



RF



ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. LXV NO. 1

PO Box 3454, Tustin, CA 92781

January 2024

The Prez Sez...

By Nicholas AF6CF



**“A new year...
is like a newborn baby.”**

Prez Says:

Happy New Year! With the New Year, I'm again at the helm of the Club. Not sure why, but it appears that nobody else is willing to do the President's job. At any rate, I was very happy to see the great turnout we had at the Holiday party. It was a great night of food, prizes, and fun! For this year, we have a great agenda with our 90th anniversary behind us. Both Winter and Summer Field Days will take center stage, but every single meeting and activity will be a great extra effort to make the Club welcoming and fun.

We hope that the Club members will again contribute to make this year one that will be remembered for a long time. There are a lot of things that you can do to help, some with more effort than others, but all of them will be great for the Club. I expect all the membership will join me and participate in our endeavor; so, in closing, let me again paraphrase one of my favorite historical speeches:

**“Ask not what the Club
can do for you, but what
You can do for the Club.”**

Thank you very much.

73,
Nicholas, AF6CF

NEXT GENERAL MEETING

IN-PERSON

**Charlie Spetnagel
W6KK
presents**

“Swains Is. DXpedition”

**January 19th, 2024, at 7pm
at the**

**American Red
Cross**

**Orange County Chapter
Santa Ana, Room 208**

NEXT BOARD MEETING

Saturday, February 3rd, 2024

See www.w6ze.org for more info

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Monthly Events

Membership Meetings*

Time: 7:00 PM
When: 3rd Friday of each Month
Red Cross Orange County, Room 208
600 N Parkcenter Dr, Santa Ana
(Replaced by the Christmas Party
on December 8th)

Board Meetings

First Saturday of each Month
*Board will handle Club business now
IN-PERSON.*

Club Nets (Listen for W6ZE)

10M ~ 28.375 MHz SSB

Wed- 7:30 PM - 8:30 PM
Net Control: Corey, KE6YHX
Alternate Net Control: AJ, KN6WNO

2M ~ 146.55 MHz Simplex FM

Wed- 8:30 PM - 9:00 PM
Net Control: Corey, KE6YHX
Echolink Node: KK6TRC-L

75M ~ 3.883 MHz LSB

Tue @ 8:00 PM
Net Control: Corey, KE6YHX

Other Nets

**Catalina Amateur
Repeater Association (CARA)**
147.090 MHz (+0.600 MHz) No PL
Monday - Friday
9:00AM & 9:00PM
Prg. Director. Tom W6ETC
COME JOIN US

OCARC 2024 DUES:

*Membership period is:
1 January to 31 December*

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

New Member Dues are prorated
quarterly and includes a badge:
Additional Badges¹ \$3

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

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

¹ \$3 or less + mailing. See form.

OCARC Needs Your HELP for 2024**Open Board Position - Activities Officer**

NO Activities Officer was elected at the election meeting in November. Since no Officer was elected, per the OCARC By-Laws, the new 2024 Board can appoint someone after the 2024 Board assumes office January 1. Are **YOU** willing to volunteer to help the OCARC? Being on the OCARC Board is fulfilling and you are supporting the club and its members!

Duties: Here are the **Key** duties that need to be done by the ACTIVITIES Chair

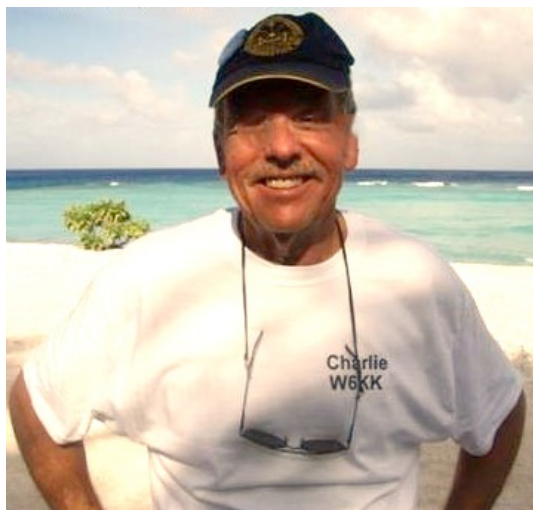
NOTE: You are allowed/encouraged to have assistants that you choose to help you.

- Obtain prizes for the Quarterly Opportunity Drawing and December Dinner
- Obtain prizes for and run the raffle at each of the regular club meetings. Strive to maintain a net positive cash flow from the raffle activities.
- Store raffle tickets and ticket-cage to be used at Quarterly meetings.
- Provide refreshments, with any assistants of your choice, at each of the regular club meetings. (Bottled water is a basic requirement.)
- Perform other duties requested by the president or the Board.

Please contact the OCARC President or anyone on the Board-of-Directors if you are interested or if you have some questions (AF6CF@W6ZE.org or OCARC_board@W6ZE.org). It would be great if you responded before January 19th.

Net@
AMATEUR RADIO WELLNESS & SUPPORT
Catalina
Amateur Repeater Association
COME JOIN US
9 AM & 9 PM Monday – Friday on CARA Repeaters:
2M: 147.090 MHz (+0.600 MHz) No PL and
1.25M: 224.420 MHz (-1.600 MHz) PL 110.9 repeaters.
Also available on EchoLink node *CATALINA*

Speaker Spotlight: Charlie Spetnagel, W6KK Swains Is. DXpedition



W6ZE is starting the year off with a great program about DXing and the 2012 NH8S Swains Island DXpedition. This 2012 DXpedition received the DXpedition of the Year award at the 2013 Dayton Hamvention, and will be presented by W6KK, Charlie Spetnagel.

Charlie was first licensed in 1975 as WB6SLI and is very active locally as a member of the Southern California DX Club, Southern California Contest Club, Northern California Contest Club, International DX Assn, and a life member of ARRL. He is on the DXCC Honor Roll #1 with 349 countries confirmed, and holds 5BDXCC with endorsements for 12, 17, 30, and 160m.

Charlie has been a member of some of the most important DXpeditions on record, including T33A Banaba, K4M Midway Island, K7C Kure Island, XR0X San Felix, and FO0CI Clipperton. He has operated contests from the Cayman Islands (ZF2JI), Bora Bora (FO8DX), Guadeloupe (FG5BG), Montserrat (VP2MKK), and American Samoa (KH8Q), among others. He is also a team member of several multi-op contest stations in Southern California.

