virginia QSO Party:** 1600 UTC Saturday June 17 to 0400 UTC Sunday June 18

Repeating Activities:

- **Phone Fry** Every Tuesday night at 0230 UTC to 0300 UTC Wednesday
- **SKCC** Weekend Sprintathon (Straight Key CW) on the first weekend of the month after the 6TH of the month. 1200 Sat. to 2359Z Sunday.
- **SKCC** Sprint (Straight Key CW) 0000Z to 0200Z on the 4th Tue., night (USA) of the mth.
- **CWops** Every Wednesday 1300 UTC to 1400 UTC 1900 UTC to 2000 UTC and Thursday 0300 UTC to 0400 UTC
- **K1USN Slow Speed Test:** (CW, 20WPM Max.) Every Friday 2000 UTC to 2100 UTC Every Sunday night at 0000 UTC to 0100 UTC Monday
- **ICWC Medium Speed Test:** (CW, 25 WPM Max.) Every Monday 1300 UTC to 1400 UTC

OCARC Club Nets:

- **75 Meter Net:** Every Tuesday night at 8:00 pm to 8:30 pm PST. SSB 3.883 MHz
- **10 Meter Net:** Every Wednesday night at 7:30 pm to 8:30 pm PST. SSB 28.375 MHz
- **2 Meter Net:** Every Wednesday night at 8:30 pm to 9:30 pm PST. FM Simplex 146.55 MHz



Other Nets:

Catalina Amateur Repeater Association (CARA)

Net@9 Wellness & Support Net

Monday thru Friday 9:00 am and 9:00 pm PST

2m: 147.090 MHz (+600 MHz) No PL

1.25m: 224.420 MHz (-1.600 MHz) PL 110.9

Echolink *CATALINA* / **Allstar** #51597

To have your favorite activity listed in next month's OCARC RF Newsletter, send your requests to the RadioActivity editor, Ron W6WG by email to:

w6wg@w6ze.org

The Orange County Amateur Radio Club

Est. 1933



W6ZE.ORG Website Ramblings

Part 5 Dan - KI6X

Serving Orange County in Southern CA

General Information:

- [Club Brochure \(PDF\)](#)
- [About Ham Radio](#)
- [Board of Directors](#)
- [Board Appointments](#)

Club Activities:

- [Meetings](#)
- [Upcoming Events](#)
- [Previous Events](#)
- [Club Nets](#)
- [Emergency Comm.](#)
- [ARRL Field Day](#)
- [Winter Field Day](#)

Membership:

- [New Membership](#)
- [Member Renewal](#)
- [Badge Status](#)
- [Public Roster](#)

Club Library:

- [RF Newsletter](#)
- [Net News](#)
- [Photo Gallery](#)
- [Club Archives](#)

Links:

- [Ham Related Sites](#)
- [Ham Vendors](#)

Miscellaneous:

- [Heathkit Articles](#)
- [Digital-ATV Library](#)
- [Items of Interest](#)
- [For Sale](#)

Contact Us

Continuing with the W6ZE website info that I started in the January *RF*... The next big section of the website is the **Club Library**. We will delve into some of the parts of this one. It is a disappointment that the membership does not use the website more. Other than Board members, we have had 4 individuals participate in the web contest over the last two months. Therefore, it is discontinued because the work involved setting it up each month exceeds the benefits! Please still review items on the site. Lots of good information and a lot of work involved creating and maintaining. Here are the links listing the finders and raffle ticket winners for April and March: [Contest - April](#) [Contest - March](#)

On to the description of the **Club Library** section. Here is where you find items that would be in a storage library if on paper (newsletters, photos, archives):

“RF” Newsletter: The *RF* is the name of the newsletter of our club. In this section of the website you will find all the electronic versions of the newsletter that could be assembled. Since the 70’s it is pretty complete. If you have paper versions of any old ones missing, we would like to borrow to scan. The current issue is highlighted near the top of the reverse chronological order list. There is even an index of article titles as of 2013 that could use an update.

“Net News”: OCARC has sponsored their nets regularly for the past 25 years (see the list of current nets in **“Club Nets”** under the **Club Activities** section). For many years a newsletter article summary was in the *RF* and recent summaries hopefully will be created and updated to the website.

“Photo Gallery”: Here is a fun section to look at photos from previous events. Events mostly include Field Days but photos from, Baker to Vegas race support, along with some special parties and convention trips are included. There

are photos from an older series of activities called “Not-So-DXpedition” where club members would travel somewhere to operate. I see this section needs an update. I have already updated recent FD pictures under the Field Day section that are not linked here. As you can see there are always pages that need an update... Well, three hours later they are updated and it is verified to meet the new HTML 5 specs!

I will continue next month breaking apart the last item in this section **“Club Archives”**. This is a detailed section on its own so it needs special billing.

