



RF



ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. LXI NO. 08

P.O. BOX 3454, TUSTIN, CA 92781

August 2020

The Prez Sez...

By Dan KI6X



I want to start out thanking all members for the support during this time where nothing is normal. We have had very well attended Zoom general membership meetings. On-line meetings have actually opened up the pool of presentations and we will need to incorporate more at in-person meetings to allow speakers via video. We had done it at a couple previous meetings. In addition, your elected Board has been holding Zoom board meetings and dealing with the club business since that needs to continue.

I want to apologize for any that were not able to get into the July general meeting. Zoom keeps updating their security features and added a "meeting lock" feature. Somehow one of the hosts must have accidentally locked the meeting after it got started. We figured it out, but I know some did not try to get in again after we fixed the issue.



I also want to highlight that at this month's general business meeting (happens after the presentation) we will have a first reading of the proposed By-Laws update. You will also get emailed a link after the meeting to review, if you would like, in more detail. Your Board has spent a lot of time discussing updates to make the By-laws match club reality and to bring it up-to-date. There is some tradition still in the By-laws, such as discussing duties of certain club positions, that really could be in a club Operating Manual. Maybe at the next revision, the By-laws can become just the basics with a companion Operating Manual. The Operating Manual would then get most of the revising over time. Nothing more time and personnel can't take care of if available at the next revision

I know I have said this before that the last 4+ months have gone slow and yet very fast. Seems like forever since we started shutting down society in March and we lost the ability to do the things we want to do but it has become August already...

NEXT MEETING

August 21, 2020

7PM

ONLINE ZOOM

OCARC Virtual Meeting on

"Test Equipment"

By Doug Millar, K6JEY

All current members will
receive an email invite

**DURING THE
CORONAVIRUS
(COVID-19)**

**All OCARC Nets
Remain Active!**

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Monthly Events:**General Meeting time & location:****REGULAR MEETINGS***

***See ZOOM announcement on Page One**

Normally Held third Friday of the month at 7PM, located at:
The American Red Cross
600 Parkcenter Drive
Santa Ana, CA

Club Breakfast (Board Mtg) info:

First Saturday* each month 8 AM
Marie Callender's Restaurant
307 E. Katella Ave
Orange, CA 92867

***Temporarily Cancelled ZOOM only**

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

Mon, Wed, Fri 8:30 PM - 9:00 PM
Net Control: Corey, KE6YHX

75M 3.883 MHz LSB

Wed @ 9:15 PM
Follows right after end of 2M Net
Net Control: Corey, KE6YHX

**Outside Nets: CARA REPEATER**

147.090 MHz (+0.600 MHz) No PL

(Net-At-9) Monday - Friday
9:00 AM and 9:00 PM

NC & Prg. Director. Tom W6ETC
NC: Jeff: KK6TRC / Don W6ZZW

OCARC 2020 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: \$ 3.

Use one of our interactive online forms to calculate current prices, join the club and/or order badges:

Online Forms / Dues & Badges

*\$3. plus mailing costs if applicable
Dues are subject to change without notice

FIELD DAY RESULTS

SUCCESS WHILE SOCIAL DISTANCING

OCARC Verified Aggregate 2020 Point Summary
(Less Bonus Points).

Operator(s) (Call Used)	Contacts			Power Mult.	Class	Total Contacts	Total Points
	CW	Dig.	Phn.				
N6GP N6NH (N6GP)	364	23	223	2	2E	610	1,994
N1BKB		67	433	2	1D	500	1,134
KI6X	32	226	15	2	1D	273	1,062
K6GTE	93	11	1	5	1B	105	1,045
W6WG	212		19	2	1D	231	886
K6RBS		234	337	1	1D	571	805
KJ6ZH		72		5	1E	72	720
KX6A	141		40	2	1D	181	644
AF6N	128			2	1D	128	512
W6ZQ		216		1	1D	216	432
W6ATB		101		2	1D	101	404
K6PGH	22	41	30	2	1D	93	312
K6JEY		67	15	2	1D	82	298
W6NKU	50			2	1D	50	200
W6HHC (W6ZE)			82	2	1D	82	164
AF6C			74	2	1D	74	148
W6ETC			53	2	1D	53	106
N6CTB	20		8	2	1D	28	96
N2VAJ			47	2	1D	47	94
W6FKX			45	2	1C	45	90
NI6E		21	2	2	1D	23	88
N6TMT			14	2	1D	14	28
AI6ZV	5			2	1B	5	20
Total Ops: 23	1,067	1,079	1,438	—	—	3,584	11,282

GREAT JOB!

Congratulations to all participating. Look forward to next Field Day.



California QSO Party October 3 & 4, 2020

Orange County Amateur Radio Club

After a successful Winter Field Day and a enjoyable ARRL Field Day it's time to make a concerted effort in one of the most prestigious and anticipated State QSO Parties. The California QSO Party gives you the opportunity to become the station the rest of the country wants to get into their log. There are many clubs that have participated in the CQP year after year so the competition for bragging rights is tough.

If you choose to participate your score will be listed both under your call sign and included with the OCARC club score.

We are planning to enter the "Small Club" category where the 10 highest scores entered by each "small club" will be used to calculate the clubs final score.

Visit the CQP website at www.cqp.org for all the information you will need to help put OCARC on top.

This is intended to be an "At Home" event similar to how Field Day was conducted.

California QSO Party announcement from Ron W6WG

RadioActivity

August 2020

Upcoming Activities:

August

ARRL 10 GHz and Up Contest: 0600 Local Saturday August 15 through 2359 Local Sunday August 16.

- **North American QSO Party, SSB:** 1800 UTC Saturday August 15 through 0559 UTC Sunday August 16.
- **Run for the Bacon QRP Contest:** 2300 UTC Sunday August 16 to 0100 UTC Monday August 17.
- **W/VE Islands QSO Party:** 1200 UTC Saturday August 29 through 0300 UTC Sunday August 30.
- **World Wide Digi DX Contest:** 1200 UTC Saturday August 29 through 1200 UTC Sunday August 30.

September

- **WAE DX Contest, SSB:** 0000 UTC Saturday Sept. 12 through 2359 UTC Monday Sept. 13.
- **ARRL September VHF Contest:** 1800 UTC Saturday August 12 through 0300 UTC Monday September 14.
- **North American Sprint, CW:** 0000 UTC to 0400 UTC Sunday September 13.
- **ARRL 10 GHz and Up Contest:** 0600 Local Saturday August 19 through 2359 Local Sunday August 20
- **North America Sprint, RTTY:** 0000 UTC through 0400 UTC Sunday Sept. 20.

* 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 CA"

October

- **California QSO Party:** 1600 UTC Oct. 3 through 2200 UTC Sunday Oct. 4.

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

State QSO Parties:

- **Maryland-DC QSO Party:** 1400 UTC Saturday August 8 through 0400 UTC Sunday August 9.
- **Hawaii QSO Party:** 0400 UTC Saturday August 22 through 0400 UTC Sunday August 24.
- **Ohio QSO Party:** 1600 UTC Saturday August 22 through 0400 UTC Sunday August 23.
- **Kansas QSO Party:** 1400 UTC Saturday August 29 through 0200 UTC Sunday August 30 and 1400 UTC through 2000 UTC August 30.
- **Colorado QSO Party:** 1300 UTC Saturday Sept. 5 through 0400 UTC Sunday Sept. 6.
- **Tennessee QSO Party:** 1800 UTC Sunday Sept. 6 through 0300 UTC Monday Sept. 7.
- **Texas QSO Party:** 1400 UTC Saturday Sept. 12 through 2000 UTC Sunday Sept. 13.

