RF

VOL. LXIII NO. 4 P.O. BOX 3454, TUSTIN, CA 92781-3454 APRIL 2022

THE PREZ SEZ
by: Nicholas Haban
AF6CF

Greetings and Disillusions!

As usual, for the month of April we have lots of fun activities, like Tax Day on the 18th and the daily earthquakes, forest fires and lost planes. We had another hybrid Board meeting and we have decided that for now we will continue with the Zoom meetings and will be back to in person in the future as soon as possible. This month we will have yet another excellent presentation about the Vaker to Begas activity reporting by some of our Club members that participate with the OPD team, helping with radio communications at the race course. Maybe you are not aware, but Field Day is around the corner with only a couple of months to prepare. We hope to have some Ham Operating classes to refresh everybody's mind on the operation of RF producing equipment, so us low skill operators learn the "ropes" of proper Field Day operation. I'm pleased to announce that we have several positions filled and the site is secured thanks to the efforts of Ron W6WG. We have a couple of Band Captains, and are working on the Food and Premises positions and we are in conversations with the higher powers to send us good propagation and sky waves. Even if you do not have your Amateur Radio license, or are a family member, you can still come and operate our GOTA (Get On The Air) station and do it under the supervision of one of our duly licensed operators. In closing, I wish everybody many happy returns on the 18th and hope to see you all at the next meeting.

73½ de AF6CF

President

PS: Grammatical Misteakes are maked on purpose to zelebrate April 1st. 73,

APRIL 2022 MEETING

The April meeting will feature A double-header; two mini programs.

Chip Margelli K7JA on his recent trip to the Oahu to compete in a multi-multi effort for the CQ WPX SSB

See "Meeting" on page 22

See you on Zoom FRIDAY, APR 22nd 2022 @ 7:00 PM
SPECIAL DATE !!

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The Next OCARC Hybrid Board Meeting is on Sat. May 7th. 2022 @ 8:15 am.

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Contact the Newsletter:

Feedback & Corrections:
rf_feedback@w6ze.org

Submit Articles:
editors@w6ze.org

Monthly Events:

General Meetings
Time: 7:00 PM
Day: 3rd Fri. of the Month

Board Meetings
Time: 8:15 AM (Now Hybrid)
Day: 1st Sat.of the Month

Meetings are currently being held over Zoom

Club Nets (Listen for W6ZE):

10M: 28.375 ± MHz SSB
Wed- 7:30 PM - 8:30 PM
Net Control: Corey, KE6YHX

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

CATALINA AMATEUR REPEATER ASSOCIATION (CARA)
147.090 MHz (+0.600 MHz) No PL
Monday - Friday
9:00 AM and 9:00 PM
Prog. Director. Tom W6ETC
NCO's include Jeff: KK6TRC;
Don W6ZZW, Chris KF6LEX
John AJ6F; Milt N6MG;
David KK6M; John KB6OVO

OCARC 2022 DUES:
Membership period is:
1 January to 31 December

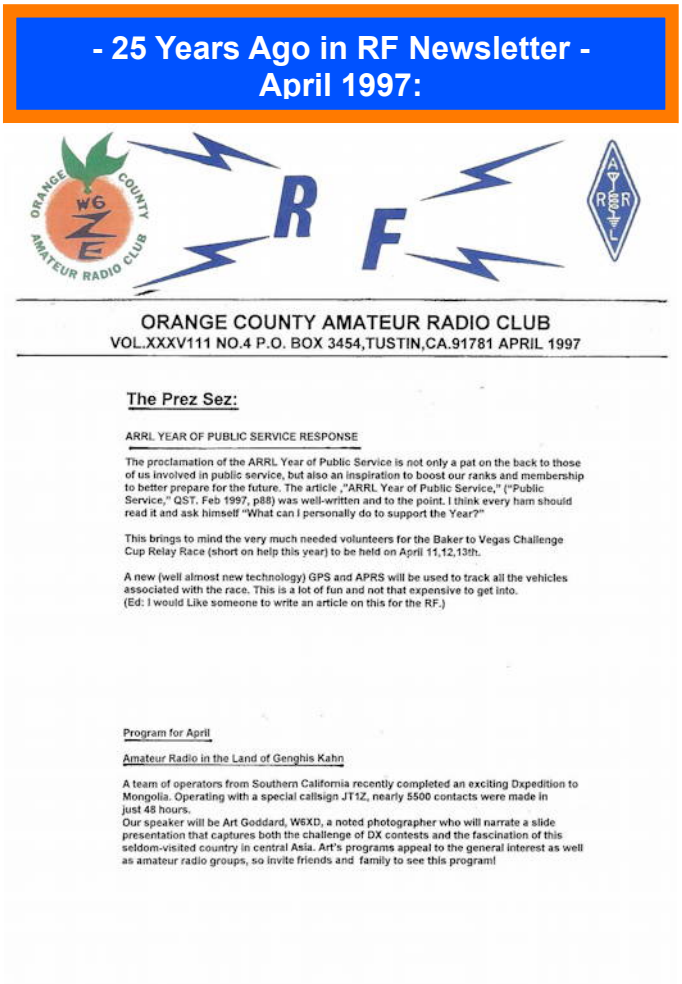
Individual New or Renewal:	$30
Family New or Renewal:	$45
Teen New or Renewal:	$15

New Member Dues *are prorated quarterly and includes a badge:*
Additional Badges[1] $3

Use one of our our interactive online forms to calculate current prices, join, renew, or order badges:
http://www.w6ze.org/FormsShortcut.html

[1] $3 or less + mailing. See form.

- 25 Years Ago in RF Newsletter - April 1997:



ORANGE COUNTY AMATEUR RADIO CLUB
VOL.XXXV111 NO.4 P.O. BOX 3454,TUSTIN,CA.91781 APRIL 1997

The Prez Sez:

ARRL YEAR OF PUBLIC SERVICE RESPONSE

The proclamation of the ARRL Year of Public Service is not only a pat on the back to those of us involved in public service, but also an inspiration to boost our ranks and membership to better prepare for the future. The article ,"ARRL Year of Public Service," ("Public Service," QST. Feb 1997, p88) was well-written and to the point. I think every ham should read it and ask himself "What can I personally do to support the Year?"

This brings to mind the very much needed volunteers for the Baker to Vegas Challenge Cup Relay Race (short on help this year) to be held on April 11,12,13th.

A new (well almost new technology) GPS and APRS will be used to track all the vehicles associated with the race. This is a lot of fun and not that expensive to get into.
(Ed: I would Like someone to write an article on this for the RF.)

Program for April

Amateur Radio in the Land of Genghis Kahn

A team of operators from Southern California recently completed an exciting Dxpedition to Mongolia. Operating with a special callsign JT1Z, nearly 5500 contacts were made in just 48 hours.
Our speaker will be Art Goddard, W6XD, a noted photographer who will narrate a slide presentation that captures both the challenge of DX contests and the fascination of this seldom-visited country in central Asia. Art's programs appeal to the general interest as well as amateur radio groups, so invite friends and family to see this program!

In his Prez Sez article , Frank - WA6VKZ commented on the proclamation off the ARRL Year of Public Service, announced in the Feb. 1997 QST, p88. He also called for volunteers to help out at the Baker-to Vegas race.