That covers most of the **Club Library** section of the main W6ZE webpage menu. Please check out at least what has been discussed these last few months. I will work through the rest of the sections over the summer months... KI6X



Image by Tom W6ETC

by Chip Margelli, K7JA

Summer is here, and “Summertime” conditions (for better or worse) are upon us.

As we approach the Summer Solstice, 6 meters enters a unique phase, where long transpolar paths (California to Japan, California to Europe) can go through a sharp enhancement, particularly June 20th through July 10th.

With the increased solar activity accompanying our rise toward Solar Max conditions, though, there is a chance that the increased solar wind can blow away the delicate E-layer ionization layers, possibly leading to a net propagation bust. I myself think we’re going to have a pretty good DX season centered around June 21st—stay tuned to see if I’m right.

On the higher HF bands (20/15/10 meters), absorption during the “high noon” hours will cause conditions to seem very “punk,” but ten meters can open at any time via Sporadic E for single- and double-hop propagation. Once the sun goes down, 20/17/15 meters will pop open for lots of DX fun, and 20 will stay open well past midnight. At least, we *hope* 20 will stay open for us all night on Field Day!



The ever-increasing solar cycle means that low power and modest antennas like a dipole or vertical will bring you lots of DX. These evening openings on 20 and 15 will be a lot of fun, so turn that radio on and make some noise!

2023 is OCARC's 90th ANNIVERSARY!

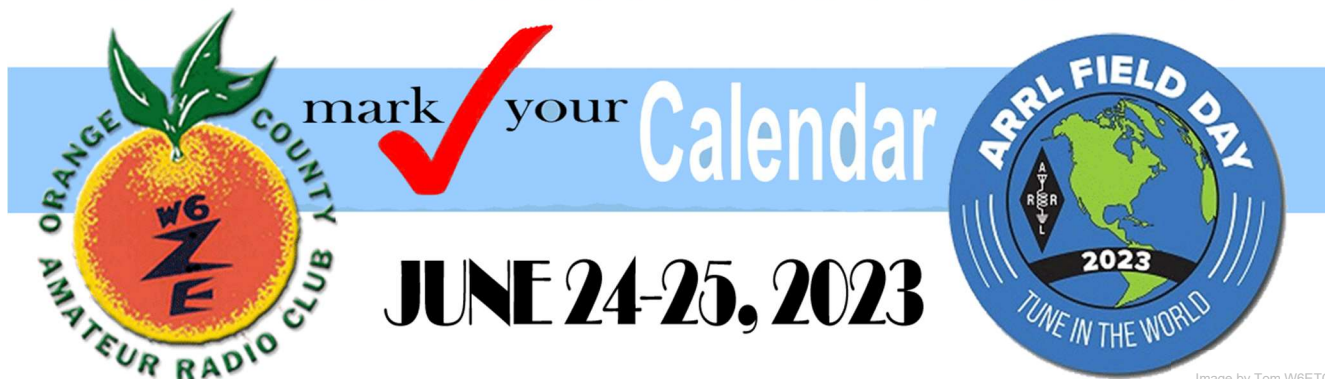
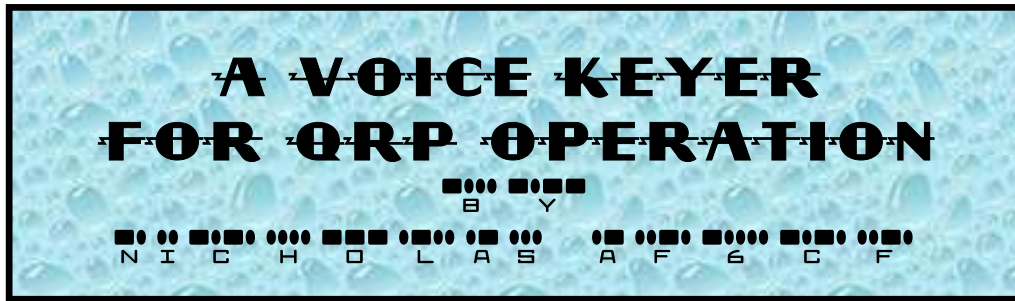


Image by Tom W6ETC



One day, I was looking in the Internet for ideas to make my portable operation more efficient and found an excellent article titled “BUILD A HAM RADIO VOICE KEYS FOR THE BACKPACK,” by Bob Fischer **WB8BEL** in the **NUTS AND VOLTS** Magazine.

The **Voice Keyer** looked like a very interesting project and should be a great addition for any portable operations setup, and even at the home shack for contesting, so I immediately got the required parts from eBay and started on building it.