Repeating Activities:

- **Phone Fray** 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 Sunday.
- **SKCC** Sprint (Straight Key CW) 0000Z to 0200Z on the 4th Tuesday night (USA) of the month.
- **CWops Mini-CWT** Every Wednesday 1300 UTC to 1400 UTC 1900 UTC to 2000 UTC and Thursday 0300 UTC to 0400 UTC

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



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American
Red Cross

Joint Statement on the Blood Supply

May 28, 2020

The following statement has been issued by AABB, America's Blood Centers and the American Red Cross regarding the status of the nation's blood supply:

Since the beginning of the COVID-19 pandemic, AABB, America's Blood Centers, the American Red Cross, and others in the blood community have been working together to monitor the nation's blood supply and help reduce the risk of blood shortages.

This past March, during the early stages of the pandemic, the blood supply decreased to a critical level. That time, the blood community and policymakers issued public statements encouraging eligible individuals to donate blood. Thanks to a strong response from the public, the blood supply was replenished through donors' selfless acts.

Now, throughout the country, blood centers are reporting inventories falling to their lowest levels since the early stages of the pandemic as the nation's hospitals resume elective surgeries. In addition, blood drives continue to be canceled, as many businesses, high schools and community organizations remain closed, and social distancing measures have limited blood centers' ability to collect blood at pre-pandemic levels. The availability of an adequate blood supply is a key aspect of ensuring optimal treatment for all patients and must be replenished to help prevent shortages during the coming weeks and months.

AABB, America's Blood Centers and the American Red Cross are joining together to urge eligible individuals to make an appointment to donate now. Blood will continue to be needed throughout the summer and beyond. Making and keeping an appointment to donate blood is the best way to help ensure the continued stability of the blood supply.

Please contact one of the following organizations to find a local blood collection site and to schedule an appointment to donate:

AABB: www.aabb.org; +1.301.907.6977

America's Blood Centers: www.americasblood.org; +1.202.393.5725

American Red Cross: www.redcrossblood.org; +1.800.RED CROSS (+1.800.733.2767)

Blood collection organizations continue to follow the highest standards of safety and infection control. To ensure optimal safety during the ongoing COVID-19 pandemic, social distancing measures and increase infection control protocols have been implemented. Donors may be required to wear a face covering or mask while giving blood. In addition, donation appointments are strongly encouraged to appropriately manage donor flow and ensure social distancing precautions are followed.

ORANGE COUNTY BLOOD BANK

The Covid 19 Pandemic has resulted in closure of many blood drives and a resultant blood inventory shortage.

Please consider helping the American Red Cross replenish by scheduling a blood donation at:

1-800 RED CROSS or www.redcross.org

Appointments and masks required.

DAY/DATE	Fountain Valley Blood Donation Center 17800 Newhope St Fountain Valley, CA 92708	Fullerton Blood Donation Center 1144 Rosecrans Ave Fullerton, CA 92833	Laguna Hills Blood Donation Center 22971 Mill Creek Dr Laguna Hills, CA 9265	Santa Ana Blood Donation Center 600 Parkcenter Drive Santa Ana, CA 92705
Wednesday, August 19	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM
Thursday, August 20	10:00 AM - 06:00 PM	10:00 AM - 06:00 PM	10:00 AM - 06:00 PM	10:00 AM - 06:00 PM
Friday, August 21	05:00 AM - 03:30 PM	07:30 AM - 03:30 PM	05:00 AM - 03:30 PM	07:30 AM - 03:30 PM
Saturday, August 22	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM
Sunday, August 23	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM
Monday, August 24	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM
Tuesday, August 25	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM
Wednesday, August 26	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM	11:30 AM - 07:30 PM
Thursday, August 27	10:00 AM - 06:00 PM	10:00 AM - 06:00 PM	10:00 AM - 06:00 PM	10:00 AM - 06:00 PM
Friday, August 28	07:30 AM - 03:30 PM	05:00 AM - 03:30 PM	5:00 AM - 03:30 PM	05:00 AM - 03:30 PM
Saturday, August 29	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM
Sunday, August 30	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM	07:00 AM - 03:00 PM

"You can still go out and give blood. We're worried about potential blood shortages in the future.

Social distancing does not have to mean social disengagement."

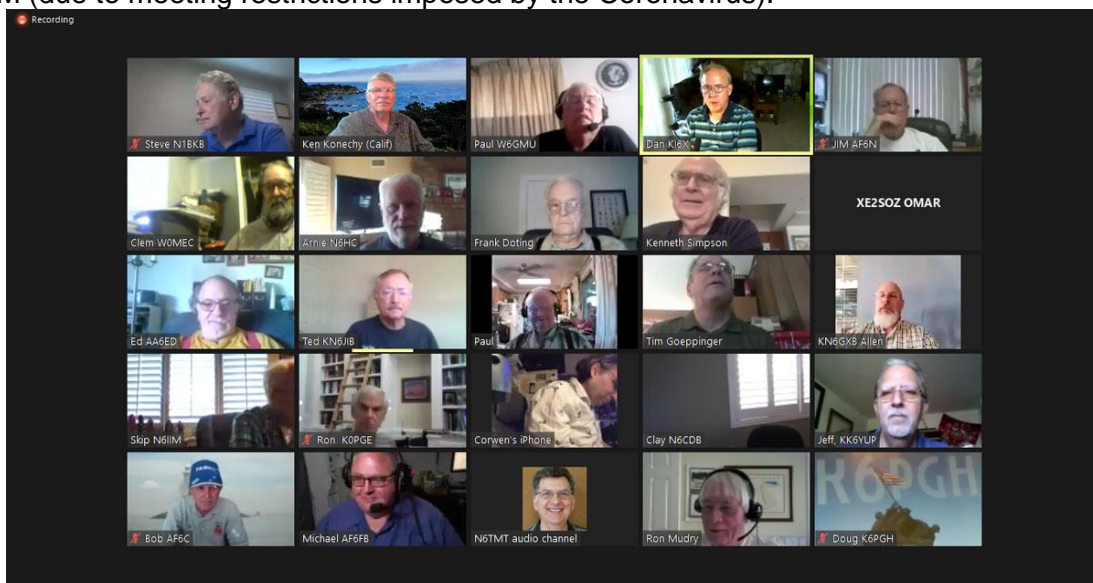
U.S. Surgeon General

OCARC General Meeting via ZOOM 2020-07-17

The July OCARC General Meeting was ZOOM via the internet on July 17, 2020.

The meeting was called to order at 7:00pm by Dan KI6X.

There were a total of 30 members and visitors in attendance, including a special welcome to visitor Omar, XE2SOZ. There was a quorum of officers, with all directors present, except W6ATB. This was the fourth OCARC General Meeting that was completely conducted using ZOOM (due to meeting restrictions imposed by the Coronavirus).



**A typical Screen-Capture of members in attendance during the July meeting.
The majority of attendees could provide video from their home QTH.
But, while some sent no video, everyone could watch video on ZOOM
and could hear the audio during the meeting.**

July Program:

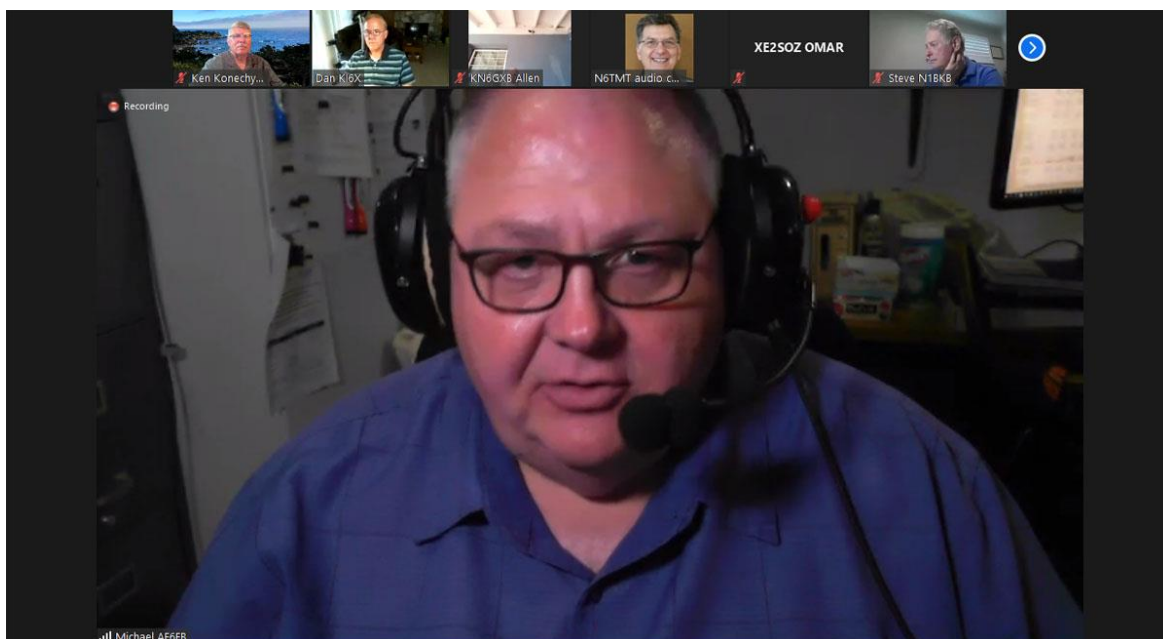
Tim N6TMT introduced Michael Rickey AF6FB on ZOOM as the club program speaker, for the evening who talked on:

“DMR (a Digital Voice Modulation Standard)...”

Michael AF6FB explained that DMR (Digital Mobile Radio) is a modulation standard and protocol for VHF/UHF radios, essentially an international digital voice standard.

Ham radio manufacturers include:

- Alinco
- RFinder
- Anytone
- TYT (MD300/390)



Michael AF6FB explained the different types of communications that could be configured for DMR radios

Michael explained that the Brandmeister network allows a flexible means to connect DMR radios and that HotSpots are a personal DMR repeater (but do not network analog (FM Radios). The networking allows two simultaneous conversations on one repeater.

BENEFITS FOR EMERGENCY GROUPS

- **Two Time Slots** - Two simultaneous conversations on a single repeater
- **Talkgroups** - Isolate conversations without requiring more repeaters
- **Text Messages** - send detailed information to operators
- **Location Tracking** - with GPS enabled radios you can track locations using aprs.fi (supported radios only)
- **Roaming** - with roaming enabled radios your mobile operators can focus on driving not selecting the best repeater.

List of Benefits of DMR Networking for Emergency Groups

AF6FB has more DMR information available on [HTTP://AF6FB.net](http://AF6FB.net)

OLD Biz –

- **Membership** - Chair Corey KE6YHX reported that there were 99 paid plus 4 more honorary club members.
- **Field Day Scores** – Ken W6HHC reported on the 23 stations who contributed their scores to ARRL for aggregation of OCARC. Over 11,000 points (plus additional bonus points) were accumulated by ARRL. Most of these stations operated as CLASS 1D from home. [See Pg 03]
- **CA QSO Party** – Ron W6WG described that the OCARC is planning to operate the October 3 CAQP contest in much the same manner that summer FD was operated. That is that OCARC members could operate from home and contribute their scores to the benefit of OCARC.

Elmer Session:

Remote Arduino Keyer – Ron W6WG and Vijay KM6IZO discussed a remote keyer that they had been working on to use with the remote ham station located at Boron, CA. During the ZOOM session, Vijay displayed the prototype keyer.



Vijay KM6IZO displayed a home-brew Arduino keyer that would be used to key the remote transmitter in Boron, CA

Submitted by: Ken W6HHC, Secretary

Heathkit of the Month #101: by Bob Eckweiler, AF6C



AMATEUR RADIO - SWL

Heathkit HD-1426 Relative (RF) Field-Strength Meter)

Introduction:

A field-strength meter (FSM) is one of those ham accessories that might seem unnecessary, especially in an urban environment. If you mess with mobile antennas or have the open space to put up an antenna range, the FSM becomes a tool of necessity. I wonder how many hams have one sitting in their shack and enjoy watching the field strength meter swing as they transmit? There is a real 'cool-factor' to that for shack guests.

Over the years Heathkit produced three field strength meters: the **PM-1 "RF Power Meter"** (1957-1959), the **PM-2 "Mobile Tuning Meter"** (1959-1975) and the **HD-1426 "Relative Field Strength Meter"** (1977-1981 - **Figure 1**). All these meters are self-powered and do the same thing, though their names vary. They are uncalibrated, but can be used for relative field-strength measurements. A variable resistor, the only control, adjusts the sensitivity and is used to keep the signal on scale in strong fields. Each device has a binding post for connecting an antenna. A length of wire taped to the wall works well. These meters have a maximum full-scale sensitivity of



Figure 1: Heathkit HD-1426

about 0.3 RF volts rms at the antenna terminal.

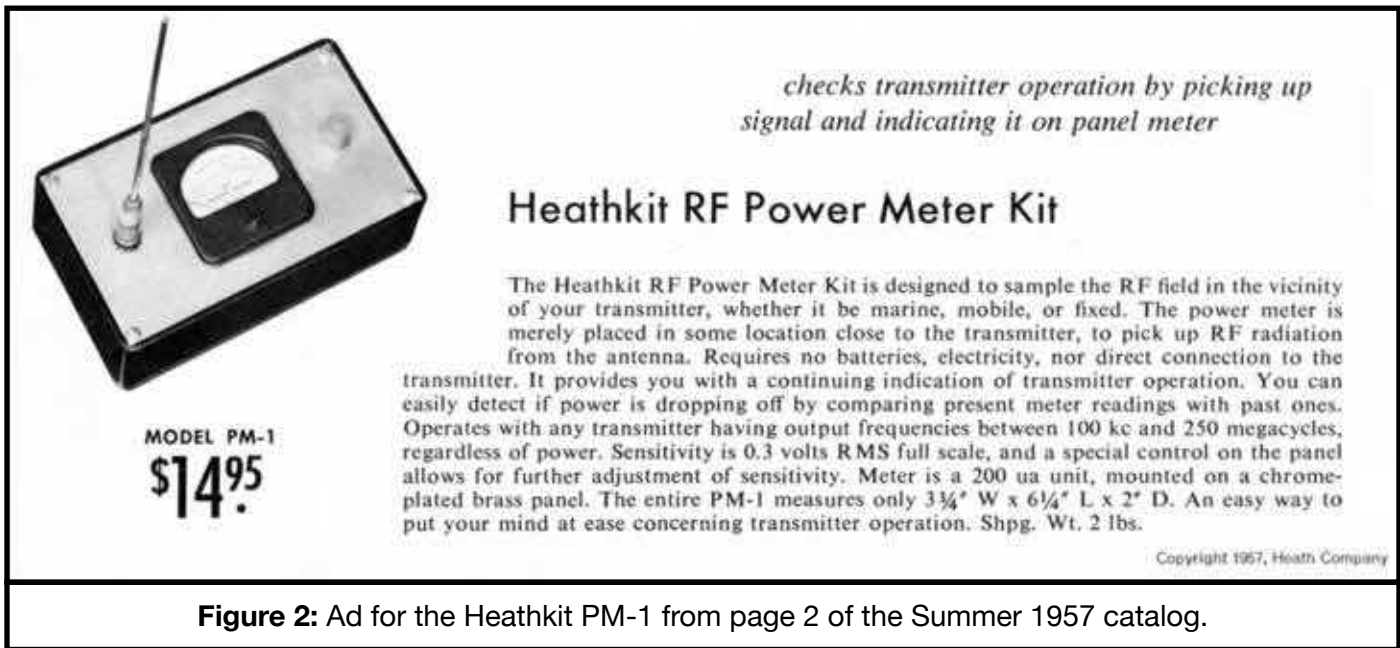
PM-1 "RF Power Meter":

The PM-1 (**Figure 2**) is believed to have been introduced in the winter 1957 catalog¹. In the later summer catalog it is shown in a two page spread of newer kits (pages 2 and 3) along with two new kits, the FD-1-6 (-12)² Fuel Vapor Detector for motorboat enthusiasts and the XR-1 Transistorized Portable Radio. A schematic of the PM-1 has not been found, but it is assumed to be identical or very similar to the later PM-2; these circuits are not complex. Originally, the PM-1 was listed among the boating accessories as a way to determine that your marine radio was transmitting.