The program "Amateur Radio in the Land of Genghis Kahn" was presented by the late Art Goddard - W6XD. Art, a noted photographer, narrated "a slide presentation that captures both the challenge of DX contests and the fascination of this seldom visited country in central Asia." The group operated with the special call sign JT1Z

Art - KE6WOX and Larry - K6LDC discussed their plans to go out to El Mirage dry lake for some antenna testing. They invited anyone who wanted to join in. This was announced as one of the club's "Not do DX-peditions". It was held April 25 - 27.

Ken - W6HHC proposed a budget for the year of $1,754.00

In 1997 the club had been meeting at the Red Cross facility in Santa Ana for about two years. The monthly breakfast and board meeting was being held at The Wildflower Restaurant at 2525 Grand Ave in Santa Ana. just south of Fairhaven Ave. Dues were $15 and Family dues were $22.50.

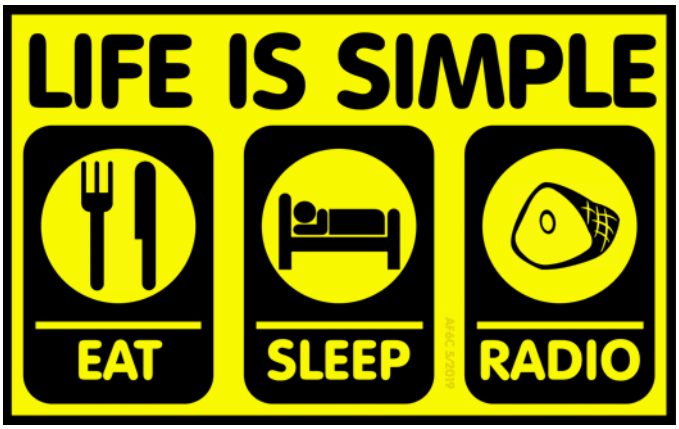
Here is a list of the officers for 1997:

President:	*Frank Smith*	WA6VKZ
V. President:	Art Sheldon	AD6B/(K7ZE)*
Secretary:	Jim Winn	KE6UCH/(AE6UC)*
Treasurer:	Ken Konechy	W6HHC
Activities:	Art Dillon	KE6WOX
Membership:	*Bob Buss*	KD6BWH
Public Relations:	Larry Beilin	K6VDP
Technical:	*Larry Hoffman*	K6LDC
Mem. at Large:	Bob Eckweiler	AF6C
Mem. at Large:	*Bob Tegel*	KD6XO

And the editor was Bud Barkhurst WA6VPP.

Current Member(s) in bold
Current Associates are underlined.
Silent Keys in *italics*
* Current call in parentheses

de AF6C



RadioActivity
April 2022

Upcoming Activities:

April

- ARRL Rookie Roundup SSB: Sunday April 10, 1800 UTC through 2359 UTC.
- 10-10 International Spring Contest/Digital: 0001 UTC Saturday April 23 through 2359 UTC Sunday April 24
- Helvetia Contest: 1300 UTC Saturday April 23 to 1259 UTC Sunday April 24

May

- 7TH Call Area QSO Party: 1300 UTC Saturday May 7 through 0700 UTC Sunday May 8
- 10-10 International Spring Contest/CW: 0001 UTC Saturday May 7 through 2359 UTC Sunday May 8
- *CQ World Wide WPX Contest/CW: 0000 UTC Saturday May 28 through 2359 UTC Sunday May 29
  * 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:

- Georgia QSO Party: : 1800 UTC Saturday April 9 to 0359 UTC Sunday April 10 and 1400 to 2359 UTC Sunday April 10
- New Mexico QSO Party: 1400 UTC Saturday April 9 to 0200 UTC Sunday April 10
- North Dakota QSO Party: 1800 UTC Saturday April 9 to 1800 UTC Sunday April 10
- Michigan QSO Party: 1600 UTC Saturday April 16 to 0400 UTC Sunday April 17
- Florida QSO Party: 1600 UTC Saturday April 24 to 0159 UTC Sunday April 30 and 1200 to 2159 UTC Sunday May 1
- Indiana QSO Party: 1500 UTC Saturday May 7 to 0300 UTC Sunday May 8
- Delaware QSO Party: 1700 UTC Saturday May 7 to 2359 UTC Sunday May 8
- New England QSO Party: 2000 UTC May 7 Saturday to 0500 UTC Sunday May 8 and 1300 UTC to 2400 UTC Sunday May 8
- Arkansas QSO Party: 1400 UTC Saturday May 21 to 0200 UTC Sunday May 22

Repeating Activities:

- Phone Fry Every Tuesday night at 0230Z to 0300Z
- SKCC Weekend Sprintathon (Straight Key CW) on the first weekend of the month after the 6TH of the month. 1200 Sat. to 2359Z Sun.
- SKCC Sprint (Straight Key CW) 0000Z to 0200Z on the 4th Tuesday night (USA) of the month.
- 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

OCARC Club Nets:

- 10 Meter Net: Every Wednesday evening at 7:30 pm to 8:30 pm Local Time. SSB 28.375 MHz
- 2 Meter Net: Every Wednesday evening at 8:30 pm to 9:30 pm Local Time. FM Simplex 146.55 MHz

Other Nets:

- Net-AT-9: Wellness & Support
  Monday thru Friday 9:00 am and 9:00 pm Local Time 147.090 MHz (+600 MHz) No PL

Send an email to *Ron W6WG, w6wg@w6ze.org to have your favorite activity or your recent RadioActivity listed in next month’s column.*

Submitted by Ron - W6WG
OCARC Activities Chairman

Heathkit of the Month #111:
by Bob Eckweiler, AF6C

AMATEUR RADIO - SWL

Heathkit HW-2026 Recalled
Synthesized 2-Meter Transceiver.

Introduction:

Well, it's again the month of April and time to review a Heathkit from an unusual, esoteric or troubled group. This HotM article will discuss what is probably Heathkit's biggest kit disaster. The HW-2026, was Heath's first attempt at a synthesized 2-meter FM transmitter, See **Figure 1**. What could go wrong?

The $289.95 HW-2026 holds the distinction of being the only Heathkit, in the forty-plus years of the company, to be recalled! The kit was introduced in the Christmas 1975 catalog with a comment in the President's Letter [1] and an ad marked "Available November" [2].

Shortly after the first production run was complete on November 15th, Heathkit began getting calls from hams experiencing problems that can happen due to spurious output from the radio. Hams were being heard where they weren't, repeaters were keying up unwarranted, etc.

After carefully examining the radio and troublesome spurs, Heath engineers decided the possibly of a quick fix was not viable.

Here is a link to the index of Heathkit of the Month (HotM) articles:

http://www.w6ze.org/Heathkit/Heathkit_Index.html

1. Notes begin on page 12

Figure 1: One of the few remaining recalled Heathkit HW-2026 Synthesized 2-Meter Transceivers. Photo by the Author.

Heathkit took the 'high' but expensive road and recalled the radio days before Christmas.