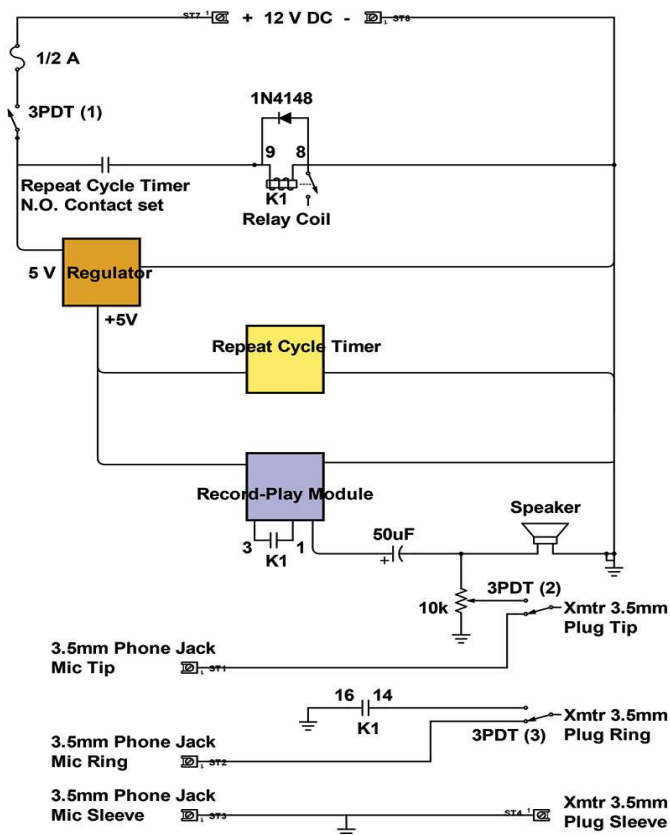


The main voice recorder was \$5, the infinite cycle timer was just \$7.15, the DC/DC converter was about \$4 and the 12V relay plus the other components brought the total parts cost to under twenty dollars.

Refer to the article at <https://www.nutsvolts.com/magazine/article/build-a-ham-radio-voice-keyer-for-the-backpack> (Permission granted by Mr. Fischer to mention here).

Of course, Bob's project was designed to be minimalist and lightweight, but having a penchant to make everything more complicated, I decided to modify the original project by adding several switches and a power LED (the more blinking the better).

My portable battery setup includes some very powerful LiFePO4 [BioennoPower](#) batteries, so I am not concerned about milliamperes. If you reproduce this device, you may consider making it simpler and lighter if you plan to go to a SOTA (Summits On The Air).



This is the original schematic from the article, which I basically followed.

My only difference was to use a 12V repeat timer, so the timer power is connected to the 12V side of the 5V DC/DC converter. Because my KX3 uses microphone bias, I added a 10 uF blocking capacitor to the 10K potentiometer arm.

So then the question was, "What type of enclosure to use?". I had an old Wyse video terminal that I could destroy to recycle its enclosure.

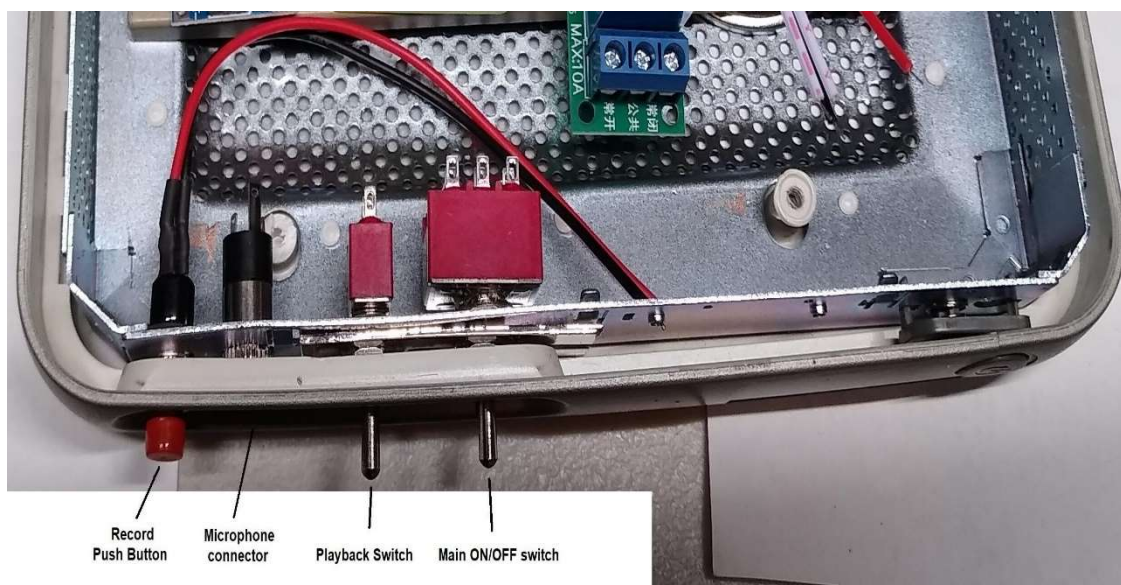
The enclosure has a mesh on both sides (originally to vent the heat) that would allow the sound from the speaker to come out.

