RF

ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. LII NO. 10 P.O. BOX 3454, TUSTIN, CA 92781-3454 October 2011

The Prez Sez.....

by Paul W6GMU

We have the OCARC Annual Auction event coming up this month to get our Ham Radio acquisition juices ready to grab some of those incredible bargains that inevitably appear at this time….please bring your old or un-needed items to sell so you'll have sufficient funds to buy even more stuff!

In November we'll hold an election to choose next year's office holders, so if you'd like to snare one of the available Board positions, please consider running for the "slot" of your choice.

Don't forget the sumptuous OCARC Holiday Party [see page 17] to which we all look forward! On Saturday, October 01, the California QSO Party event took place, manned by Tim K6GEP and Jeff W6UX. The impressive results are on Page 11.

73 de Paul W6GMU

The next general meeting will be on:

Friday, Oct. 21
@ 7:00 PM

As usual, we will be meeting in the east Red Cross Building, Room 208. See you there!

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ORANGE COUNTY AMATEUR RADIO CLUB
www.W6ZE.org

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Monthly Events:

General Meeting:
Third Friday of the month
at 7:00 PM
American Red Cross
601 N. Golden Circle Dr.
(Near Tustin Ave. & 4th St.)
Santa Ana, CA

Club Breakfast:
Second Saturday of every
month at 8:00 AM
Jagerhaus Restaurant
2525 E. Ball Road
(Ball exit off 57-Freeway)
Anaheim, CA

Club Nets (Listen for **W6ZE**):
28.375 ± MHz SSB
Wed- 7:30 PM - 8:30 PM
Bob AF6C, Net Control

146.55 MHz Simplex FM
Wed- 8:30 PM - 9:30 PM
Bob, WB6IXN, Net Control

7.086 ± MHz CW **OCWN**
Sun- 9:00 AM – 10 AM
John WA6RND, Net Control

VISIT OUR WEB SITE

http://www.w6ze.org

for up-to-the-minute club information, the latest membership rosters, special activities, back issues of RF, links to ham-related sites, vendors and manufacturers, pictures of club events and much much more.

Club Dues:

Regular Members	...$20
Family Members*	...$10
Teenage Members	..$10
Club Badge**	…….$3

Dues run from Jan thru Dec and are prorated for new members.

*Additional members in the family of a regular member pay the family rate up to $30 per family.

**There is a $1.50 charge if you'd like to have your badge mailed to you.

OCARC General Meeting Minutes
September 16, 2011

The OCARC March General Meeting was held at the Red Cross complex in Santa Ana, called to order by OCARC President Paul Gussow W6GMU at 7:00 pm on Friday evening, September 16, 2011. There were a total of 45 members and 5 visitors present. Nine club officers were present for a quorum.

Paul W6GMU opened the meeting with the Pledge of Allegiance. George N6VNI introduced our speaker for the evening, Martin Woll N6VI, ARRL's Southwest Division Vice-Director. Marty presented a great summary of the activities, services, and benefits for member of the American Radio Relay League (ARRL).

Marty N6VI presents overview of services provided by ARRL

Marty listed and discussed the 5 primary services offered by the ARRL, 1) Public Service, 2) Advocacy, 3) Education, 4) Technology, and 5) Membership benefits. In Marty's opinion, ARRL's advocacy services is the biggest reason to maintain membership. ARRL's advocacy on the behalf of amateur radio includes spectrum defense, interference resolution, working with wireless industry, and FCC rules enforcement. Thanks Marty for an interesting program.

Portables in the Park – Jeff Hall W6UX gave a brief update on the status of OCARC Field Day scheduled for October 1 to coincided with the CA QSO party. Jeff encouraged members to attend the event and then operate the QSO party at home submitting scores under the clubs name.

October General Meeting – Doug W6FKX reminded club members to attend and bring amateur radio items to the clubs auction next month.

SHOW & TELL – Nicholas AF6CF presented his “pvc pipe” antenna for 10, 15, or 20M; tuning the antenna by extending the collapsible whip, changing the coil, and radials. Great idea and neat field antenna Nicholas!