The PM-1 is built into a 3¼" x 6¼" x 2" bakelite box with a chrome-metal faceplate. The plate contains a binding post for the antenna, a sensitivity control and a 2½" square meter. The 200 µA meter was made by Simpson. The meter scale goes from 0 to 10 in 51 divisions, eleven of them major. Near the end of production, the meter was replaced by an all-plastic faced meter in the style of the later AM-2 and DX-40.

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

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



checks transmitter operation by picking up signal and indicating it on panel meter

Heathkit RF Power Meter Kit

The Heathkit RF Power Meter Kit is designed to sample the RF field in the vicinity of your transmitter, whether it be marine, mobile, or fixed. The power meter is merely placed in some location close to the transmitter, to pick up RF radiation from the antenna. Requires no batteries, electricity, nor direct connection to the transmitter. It provides you with a continuing indication of transmitter operation. You can easily detect if power is dropping off by comparing present meter readings with past ones. Operates with any transmitter having output frequencies between 100 kc and 250 megacycles, regardless of power. Sensitivity is 0.3 volts RMS full scale, and a special control on the panel allows for further adjustment of sensitivity. Meter is a 200 ua unit, mounted on a chrome-plated brass panel. The entire PM-1 measures only 3 3/4" W x 6 1/4" L x 2" D. An easy way to put your mind at ease concerning transmitter operation. Shpg. Wt. 2 lbs.

MODEL PM-1
\$14.95

Copyright 1957, Heath Company

Figure 2: Ad for the Heathkit PM-1 from page 2 of the Summer 1957 catalog.

PM-2 "Mobile Tuning Meter":

In 1959 the PM-2 replaced the PM-1. This FSM was designed with the mobile radio crowd in mind. Where "RF POWER METER" is printed across the PM-1 meter face, the PM-2 says "MOBILE TUNING METER". The only feature, other than size, that relates to "mobile" is a magnetic base on the chassis that allows it to be mounted on a car fender or metal car dashboard while tuning. The PM-2 has the same antenna binding post and sensitivity control as the PM-1. The meter is the newer style plastic face, and could be the same meter as used on the late PM-1 with an updated meter face?

The PM-2 styling is completely different than the PM-1. It uses the same style sloping chassis as the HD-20 Crystal Calibrator (HOM #99) with an auto-aligning magnet added to the base. **Figure 3** shows the PM-2 with a chrome knob that was furnished with the early units. The PM-2 later came with a gray plastic knob, similar to the one used on the PM-1. The PM-2 was in production for over 15 years. In 1959 it originally sold for \$12.95; and was still \$12.95 in the March

1974 catalog. Did the savings between a metal and plastic knob really keep the price stable over 15 years?

Figure 4 shows an early ad for the PM-2 from May of 1961. It was no longer featured with the boating accessories, but had moved to the ham radio accessory section.





Use this RF POWER METER to monitor transmitter output

- Sensitive 200 ua meter
- Requires no external power source
- Stays put in mobile use by means of powerful magnet

This handy power meter gives a continuous indication of transmitter relative power output by sampling the RF radiation near the antenna. Requires no batteries or other power source. The PM-2 operates with any transmitter, whether it be marine, mobile or fixed, having output frequencies between 100 kc and 250 mc. Sensitivity is 0.3 volts RMS at antenna input terminals for full scale deflection. A sensitive 200 ua meter is used with a control to set sensitivity level. A strong magnet holds the meter on any steel surface such as automobile dashboard. 2 lbs.

Kit PM-2 **\$12.95**

Figure 4: May 1961 Catalog ad for the PM-2

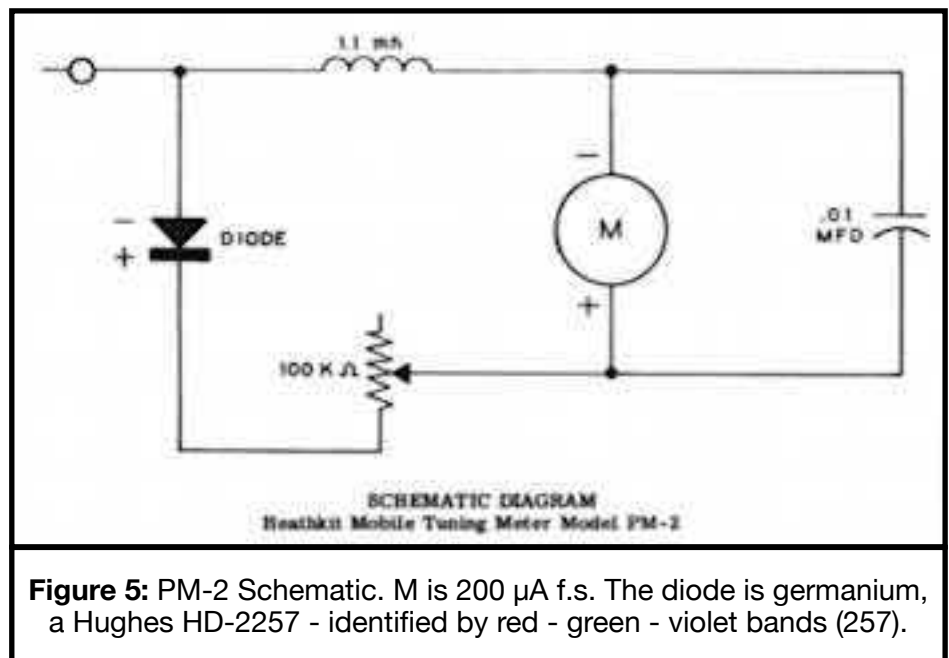
Figure 5 is the schematic of the PM-2. RF enters via the antenna connector on the left and is rectified by the diode. The 100 K Ω sensitivity pot, wired as a rheostat, controls the meter deflection depending on how strong the local RF field is. The .01 μ F capacitor filters the rectified RF. The ever-so-important 1.1 mH RF choke (not a critical value) provides a DC return path for the current going through the meter. Without it the meter won't respond.

A typical 200 μ A meter has an internal resistance of 1100 Ω , corresponding to 0.22 VDC full scale with the sensitivity pot at its lowest resistance setting. Even with circuit losses and the benefit of the conversion from volts rms to VDC the PM-2 should easily meet the 0.3 V RF sensitivity specification.

Since the sensitivity control acts as a rheostat, the meter will respond when the sensitivity control is at its minimum position. Again, assuming the internal meter resistance is 1100 Ω , the PM-2 will respond f.s. to an RF field of a bit over 20 V. That's a reasonably strong field and reducing the length of the antenna is a simple way to decrease sensitivity.

HD-1426 "Field Strength Meter":

In 1977, about a year after the PM-2 disappeared from the Heathkit catalog and stock ran out, the HD-1426 "Field Strength Meter" appeared. When introduced, the selling price was \$12.95, the same as the PM-2. The HD-1426 continued to be sold into 1981. In the 1978 catalog the price dropped to \$10.95; one has to assume that the savings came from the inexpensive meter. It appears to be the same style meter used on the HD-1250 Dip Meter^{3,4} which uses glue as balance weights, and on some the glue is hygroscopic and tends to swell over time, making the meter go out of balance or stick.



The HD-1426 measures $4\frac{1}{4}" \times 4\frac{1}{4}" \times 2\frac{1}{2}"$. The small composite cabinet tapers down slightly in height towards the rear. A similar cabinet is used in the HD-1416 Code Practice Oscillator, and over the years it came in light green-gray, brown and black. While the cabinet for the HD-1426 is believed to have only come in green-gray, the HD-1416 CPO came in brown (as the HD-1416A) and black (as the HD-1416H). A black version of the cabinet, the SK-99 ⁵, was sold as an accessory for the SK-104 1-watt Audio Amplifier and SK-107 Stereo Synthesizer (HOtM # 69) kits.