With a pedigree like this, who wouldn't want to be entertained with stories of a far-off land and the struggle to setup and play ham radio? Come join us and learn more about DXing and contesting from a master. 7PM, American Red Cross, 600 Parkcenter Dr, Room 208, Santa Ana. See you there!

Janet Margelli, KL7MF
Vice-President, OCARC

RadioActivity

January 2024

Upcoming Activities:

JANUARY

- ****North American QSO Party / CW:** 1800 UTC January 13 through 0559 UTC January 14
- ***January VHF Contest:** 1900 UTC Saturday January 20 through 0359 UTC Monday Jan. 22
- ****North American QSO Party / SSB:** 1800 UTC Sat. January 20 through 0559 UTC Sunday January 22
- ***CQ WW 160 Meter / CW:** 2200 UTC Friday January 27 through 2200 UTC Sunday Jan. 28
- **Winter Field Day: 1900 UTC Saturday January 27 through 1900 UTC Sunday January 28**

FEBRUARY

- **10-10 Winter Contest, SSB:** 0001 UTC Feb.3 through 2359 UTC Sunday Feb. 4
- ***CQ WW WPX / RTTY** 0000 UTC Saturday Feb. 10 through 2359 UTC Sunday Feb. 11
- ***ARRL International DX Contest:** CW: 0000 UTC Sat. Feb. 17 through 2400 UTC Sunday February 18
- ***CQ WW 160 Meter SSB:** 2200 UTC Friday Feb. 23 through 2200 UTC Sunday February 25
- **North American QSO Party / RTTY:** 1800 UTC Feb. 24 through 0559 UTC Sunday February 25

* Indicates club entries are accepted

** Indicates team entries are accepted

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

State QSO Parties

- **Vermont QSO Party:** 0000 UTC Saturday February 3 through 2359 UTC Sunday Feb. 4
- **Minnesota QSO Party:** 1400 through 2359 UTC Saturday February 3
- **South Carolina QSO Party:** 1500 UTC Saturday February 24 through 0159 UTC Sunday Feb. 23

- **North Carolina QSO Party:** 1500 UTC Sunday February 25 through 0100 UTC Monday February 26
-

Repeating Activities:

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

OCARC Club Nets:

- **75 Meter Net:** Every Tuesday night at 8:00 pm to 8:30 pm Local Time. SSB 3.883 MHz
- **10 Meter Net:** Every Wednesday night at 7:30 pm to 8:30 pm Local Time. SSB 28.375 MHz
- **2 Meter Net:** Every Wednesday night 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.



Help Continue the **WINTER FIELD DAY** Tradition in 2024

**The Help Wanted sign is hung out for Logistical Support, Setup and Teardown.
Setup starts Friday at noon and Teardown will start at 11:00 am on Sunday.**

Can any club members owning a truck volunteer to help with the transportation of club equipment to and from the Winter Field Day site?

On Friday January 26 we need to move equipment from our storage site in Yorba Linda to the WFD site in Huntington Beach.

On Sunday January 28 around 12:00 pm we need to return the equipment back to the Yorba Linda storage site.

Your help is very important, without volunteers we cannot have a successful Winter Field Day.

Please contact Ron W6WG if you can help with the equipment transportation, site setup or want to volunteer in **ANY** other way.

Heathkit of the Month #120: by Bob Eckweiler, AF6C



MISCELLANEOUS - AUTOMOTIVE

Heathkit CI-1020 12 Volt Automotive Timing Light

Introduction:

A recent email asked about the CI-1080 Exhaust Gas Analyzer that Heathkit sold back in the mid-1970's, and if it could be featured in an article? Yes it can, and I actually own one. HotM #73 (July 2016) featured the ID-29 Automotive Tune-up Meter. Looking over the back articles, the CI-1020 Timing Light was never covered. The three instruments made up a triumvirate that helped keep my sports car in tune over many years and almost 250 thousand miles. Before tackling the Exhaust Gas Analyzer, perhaps the simple Heathkit CI-1020 (**Figure 1**) should be examined. This article will do that.

A timing light is a simple tool that looks like a hand gun, but shoots a bright flash of light. The light is triggered each time the #1 spark plug¹ fires. When pointed at the crankshaft pulley the gun stroboscopically illuminates a timing mark or scale on the pulley flange, making it look like it is standing still. One mark on the Crankshaft pulley indicates "top dead center" (TDC - the point where the #1 piston is at the top of its travel).

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 14.



Figure 1: The Heathkit CI-1020 Timing Light showing the battery clip leads and red clip with metal spring adapter that mates between the #1 spark plug terminal and its spark plug wire, or the #1 spark plug wire and the distributor.

Fixed to the engine block is either a pointer, or if there is only one timing mark on the pulley, a scale². Comparing the marks show The timing in degrees before TDC where the spark plug fires.

The degrees varies with the car model. It is adjusted by adjusting the rotational position of the distributor. Proper timing is important for fuel economy, as well as performance.

Heathkit Automotive Timing Light Family:

Heathkit introduced the CI-1020 in late 1971. **Figure 2** shows an early catalog listing. It sold for \$19.95 from the factory throughout its production run, and was described as a "One Evening Kit". Prior to the CI-1020, Heathkit offered one other automotive timing light, the ID-11, which was introduced in 1961. However, it was not stand-alone; it was an accessory for the IO-20 Ignition Analyzer that sold from 1960 through most of 1971. The CI-1020 continued in production until around the end of 1978. A deluxe timing light, the CI-1040, was sold alongside the CI-1020 starting in mid-to-late 1972 and

Heathkit automotive gear



Heathkit Solid-State Timing Light...19.95

- Completely self-contained
- Bright new high intensity flash
- High-impact plastic focusing lens

Provides a high intensity flash that won't wash out even in direct sunlight. And a high impact plastic focusing lens inside the barrel concentrates the beam into a clearly defined spot for even more accurate ignition set up. Just connect the two cables—one to the car's battery terminals, one to the number one spark plug. An adapter is included for distributor cap hook-up.

The slim-line housing is made of rugged, charcoal green high-impact plastic to resist oil, gas and corrosion—protect you from electrical shock. Other features include circuit protection against damage from reversing polarity and a built-in calibrator. Assembles in just two hours. Manual gives detailed operational instructions.