During Show-n-Tell, Nicholas AF6CF demonstrates his “$2 field antenna”

Remember if you have something for the Show and Tell bring it to the next meeting!

GOOD of THE CLUB –

Just a reminder that the ORARC Board Meetings will now be held on the second Saturday of each month at 8:15 AM at the Jagerhaus Restaurant, 2525 East Ball Road Anaheim. Visitors are welcome.

A motion to adjourn meeting at 8:53 pm was made by Larry Mallek K6YUI, and unanimously seconded.

And thanks again Ken W6HHC for providing the photo!

Respectfully submitted by:
Doug Britton W6FKX
OCARC Secretary

OCARC did not have a September Board meeting.

To all OCARC members,

Hamcon 2011 is over now and it will not return to the Southern California area until 2015

Hamcon 2011 was a total success and I would like to thank all the OCARC members who attended the convention. I hope it was as enjoyable for you, as it was for me to be the vendor chair person.

73

De

George T. Jacob Jr. N6VNI

OCARC Vice President.

The October Meeting is our yearly auction. Please plan on arriving at 6:00 pm if you plan on selling to register and display your treasures.

Remember:

OCARO Auction – October 21, 2011
6:00 pm to register
7:00 pm Meeting and Auction starts.

AUCTION !!!
AUCTION !!!
AUCTION !!!

It's that time of year again. The OCARC annual ham radio auction is Friday, October 21st 2011 at 7:00 PM.

Bring your gear to sell. Come bid on other equipment.

This is always a fun event. Bring your ham radio friends too!

Location and a map to our auction are on the next page or visit our website for info.

The Orange County
Amateur Radio Club "OCARC"
P.O. Box 3454
Tustin, CA 92781

Web: www.w6ze.org Email: ocarc_info@w6ze.org

ANNUAL RADIO AUCTION

Friday, October 21, 2011

Auction Rules

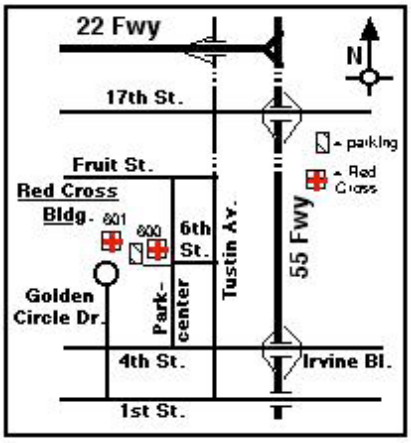
The OCARC Annual Auction will take place on Friday evening, October 21st, 2011, at 7:00 PM at the American Red Cross facility located at 600 N. Parkcenter Drive, Santa Ana. The room will open at 6:00 PM to allow registration, set-up and viewing. All buyers and sellers are welcome. The following rules for the auction will be in effect:

1. Only ham radio or electronic equipment / items will be auctioned (i.e.: no fishing equipment, etc)
2. Buyers and Sellers must register at the door with the OCARC Treasurer. **There is NO registration fee.**
3. Sellers should number each item in their lot. A tag should indicate the minimum bid they expect.
4. Only 3 items from a Sellers lot will be auctioned during each turn. After auctioning 3 items, the auctioneer will move on to the next lot. After the first 3 items from every lot have been offered for bidding, the auctioneer will start the second round of auctioning with the next 3 items in lot #1.
5. Auction bidding will take place as follows:
    a. $0.00-to-$5.00 bidding will take place in $0.50 increments.
    b. Over-$5.00-to-$50.00 bidding will take place in $1.00 increments.
    c. Over-$50.00-to-$100.00 bidding will take place in $5.00 increments.
    d. Over-$100.00 bidding will be in $10.00 increments.
6. **Rules 4 and 5 may be changed at the auctioneer's discretion to expedite the auction**.
7. Payments for purchased items are due at the end of the auction and shall be by cash or check with the appropriate ID. No two-party checks or credit cards are allowed. Disbursements to the Sellers will be by OCARC check, only. Sellers will be charged 10% of the selling price for items sold by OCARC.

A special table will be set up for donated items. The proceeds of donated items will go to the OCARC.