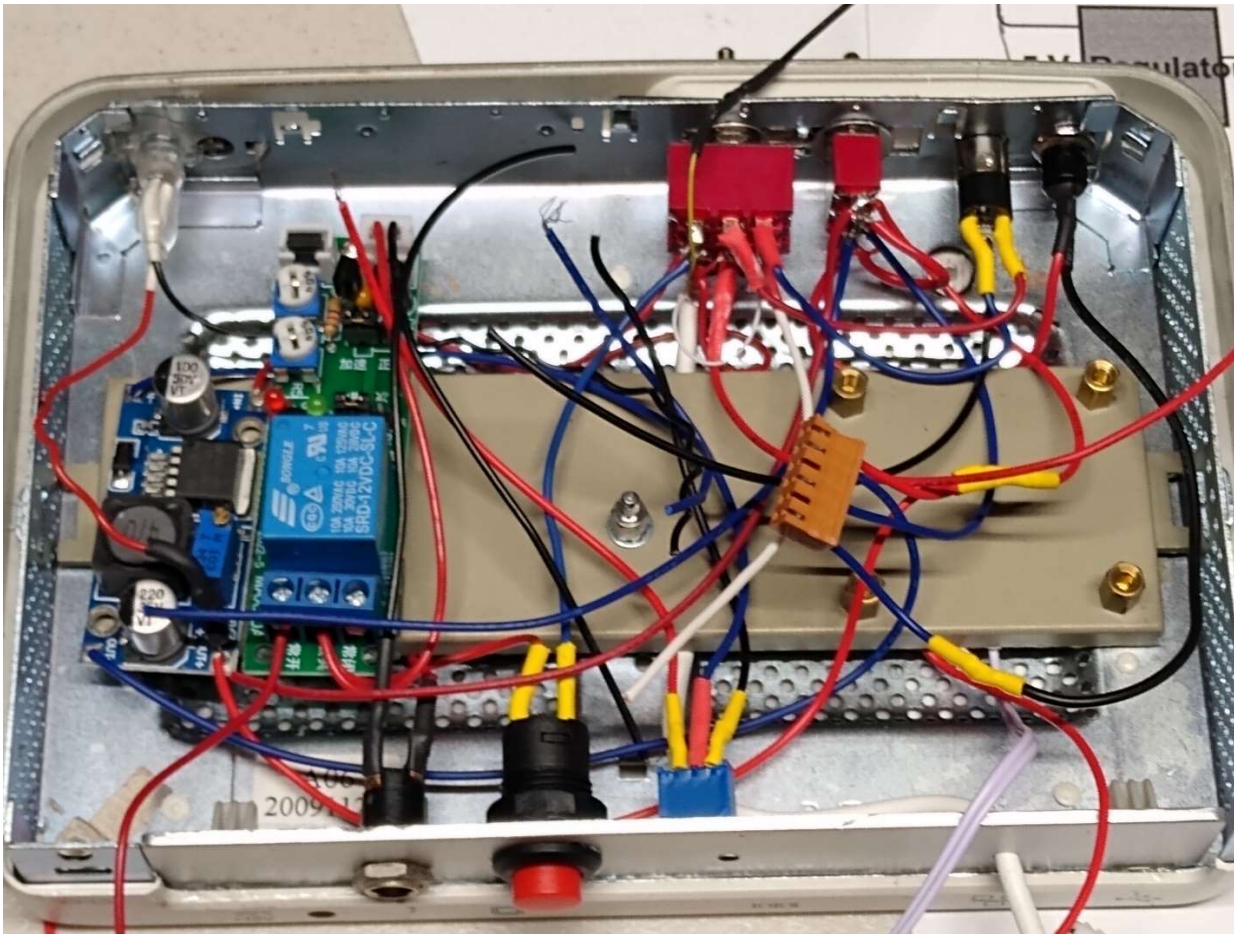
The speaker volume is very low, but that is not a problem because it's only used to monitor when setting up the recording.

I used an old 5-1/4 floppy disk blank insert as a "chassis" to mount the circuit boards, with the speaker under it.