Kit CI-1020, 3 lbs., available 19.95

Figure 2: Listing for the CI-1020 Timing Light.
Source: Early 1972 Catalog 800-28

costing \$29.95. It continued to be sold until late 1983, at which time it was selling for \$39.95. Heathkit also sold two other stand-alone automotive timing lights, the CI-1096 and CI-1098. Both include additional features. Heath later also sold two other timing lights as part of ignition analyzers, the COA-2500-1 and the CO-2600-4. These will be briefly discussed later in this article.

The Heathkit CI-1020:

The CI-1020 Automotive Timing Light is powered from the running car battery by a

twin-lead power cable terminating in two large battery clips, one red, the other black. Should the car battery not be accessible, power can also be obtained from any available 15 volt source capable of supplying 1.5 amps. A third, heavy red HV lead, terminating in a test clip, connects to the #1 spark plug wire. A spring “plug-adapter” (432-197) allows the connection to be made at the spark plug or distributor (See **Figure 3**).

Operation of the timing light is very simple. With the power leads connected to the car battery (be sure to observe polarity) and the red lead connected to the #1 spark plug, the engine is started. With the car warmed up and idling, simply point the timing light at the pulley by the stationary marks on the engine and press the trigger. If the engine is idling at 600 RPM the light will flash five times a second and the mark(s) in the moving pulley will appear to stand still due to the stroboscopic effect of the bright light. Read the angle between when the plug fires and TDC³ by looking at the relation between the fixed and the “stationary” pulley marks. The distributor can now be adjusted to the proper timing mark. This procedure varies



Figure 3: The Spring adapter P# 432-197 that comes with the Heathkit CI-1020 is designed to mate between the spark plug wire and either the spark plug or distributor cap terminal.

SPECIFICATIONS – ID-1020 TIMING LIGHT

Useful Light range:	Up to two feet in daylight
Engine Speed Range:	Full brightness up to 2000 RPM. Operation above 2000 RPM should be intermittent only
Triggering Requirements:	Direct connection to spark plug specified for use in timing of engine ignition system.
Connecting Cables:	Battery Cable with clips (7 feet). High voltage cable with clip (5 feet).
Adapter/Connector:	Connects to either a spark plug or the distributor.
Power Requirements:	12 volt automotive storage battery or separate 15 volt DC power supply with 1.5 ampere capacity.
Size:	6-1/2" high x 10" long x 2" wide.
Weight:	1 lb. 4 oz.

TABLE I

between make and model of the vehicle. **Table I** gives the CI-1020 specifications.

Caution: *When using the timing light be careful to keep your hands and other body parts, as well as the timing light wires, away from the moving fan blades. Only run the engine in a place where there is adequate ventilation.*

The Heathkit CI-1020 Circuit:

Figure 4 shows a block diagram of the CI-1020 Timing Light, and **Figure 6** shows the schematic diagram.

No power is applied to the circuit until the momentary trigger switch SW1 is pressed. Power is then applied to Q1, (Part #417-278) a Motorola M1613 or a Delco DTG-110 PNP germanium power transistor. Q1, along with C1, R1, R2, and T1 form an oscillator operating in the high audio frequency range. R1 adjusts the frequency of oscillation and the voltage on the secondary of winding of T1. C2 and R3 promote oscillator starting and dampen transients that could damage Q1. The secondary AC voltage is half-wave rectified by diode pair D1 and D2, and charges capacitor C3 up to around 600 VDC. R4 and

R5 act as bleeder resistors drawing about 6 mA and providing a minimum load. R6, R7 and the neon lamp NE-1 are used for adjustment and will be described in the next section. The 600 volts across the xenon flash tube V1 is not high enough to cause the tube to conduct. However, the flash tube is mounted by two U-shaped leads that connect to the high tension lead from the spark plug. When the spark plug fires the multi-thousands of volts are capacitively coupled to the lamp, ionizing the gas inside and causing capacitor C3 to discharge through the flash tube causing it to produce a bright ~10 microsecond flash. A 1/4" spark-gap⁴ protects the flash tube. Normally the spark plug, with its smaller gap, will fire first; but should the lead to the spark plug become disconnected or, if there is a faulty spark plug, the safety spark-gap in the timing light will prevent excessive voltage buildup on the lead connected to the car's high-tension circuit.

Heathkit CI-1020 Adjustment:

There is just one simple adjustment before you can use the timing light. The voltage across C3 needs to be set near 600 volts by