The American Red Cross
George M. Chitty Building
600 Parkcenter Drive
Santa Ana, CA.
Second Floor, Room 208*
(Enter from the West Side.)
Note: The door locks after 7 PM. If no one is there to let you in call W6ZE on the talk-in frequency for admittance.
TALK-IN 146.55 MHz Simplex

* Room is subject to change.



OCARC 2011 Radio AUCTION Partial Equipment List

OCARC has the following items being brought to the AUCTION:

DESCRIPTION	MFGR	Model	NOTES
Multi-band Dipole	Alpha-Delta	DX-CC	Covers 80, 40, 20, 15, 10 Like new
2M All-Mode Transceiver	ICOM	IC-211	No microphone, needs fuse-holder
2M All-Mode Transceiver	YAESU	FT-290R	No Microphone
2M FM Mobile	Kenwood	TM-241A	Microphone to come
2M FM Transceiver	YAESU	FT-2530A	No Microphone
2M mag-mount antenna	METZ	214	1/2 wavelength
2M Hand Held	ICOM	IC-02AT/2AT CG	with charger, batteries dead
SWR Meter	SWAN	SWR-3	
COAX Switch	PACE	5621	1 KW – 3-position
LOW PASS FILTER	DRAKE	???	
DUPLEXOR	COMET	CFX 260	3–150MHz, 400–500MHz,
TRIPLEXOR	COMET	CFX 431	.3–150MHz, 400–500MHz, 900–1400MHz
PHONE PATCH	KENWOOD	PC-1-A	
TNC CONTROLLER	AEA	PK232MBX	Pactor, VHF/HF Packet, Baudot, AMTOR/SITOR, Morse, RTTY
Weather Receiver	Realistic	???	Crystal controlled
Power Line RF Filter	CORCOM	F3387	6A TEMPEST/EMI filter
Mobile Speaker	MOTOROLA		
Ear Phones	Heil		
Ear Phones	Western Electric	509W	Over 70 years old…classic collectable

OCARC Member

co-presents

TAPR Digital Communications Conference

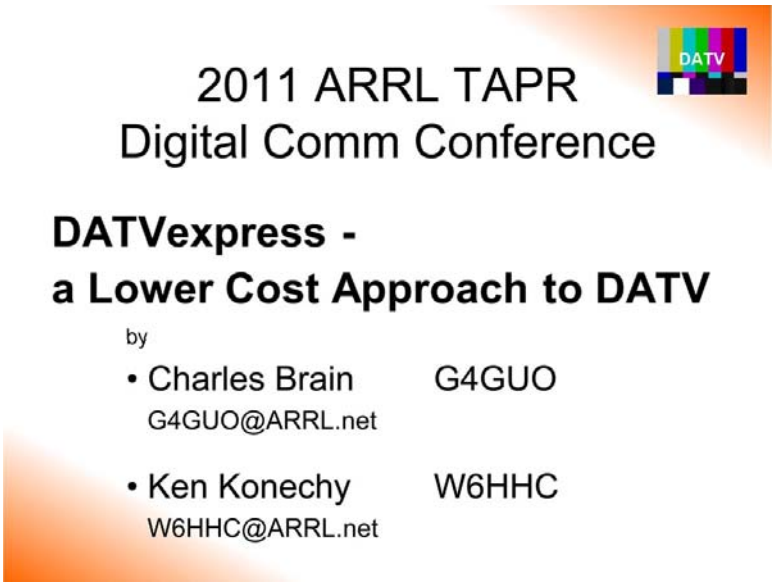
talk on

DATVexpress Project

The TAPR Digital Communications Conference, an international gathering of hams interested in digital communications, was held September 16-18 in Baltimore, MD. Ken-W6HHC teamed-up with Charles-G4GUO to present a talk on Digital-ATV. The presentation was called:

DATVexpress Project – a lower-cost approach to Digital-ATV XMTR

The TAPR DATVexpress presentation by Charles and Ken was an introduction to the DATVexpress project being developed by a small group of hams around the world (G4GUO, W6HHC, WA8RMC, WB6P, and WB8LGA). The TAPR presentation provided both an overview and a status of this project to develop a software-defined approach to digital-ATV that also uses a simple low-cost printed-circuit board to gen-erate the 1.2 GHz DVB-S modulation after receiving the I/Q data stream from a PC.