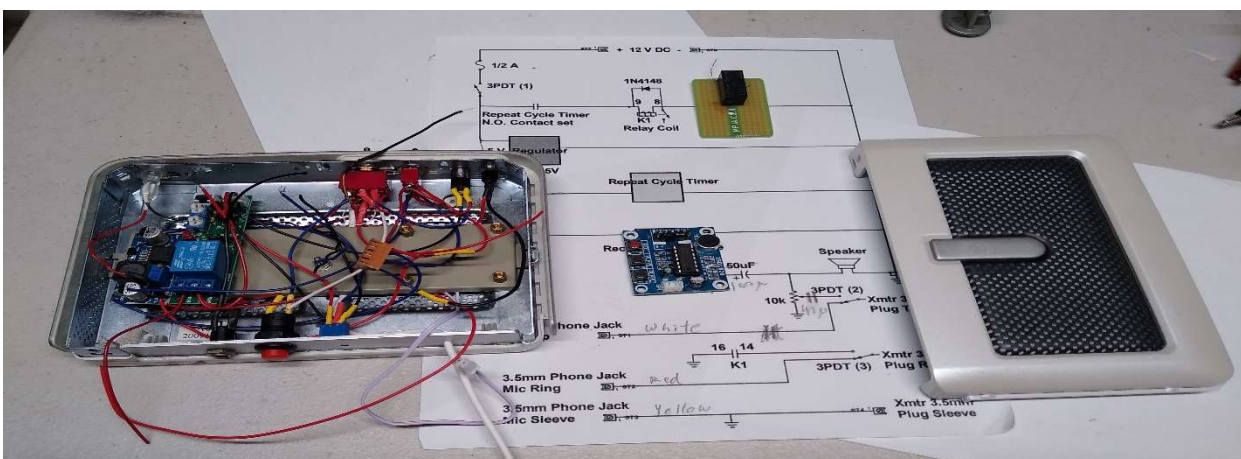
The front panel of the terminal holds the on/off switch, record and playback and microphone connector, as well as an LED for "power" indication.

The back panel has the power connector, a switch to defeat the timer (to setup the recording), the 10K pot to adjust the audio output and the cable to the radio's mic.





I used standoffs to mount the recording board, the timer and voltage converters. Below is a general view of the Voice Keyer before the relay board wiring and final assembly.



If you have any questions, you can email af6cf@w6ze.org or talk to me personally at one of the OCARC meetings.

73 DE AF6CF



**OCARC GENERAL MEMBERSHIP
MEETING MINUTES
2023-04-28**

OCARC General Membership Meeting Minutes for: April 28th, 2023

President Chip K7JA started the meeting on time and proceeded with introductions for those members and guest in attendance.

Janet KL7MF introduced this month's speakers Endaf Buckley, N6UTC and Patrick Stoddard, WD9EWK, with their accounts of roving around various states, counties, and grids, working satellites and obtaining WAS status.



N6UTC using a Kenwood TM-V71A & Elk Antennas 2m/70cm log periodic, from the DM06/DM16 line in central California

Both operators spoke from their many years of experience operating both FM and Linear satellites. They've chased "worked all state" awards from various regions and operated from various grids around the southwestern parts of the USA. Special event activations such as "Walmart's on the air" to POTA fill their days with challenges.

This was a well presented and much enjoyed presentation.



WD9EWK at Organ Pipe Cactus National Monument in southern Arizona (grid DM31), on 22 January 2022

After a short break we had a business meeting. Winter Field Day results became available, and our club entries place 1st and 2nd overall by wide margins.

Plans are underway for Summer Field Day (June 24-25, 2023).

More information to follow.



Figure 1 Gordon West WB6NOA

Vice President report from Janet KL7MF let us know about some of the upcoming speakers such as Dennis Kidder in May. June – Field Day, Gordon West in July.

Treasurer Tim N6GP - Visalia DX Convention was the previous weekend with 480 hams from US and onboard attending. Club finances are in good shape also.



Field Day is June 24-25, 2023

Membership Corey KE6YHX reports that we have a total of 35 online and/or in person at the meeting tonight.

Next meeting is May 19th Dennis Kidder. Meeting adjourned at 8:45 PM.

Submitted by the OCARC Board of Directors/Secretary: [Tim N6TMT](#)

**OCARC Board Meeting Minutes for: May 6, 2023**

The OCARC Board meeting was held at The Streamliner Lounge, 186 N. Atchison St., Orange, and called to order to order by President Chip Margelli K7JA at 8:15 am. 9 Board Members were in attendance.

Treasurer Report –presented a current Cash Flow report. All looks good. Our bank has changed rules and terms on CD's so no longer worth pursuing. See next page (pg13).

Activities report – Next opportunity drawing ~ will be held at the June meeting.

Membership – Roster online, 92 members paid.

Newsletter May – Tom - W6ETC. Jun - Dan?

Speakers - May – Dennis Kidder, W6DQ (Can anyone hear me?) Jun – Field Day, July – Gordon West WB6NOA-VHF/UHF Tropo Propagation, DX, etc.

Summer Field Day Plans – San Bernardino Microwave contact will be arranged on the microwave bands, displays and information in VHF/UHF station. Food Budget and plans need to be firmed up. Tents are hired. Porto's treats for Sunday Breakfast. The school site is secured.

New business

3 or 4 signs with details for each of the FD operations. Chip will have more details soon.

Honorary Membership for Jeff Mikoleit, KK6YUP, our Door Guard. Board approved.

Good of the Club

A member mentioned the extra steps necessary to renew if you have you Callsign lapse. Lesson learned don't let it lapse and take advantage of the ARRL renewal services when possible.

Adjournment occurred around 9:25 am.