The Heathkit HW-2026 Recall:

The recall procedure varied slightly depending on whether your radio purchase was from the factory or an Heathkit Electronic Center:

If the radio was bought from the factory you were sent a letter dated December 23rd, 1975 from Heathkit's President, David Nurse (**Figure 2**). Included with the letter was a shipping label and return form. One of the questions on the form asked whether the kit was fully assembled or not.

If the radio was bought at a Heathkit Center, the buyer would receive a letter from Schlumberger Products (who managed the Heathkit stores) with Dave Nurse's letter attached. No shipping label or return form was included, as you were expected to bring your recalled radio back to the store. However, the store letter did say that if you wanted to ship to the store, they would send a shipping label and return form.

In either case, upon receipt of the radio, Heathkit would mail you a full refund in-

HEATH COMPANY
BENTON HARBOR, MICHIGAN

D. W. NURSE
PRESIDENT

December 23, 1975

Dear OM:

It is "back to the breadboard" stage for us at Heath. With our pride a bit dented, faces slightly red, but with complete confidence, we are going to redesign the HW-2026. This time it will be a rig both of us can be proud of - that is the assurance I give all of you.

This is my way of saying that we are recalling all HW-2026's - each and every one. Included is a shipping label and a return form for your use. Please indicate on the form whether your kit was completely or only partially assembled.

Upon receipt of your unit we will mail you a full refund, including the full postage you paid. If you purchased on our Heath revolving charge plan, your account will be fully credited for the purchase, including any interest paid.

In addition, we will include a gift certificate for $50.00 if your unit was fully assembled, and $25.00 if it is returned unassembled or partially assembled. You may wish to apply this to the purchase of an HW-202 so you can get back on the air. However, it may be used for any kit of your choice. The only restriction is that I would like you to use it within the next 60 days.

Should you have any questions, please contact our Marketing Services Manager, Matt Cutter, by writing him direct or by telephone at (616) 982-3264.

In our long history, this is our first recall of a product. Not only that, but our timing could not have been worse. We suspect many of you have received the HW-2026 as a Christmas present, and for that reason we are especially sorry. Aside from this difficult problem, I would like to sincerely wish you and yours the best of everything in the new year.

73

David Nurse
W8GCD

Figure 2: The letter sent to owners of the Heathkit HW-2026. Note the date and the greeting. this letter was actually sent to a "**Laverne"** so perhaps Dear OM / YL would have been more appropriate?

cluding any postage you paid. If the radio was purchased on the Heath revolving charge plan, any payments and interest also would be refunded. As a bonus, Heathkit would send the returnees of fully assembled HW-2026 radios a $50 Heathkit Gift Certificate, and returnees of partially or unbuilt radios a $25 gift certificate. (One wonders how many hams stayed up late into the night to finish their radio before returning it?)

What Happened?:

I'm sure many people were asking that question at Heathkit in December. How did this product slip through? It is a good question, but any answer today would be full of speculation. One fact: In the HR Report for December 26th 1975 [3] (Published by Ham Radio Magazine) it was noted that: *"The Heath [HW-2026] radio did meet its -45 dB spur spec – which, incidentally, is also the international and only applicable spur specification for 2-meter amateur transmitters – comfortably…".*

One area of speculation is that there was a push to get the radio out for Christmas sales, which was approaching quickly. A few details of this period were provided in an EDN article by a former Heathkit employee Terry Perdue which adds some light to the situation. In his February 21, 2018 article [4] titled "*Heathkit transceiver recalled After Meeting Specs!*" Terry comments that the project engineer had been promoted at a critical time in the rollout and didn't get to interface with various departments, especially the Evaluation department.

This department ensures design specifications and selects employees to build kits, verify instruction manuals and report any anomalies. They are given their finished kit and encouraged, in this case, to put them on the air. Exactly how much of this was accomplished with the project engineer gone is was not mentioned, but I'm sure there were many ham employees wanting to build and use one of the radios. And it was probably thoroughly put through the evaluation cycle(s).

Evidently, the problem wasn't so much the numerous low-level spurs, all below the legal specifications, it was more that the frequency of many of these spurs coincided with simplex and repeater input frequencies for the two-meter band plan in certain crowded areas.

The complaints that started to appear in mid-November of 1975 were most often from areas of dense ham activity and areas with high mountain-top repeaters. NYC, LA and the Bay Area, part of which was soon to be known as Silicon Valley, were three problem areas. (Heathkit used the Bay Area later in its tests for the replacement HW-2036.) Rural users of the radio didn't experience the interference as widely. Perhaps this is why some owners never did heed the recall, and thus a few HW-2026s are still out there, fast being gathered by collectors.

In investigating the HW-2026, the author came across numerous comments such as the FCC demanding Heath recall the radios, serious interference to the aircraft band, etc. Nowhere was it found that the FCC was involved in the recall, and they surely would have been if aircraft band interference were the case (especially since the radio's spurs met the then current specifications). Others claimed the spurs were a product of poor lead dress by the builder.

One rumor worth mentioning, as it spread around the Heath facility among employees involved what happened to the recalled radios and remaining stock. The rumor was that Heathkit took them out to an undis-