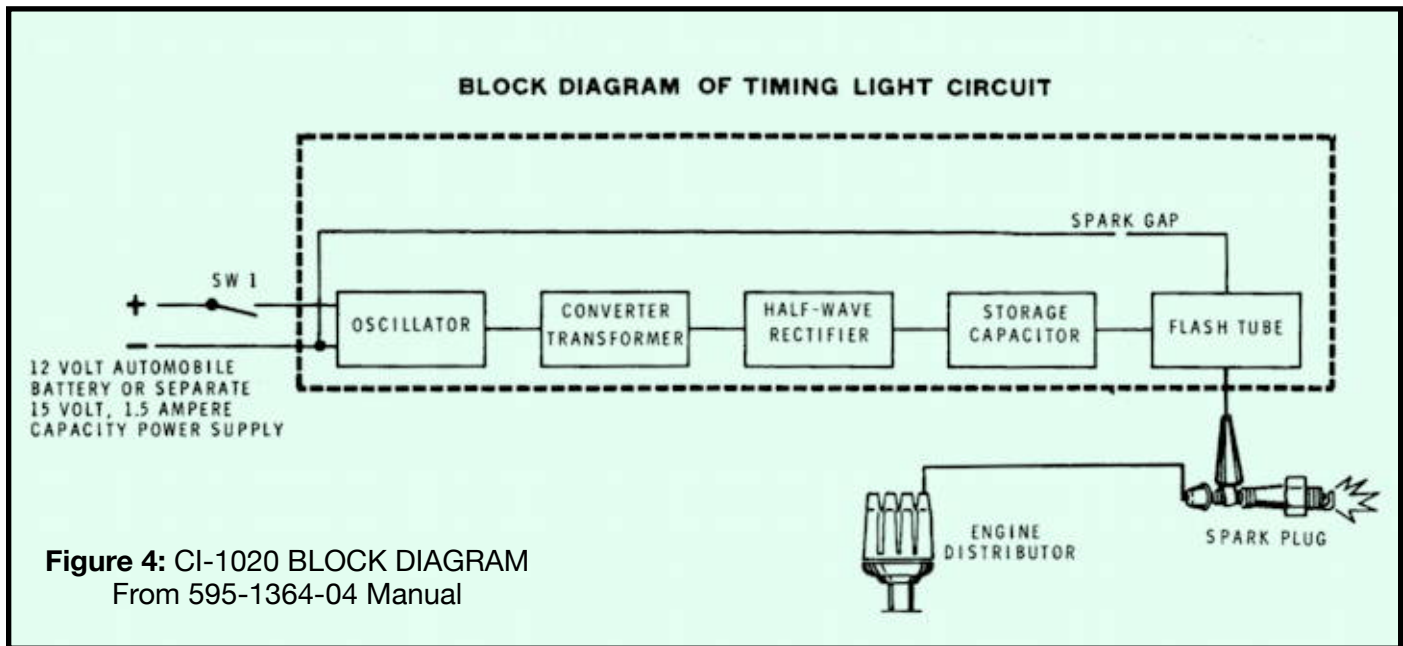
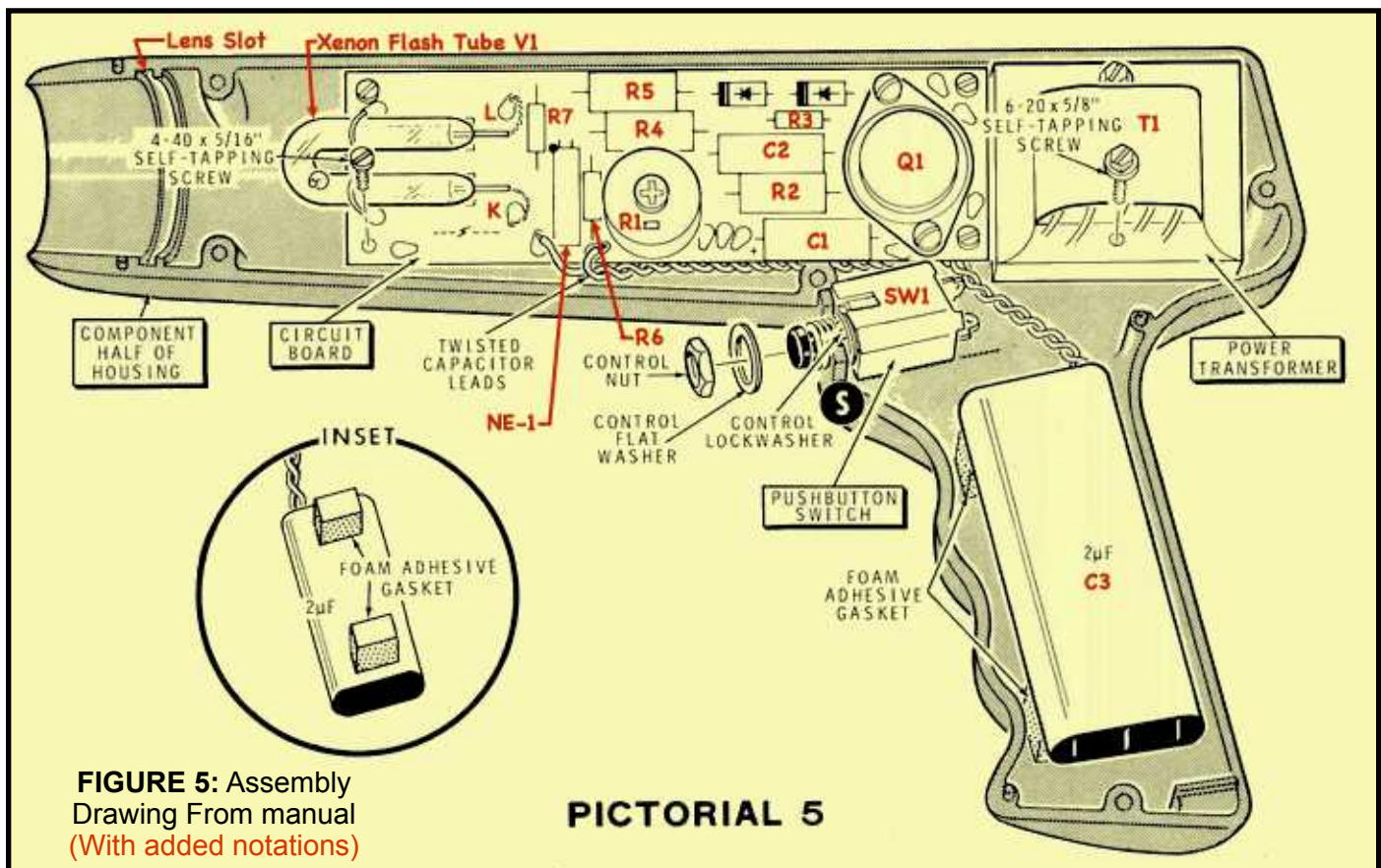


Figure 4: CI-1020 BLOCK DIAGRAM From 595-1364-04 Manual

adjusting R1 counterclockwise from its full-clockwise position. Heath offers two ways to make the adjustment. The preferred way is to use a DC voltmeter clipped across points K (negative) and L (positive) on the circuit board

near the flash lamp (shown on **Figure 5**). A less accurate, but quite viable, way is to use the simple calibration circuit that Heath built into the timing light, (**See Sidebar**). Simply turn R1 from fully clockwise, in the counter



clockwise direction, slowly until the built-in neon bulb just lights. The timing light must be powered either with the car battery, and the engine idling, or by a 15 volt 1.5 amp power source.

Heathkit CI-1020 Assembly:

All, but three, circuit components mount on the circuit board which is assembled first. The other components; the switch, transformer and large 2 μF capacitor are wired to the board using their leads or hookup wire. The power and spark plug leads are also wired to the circuit board and their other ends terminated with the appropriate clips.

The circuit board is then mounted into the component half of the gun-like housing. Leads are dressed and the circuit board is secured with four self tapping screws. The transformer is then mounted at the rear of the housing with two self-tapping screws. The switch is mounted next with its hex nut, and the capacitor is mounted into the handle space with foam tape.