While the PM-1 and PM-2 use point-to-point wiring, the HD-1426 uses a printed circuit board to mount the choke and diode. Part of the circuit board is a 72" (approx.) etched-foil antenna. This antenna picks up nearby RF fields because the cabinet is composite and doesn't shield the internal antenna. The choke used is the same part as in the PM-2, but the

diode changed to a more readily available (at the time) 1N295. The meter sensitivity has been increased to 150 μ A

The HD-1426 has the same features as the PM-1 and PM-2. It has a sensitivity control and a binding post for an external antenna. A 12" length of bare wire is supplied as a simple external antenna. The manual instructs that a small loop be formed on one end of the antenna wire to provide some protection from getting poked by the sharp wire end.

Figure 6 is the schematic of the HD-1426. The sensitivity control is now wired as a potentiometer allowing control of the sensitivity all the way down to zero.

The PM-1 and PM-2 are both specified to operate over the range of 100 kilocycles to 250 megacycles and have a maximum sensitivity of 0.3 VRMS at the antenna terminal. The

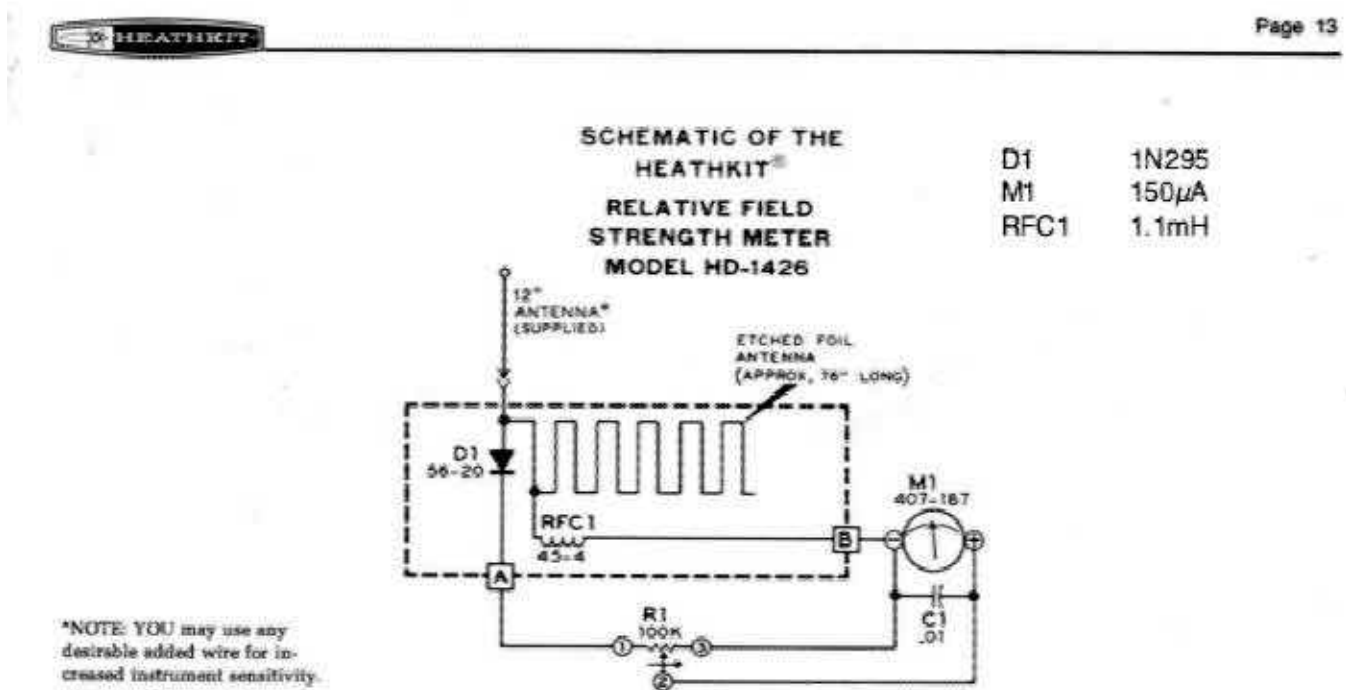


Figure 6: Schematic for the HD-1426 Relative Field Strength Meter.

HD-1426 is rated at 1.8 MHz to 250 MHz., and while the meter sensitivity has increased, the specifications no longer give a full scale sensitivity figure. The change in the low-end frequency range probably is more a result of adjusting the specifications to the amateur bands than a drop in performance.

All three of these kits are easily assembled in one evening.

FSM as a Club Project?

The field strength meter might make an interesting club project? Parts should be readily available, and they can be built into a simple plastic case. The cost will depend on whether a source for an inexpensive 0-200 μ A meter can be found. MPJA had one in their catalog for under \$15 but I don't currently see it on their website. Any thoughts?

What's Been Happening:

With the pandemic still raging in the US I've had some time to work on updating some of the HOtM articles. This is a lot of work as Apple© may want you to "Think Different", but once you've written a document they make it hard for you to keep it updated. Many of the articles from older AppleWorks and the earlier Pages word processing programs don't convert easily to the later versions. Graphics are one of the most recent problems. If the original graphic was "dropped in" it appears in the new article as a box with a big X in it. Recreating those graphics is very time consuming.

The current Heathkit project here is the restoration of an old QM-1 Q-Meter. A check of the unit found a few resistors out of tolerance and of course the two 8 μ F 475V electrolytic capacitors in the power supply need to be replaced. This QM-1 has been in storage for awhile (it was last used to measure the loading coils Ken - W6HHC built for his

30-meter antenna)⁶. The most noticeable problem during initial restoration was that the built-in vernier drives on the two main variable capacitors were frozen. That problem is now solved and they turn smoothly. This will be covered in an upcoming article.

I thought I had written an HOtM article on the QM-1, but evidently I didn't. So, look for one in the near future.

Thanks to Santos e Silva, the parts list for the O-1 and O-2 oscilloscopes have been added to the 'O'-Series support page.

73, from AF6C



Notes:

1. Thanks go to Chuck Penson - WA7ZZE for helping firm up the introduction date of the PM-1
2. The FD-1 Fuel Vapor Detector kit came in two versions for boats with 6 or 12 volt electrical systems (FD-1-6 or FD-1-12).
3. The HD-1250 Solid-State Dip Meter is covered in HOtM #7.
4. Repairing the meter movement in the HD-1250 Solid State Dip Meter is discussed in HOtM #66.
5. For more information on the SK-99 optional cabinet see page 3 of HOtM #69.
6. *A Shortened 30M Dipole Antenna* by W6HHC in 3 parts: RF Newsletter Mar., Nov. & Dec., 2005.

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

Thanks - AF6C

OCARC
BOARD MEETING MINUTES VIA ZOOM
August 1, 2020

Due to the COVID-19 restrictions on physical gatherings, the latest OCARC Board meeting was held ON-LINE via ZOOM on Saturday August 01, 2020 at 8:30 AM. In attendance were eight (8) Board Members and Directors and three (3) club members. All board directors (except Ken W6HHC & Vijay KM6IZO) were present for a Board quorum. The ZOOM technology was hosted by Tim N6TMT and presentations by President Dan KI6X which worked very well and allowed the board to see agendas and reports as well as to see which board member was talking.

Directors Reports:

- **Membership** – Corey KE6YHX reported that the club has a total of 102 members (paid, lifetime, and honorary members). That includes 74 renewals, 4 returning, 20 new, 1 lifetime, and 3 honorary (non-voting). Seventeen (17) kept on club distribution (for now) but have not renewed.
- **Treasurer** – Greg W6ATB reported that the club had an asset balance of \$4965 and a net profit of \$668, so far Year-to-Date. See this newsletter for full cash flow report. Funds held in Wells Fargo bank and club PayPal account.
- **Tim, N6GP, Director at Large** – The FD tower base should be modified by a club member in the next few weeks. It will need to be picked up and taken to storage when complete. Also, the club battery has charging problems and Bioenno will repair at no charge when situations allow regular business to resume.