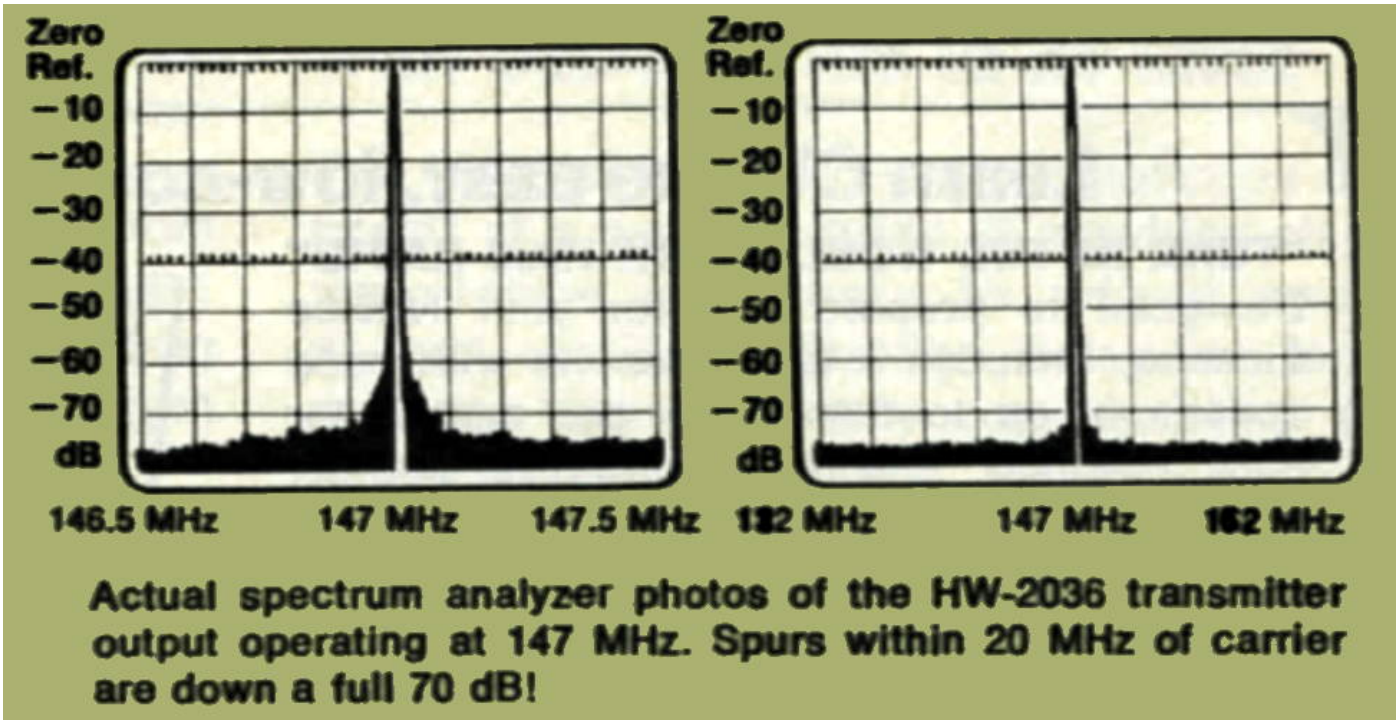


Figure 3: Two photos that accompanied the Christmas 1976 release of the HW-2036 replacement radio. They show a really clean signal for the new radio both near its frequency and 15 MHz on either side.

closed location on Lake Michigan and dumped them into the depths.

While this may seem outlandish, if some sort of product insurance was claimed by Heath or even for the big tax write-off they likely claimed, it would be important to be sure the radios were destroyed and didn't end up on some surplus market either as kits or parts.

In the aerospace industry structures such as, wings, empennages, fuselages, etc. that have gone through fatigue testing, often for the equivalent of multiple lifetimes, are destroyed to prevent these items ending up on flying aircraft. Often these structures are stripped of any environmentally bad items cut up and dumped into the ocean to act as artificial reefs.

The HW-2036 2-Meter Synthesized FM Radio: What a difference a year makes. One year after Heathkit announced the disaster that was the HW-2026, Heathkit, in its 1976 Christmas catalog, announced the replacement HW-2036. The full-page catalog announcement [5] includes actual spectrum photos showing two very clean signals. One scan covers ±500 kHz from the signal and the other ±15 MHz. (See Figure 3). The new HW-2036 actually sold for $20 less than its recalled predecessor.

The HW-2036 became a successful product for Heathkit. Perhaps its biggest weakness is that it would only cover any two-megahertz portion of 2-meters without a realignment. In 1978 this weakness was removed with the HW-2036A, which continued as a success for Heathkit for an additional two years when it was replaced by the VF-7401 which introduced a scanning capability.

The Recalled HW-2026 Synthesized FM Radio: Let's take a short look at this ill fated radio. **Figure 4**, from the 1975 Christmas shows the

Figure 4: The original introduction of the HW-2026 in the 1975 Christmas Catalog, which came out in October.

original ad. Heathkit also sold a separate AC power supply for the radio (HWA-202-1 $32.95). This is a proven power supply designed for the HW-202.

Table I shows the specifications for the HW-2026. Two things stand out: the radio, even with its fancy thumbwheel switch frequency selector, can only operate over half the band (any 2 MHz segment). A major realignment is needed to change the segment. And second, the only repeater split is -600 kc, though there is a place for an optional

Heathkit HW-2026 Specifications (1975)

Receiver:	
Sensitivity:	12 dB SINAD at 0.5µV.
Squelch Threshold:	0.3 µV or less.
Audio Output:	2 Watts (typ.) <10% THD, 5 kHz deviation.
Image Rejection:	-45 dB
Spurious Rejection:	-50 dB
IF Rejection:	-80 dB
Internally Generated Spurious Signals:	Below 1 µV except at 146.87, 146.90, 147.46,147.53 & 147.67
Bandwidth:	6 dB @ 15 kHz, 60 dB @ 30 kHz
Modulation Acceptance:	7.5 kHz minimum.
Transmitter:	
Power Output	10 W minimum into 50 Ω
Harmonic and Spurious Output	-40 dB within 2 MHz of carrier -45 dB elsewhere.
Modulation:	FM, 0 - 7.5 kHz, adjustable.
Duty Cycle	100% with infinite SWR.
Tone Encoder	
Burst Mode:	1800 to 2500 Hz. 6 kHz dev.
Continuous Mode:	70 to 200 Hz, 700 Hz deviation.
Transmitter Offset:	0 and -600 kHz xtals supplied. Provision for one additional offset crystal.
General:	
Frequency Coverage:	Any 2 MHz segment from 144.000 to 147.995 MHz
Frequency Increments:	5 KHz.
Frequency Stability:	±0.0015%
Operating Temp. Range:	15 to 125° F (-10 to 50° C).
Operating Voltage Range:	12.6 to 16 VDC (13.8 V nom.)
Current Consumption	
Receive Mode	700 mA maximum, squelched
Transmit Mode:	2.5 amperes maximum
Dimensions:	2 ¾ H x 8 ¼ W x 9 ⅞ D (7.1 cm x 21 cm x 24.5 cm).
Weight:	6 lbs. (2.7 kg).

TABLE I

crystal (not supplied) for a second split. This probably was okay at the time for use in less populated areas, but major city locales were already becoming crowded.

The radio puts out a healthy 10 - 12 watts by all reports. It also includes CTCSS as well as tone burst for repeater operation.

Heathkit HW-2026 Assembly:

A majority of the radio construction resides on five printed circuit boards. In the order of board assembly, there is the VCO board, Transmitter board, Power Amplifier board, Synthesizer board and Receiver board.

Construction of the Power Amplifier board includes its installation to the rear panel. In a cost savings step seven holes on the rear panel (4 #6 and 3 #4) come untapped. Heath supplied with the kit seven self-taping screws, one for each hole, that is used to thread that hole. Upon completion these seven self-tapping screws are discarded, and the threads are cleaned up with a knife or file. The two Amplifier power transistors are treated with silicon heat compound prior to being attached to the rear panel. Two 'U' shaped heat sinks get added to the rear panel later, in the final assembly.

On the synthesizer board the nine dual in-line (DIP) ICs mount in sockets, as do the five DIP ICs on the transmitter board and the single DIP on the receiver board. Sockets make for easy repair but can be a problem after years of operation. It is a good idea to reseat such ICs if intermittent problems start to appear later in the life of the device.

Once the Power Amplifier board assembly and four other boards are completed, chassis assembly begins. The first task is preparing the prefabricated wiring harness by placing PC board connectors and connector pins on desig-

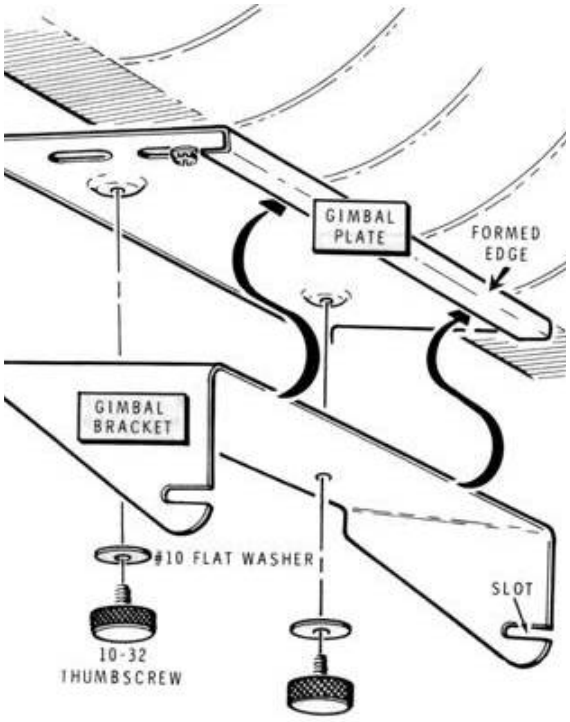


Figure 5: HW-2026 under-dash mounting bracket.

nated harness wire ends. With that out of the way, controls, switches, the speaker, the meter, brackets and insulators, etc. are assembled to the chassis. The wiring harness is then wired to the components on the chassis.