After adjustment, the final assembly includes adding labels to the two halves of the housing (including the "blue-white" series label that mounts inside the non-component half of the housing), dressing the wire leads, inserting the lens (with the flat side towards the lamp) and joining the two halves of the housing together. Figure 5 shows one of the assembly pictorial drawings from the manual with annotations by the author.

The Heathkit Deluxe CI-1040:

The CI-1040 Deluxe Automotive Timing Light was released in late 1972 and sold for \$29.95. Electrically it is very similar to the CI-1020 with one excep-

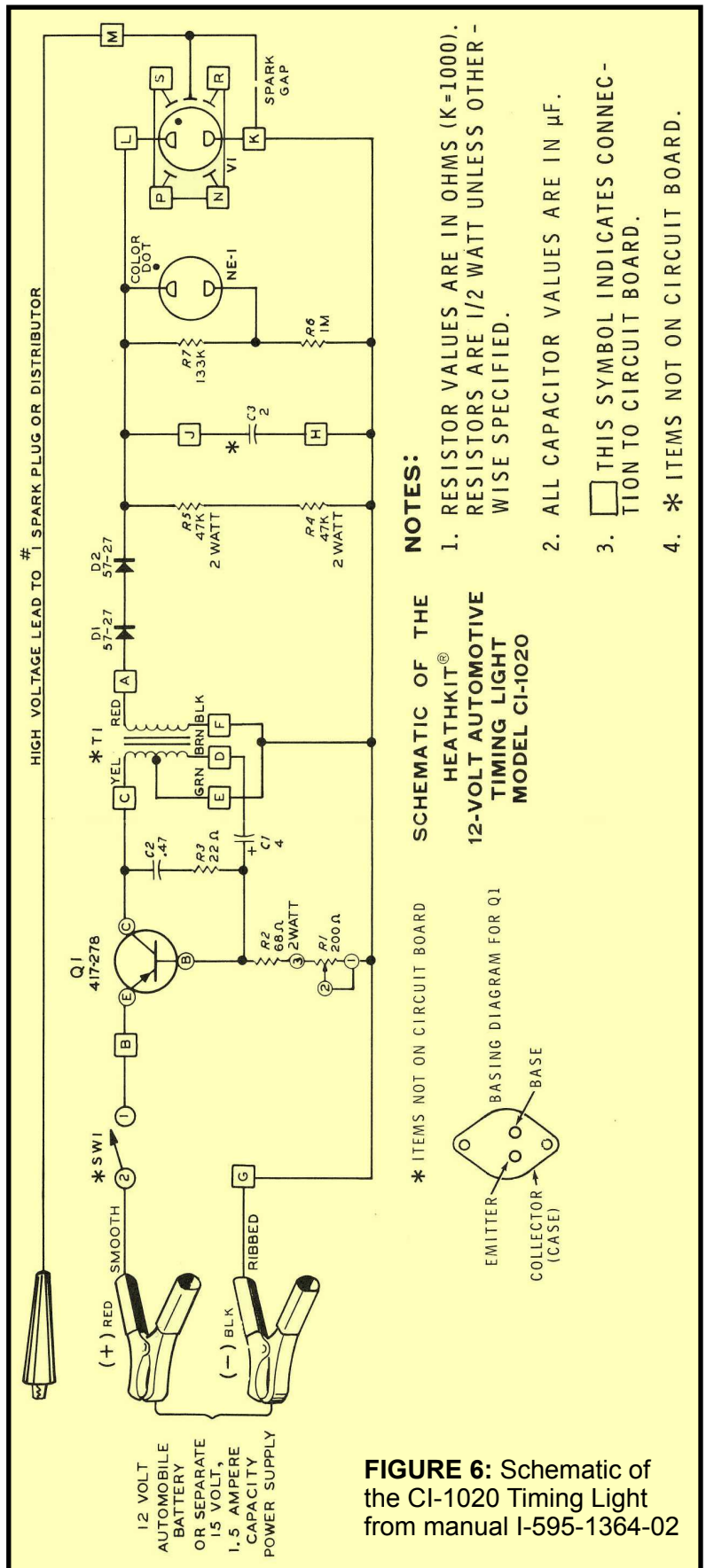


FIGURE 6: Schematic of the CI-1020 Timing Light from manual I-595-1364-02

tion. Instead of connecting the HV lead to a spark plug, it has a sensor that clips over the #1 spark plug lead. **Figure 7** shows the circuit change for the CI-1040. Everything not shown to the left of C3 is as on the CI-1020 schematic except the original HV lead and the built-in spark gap, which are no longer needed. When the inductive pickup senses the spark firing it triggers D3, an SCR (Texas Instruments TIC47) in the timing light which causes a capacitor to discharge through the primary of a step-up autotransformer L1 that triggers the xenon lamp. The clip-on sensor is handy and found on most all professional timing lights. To warrant the additional cost over the CI-1020, Heath advertising often mentioned the “sunshine bulb” for the CI-1040 when advertised alongside the earlier CI-1020, though they both used the same lamp and basic circuit. However, the convenience of the clip-on pickup is worth the added cost to most people⁵. Adjustment is the same as the CI-1020.

The CI-1040 was also available factory wired as the WD-5150 for a short time, but it stopped being listed sometime after March of 1974.

The Other Heathkit Timing Lights:

Heathkit also offered the CI-1096 and CI-1098. Both are stand-alone timing lights with added features. Early on they offered the ID-11 mentioned in the introduction, and later on they offered the COA-2500-1 and the COA-2600-4; both were designed as an add-on to a Heathkit ignition analyzer. A brief discussion of each follows (in chronological order.)

The ID-11...