G4GUO and W6HHC both made the PowerPoint presentation remotely from the comforts of their homes to the TAPR DCC audience in Baltimore (using SKYPE for audio and WebEx for desk-top video). Ken likes to say that the airfare and hotel money saved by using remote WebEx can be spent on more ham radio gear!

The PowerPoint file for the presentation is available on the OCARC web site at **www.W6ZE.org/DATV**

OCARC participates in CA QSO Party during Portables-in-the-Park

by Jeff W6UX

Several members of the club met at the Jeffrey Open Space Park in Irvine on October 1st for this year's California QSO Party. Operators included Jeff (W6UX), Tim (K6GEP), Jay (KI6WZU), Atlee (N2CNC), Ron (WB6FRV) and Carl (N8AE). Visiting hams included George (N6VNI) Dan (N6PEQ), Kristin (K6PEQ), Tim (KJ6NGF), Kevin (N6NGO), Dee (N8UZE), Kris (W6KJC), Kenan (KR6J), and Steve (KJ6LHA).

Three 100 watt stations running on generator power (thank you, Arnie) were setup in the picnic area. W6UX's 20-meter station used an Elecraft K3 radio and a vertically hung end-fed dipole antenna. K6GEP's 15-meter station used an Icom IC-7000 radio and a sloping end-fed dipole antenna. KI6WZU's 10-meter station used a Ringo Ranger vertical. Each station had a laptop for logging (thank you Kris, for lending us one).

While our stations were being setup, a group of Tai Chi practitioners gathered for its weekly exercises. At one point some of the women began to sing. K6GEP apparently speaks fluent Chinese, as he informed us they were praising the Sun, thanking it for the wonderful solar conditions and wishing the club a high placing in the contest!

The first contact was made at 9:30am, but it wasn't for the QSO party. W6UX snagged T32C on his first try during a lull in their pileup for the Oceania contest. About 600 Qs had been made by 8:30pm. Contacts of interest included Thailand on 10-meter phone and North Pole, Alaska on 20-meter phone. The weather could not have been better, several DX contacts were made, and much fun was had! [NOTE: Frank W6NKU, operating from his home station, was able to gather another 120 contacts to send in for the OCARC total CAQP score.]

N6VNI visits while WB6FRV operates on 20M phone

K6GEP operating 15M CW

Heathkit of the Month #34:
by Bob Eckweiler, AF6C

Heathkit GC-1A "Mohican"
Solid-State Communications Receiver

Introduction:
In late 1959 Heathkit introduced its first all solid-state communications receiver, the GC-1. This small radio, one of the last "Indian" named radios, is compact (around 7" x 12" x 10") yet heavy at 17 lbs. It can run on batteries or use the XP-2, an optional internal AC power supply.

Transistor development was advancing fast when the Mohican was in design. Getting transistors to operate over a few megacycles per second (mc) had been a challenge that was finally being overcome. The GC-1 uses 10 germanium PNP transistors including the 2N1225 and 2N1396 RF transistors allowing operation of the receiver up to 32 mc. Neither silicon nor NPN transistors were yet readily available to the industry at competitive prices.

The GC-1 and the later GC-1A each originally cost $109.95 in kit form. An optional XP-2 AC power supply cost an additional $9.95 but was not available initially. The radio was also available factory wired as the GCW-1A for $193.50. By 1964 the prices dropped to $95.00 and $165.00. In 1966 the GC-1A price further dropped to $89.50. The price of the XP-2 remained unchanged.

The GC-1A remained in production until 1968.

The GC-1 Mohican:
I could not find a copy of the manual or even a schematic of the early GC-1. I did find a schematic of the GC-1U which is the European version of the GC-1.

Fig 1: Beautifully Restored GC-1A Mohican. Photo courtesy of WD4EUI

The GC-1 is an all solid-state, ten transistor, single conversion superheterodyne receiver covering 550 kc to 32 mc in five bands. Bandspread tuning is included with calibrated scales covering 80/75 meters, 40 meters, 20 and 15 meters, and 11/10 meters. There is also a linear 0-100 logging scale. (Ironically, 11 meters was an amateur radio band until September 11th, 1958).