Front panel assembly is next. The thumbwheel frequency switch is assembled and ten short wires are prepared with a PCB connector on one end. These wires are then soldered to ten switch terminals and the switch is mounted. Final wiring of the chassis is then conducted; and the fused power lead with strain relief is added.

The circuit boards are installed next, starting with the Transmitter board, VCO board, Receiver board and Synthesizer board. Then the rear panel with the Power Amplifier board is installed, and the boards are connected up. Most of the board connections are push-on connectors making the boards easier to remove if repair is necessary.

Checkout and alignment come next, before the final covers are put in place. Alignment requires a frequency counter or receiver capable of receiving WWV, an alignment tool (supplied). a 50Ω dummy load and a 51Ω alignment load (both assembled from parts provided in the kit), and a VTVM. Receiver alignment can be done with a frequency counter or an on-air signal, preferably from a repeater. Modulation deviation adjustment can be done with a deviation meter or by on-air adjustment monitored by another station. Tone burst and CTCSS tone adjustments require a frequency counter.

The manual covers setting up the radio for mobile and home use. The radio came with a gimbal plate that bolts under the dash of a typical mid-seventies automobile. (**Figure 5**). The radio, with or without the gimbal, bracket, can easily be removed using two large thumbscrews. (See **Figures 5 and 6**.)

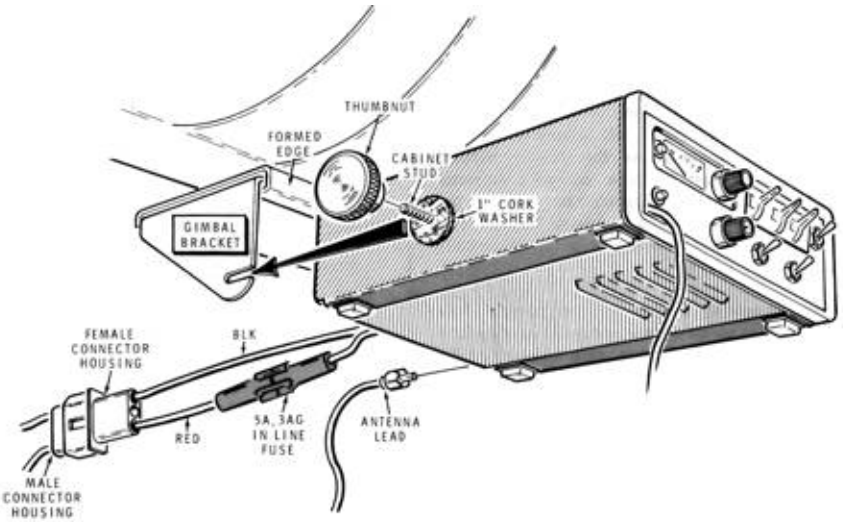
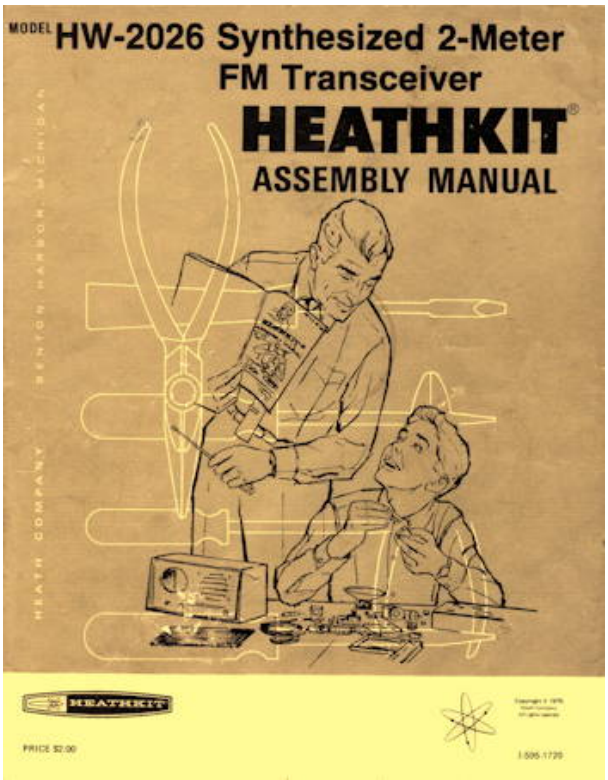


Figure 6: HW-2026 to gimbal bracket mounting.

Notes:

1. The President's Letter in Christmas Heathkit catalog #806 page 51. (Catalog issued late September 1975): "***In this catalog we introduce three new transceivers, the HW-104 5-band SSB, the HW-2021 2-meter hand-held, and the HW-2026synthesized 2-meter fixed or mobile rig."***
2. Christmas Catalog 1975 #806 pages 86, and 87.
3. A copy of the full HR News article will be posted in an online addendum on the Heathkit of the Month website. The link should appear under the HotM #110 listing.
4. Terry Perdue's article is available online at: https://www.edn.com/heathkit-transceiver-recalled-after-meeting-specs/
5. Christmas Catalog 1976 #813 page 74. A scan of the page will appear in the online addendum (See note 3).



Remember, if you are getting rid of any old Heathkit Manuals or Catalogs, please pass them along to me for my research.

Thanks - AF6C

Sadly, these radios never made it into use. But the later HW-2036 and HW-2036A released a year later became popular. These later radios came with both ±600 kHz splits along with an auxiliary crystal socket for a third, non-standard, repeater split. The 2-MHz useable bandwidth limit continued for the HW-2036 but the later 'A' version covered all 4 MHz of the 2-meter band.

Final Comments on the HW-2026:

There is no doubt the HW-2026 failure came as an expensive shock to the Heath Company. However, their determination to right the wrong and to come out with a solid replacement for the radio shows there was backbone behind the "We will not let you fail" motto that Heath worked hard to keep true.

What's Happening at HotM?:

The home of HotM is now sporting new double pane environmental windows. The change is amazing from the old drafty windows. Prep for new exterior paint is being started as I write this. I was tempted to paint the house Heathkit green with Heathkit gray trim. But alas, my current choice tends towards medium light gray ("Silver Polish") with off-white for the trim and eaves ("Whisper").

The Heathkit web pages needed to be updated, but I'd lost FTP access, without a lot of hassle, and the rewriting of numerous scripts, so I postponed any updates until the promised fix occurred; it did at the end of March. I do have a big update to HotM #110 covering the Deluxe Service Bench VTVMs. It's been awaiting posting, but is up now.