Submitted by the OCARC Board of Directors/Secretary: [Tim N6TMT](#)



OCARC Cash Flow - Year To Date - Year to Date

1/1/2023 through 5/5/2023

5/5/2023

Page 1

Category	1/1/2023- 5/5/2023
INFLOWS	
Badge Income (PayPal)	3.00
Donations - FD	30.00
Dues, Membership (PayPal) 2023	1,290.00
Dues, Membership 2023	645.00
Opportunity Drawing -Monthly	235.00
TOTAL INFLOWS	2,203.00
OUTFLOWS	
Guest Speaker Meal - Exp	107.03
Opportunity Drwg - Monthly Exp	157.38
PayPal Fee	69.39
Propane Tank	61.30
Secretary of State	5.00
Web Site Hosting	76.00
WFD - Propane	47.39
WFD Flowers	30.00
WFD Rental - Tent	150.00
ZOOM subscription	-44.97
TOTAL OUTFLOWS	658.52
OVERALL TOTAL	1,544.48

Honorary OCARC Club Membership Bestowed upon:

Jeff Mikoleit - KK6YUP



Recently, when you come to a club meeting in person at the Red Cross, you are greeted at the door and let in by Jeff - KK6YUP.

Jeff is a representative of the local American Red Cross chapter and a former club member. Besides being active with the Red Cross, he is also active in COAR, a volunteer amateur radio group that is associated with the Orange Police Department. Due to these and other commitments, Jeff, who first joined the club in early 2016, left the club during the COVID pandemic 2021.

When COVID waned and we began meeting again, the Red Cross had changed their security, so Jeff began greeting us at the door and admitting us as we showed up for our monthly general meetings.

At the May board meeting a resolution was brought bestowing honorary membership to Jeff as a partial thank you for all he is doing for the club. A vote was taken and the years were unanimous.

President Chip Margelli has sent a congratulatory email to Jeff informing him about the club's action.

So when you come to a meeting in the future please say hello to Jeff and thank him.

73 de AF6C



Badges Are Ready

by Bob AF6C

After a long off-and-on struggle with a high-end Epson printer that was slowly turning its insides yellow at \$30 a cartridge, often destroying a one dollar sheet of paper in the process, I found a replacement printer that meets most of my needs.



It lacks two features I really cherished on my old all-in-one printer. The printer has no rear feed where I could feed heavy stock and special paper.

The scanner does have a document feeder; however, unlike the former printer it does not do two-sided scanning.

I did print out and laminate the remaining seven badges that were in the cue, and am now up-to-date. One badge I mailed off to AD7J in Las Vegas; the others will be available at the the next meeting. There are also a few badges from this year that haven't yet been picked up. I have badges for:

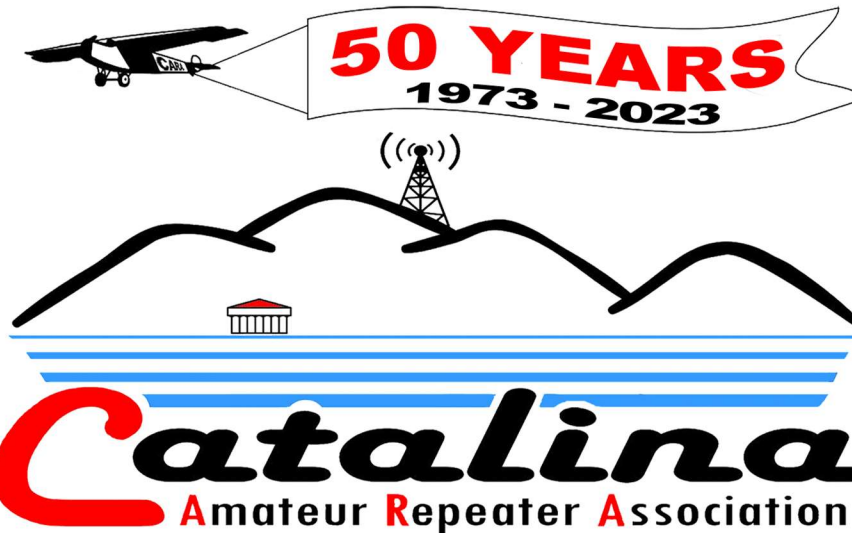
ADNAN	KN6OIN
TRACY	(Aragaki) no call
BRENT	KN6WYU
BOB	AD7J mailed
JEFF	WA6TKR
DAN	KI6X
BRUCE	W4YOU
BARBARA	W6LTI
K6JEY	DOUG

I hope to see you at the meeting.

73 de AF6C



**AMATEUR RADIO WELLNESS & SUPPORT NET
CONGRATULATES
CATALINA AMATEUR REPEATER ASSOCIATION ON
50 YEARS OF SERVICE
TO THE AMATEUR RADIO COMMUNITY**



Many OCARC Amateur radio operators began their ham radio adventure by programming their HT, mobile or base station radio's to a local repeater.