The single conversion radio uses an IF of 455 kc. It also uses a diode tuned BFO to allow reception of CW and SSB. Audio output is up to four-tenths of a watt at 10% audio distortion. The radio draws a mere 35 ma of current from the batteries when listening at an audio level of 50 mW.

The Mohican runs on batteries. The later GC-1A uses eight "C" cells, but there is more than one source that specifies six "C" cells for the original GC-1. I haven't found whether this is correct or not, but lean towards eight cells.

The optional XP-2 AC power supply was not available initially when the GC-1 was released. It does not work with the early GC-1 receivers without a modification to the receiver circuit. Fortunately this modification is a simple com-

ponent relocation on the circuit board, and instructions are included on a sheet that came with the XP-2 manual. The modification was added to the GC-1 during its model run.

Though a "compact portable" communications receiver, the Mohican weighs 17 pounds. This is mostly the weight from the steel cabinet and chassis. The unit is built with ruggedness in mind and to reduce frequency instability due to chassis flexing. Individual compartments are shielded from one another adding to the amount of chassis material used.

In late 1961 the GC-1 was updated to the GC-1A. Some of the original GC-1 receivers suffered from audio distortion after the batteries were partially consumed or when hot, as well as unstable operation at higher frequencies. Heathkit made numerous circuit modifications and introduced the GC-1A. they didn't forget their patrons though and provided a kit of parts for GC-1 owners to fix those radios that suffered from the known problems. A big change to the radio was the introduction of temperature and voltage compensating diodes in the audio bias circuit to prevent distortion due to low voltage or high temperature.

The GC-1A Mohican:

The GC-1A Mohican (See Figure 1) that replaced the GC-1 became quite popular. It is rugged and works well. Numerous reports I read commented on good sensitivity, the radios generally being classified as "hot". Frequency stability is not near today's standards but acceptable for such a radio in the sixties. Some amateurs used the GC-1 as a backup receiver, and a few even used it as their main receiver on the lower HF ham bands.

Selectivity is 3 kc at 6 dB down. No specification is given at -60 dB. However selectivity is by the use of two sets of ceramic "Transfilters" in the IF section which should result in sharp skirts. Heathkit later used Transfilters in some of their stereo Hi-Fi receivers.

The front panel of the Heathkit GC-1A is divided into three sections.

The upper third of the front panel (L to R):

S-meter 0-1 ma meter.
(arbitrary vertical scale)

Main Tuning slide dial.
(scales for bands **A, B, C, D, E**)

The middle third of the front panel (L to R):

AVC: slide switch.
OFF/ON (below S-meter)

Bandspread slide dial.
(scales for **80, 40, 20 & 15, 11 & 10M,** Log)

The lower third of the front panel (L to R):

MAIN TUNING: variable capacitor.
(operates upper slide dial)

VOLUME: potentiometer.
Power **OFF** (ccw - no scaling)

ANL: slide switch.
OFF/ON

BFO off/on and tune: pot with pull sw.
(3 dots signifying LSB, center, USB)

BANDSWITCH: 5 pos. rotary sw.
A, B, C, D, E

RF GAIN: potentiometer.
(no scaling)

DIAL LIGHT slide switch.
OFF/ON

ANT. TUNING: variable capacitor.
(no scaling)

BANDSPREAD: variable capacitor.
(operates lower slide dial)

(Panel nomenclature is shown in **bold**.)

Table 1: GC-1A Front Controls

Antenna (high Z): two screw terminal.
EXT. ANT, GND

MUTING: two screw terminal.
(normally connected - open to mute)

PHONES: 1/4" phone jack.
(35Ω impedance)

Table 2: GC-1A Rear Chassis Connections

Table 1 lists the front panel controls. The upper rear of the GC-1A cabinet has an open area where either the included battery pack or XP-2 snap in. The rear panel connections along the lower chassis are listed in table 2.