Heathkit made European versions of some of the DSP voltmeters. It would be interesting to see how closely they followed the US versions.

73, from AF6C

OCARC GENERAL MEETING MINUTES 2022-03-18

Due to the lingering pandemic, the third General Meeting of the year was via Zoom on Friday, March 18, 2022. The meeting was called to order by our president, Nicholas Haban AF6CF at 6:59 PM PDT. There were twenty-four (24) members, guests and visitors present, including our speaker.

Pledge of Allegiance
Nicholas plays a video to lead the Pledge of Allegiance at 7:01 PM PDT.

Meeting Presentation
Nicholas AF6CF turns the meeting over to our vice president Tim Goeppinger N6GP. Tim introduces Brenda Emrik with the Costa Mesa Fire Department. Brenda has presented for the OCARC before, and is a Fire Protection and Community Education Specialist with the City of Costa Mesa Fire and Rescue Department. She has over 29 years of experience in the public education field. Brenda coordinates the citizen and business preparedness programs, including CERT, workplace, campus and teen CERT programs, citizen, fire academy, adult and youth safety programs, and CPR/First Aid training. She is the lead instructor trainer for Orange County CERT and Teen CERT, and is a National Instructor for FEMA. She currently serves as a liaison and subject matter expert to the California State CERT Workgroup and the READY OC Advisory Committee, in support of citizen preparedness and volunteerism. She is notably a licensed Ham with the call sign KI6EXL. Tonight, Brenda will be presenting on "Surviving a Disaster on the Financial Side."

Tim turns the meeting over to Brenda. Brenda thanks us for the opportunity to meet with us again. Brenda starts with a mention of an opportunity with her CERT team and the Amateur Radio Club MESAC. They recently held an exercise with an internal radio net and Ham Radio operators who relayed messages. Ham Radio is an important part of emergency communications and professional responders.

[The Presentation slides are included at the end of the minutes - Editor]

•Questions and Answers
Brenda takes questions from the audience.Tom asks how to contact Brenda, and mentions AuxComm, a FEMA program of specially trained Amateur Radio Operators serving in Auxiliary Communication as Auxiliary Communicators during a FEMA Declared Event/Emergency.

Brenda explains the importance of the power and capability behind Amateur Radio in emergency communications.

Brenda turns the meeting back to our vice president, Tim Goeppinger N6GP. Brenda has opened our eyes and we have taken notes of things to prepare and be ready for. Tim appreciates Brenda's knowledge and enthusiasm for this subject. He then turns the meeting back to Nicholas AF6CF.

Nicholas and the attendees appreciate the interesting and informative presentation and hope Brenda comes to present for us again.

Business Meeting
Our president, Nicholas AF6CF starts the business meeting at 7:56 PM PDT. All ten (10) Board members were present for a quorum. Seven (7) topics were brought to the Board tonight, and one (1) motion carried, adjournment.

•Director Reports
Nicholas AF6CF starts the Director Reports.

-Activities: Ron W6WG says Summer Field Day 2022 is coming in June, and we have designated two chairmen for the Field Day Committee.

Ask the Elmer

-Ron W6WG has a question regarding the low-pass filter he is constructing. He asks what level of reduction the FCC requires the second harmonic to be. Nicholas looks it up and tells us it is 43dB for any harmonic.

-Corey KE6YHX reports he input the gain for his Hamstick, and has his station safety evaluation. No modifications were required.

-Gregorio KK6OYR says he finished his emergency preparedness plan before the meeting. He tells us the limit of FEMA Disaster Assistance for his situation, and that extra insurance should be acquired.

-Nicholas shares his experiences with disasters and the need for things like spare house keys.

-Member Jim Schultz AF6N tells us about the difficulties with individuals' safety deposit boxes at banks that go out of business. Member Arnie N6HC says to Jim that Chase Bank has a good safety deposit box system. Bob AF6C tells us the banks that are closed have a complex system for accessing their safety deposit boxes, including a wait time.

-Tim G. N6GP will email the speaker's presentation to anyone who is interested. Tim's email is n6gp@w6ze.org.

Good of the Club

There are no items for the Good of the Club.

Adjournment

A motion to adjourn was made, seconded and carried at 8:21 PM PDT.

--Respectfully submitted by Corey KE6YHX
OCARC Secretary

Starting in the next column are fourteen slides from Brenda's presentation at the March general meeting.

Fig 1 – Emergency Financial First Aid and Planning for Personal Disaster Recovery

Fig 2 – 12 Ways to Prepare

Fig 3 – Personal Disaster Recovery Planning

Fig 4 – What is Recovery

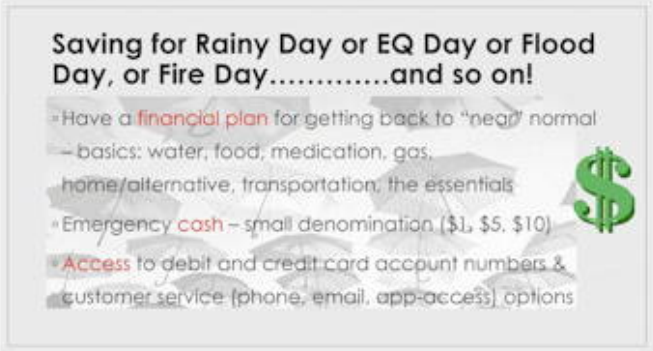


Fig 5 – Saving for Rainy Day, or EQ Day, or Flood Day, or Fire Day... and so on!

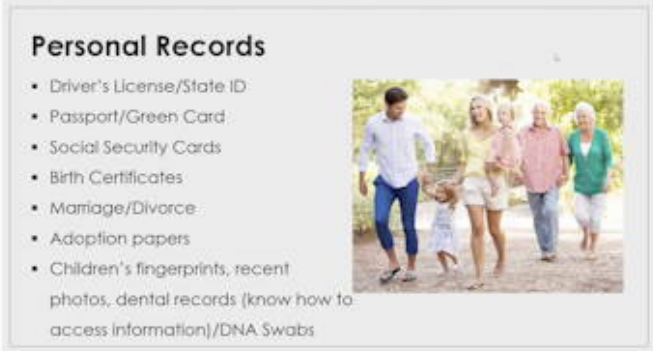


Fig 6 – Personal Records

Fig 7 – Other Document Types

Fig 8 – Emergency Contacts for Household

Fig 9 – Document and Insure Property

Fig 10 – Record and Photograph

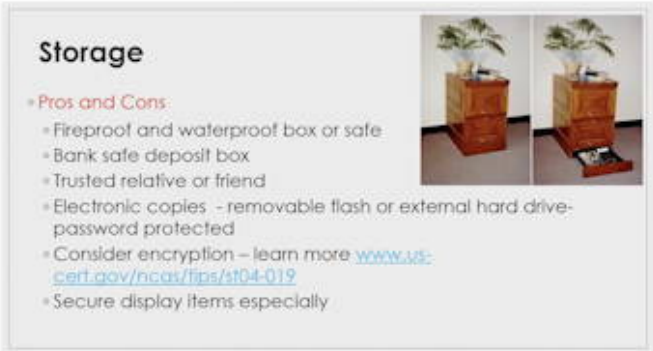


Fig 11 – Storage

Fig 12 – Inventory

Fig 13 – Insurance

Fig 14 – Resources to Share

Baker to Vegas Race COAR/OCARC Comm Support Group

Each year, over 260 law-enforcement running-teams compete in a 120-mile relay race called "Baker-to-Vegas" through the desert. The Orange Police Department running-team is supported with communication over the race course by the City of Orange RACES group, COAR.