With a footprint that practically takes up a good share of Southern California and beyond, the Catalina Amateur Repeater Association or CARA for short, continues to be a favorite of many So-Cal based operators.

The following pages are from the 73 Magazine of April 4th, 1974.

It was on April 27th, 1973 that CARA became the first licesnsed remotely controlled repeater to come on the air with a 10-watt voice from Santa Catalina Island.

73, Tom W6ETC

K.W. Herkimer
690 Chipwood
Orange, CA 92667

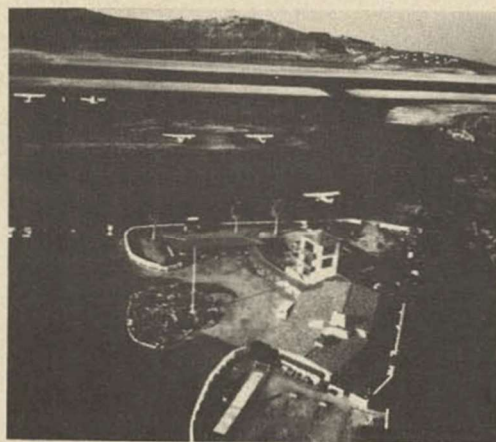
FIRST U.S. LICENSED REMOTE - CONTROLLED REPEATER

On 27 April, 1973, the country's first licensed remotely controlled repeater came on the air with a 10-watt voice from Catalina Island, and more than 200 Southern California and Mexican amateurs tried out its 13,000 square mile coverage.

Located on an island, the new WR6 AAA repeater had several obstacles to overcome before it was ready for service. First, the island of Catalina is privately owned by the Wrigley (chewing gum) family, which meant designing an installation under some conditional constraints of the lease. Then, there is the problem of transportation. Everything going to or from the island must be transported either by boat or by aircraft. In fact, it was this aspect of private flying that actually sparked the creation of the "AAA" repeater.

Catalina Island is not heavily populated; only about 1500 full-time residents share the 18-mile-long by 7-mile-wide island with some wild goats, numerous wild boar, and a herd of buffalo. The island is located 26 miles off the Southern California Coast, giving it a view of the mainland north to Santa Barbara, south to San Diego and Mexico, and inland to the San Bernardino Mountains.

The island itself is mountainous, with the terrain covered by thick chaparral growth and some scrub oak. Private pilots are keenly



Catalina Island's "Airport in the Sky"

aware of the topographic elevation of the island's "airport in the sky." Catalina Airport is 1,560 feet above sea level. There is a unique thrill finding yourself at 2,000 feet altitude over the water when you have left the runway just seconds before. It is this unusual airport location that brought private pilots to the service of amateur radio.

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The idea of a repeater on Catalina started more than two years ago when Dave Corsiglia WA6TWF, working as a flight instructor, would occasionally visit the airport in the sky with student pilots. On several of these trips, he found that he was able to work San Diego as well as the greater Los Angeles area with a 2-watt hand-held from the base of the control tower. He decided to pursue the idea of an airport-located repeater, and obtained a lease from the Catalina Island Company with the help of Ms. Debby Klapper, a student pilot and friend of the airport manager.

Next came the task of gathering financial support. Several clubs in the Los Angeles area were contacted, but all were skeptical. One club's "engineer" even said that he knew it would never work because he had tried to install a repeater for the Government in the 1950's and had failed because of the local temperature inversion. Strangely enough, instead of a hindrance, this weather phenomenon of the temperature inversion layer has so far seemed to be a great help to propagation.

Undaunted by the skeptics, Dave continued his efforts and formed the Catalina



Catalina Island Repeater Club with equipment by Henry Radio.

Island Repeater Club. However, they were still unable to raise sufficient financial support until Sam Niles W6CXW, volunteered to talk to his employer, Ted Henry of Henry Radio. Ted agreed to sponsor the repeater.

The next step was to apply for the repeater station license and to design the system. I had some limited experience with FCC applications, so this is where I got into the program. Being a private pilot too, this also added to the transportation availability out to the island. Working together with Sam Ferraro W3VGU, of the FCC's Washington Office, we were able to obtain our station license, complete to the gain antenna and the radio remote control. Special thanks to Sam for his patience in this aspect.

The design of the system required careful consideration for reliability; an island 26 miles off the coast is not exactly handy for service calls. For this reason, plus the history of successful operation of the Standard repeater, WR6AAC WA6ZZE, an all solid-state design was selected. The system would consist of a Standard Radio model RPT-1, several Tempo Commercial Line transceivers for control, a TPL 80-watt power amplifier with a fan (installed later), a Cushcraft colinear antenna, and a Phelps-Dodge 506-509 duplexer. The control tone circuitry was custom designed. After final assembly and test, the repeater and duplexer were fine-tuned by Roland Souci WA6EGZ, who designed the repeater for Standard.



Catalina Airport Control Tower.