...was introduced in late 1964. It is not stand-alone but is an accessory for the IO-20 Ignition Analyzer. It uses a 2D21 thyratron vac-

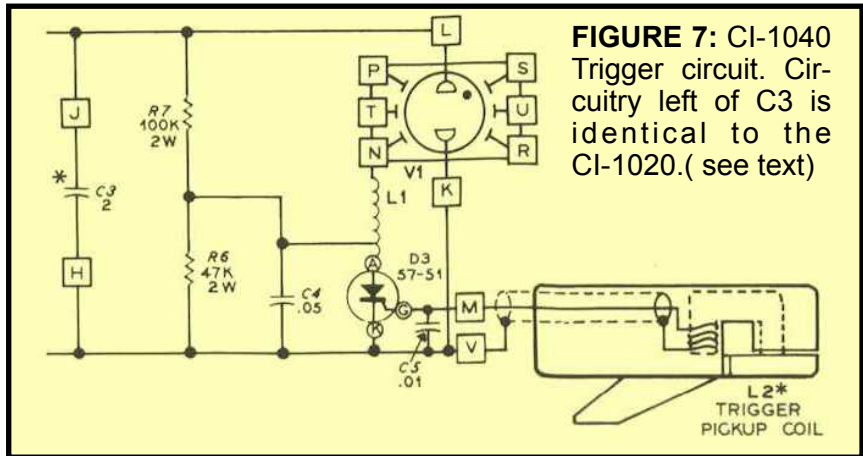


FIGURE 7: CI-1040 Trigger circuit. Circuitry left of C3 is identical to the CI-1020. (see text)

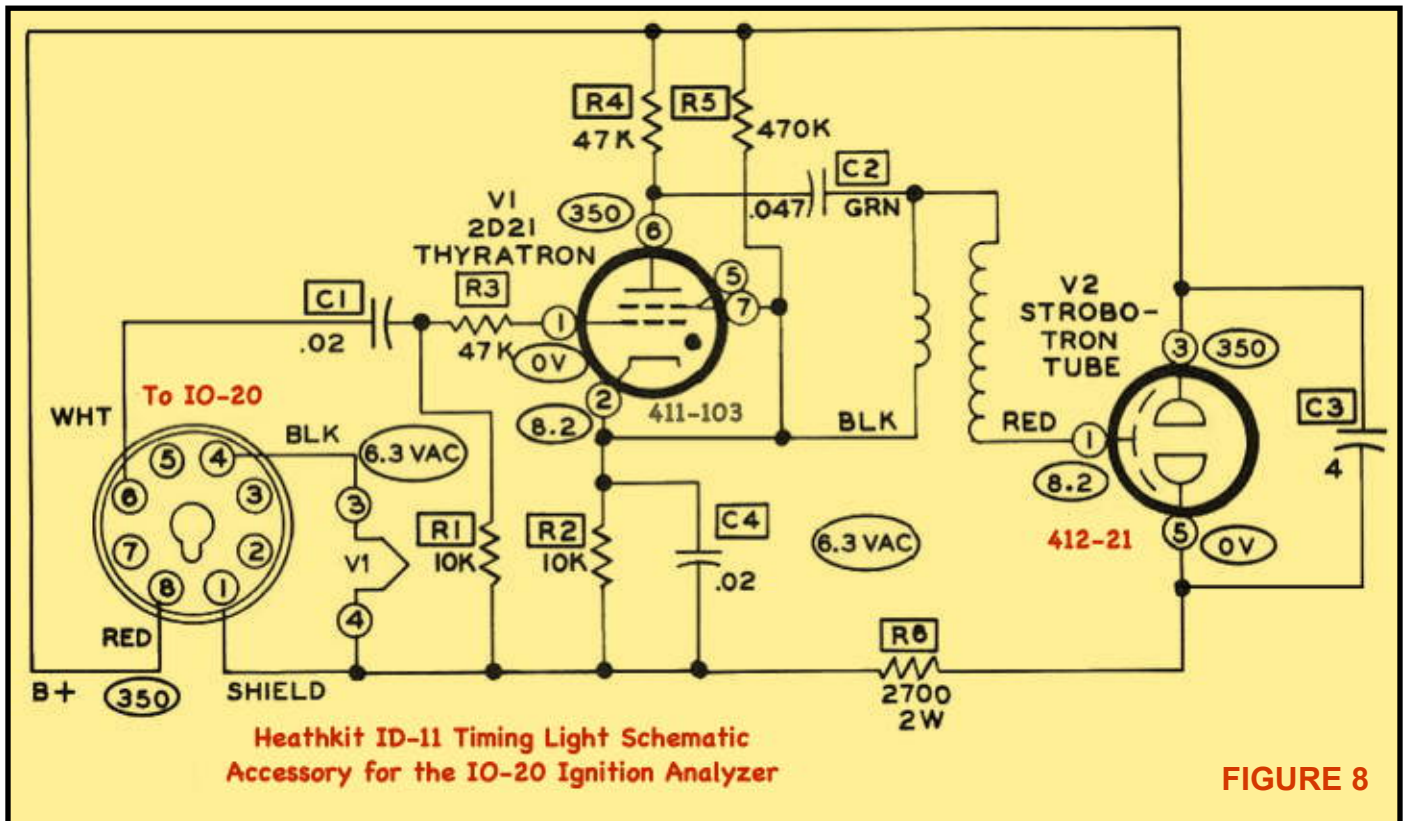
uum tube and has an octal plug that mates with the IO-20 to provide 350 V B+, filament voltage (6.3 V) and a 10 V positive pulse to trigger the strobe light. The schematic is shown in **Figure 8**.

The CI-1096 with Tach & Advance Meters...

...was introduced in the spring 1977 catalog. It is not only a stand alone timing light, it includes a meter that is a tachometer reading up to 4500 RPM while the trigger is not held in, and a timing advance meter when the trigger is held in. It utilizes a clip-on inductive pickup that fits around the spark plug lead. For a time it was selling alongside both the CI-1020 and CI-1040 at a price of \$64.95. Little information could be found on this kit other than what appears in the catalogs.

The Self Powered CI-1098...

...was introduced between late 1978 and the fall of 1979⁶. The major feature of this timing light, not found in any of the others, is that it is self-powered by a rechargeable 6-volt NiCad battery pack. A 120/240 V charger is included. It is similar in appearance to the earlier CI-1096 with a tachometer feature that has two ranges; 2000 RPM and 6000 RPM and also utilizes a clip-on inductive pickup. Self powering gets rid of the leads that normally go to the car battery for power. It originally sold for \$49.95. By Christmas of 1979 it was selling for



\$59.95. In the Christmas 1980 catalog the price was dropped to \$39.95.

The COA-2500-1...