Heathkit recommends that when using the Mohican with a transmitter that an external relay short the receive antenna connections to ground during transmit to protect the transistor in the RF amplifier from damage. This should be done in addition to opening the **MUTING** connections on the rear chassis.

Styling-wise the Mohican uses the same paint scheme as their ham equipment of the time. The green and green-gray colors match the style of the Apache and Mohawk, as do the knobs. The GC-1A however has chrome knobs found on the later ham equipment of that time. The radio also has a handle on the top for carrying and a whip antenna for true portable operation. The handle may be moved to the side.

Heathkit GC-1A Circuit Description:
The GC-1A uses ten transistors and seven diodes as listed in Table 3. The transistors all mount in sockets, something rarely done today.

RF Circuits:
The RF amplifier uses a 2N1396, which is a selected version of the 2N1225 used in the mixer and local oscillator. These transistors are drift type germanium transistors where the doping of the base varies exponentially from heavy at the emitter to light at the collector. This results in low base resistance and low base-collector capacitance - features that are needed for high frequency response. The circuit is a standard tuned input, tuned output, common-base amplifier offering a large current gain. It provides a sensitivity of 2 µV except on the AM broadcast band (Band A) where it is 10 µV. AVC voltage adjusts the bias voltage of the stage to reduce gain on strong signals. The RF gain further controls the AVC voltage, or when the AVC is turned off, controls the stage bias directly.

The mixer stage is a common emitter circuit with the signal injected into the base and the oscillator injected into the emitter. A series of tuned circuits, one for each band, between the RF stage and the mixer are tapped to provide proper impedance matching.

The local oscillator section consists of an RF transistor in common base mode. The oscillator runs 455 kc higher than the received signal on bands A through D and 455 kc lower on band E. Different oscillator coils are switched in for the various bands as are networks to control feedback and injection levels.

The main tuning capacitor is three sections: one tunes the RF input coils, one tunes the mixer input coils and one tunes the local oscillator frequency. The **ANT. TUNE** capacitor is across the section that tunes to RF input to allow adjustment for antenna mismatching, and the **BANDSPREAD** capacitor is across the section that tunes the local oscillator allowing electrical bandspread tuning.

Germanium PNP Transistors:

2N1396	RF Amplifier
2N1225	Mixer
2N1225	Master Oscillator
2N373	1st IF Amplifier
2N373	2nd IF Amplifier
2N373	3rd IF Amplifier
2N407	Audio Driver
2x 2N407	Push-Pull Audio Output
2N409	BFO

Diodes:

2x 1N2326	Stabilizing Diodes*
1N754	Voltage Regulator 6.8V
not given	Detector Diode**
HD2257	AVC Crystal Diode
HD2257	ANL Crystal Diode
HD2257	BFO Varactor Diode

* Used to thermally stabilize the 2N407 audio output diodes.

** Not in parts list. Part of IF transformer T2.

Table 3: GC-1A Semiconductors

IF Circuits:
Three stages of IF amplification follow the mixer. All utilize a 2N373 transistor. Only the gain of the first IF stage is controlled by the AVC circuit. IF transformers are used only for the input to the first stage and output from the third stage. Between stages ceramic "transfilters" provide a fixed selectivity of 3 kc at 6 dB down. Skirt response is not specified but the ceramic filters should provide superior performance than transformers. The second and third IF stages also have a series resonant "transfilter" in their emitter leads instead of bypass capacitors to further increase selectivity. There is an option, shown on the schematic, to replace one series filter with a capacitor to reduce selectivity for wider frequency response.

AVC voltage is developed from the collector of the third IF transistor and coupled through a capacitor to the AVC diode where it is converted to DC, filtered and fed back to the RF and first IF stages.

BFO Circuit:
The Beat Frequency Oscillator uses a 2N409 transistor. The frequency is determined by a coil and a fixed capacitor. Instead of a variable capacitor adjusting the frequency a crystal diode is back-biased across the coil. When back biased the diode acts as a small capacitor and by adjusting the bias the capacitance changes and the BFO can be tuned. As the semiconductor industry grew some diodes were designed just for this purpose. They are called varactor diodes. Heathkit used a simple crystal diode for the purpose and it works well. The BFO oscillator tunes across the IF passband allowing for tuning of CW and SSB/DSB signals.