Old Business:

- **Newsletter Editors:** **August** Jim (this newsletter) future: **Sep** Dan KI6X, **Oct** Greg W6ATB, **Nov** Tim N6GP
- **General Meeting Programs (Zoom meetings until further notice)**
 - Aug - Test Equipment, Doug Millar - K6JEY
 - Sept – Kate Hutton K6HTN (morse code or NTS)
 - Oct – AUCTION [May be cancelled or postponed, decision at Sept Board Mtg]
 - Nov – Dennis Kidder W6DQ, subject: TBD (him on Zoom at least)
 - Dinner – [TBD]
- **By-laws Update:** The Board approved the latest draft with very minor typographical corrections before presentation for the first reading to the General Membership at the August meeting. Vote 5 – yea, 0-nay, 2 – abstain. After the reading at the August meeting, the draft will be put on the website with a link sent to the current members via email.

- **Field Day 2020:** The format worked fine and we had good member participation. The club scoring summary has been corrected and verified to the best of our knowledge. It will be archived with FD information. Website has been updated.
- **California QSO Party:** Ron W6WG said he will continue to collect interest and encourage operating for the club aggregate score for the CQP. W6ZE may be raffled off again for a member's use during CQP.
- **Unclaimed HRO Gift Certificates:** There are \$200 worth of unused HRO gift certificates raffled off over the years. One \$25 is still to be raffled and is in-hand. A \$100 was won at the 2017 Christmas dinner and a \$50 soon after at a meeting. We are looking for the owners. Another \$25 one was raffled in 2014. Also looking for the owner of that one or the Board may declare that it will not be used and the club can then spend the funds. We will reimburse if someone then cannot spend it, if they have it, and the club used the funds.

New Business:

- None

Good of the Club:

- Red Cross is in desperate need of blood donations. Information to be included in the RF.

Meeting adjourned 09:57 AM

Submitted by Dan KI6X, OCARC President for the Secretary



THE
BYLAWS
of the

ORANGE COUNTY AMATEUR RADIO CLUB, INC.

A California Nonprofit Corporation

Incorporated June 4, 1960

Rewritten: October 1993: adopted: April 15, 1994

Draft G: August 5, 2020

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ARTICLE I OBJECTIVES

The objectives of the club, to be known as the Orange County Amateur Radio Club, are:

- A. To promote interest in and the advancement of amateur radio, and electronics in general.
- B. To promote a good relationship between radio amateurs and the public through public service activities.
- C. To help interested persons to obtain a license and new licensees to upgrade.
- D. To participate in activities involving or for amateur radio.

ARTICLE II MEMBERSHIP

A. Members shall be of good moral character who have an interest in amateur radio and/or electronics, and have an interest in the aims of the club. Such persons may, upon application and prepayment of dues, become members of the club, provided any other requirements of the Bylaws are met.

B. Yearly dues for members are due and payable on January 1 of each year. **Nonpayment** of dues by March 31 constitutes forfeiture of club membership. The amount of dues shall be:

The base rate amount of yearly dues shall be determined by the **Board of Directors** for the coming year, no later than the November **Board** meeting preceding the beginning of the coming year. If no action is taken by the **Board**, then the base rate will not change in the coming year.

- 1. Dues for members 20 years of age or older, are 100% of base rate.
 - 2. Dues for members 19 years or younger, are 50% of base rate.
 - 3. For additional members in the same household as a member who has paid full dues, half of the full dues for his/her age group.
 - 4. For new members joining during the year, dues shall be prorated on a quarterly basis for the remainder of the calendar year.
- C. Each member after admission shall receive a dues receipt signed by the treasurer.

D. Each member is responsible for notifying the Membership Chairman of a change of address.

E. The Board of Directors may expel or suspend a member by unanimous vote at a Board meeting under the following conditions:

1. Failure to discharge his debts to the club other than dues.
2. Conduct detrimental to the welfare, interest, character, or order of the club.
3. Conviction of a violation of the FCC rules when such results in the suspension or cancellation of the amateur license.
4. Conviction of a felony under the laws of the State of California or of the United States of America.

F. The Board of Directors may reinstate any expelled or suspended member by a unanimous vote at a Board meeting.

G. Members who have been expelled or suspended or who voluntarily withdraw from the club have no recourse on club assets or property; real or otherwise.

H. Honorary membership may be given to any person under the following conditions. Honorary members shall not be able to vote, or hold office,

1. Nomination for honorary membership may be made by any club member during the good of the club portion of any Board or regular club meeting.
2. Honorary membership shall require a two-thirds affirmative vote of the Board and shall be for a period not to exceed 24 months and shall expire on December 31.
3. Honorary membership may be renewed for an additional period by voting as stated above during the last 3 months of the membership.
4. The Membership Chairman shall maintain a list of all honorary members.

ARTICLE III MEETINGS

A. Regular meetings of the club shall be held monthly at designated times and places. All meetings shall be open to all interested members. Special meetings may be called by the Board when necessary.

Notices of regular and special meetings shall be sent to each member within a

reasonable time prior to each meeting. Notices of special meetings shall contain a list of important items on the agenda. Robert's Rules of Order (revised) shall govern club meetings when it does not conflict with these Bylaws.

The order of business at the regular club meetings shall be as follows unless circumstances dictate otherwise.

1. Call to Order - The president shall call the meeting to order.
2. Lecture or Entertainment - The vice president shall introduce the speaker or entertainment for the meeting.
3. Roll Call of Officers - The secretary shall call roll by title and record the officer attendance in the minutes.
4. Reading of the Minutes - The secretary shall not be required to read the minutes of the previous meeting if they were published in the club bulletin. The president shall ask for a motion and a vote to approve the minutes as published. Any corrections or additions may be made by a member and be approved by the members present.
5. Introduction of Members - The membership chairman shall introduce any new members present.
6. Introduction of Visitors- The president shall introduce any visitors present at the meeting. A visitor log shall be **made prominently available for signing by the attendees, at the beginning, and for the duration of the meeting.** The visitor log shall be retained in the permanent records of the membership chairman.
7. **Board Member** Reports - The president shall ask for any **Board Member** reports.
8. Old Business- The president shall bring up items of old business for further or final action.
9. New Business - The president shall ask for any items of new business for the club.
10. Good of the Club - The president shall ask if there are any items of interest to the club.

ARTICLE IV DIRECTORS

A. Subject to the limitations of the Articles of Incorporation, the Bylaws, and the California General Corporation Laws, all corporate powers shall be exercised by and under the authority of, and the business and affairs of the corporation shall be controlled by a Board of Directors. Without prejudice to said general powers, and subject to the stated limitations, the Directors shall have the following powers:

1. To select or remove all other officers or agents of the corporation. To prescribe the powers and duties for them as are consistent with the corporation and to require from them faithful service.
2. To conduct, manage, and control the affairs of the corporation, and to make rules and regulations as they deem best. To borrow money for the purposes of the corporation.
3. To change the principal office of the corporation, to designate a place for holding meetings.

B. The number of Directors of the Corporation shall be ten (10) or more until changed by an amendment to the Articles of Incorporation and a change to the Bylaws (See Article IX, Section B).

C. It shall be the duty of the Directors to insure that a complete record of all proceedings of all meetings be kept, and to present a full statement at the regular meetings showing the assets and liabilities of the club and the general condition of its affairs.

D. It shall be the duty of each director to receive a copy, read, and understand this document.

ARTICLE V ELECTION OF OFFICERS AND DIRECTORS

A. The officers of the club shall be President, Vice President, Secretary, Treasurer, Activities Chairman, Public Relations Officer, Technical Committee Chairman, and Membership Chairman. The other two **board members**, designated as **Directors** at Large, shall be the **preceding** president and/or the **preceding** vice president. **If either or both are elected to another office or decline the position, nominations are accepted to fill the vacancies.** All Directors shall be holders of **a current FCC Amateur Radio License**, and shall be at least 21 years of age. No officer shall hold the same office for **more than two (2)** consecutive terms. A term consists of 6 months or more in office.