...timing light was introduced in the winter 1976 (#807). catalog as part of the short-lived CO-2500 12" Screen Professional Ignition Analyzer. It sold for \$19.95 along with a factory wired version, the WOA-2500-1 that sold for \$29.95. The CO-2500 analyzer appeared again in the Spring 1976 catalog, but was not mentioned in, nor after, the Fall 1976 catalog. However, the C/WOA-2500-1 did reappear when the new CO-2600 Ignition Analyzer was introduced in the Spring 1978 catalog. They were offered in "Limited Quantities" as a less expensive alternate to the newly introduced COA-2600-4. Their prices remained unchanged. In the Spring-Summer 1980 catalog only the factory wired timing light was offered, and by Christmas neither was offered. The timing light is triggered from the CO-2500 which uses an inductive pickup.

The COA-2600-4...

...was introduced in the Spring 1978 catalog as a deluxe timing light to be used with the CO-2600 Deluxe Ignition Analyzer, which was introduced at the same time. The COA-2600-4 is a timing light with built-in distributor advance meter. It originally sold for \$49.95. Like its predecessor, triggering was supplied by the "mother-ship".

Comments:

The receipt attached to the front of my manual shows I bought the CI-1020 in early 1974. The price was \$19.95 and shipping cost \$1.48. It was order #469,453 from Benton Harbor; the invoice entry date was "Jan 21 74". I don't know much about this, but it might be of interest to another "Heath-storian" ?

The CI-1020 was easy to build and easy to use. More importantly, it worked as it should for many years. The screws haven't been off since it was built.

I've only written one article on a Heathkit automotive kit in the past. I hope I didn't bore too many readers this time. In a few months I will cover the CI-1080 Exhaust Gas Analyzer. Before then, perhaps I can find another ham related Heathkit to feature.

I have to thank Gerhard - DF1DA for filling me in on the CO-2500 Ignition Analyzer. I was unaware of its existence, though I knew the COA-2500-1 was offered with the early CO-2600 Analyzers. I was about to do some Googling when his email arrived with the CO-2500 catalog page.

I have a bunch of Heathkits that need restoring. I hope to get to some of them in 2024.

It is a new year, so let me wish everyone a belated Happy Holidays and a Happy New Year.

73, from AF6C



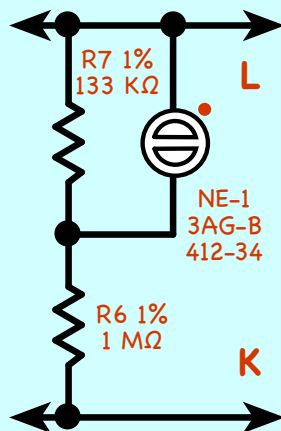
CI-1020 Calibration Circuit:

This circuit consists of two precision resistors in series across the voltage to be set. One resistor is 1 Meg Ω and the other is 133 K Ω . A CML7 3AG-B neon bulb shunts the 133 K Ω resistor. The bulb appears open until its breakdown voltage V_f (nominally 70 VDC) is reached. Once lit, the bulb draws current to establish a maintaining voltage of nominally 57 volts. As R1 is adjusted in the direction that increases the voltage between points L and K, the voltage across NE-1 increases per the voltage divider equation.

$$V_{(L-K)} = \left(\frac{1133}{133} \right) V_f$$

Where $V_f = 70$ volts. Solving the equation gives $V_{L-K} = 596$ volts. Once the neon bulb begins to conduct its voltage drops to the maintaining voltage and the bulb remains lit drawing about 120 μ A.

The neon bulbs appear to have been vetted by Heath as they come with a polarity dot signifying the direction they were tested and which way they should be installed.



Notes:

1. Almost universally spark plug #1 is used. However, check your vehicle manual before adjusting the timing.
2. Sometimes there is a single mark on the crank pulley flange and a fixed scale, and sometimes the scale marks are on the pulley flange and a fixed pointer designates where to read the scale marks on the pulley. It's in your car manual.
3. The timing is measured as an angle BEFORE "top-dead-center" (BTDC). This angle changes with RPM from about 6° BTDC at idle to a higher number depending upon the engine. This increase in the advance of the spark is controlled by the centrifugal and/or vacuum advance built into the distributor. The timing is normally set at idle speed, so check that the idle speed is correct before setting the timing.
4. The safety spark-gap is located on the foil side of the circuit board and is made from a piece of solid hookup wire with a 1/4" inch gap cut out after installing on the board.



5. At the time I was occupied with other things and busy with a lot of business travel. I had the choice and selected the less expensive timing light. Later on I would have done the opposite; but the fact is that timing light served me well for many years.
6. Many of the online Heathkit catalogs have arbitrarily missing pages. The catalogs in this timeframe seem to be missing many of the pages that carry the timing lights and other automotive kits.
7. CML - Chicago Miniature Lamps.

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

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Thanks - AF6C

**January 6th, 2024,
Board Meeting Minutes**

OCARC Board Meeting Minutes for: January 6, 2024, The OCARC Board meeting was held at The Streamliner Lounge, 186 N. Atchison St., Orange, and called to order by President Nicholas Haban AF6CF at 8:15 am. A quorum of Board Members was in attendance.

President report: Nicholas felt the Christmas Dinner turned out well. It was noted that somehow the mystery gift was awarded but since it tends to be something of a “white elephant” prize we have the person open it there so we can all enjoy the surprise. The mystery now is who chose it and what it contains. Also, it was noted that the two HRO gift certificates went to Ron W6WG and Tom W6ETC.

Treasurer report – Didn’t have a written report to present. The audit committee of Bob AF6C, Ken W6HHC, Tim N6TMT will be meeting in the coming weeks to review the books.

Publicity report – Will try to do a live broadcast through Facebook for Field Day. Also, has prepared a document for going out to announce Field Day plans.

Membership – 106 current members including 4 honorary members.

Newsletter Jan– Tim N6TMT, Feb Nicholas AF6CF, Mar Tim N6GP, Apr Bob AF6C

Speakers - Jan – Charles Spetnagel, W6KK – presentation on the NH8S Swains Island DXpedition.

Michael Scofield N6OK how we communicate under stress – “Life Without Full Duplex.”

Kevin Karamanos WD6DIH will be talking about PowerPole connectors.

Winter Field Day plans are moving along per Ron. Field and insurance are secured. There is a need to get people to sign up to pick up equipment in Yorba Linda and delivering it to the Huntington Beach site.

Monthly Planner still in testing.

New business

The Activities Director is still an open board position. A motion was made to have the two Directors at Large extend the search for a new director. The motion carried. In the mean, time AJ offered to pick up prizes for an opportunity drawing at the March 2024 meeting.