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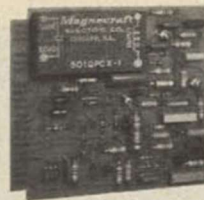
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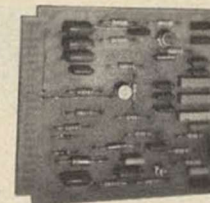
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After a week of checkout operation from Orange, California, the 4-foot pack plus accessories was ready to move out to the island to the top of the Catalina Airport control tower. Dave Corsiglia WA6TWF, Bob Swenson W6HIL, Rick Moore WB6FXF, Sam Niles W6CXW, and I loaded up two aircraft on the morning of 27 April and waited for the fog to clear at Catalina. At about 10:30, the island cleared just long enough for us to land, and then it closed in again.

Paul White WA6NUA, Assistant Manager of the Airport, was on hand to help us haul the equipment to the top of the tower by way of a rope line over the side. Then we connected the power. This was when we discovered another constraint - a minor clause in the lease agreement which said that the total antenna height should not exceed five feet because it would conflict with the aesthetics of the building. It should be pointed out here that the Catalina Airport is indeed a beautiful piece of architecture in the traditional Southern California old-Spanish-mansion style, which blends nicely with its environment. A not-beautiful antenna would certainly disrupt the aesthetics.

The remote control link antenna posed no problem. This 11-element beam antenna was installed inside the building, on the ceiling. The main antenna, however, would be another design challenge.

Our return trip was a real lesson in instrument flying and zero-zero takeoff. With the white line on the runway barely visible, we pushed our way through the fog and within 30 seconds were over the water, back in the sunshine...but still worrying about how to design an aesthetically pleasing antenna that would still perform well when mounted to the side of the control tower.

George Campbell W6FXZ, an antenna engineer and a new 2m FM enthusiast, was contacted and he agreed to take on the antenna design task. His first design consisted of two 2-element, end-fire, colinear arrays, fed 90° to provide a cardioid pattern. This antenna was installed and produced satisfactory results.

George soon discovered that this first design did not cover San Diego as well as he had hoped, so he designed and built a

second antenna for the repeater system. As shown in the photographs, the antenna is about 13 feet long overall, consisting of two 3-element, colinear arrays spaced at 135°, and driven 45° out of phase to produce a modified cardioid pattern shaped (appropriately for Southern California) much like the ears on a Mickey Mouse hat.

The second array design proved to work much better. The antenna develops 7.5 dB gain ±45° off center and approximately 5.5 dB at center. Total 3 dB beamwidth is 180°. The dipoles used to construct the antenna were taken from the original Cushcraft hardware.

With satisfactory operation of the antenna established, a TPL power amplifier was installed to bring the ERP up to the allowed 100 watts. Operation of the system has been outstanding; only one service call has been required in eight months of operation. Planned later additions to the repeater system include a battery backup for emergency operation.

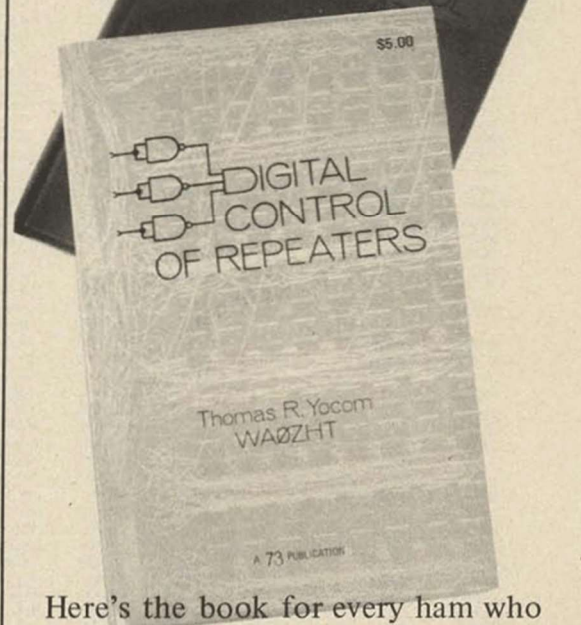
Remote control and monitoring of the repeater is accomplished from five control points in the Orange County, California area on a shared-time basis. Each day is broken into four time segments. Bill Davis WB6YHP, handles service from 6AM until noon, when Rick Moore WB6FXF, covers until 6PM, then Bob Swenson W6HIL, operates until midnight, when my call letters K6BIG, are behind the control until 6AM. Dave Corsiglia WA6TWF, acts as backup in the event of equipment failure or operator commitments.

Operation of the WR6AAA repeater system has proven to be a real help to Southern California amateur operators. More than 600 different calls have been logged to date and the repeater's record of continually improved performance attests to its fine operation.

We wish to thank everyone who has graciously supplied their time to the "AAA" project, particularly the people involved with the antenna installation, and to Jerry Vanderville (the new Catalina Airport Manager) for his patience and understanding, and especially to Henry Radio for their support of the program.

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