Here is a photo of one of the B2V planning meetings held at the OPD (this photo was taken in Feb). In addition to official COAR members, the OPD effort is supported by many other ham volunteers. This year four OCARC members were involved in the race... Ken W6HHC, Nicholas AF6CF, Tim N6GP, and Bob AF6C. in the May issue of RF there will be many more photos of the B2V race that was held on Apr 9 and 10.

The Pahrump "Baker to Vegas" Crew

After a *Rib Fest Buffet* at the SaddleWest *Silver Slipper*.

(L to R) Arland Miller - W6ACM (COAR), and OCARC members: Bob Eckweiler- AF6C, Ken Konechy - W6HHC, Nicholas Haban - AF6CF and Tim Goeppinger - N6GP.

OCARC BOARD MEETING MINUTES APRIL 2, 2022

Due to the waning pandemic, the fourth Board Meeting of the year was via Zoom hybrid on Saturday, April 2, 2022, at Tom W6ETC's QTH in Tustin. The meeting was called to order by our president, Nicholas Haban AF6CF at 8:22 AM PDT. All ten (10) directors were present for a quorum, including three who attended by Zoom. There were nineteen (19) topics brought to the Board this morning, and two (2) motions carried, including adjournment.

Fig 1 – All ten (10) Board Directors were present. Three directors attended by Zoom©

Director Reports

Nicholas AF6CF calls for director reports.

- **Secretary:** Corey KE6YHX has been going to the Tustin Post Office regularly this past month. There were four (4) dues checks that came in March. On the night of March 31, the Post Office Box was empty. One more dues check came in on the day of the Board Meeting.

- **Treasurer:** Ken W6HHC reports our income since the beginning of the year totals $2,009. We have few outflows totaling $312, and more expected in June. We have a net increase of $1,697. *[See report on page 20 - Editor]*.

- **Public Relations:** Tom W6ETC reports he has been to HRO, and the pamphlets are in order.

- **Technical**: Steve N1BKB has nothing to report, but Bob AF6C had some inquiries from two people regarding equipment donations, and will contact Steve N1BKB at a later date.

- **Membership:** Bob AF6C reports we have 89 members paid for 2022. Of those, four (4) are Honorary Members. Tim G. N6GP makes a motion to make Atlee Hitchcock N2CNC an Honorary Member for 2022, Bob AF6C seconds, and the motion is carried unanimously at 8:31 AM PDT.

Old Business

- **Newsletter Editors**

April:	Bob AF6C
May:	Tim G. N6GP
June:	Steve N1BKB
July:	Tom W6ETC
August:	– open to volunteers –

- **General Meeting Programs**

April:	Chip K7JA on the WPX contest operation from Oahu, HI, plus Ken W6HHC with three others on the "Baker-to-Vegas" race.
May:	– to be determined –

- **American Red Cross Meeting Location**

Dan KI6X reports the American Red Cross

buildings in Santa Ana opened as a facility on April 1, and May is the soonest possibility for reservations by outside organizations.

• PayPal Account Ownership
The meeting for the transfer of the PayPal account to club ownership is planned for after the Board Meeting.

• Continuation of Zoom Meetings
-It is agreed to continue to include Zoom in the meetings.

- The April General Meeting is discussed, and the Board decides to have a Zoom-only General Meeting on the appointed date, Friday, April 22, and an informal gathering at Rodrigo's Restaurant in Tustin on the following Monday, April 25.

• Old Generator Plans
Bob AF6C reports the generator is now under a tarp, and some work remains to be done.

• Baker-to-Vegas Race
Four Board Members are participating in support of OPD communications in Pahrump, Nevada, for the Baker-to-Vegas Race this year. B2V is scheduled for April 8th and 9th.

• Summer Field Day 2022
Tim M. N6TMT and Ron W6WG report we have the site approval, and have four individuals for band captains. A GOTA captain is discussed, and there is one prospect to be contacted. CW operators can also be promoted for scheduling, and tower transport needs to be arranged.

New Business

• Tower Base Repair
Tim N6GP got both tower bases out of storage, and has found the misalignment. Our welder now has the tower base and base plate for repair.

• Equipment Donations
Dan KI6X reports he has several pieces of equipment for sale. Bob AF6C is in contact with four people who have equipment to donate. Tim G. N6GP knows another Ham who has equipment to donate.

• April General Meeting Date Change
The April General Meeting date remains April 22nd.

• Ken W6HHC "Thrashing"
Ken W6HHC describes a multitasking computer condition known as "thrashing" where many tasks are never completed. Ken explains he has a similar problem and that problem is that there is more on Ken's OCARC plate currently than he has time to accomplish and still live a normal life. He wants to have members take over most of these OCARC responsibilities. The five OCARC duties that Ken needs to offload during 2022 are:

1) Managing editor of RF Newsletter
2) RF Distribution (email and website).
3) Webmaster
4) Responsible for group emails to membership.
5) Drop "heavy duty" board positions after December. 2022.

Corey KE6YHX agrees to take on the responsibility of group emails to the club membership.

The board needs to find club members willing to perform three other responsibilities of Ken that need to be offloaded during 2022:

1) Managing editor for RF Newsletter.
2) Distribute RF (website and email).
3) Webmaster (interface with ISP).

Good of the Club
- Tim M. N6TMT reports on an email from the ARRL "The ARRL Letter for April 1, 2022", requiring a new login password from their members on the ARRL.org web site. There are technical difficulties, and Dan KI6X has seen the problem. Corey KE6YHX forwards the email to the Board.

- Tim G. N6GP has a show-and-tell of a new "ratcheting belt."

Adjournment
A motion to adjourn is made, seconded, and carried at 9:37 AM PDT.

– Respectfully submitted by *Corey KE6YHX,*
OCARC Secretary

OCARC
CLUB CORRESPONDENCE

The Club received the following letter concerning some serious antenna damage that is occurring south of Orange County and appears to be moving northward:

April 1, 2022

Dear OCARC,

I live down south of O.C. and wanted to warn you about a bird (or such) that has been attacking antennas in the area. I particularly want to warn you as the animal seems to be proceeding up the coast.

In the past week I heard of two hams south of me who went on the air, only to discover their SWR high and reception poor. Upon inspection they found some of their elements bent or broken off and in a few cases the element looked as if it were bitten through. To me it was hard to believe some bird did that!

Then, the other night I was listening to a local net while awaiting a DX station to come on the air. My Henry 4K was loaded up and I was ready to go. Suddenly there was a loud flapping outside and the net I was listening to started changing in signal strength, mostly down. At the same time I heard above the house a real ruckus. With reactions I never thought I had, I switched the transmitter to send and pressed the key, sending a kilowatt to the antenna (okay, I might have set the amp to a bit more power than that - my bad.)