Detector and Audio Circuits:
A simple diode detector is built into the second IF transformer can, providing signal detection. (Heathkit doesn't include this diode in their "ten transistors and six diodes" description for some reason.) The resulting audio is passed through the **VOLUME** control to the first audio amplifier. A simple diode **ANL** circuit may be switched in to clip large noise spikes. This function is controlled by the **ANL** (automatic noise limiter) switch.

The first audio amplifier uses a 2N407 and runs in class A driving a coupling transformer. The coupling transformer has dual 750Ω secondaries; each driving one transistor of a modified class B push-pull amplifier. The two 2N407 audio output transistors receive their voltage in series.

The bias circuit of the two output transistors evidently changed from the GC-1 to the GC-1A. It is rumored that Heathkit put out a modification kit for the GC-1 to improve stability at higher frequencies and improve audio which became distorted in some radios at high temperatures and when the batteries were not fresh. The biasing of the two audio output transistors were modified and a diode was added in each output transistor's bias circuit. The 1N2326 germanium diode in the bias circuit compensated for changes in temperature and battery voltage and helped keep the audio output stage stabilized at its proper operating condition.

Power Supply:
The power for the GC-1A comes from a 12 volt battery pack or an optional XP-2 AC supply that provides 12 volts. In either case the voltage is positive ground, eliminating the use from the cigarette lighter of a negative ground automobile or the 12 volt source running most of today's ham gear - at least without some form of power converter.

The Audio output stage runs at 12 volts while dividers drop the voltage to 10.6 volts and 9.3 volts to power the first audio stage and IF stages respectively. A zener diode is used to provide a stable regulated voltage to the local oscillator and BFO stages as well as the RF and mixer stages. Typical current drain is 35 mA. The maximum current drain is around 120 mA with full volume and the dial lights on. When using the AC supply the dial lamps are on con-

tinuously at a slightly dimmed state. Operating the dial light switch will bring them to full brightness. The GC-1A uses two #49 miniature lamps (2.0 V 60 ma rated).

Summary:
Heathkit's entry into the solid state communications receiver market was a big success. The GC-1A is still regarded as a great portable receiver. Obtaining replacement transistors should not be difficult; currently they all have listed NTE replacements. Whether the replacements will work well is not known. However since the transistors are socketed replacement and experimentation is easy.

Acknowledgements:
I'd like to thank three people for helping me put together this article. They are:

Allen Wooten - WD4EUI for allowing me to use some pictures from his GC-1A Mohican webpage:

http://wd4eui.com/Heathkit_GC_1A_Mohican.html

Be sure to visit his site to see more pictures of this nicely restored Heathkit GC-1A Mohican.

Club member John Roberts - W6JOR for passing along the GC-1A and XP-2 manuals (and several others) making this article possible.

Mark Bender - KD6NOT for dusting off his GC-1A Mohican so he could answer some questions I had on the details of the receiver.