B. The officers shall be nominated and elected one office at a time from the floor at the regular November meeting. **Individual candidates may be nominated to one or two offices. A candidate may be elected to only one office. Election shall be made in order of higher to lower precedence in Article V, section A.** Election shall be by secret ballot if there are two or more candidates for any elective office, **or by show of hands if there is only one candidate.** The new officers shall assume their offices at the first scheduled meeting in January of the next year.

C. Vacancies occurring on the Board during the year shall be filled at the next regular meeting by nomination and election from the floor. The new officer shall immediately assume office for the balance of the term.

ARTICLE VI DUTIES OF OFFICERS

A. PRESIDENT- It shall be the duty of the president to:

1. Preside over all regular, Board, and special meetings of the club.
2. Direct the affairs of the club subject to the advice of the Board and the requirements of the Bylaws.
3. Appoint a Finance Committee of 2 or more members to audit the club account books. Appoint all other committees not provided for herein or elsewhere.
4. Sign as required, all contracts or written instruments on behalf of the club.
5. Represent the club for social or business contacts when required.
6. With approval of the Board, have sent flowers or other appropriate gifts to ill or hospitalized members, or to the family of a deceased member.
7. Perform incidental duties not herein specified.

B. VICE PRESIDENT- It shall be the duty of the vice president to:

1. Act in the absence of the president at all club functions and perform all duties of the president herein described.
2. Arrange for the speaker or entertainment for each of the regular club meetings.
3. Perform other duties required by the president or the Board.

C. SECRETARY- It shall be the duty of the secretary to:

1. Keep a written record of all proceedings of all regular, Board, and special meetings. Provide a copy of each record to the editor of the club bulletin for publication.
2. Receive and send all club correspondence. Read all correspondence of general interest to the members at a regular or Board meeting.
3. The secretary shall be responsible for a PO Box key, verify regular access and collect mail, as required.
4. Perform other duties required by the president or the Board.

D. TREASURER - It shall be the duty of the treasurer to:

1. Keep a written record of all monies received or expended by the club. Initiate checks for normal monthly expenses and have them properly signed. Checks for \$250 or less or for normal expenses [Note: "normal expenses" are expenses that tend to recur from year to year] may bear one authorized signature. Checks for expenses over \$250, that are not for normal expenses, shall have either the approval of the Board or the approval of the club membership at a general meeting.
2. The treasurer shall report the monthly cash flow of the club in the newsletter.
3. Maintain the club's bank accounts at banks approved by the Board. A signature card shall be kept by the bank showing the signatures of the president, vice president, and treasurer.
4. Issue dues receipts as required.
5. Maintain an accurate list of all physical assets of the club and their present location
6. The IRS requires all 501(c)(7) Non-profit Corporations to file an online FORM 990-N questionnaire yearly; after the close of the fiscal year and before the following May 15. The treasurer shall go to the www.IRS.gov internet site and submit a FORM 990-N (e-Postcard) or later form.
7. The State of California requires small California tax-exempt organizations to file a Form 199 with the Franchise Tax Board by the 15th day of the 5th month after the close of the organization's tax year. The treasurer shall file this Form 199 in a timely manner. If the club normally has annual gross receipts of \$50,000 or less, the treasurer may complete this requirement by submitting a Form 199N, commonly referred to as the "e-Postcard," with no cost to file.
8. The State of California requires all 501(c)(7) Non-profit Corporations to file a Statement of Corporation, FORM SI-100 (or later form), every two years (during even years). The treasurer shall file a FORM SI-100, with an appropriate check for the state fee, before August 01 of even-numbered years.
9. The treasurer shall be responsible for a PO Box key, verify regular access and collect mail, as required.
10. Perform other duties required by the president or the Board.

E. ACTIVITIES CHAIRMAN - It shall be the duty of the activities chairman to:

1. Organize club activities with assistants of his choice for the enjoyment of the members.

2. Obtain prizes for and run the raffle at each of the regular club meetings. Select prizes of general value to radio amateurs and when possible solicit prize donations from retailers or manufacturers. Strive to maintain a net positive cash flow from the raffle activities.
3. Provide refreshments, with assistants of his choice, at each of the regular club meetings.
4. Help with the organization of the annual Field Day.
5. Perform other duties required by the president or the Board.

F. PUBLIC RELATIONS OFFICER - It shall be the duty of the public relations officer to:

1. Prior to each regular club meeting, provide, with the assistants of his choice, adequate seating for the members.
2. Welcome members and visitors to the meeting and answer any questions they may have about the club.
3. Contact and get published in local newspapers, as needed, announcements of club activities such as Field Day.
4. Perform other duties required by the president or the Board.

G. TECHNICAL CHAIRMAN - It shall be the duty of the technical committee chairman to form a committee, if needed, to:

1. Assist members with technical problems relating to equipment setup, operation, and interference.
2. Assist members to obtain and/or upgrade their licenses. When sufficient interest exists, hold classes for code practice and theory.
3. Perform other duties required by the president or the Board.

H. MEMBERSHIP CHAIRMAN - It shall be the duty of the membership chairman to:

1. Maintain to date, an accurate roll of all honorary, paid-up and other members.
2. After the March regular meeting, prepare a list of honorary, paid-up and other members including name, call, address, telephone number, and electronic mailing address, with member password-protection, and submit this list to the webmaster for posting on the club web site in April and to the club historian.

3. In the month before the end of his term, prepare a list of honorary, paid-up and other members including name, address, telephone number, and electronic mailing address, and submit the list to the appointed webmaster for posting on the club web site with member password-protection, to the club historian, and to the membership chairman elected for the following term.
4. Bring at least one copy of the most recent club bulletin to the regular club meetings for attendee perusal.
5. Perform other duties required by the president or the Board.

I. DIRECTORS AT LARGE - It shall be the duty of the Directors at Large to:

1. Be available to head up special committees or accomplish tasks at the discretion of the Board.
2. If a Director at Large was the preceding president or the preceding vice president, provide sage advice from their leadership experience, therefore promoting the continuity of the Club.
3. This position can be also used as an entry level position on the Board, as the workload of it is generally less than some of the others.

ARTICLE VII COMMITTEES

A. FINANCE COMMITTEE - The president shall appoint a finance committee consisting of two or more members at the December Board meeting whose duty shall be to audit the club account books and report their findings to the club at the January meeting.

B. FIELD DAY COMMITTEE - The president may appoint a field day committee to organize and run the annual field day.

C. NOMINATION COMMITTEE - The president may appoint a nomination committee to propose a slate of candidates for club offices for the next year.

D. SPECIAL COMMITTEES - The president may appoint special committees for a specific purpose or for the good of the club.

ARTICLE VIII LONG TERM APPOINTMENTS

Long term appointments shall be made by the president when necessary. These appointments shall be for an indefinite period preferably for several years, and should only be given to members who are able to perform the specific requirements of the job.

A. CLUB HISTORIAN - The club historian shall maintain records and all other items of historical value to the club. He shall be responsible for recording changes to the Bylaws as they are approved.

B. LICENSE TRUSTEES - The club license trustees shall each hold a General or higher amateur license. He They shall be responsible for the club calls, W6ZE, in memory of Earl Griffin, a long time club member who died in 1956; and W6NGO, in memory of Kei Yamachika, a long time club member who died in 1997. The license trustees shall file renewal forms with the FCC when required.

C. WEBMASTER - The Board shall appoint a club webmaster to oversee the administration and upkeep of a club website while the OCARC operates a website. The webmaster may appoint other club members to assist in the maintenance and programming for the site. The webmaster shall assure that the website content remains up-to-date and focused on club interests. The webmaster shall also coordinate issuance of club email addresses (using the w6ze.org domain) for club members, as needed.