As I hit the key I heard a scream not of this earth, and a loud flapping that lasted only a few seconds. I grabbed my cell phone and flashlight and went out back. My antenna was almost intact, except one element that was askew, bent almost 45 degrees. As I turned cursing, to go back in the house, something caught my eye sitting atop the nearby power pole. I grabbed my phone camera and took the attached photo. The flash from the camera lit the critter's eyes, and it took to the skies in a northerly direction. Be aware.

73,
Larson E. Rapp - NA5TY
Southern California Amateur Radio Extras
Bombsall, CA

April 2022
Treasurer's Report

1/1/2022 through 4/1/2022

Category	1/1/2022-4/1/2022
INFLOWS	
Dues, Family (PayPal)	$85.88
Dues, Membership	330.00
Dues, Membership (PayPal)	1,565.30
Dues, Membership (PayPal) 2023	28.46
TOTAL INFLOWS	**$2,009.64**
OUTFLOWS	
Web Site Hosting	$74.42
WFD	26.68
WFD - Food	17.90
WFD - Propane fuel	43.06
WFD Rental - Tent	150.00
TOTAL OUTFLOWS	**$312.06**
OVERALL TOTAL	**$1,697.58**

Submitted by *Ken Konechy - W6HHC*
OCARC Treasurer

? PUZZLER ?

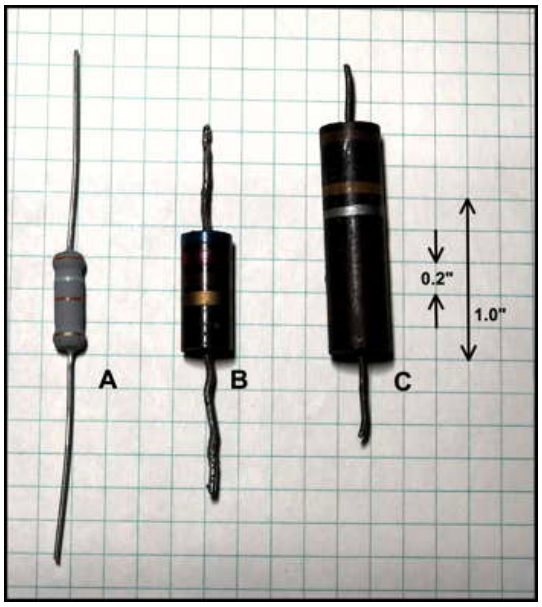
A New Puzzler for you to ponder:
It's been awhile since someone submitted a Puzzler to RF. Here is one for the old-timers. It is simple yet also tricky.

George is downloading a set of files to his computer. The set contains twelve files. Each file name contains a number. The numbers run from one to twelve. Instead of downloading them in order George downloads them in what seems like a random order: 4, 8, 12, 2, 1, 7, 6, 3, 5, 11, 10, 9. George wasn't being random. He chose that order for a particular reason; can you explain why?

Send your answer to puzzler@w6ze.org

The May 2019 Puzzler Answer:
In the May 2019 issue of RF the Puzzler was a simple picture of three resistors and the question was, which one was the two-watt resistor? Once the issue was published only one member sent in an answer. In an attempt to get more responses the puzzler remained unanswered. In the following (almost) two-years we were not even able to double the number of responses. So to bring a close to that puzzler, here is the answer:

They are all two-watt resistors !! It's a bit of a trick question. The three resistors are all the same wattage but come from different electronic eras. The largest resistor (C) actually came out of a Hallicrafters S-40B general coverage receiver, circa post WWII to 1950; it is a carbon composition resistor. The second largest resistor (B) is also carbon composition and is circa 1950s to 1980s. The smallest resistor (A) is a two-watt metal film type, and is from the current period.



New Ham Morse Code Requirements from the FCC

April 1, 2022

Washington, D.C. — April 1, 2022 — Today, the Federal Communications Commission (Commission or FCC) approved Report and Order 14-987af which reinstates the Morse Code test for General Class and Amateur Extra Class licensees.

"Eliminating the Morse Code test was a big mistake" admits Dottie Dasher, the FCC's director of examinations. "We now realize that being able to send and receive Morse Code is an essential skill for radio amateurs. As they say, it really does get through when other modes can't."

Not only will new applicants have to take the test, but General Class licensees who have never passed a code test will have one year to pass a 5-wpm code test. Similarly, Amateur Extra class licensees that never passed a code test will have one year to pass a 13-wpm test. Those amateurs that fail to pass the test will face revocation of their operating privileges. Materials for administering the examinations will be distributed to Volunteer Examiner Coordinators by the end of May, so that they can begin the testing on June 1, 2022.

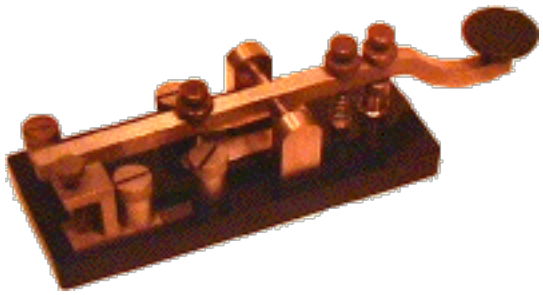
"This isn't going to be one of those silly multiple-choice type tests," noted Dasher. "We are going to be sending five-character random code groups, just like we did in the old days. And, applicants will have to prove that they can send, too, using a poorly adjusted straight key."

Technician Class licensees will not be required to take a Morse Code test, nor will a code test be required for new applicants. "We discussed it," said Dasher, "but decided that since most Techs can't even figure out how to program their HTs, requiring them to learn Morse Code seemed like cruel and unusual punishment."

When asked what other actions we might see from the FCC, Dasher hinted that in the future applicants taking the written exam may be required to draw circuit diagrams, such as Colpitts oscillators and diode ring mixers, once again. "We're beginning to think that if an applicant passes an amateur radio license exam it should mean that he or she actually knows something." she said.

For further information, contact James X. Shorts, Assistant Liaison to the Deputy Chief of Public Relations for the FCC.

(Tnx O.A.A.R.S. - K8OAR)



APRIL GENERAL MEETING
to be held
ONE WEEK LATE
APRIL 22nd, 2022

This year Good Friday and the start of Passover coincide with our regular third Friday meeting date. Thus the Board has decided to move the meeting to the fourth Friday.

This meeting will again be held over Zoom© at 7:00 PM. Members and guests may check in after 6:30 PM for meet and greet and to make sure their Zoom© audio and video are working properly.

There is a possibility that we may start up real or hybrid meetings in May ???

"Meeting" Continued from page 1

contest. They ran up a fantastic score, but had to face some very strange propagation.

Also, several OCARC members (W6HHC, AF6C, AF6CF and N6GP) will present their adventures operating out of Pahrump NV for the Baker to Vegas law enforcement relay race held April 9th and 10th.

Join us on Zoom© at 7 PM Friday April 22nd. If you need help, contact a board member

There is a rumor the the Red Cross will be opening up in early May to outside organizations. If true, the club is planning on beginning hybrid meetings where people can meet in person or join the meeting by zoom. Stay tuned…

The ORANGE COUNTY AMATEUR RADIO CLUB, INC.
RF - VOLUME 63 ISSUE 5 - APRIL 2022
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