Good of the Club

Adjournment occurred around 10:03 am.

A HISTORY of OCARC PRESIDENTS

by **Ken Konechy W6HHC**
with great assistance from past
Club Historian Emeritus,
Bob Evans - WB6IXN (SK)

YEAR

2024 AF6CF Nicholas Haban
2023 AF6CF Nicholas Haban
2023 K7JA Charles (Chip)
Margelli (served from Jan-Apr)
2022 AF6CF Nicholas Haban
2021 AF6CF Nicholas Haban
2020 KI6X Dan Violette
2019 KI6X Dan Violette
2018 N6GP Tim Goeppinger
2017 N6GP Tim Goeppinger
2016 AF6CF Nicholas Haban
2015 N6TMT Tim Millard
2014 AF6CF Nicholas Haban
2013 AF6CF Nicholas Haban
2012 W6GMU Paul Gussow
2011 W6GMU Paul Gussow
2010 K6PEQ Kristin Dankert
2009 AF6CF Nicholas Haban
2008 N8WP Willie Peloquin
2007 K6PEQ Kristin Dankert
2006 N8WP Willie Peloquin
2005 W6HHC Ken Konechy
2004 N1AB Steve Brody
2003 KQ6JD Lowell Burnett
2002 KE6WIU Cory Terando
(now AE6GW)
2001 KD6BWH Bob Buss
(later KØBWH)
2000 K6LDC Larry Hoffman

YEAR

1999 WA6VPP Bud Barkhurst
1998 KD6BWH Bob Buss
(later KØBWH)
1997 WA6VKZ Frank Smith
1996 AF6C Bob Eckweiler
1995 N6XTJ Jim Roberts
1994 KJ6ZH Chris Breller
1993 KC6TAM Jane Breller
1992 WA6VKZ Frank Smith
1991 W6HHC Ken Konechy
1990 KJ6ZH Chris Breller
1989 WA6VKZ Frank Smith
1988 W6HHC Ken Konechy
1987 N6JSV Jim Talcott
1986 WA6VKZ Frank Smith
1985 AF6C Bob Eckweiler
1984 KA6IMP Chris Breller
(now KJ6ZH)
1983 W6IBR Al Watts
1982 KA6HNY Robin Hoff
1981 WA6VKZ Frank Smith
1980 WA6FOW Ernie Prichard
1979 WB6IHZ Terry Mathers
1978 WA6LFF Jim Kingsbury
1977 WA6WZO Fried Heyn
1976 WB6PEX Martin Raymond
1975 WA6LHB Art Sheldon
(now K7ZE)
1974 W6HHC Ken Konechy
1973 WB6QNU Bob Eckweiler
(now AF6C)
1972 WA6FIT Ron Cade
(now W6ZQ)
1971 WB6CQR Billy Hall
(now N6EDY)
1970 WB6UDC Jack Hollander
(later N6UC)
1969 WA6ROF Jerry VerDuft
(later ADØA)
1968 W6COJ Dave Hollander
1967 WB6GPK Jim Hill
1966 WA6YWN Jack Shaw
1965 K6KTX Rolland Miller

YEAR

1964 W6WRJ Ralph Alexander
(later W6RE)
1963 W6DEY Roy Maxson
1962 K6LJA Ted Glick
1961 K6IQ Roy Morriss
1960 K6TXS Charles (Ed) Edwards
1959 W6BVI Ken Kesel
1958 W6BVI Ken Kesel
1957 - CLUB DISBANDED -
1956 W6HIL Bob Swenson
1955 W6BVI Ken Kesel
1954 W6UPP Marinus Conway
1953 Probably only informal
meetings, no officers?
1952 W6QZQ Horace Bates
1951 W6LDJ Sam (Mac) McNeal
1950 Probably only informal
meetings, no officers?
1949 W6CGF Chuck Lunder
1948 W6BWO Dale Bose
1947 W6ALO Tommy Gentges
1946 W6DEY Roy Maxson
1945 W6DEY Roy Maxson
1944 - **ALL OFF TO WAR!!**
1943 - **ALL OFF TO WAR!!**
1942 W6IBN Roy Cumpston
1941 W6BAM Shelley Trotter
1940 W6KLU Harold Christensen
1939 Probably only informal
meetings, no officers?
1938 W6NSA Les Gates
1938 W6ADT Norol Evans
1937 W6LYM Norol Evans
(later reissued as W6ADT)
1936 W6LYM Norol Evans
(later reissued as W6ADT)
1935 - CLUB DISBANDED!!
1934 W6IGO Earl Moore
1933 W6IGO Earl Moore

Cash Flow - Last year

1/1/2023 through 12/31/2023

1/14/2024

Page 1

Category	1/1/2023- 12/31/2023
INFLOWS	
Auction In	1,765.00
Badge Income	7.00
Badge Income (PayPal)	3.00
Christmas - Opportunity Drawing	470.00
Christmas Dinner Ticket Sales	900.80
Donation	2,240.00
Donations - FD	30.00
Donations - FD Food	590.00
Dues, Membership (PayPal) 2023	1,410.00
Dues, Membership (Paypal) 2024	675.00
Dues, Membership 2023	697.50
Dues, Membership 2024	60.00
Food Snacks Donations	213.00
Opportunity Drawing -Monthly	418.00
TOTAL INFLOWS	9,479.30
OUTFLOWS	
Accounting Software License	59.88
Anniversary Party Food	207.80
Auction Payout	918.90
Christmas Drawing Prizes	502.72
Field Day - Propane	38.66
Field Day Food	875.31
Field Day Rental - Tent	215.00
Guest Speaker Meal - Exp	196.52
Historian Expenses	289.33
Insurance Expense	300.00
Opportunity Drwg - Monthly Exp	348.37
PayPal Fee	135.80
PO Box Rental	166.00
Propane Tank	61.30
Refreshments Expense	84.82
Secretary of State	5.00
Storage of Equipment - Ann Millard	500.00
Web Site Hosting	304.61
WFD - Propane	47.39
WFD Flowers	30.00
WFD Rental - Tent	150.00
Xmas Party Expense	1,675.23
ZOOM subscription	104.93
TOTAL OUTFLOWS	7,217.57
OVERALL TOTAL	2,261.73

The **ORANGE COUNTY AMATEUR RADIO CLUB, INC.**

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