D. OTHER - Other appointments may be made as necessary, such as club net control operators.

ARTICLE IX AMENDMENTS

A. These bylaws may be amended by motion at a regular club meeting by a two-thirds affirmative vote of the members present provided that the proposed amendment has been presented to the membership at two consecutive general club meetings.

B. To reduce the number of Directors to less than ten shall require an amendment obtaining a written consent or affirmative vote of at least 80% of the members.

AMENDMENTS

AMENDMENT A

Rewritten 10/1993; adopted 4/15/1994

AMENDMENT B

Adopted 1/15/1999 and 2/19/1999

AMENDMENT C

Adopted 11/2000

AMENDMENT D

Adopted 11/2003

AMENDMENT E

Adopted 11/2008

AMENDMENT F

Adopted 01/2012

AMENDMENT G

Adopted --/----

1. Article III, Section A, shall update mailing of notices of meetings to sending of notices.
2. Article III, Section A, Treasurer's Report, shall move the financial report from presenting at the meetings, to Article VI, Section D, Treasurer.
3. Article III, Section A, shall change the attendance sheet procedure, change Committee Reports to "Board Member Reports," and remove Communications.
4. Article IV, Section A, remove outdated director corporate seal powers, remove the 5-year license requirement for Board members, and clarify term limit to two (2) terms.
5. Article V, Section B, elections shall provide for same nominee to two offices, and remove old Section C,
6. Article VI, Section C, Secretary, add PO Box key responsibilities.
7. Article VI, Section D, Treasurer, add duties for IRS Form 199, remove corporate seal duty, and add PO Box key.

8. Article VI, Section E, Activities Chairman, shall remove suggested activities.
9. Article VI, Section G, change "Technical Committee Chairman" to "Technical Chairman," remove TVI duties, and add interference assistance.
10. Article VI, Section H, Membership Chairman, clarify duties to include honorary members, electronic mailing addresses, password-protection of membership list, and change the newsletter mailing to the web site.
11. Article VI, Section H, Membership Chairman, add duty to prepare a list of members before the end of his term, and send it to the webmaster, club historian, and the membership chairman elected for the following term; and change from handing out extra bulletin copies to visitors, to providing one or more for attendee perusal.
12. Article VI, Section I, shall add "Directors at Large" to Duties of Officers.
13. Article VIII, Section A, Club Historian, add bylaw recording duty.
14. Article VIII, Section B, add license trustee for the W6NGO call sign.
15. Article VIII, new Section C, add "Webmaster" in Long Term Appointments.
16. Article IX Amendments, Section A, change "reading of an amendment" to "presenting of the amendment."

**OCARC Cash Flow - Year To Date
1/1/2020 through 7/31/2020**

Category	1/1/2020- 7/31/2020
INFLOWS	
Auction In, Jan 2020	1,696.25
Cash Box Deposit	140.00
Donation - Michael K6GTE	30.00
Donation - N6GP	20.00
Dues, Family (PayPal) 2020	131.78
Dues, Membership (PayPal) 2020	1,262.84
Dues, Membership (PayPal) 2021	101.05
Dues, Membership 2020	568.83
Refunds Received	15.53
TOTAL INFLOWS	3,966.28
OUTFLOWS	
Auction Flyer Printing	21.55
Auction Payout, Jan 2020	1,359.23
Donations - Red Cross	250.00
Field Day Winter - Tent Rental	130.00
OCARC Historian	29.29
Opportunity Drwg - Monthly Exp	438.71
PO Box Rental	92.00
Refreshments Expense	32.65
Refund paid	7.50
Storage Locker	475.00
Storage of Equipment - Ann Millard	250.00
Supplies	15.85
Web Site Hosting	101.94
Web Site Hosting - PayPal	95.00
TOTAL OUTFLOWS	3,298.72
OVERALL TOTAL	667.56

MiniTiouner-Express

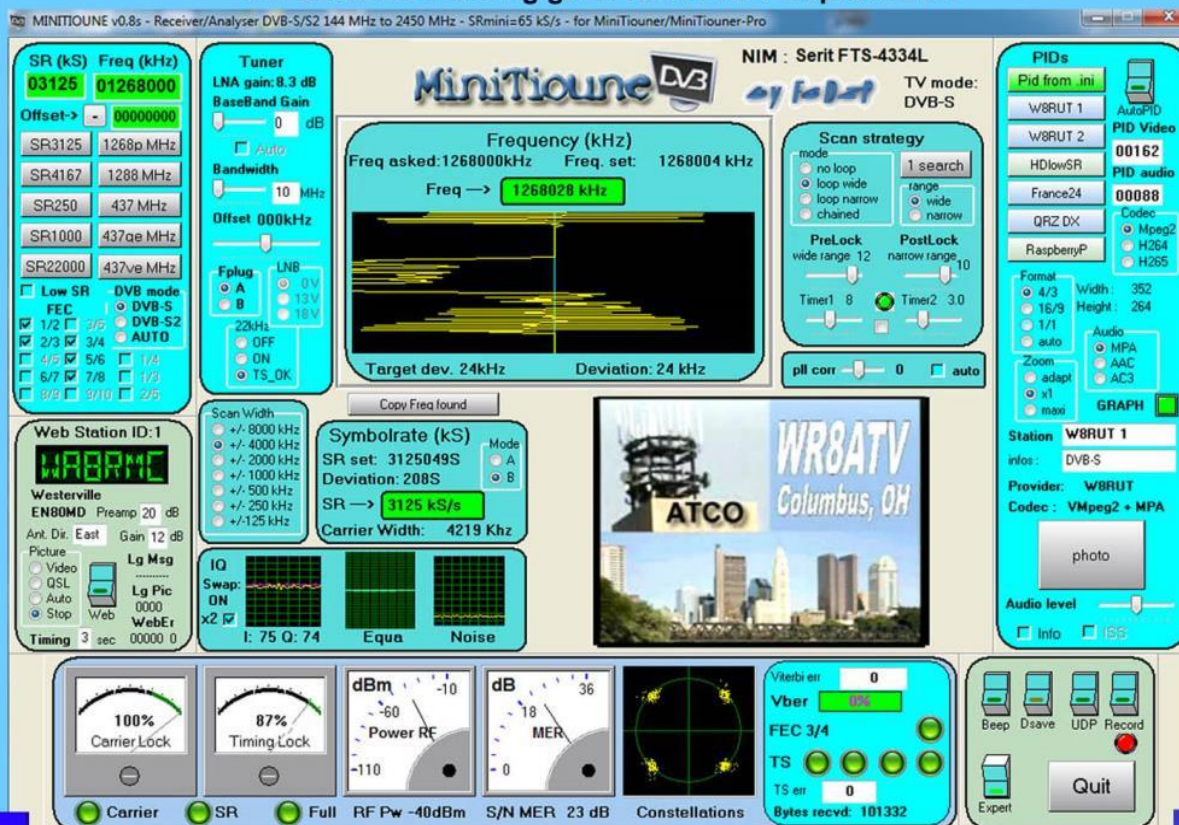
Digital Amateur Television DVB-S/S2 Receiver / Analyzer



Available at DATV-Express.com

- Operates with Windows PC using free MiniTioune software from Jean-Pierre F6DZP
- Smaller than a stack of 2 decks of cards (picture above is full size)
- Two independent simultaneous RF inputs with internal preamps
- High sensitivity -100dBm @1288MHz – at 1/2 FEC
- Fully assembled/tested in aluminum enclosure
- Covers 144-2420MHz (ideal for Space Station DATV reception)
- Symbol rates from 75 KSymb/s to >20 MSymbols/sec
- Uses external 8-24VDC supply or +5V from USB-3 port (with small modification)
- Real time signal modulation constellation & dBm signal strength display
- Price: US \$75 + shipping – order with PayPal

For details & ordering go to www.DATV-Express.com



(MiniTioune display above is the ATCO 1268MHz DVB-S repeater signal at WA8RMC QTH 15 miles away).