73, from AF6C

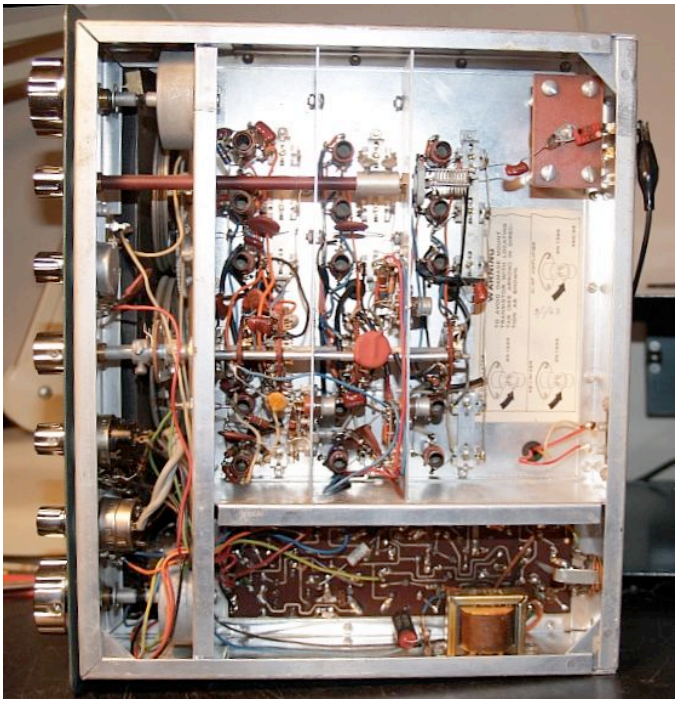
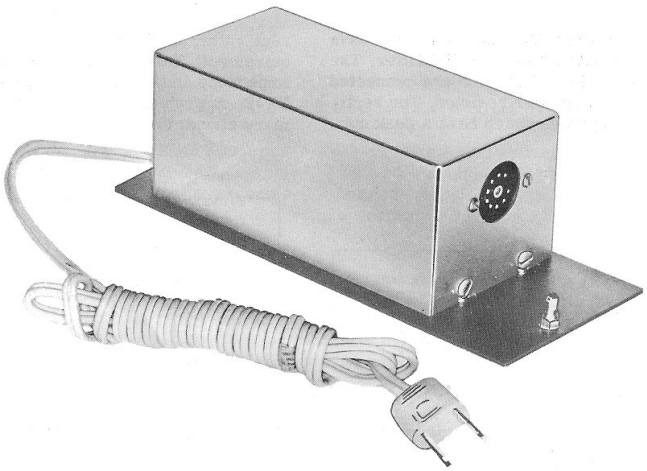


Fig 2: GC-1A Mohican under chassis view. Photo courtesy of WD4EUI



Power Input: ..... 117 V 50/60 cps 3.5 W
Output: ..12.V.nom..200 ma DC
Duty Cycle: .Continuous
Ripple: ..0.6%.at.150.ma
Net Weight: ..1.1/4.lbs.
Dimensions: ..... 7-1/2" L x 2-3/4" W x 2-1/4" H

Fig 3: XP-2 Optional AC Power Supply and specifications for the GC-1A Mohican.

2011 Holiday Party

Friday evening, December 9th

7:00 pm.

Jagerhaus Restaurant, Anaheim, CA

Mark your calendars, more information will be published in the November newsletter and announced at the October meeting.

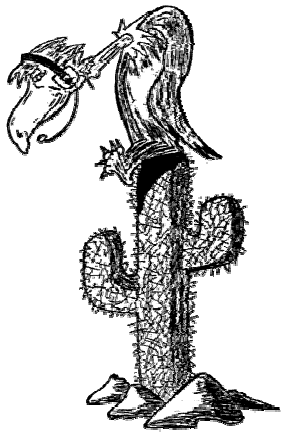
2012 ARRL Southwestern Division Convention

8th Annual

Yuma Hamfest

& Emergency Preparedness Show

Yuma, Arizona



Feb. 17 & 18, 2012

Yuma County Fairgrounds
2520 East 32nd Street, Yuma, Arizona

www.yumahamfest.org

Check the Website for Additional Information
and a Current Schedule of Activities and Seminars

Gates Open for Camping Thursday, 2 pm Vendor Setup Friday, 7 am - Noon	Event Hours Friday, Noon - 5 pm Saturday, 8 am - 5 pm	Buzzard BBQ & Grand Prize Drawing Saturday Night 6:00 - 8:00 pm

Vendors & Exhibitors
Consignment Sales
License Testing
Hourly Door Prizes
Incredible Grand Prizes
Buzzard BBQ Dinner
Antenna Clinic
Tailgating (Swap Meet)
Full Seminar Schedule
DXCC Card Checking
Hospitality Area
On-site RV Camping
Transmitter Hunt
ARRL Speaker

Hamfest Talk-In Frequency: 146.840 (–) PL 88.5 Hz

Email Contact: ***info@yumahamfest.org***

Presented by the Yuma Amateur Radio Hamfest Organization (YARHO)

We are proud to have the Amateur Radio Council of Arizona (ARCA) as a sponsor of our event.

The Yuma Hamfest is an American Radio Relay League (ARRL) sanctioned event.