



RF



ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLVII NO. 10

P.O. BOX 3454, TUSTIN, CA 92781-3454

October 2006



**THE ORANGE
COUNTY
AMATEUR RADIO**



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OCCARO Delegate:

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DargatzLR@msn.com

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:

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

**Club Nets (Listen for
W6ZE):**

7.086 ± MHz CW **OCWN**
Sun- 9:00 AM – 10 AM
Rick KF6UEB, Net Control

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

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 more.

Club Dues:

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

Dues run from January 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 charge if you'd like to have your badge mailed to you.

The Prez Sez....

by Willie – N8WP



“Be Careful When Operating Radio in the California Desert”

Going once! Going Twice! Sold for 27 dollars.

Who needs eBay when you can come to the OCARC Annual Auction! Bring all your treasures to sell and make room for great new deals.

It seems like October is one of the busiest months in the Southern California amateur radio community. Cheryl and I helped out with the MS-150 Bike Tour this past weekend. We operated a SAG wagon to assist tired bicyclists and broken bicycles. The event was sponsored in part by Land Rover. We had the opportunity to tool around in a brand new Land Rover equipped with every widget known to man. I had a great time playing with the GPS and listening to the girl with the British accent tell me where to go. Unfortunately I had to miss out on two other events. The California QSO Party was the same weekend. So was the Orange County emergency drill. There is never a dull moment.

It is almost time for club elections. Now is your chance to volunteer to help lead OCARC. I encourage all members to help participate with the OCARC board. If you are not ready to run for an elected position, you can still come to the board meetings at the Jaegerhaus to enjoy breakfast. New blood is always needed in Amateur radio. Bring up new ideas to keep our hobby fresh.

The Christmas party will be upon us before you know it. Once again we will have the Christmas party at Jaegerhaus. OCARC will feature another GREAT raffle. Rumor has it that a lucky person will go home with a new ICOM IC-7000. There will be several other great prizes to help fill in those empty spots in your shack, or dashboard.

Just one more note. There will soon be a digital D-Star repeater available in the Orange County area. Stay tuned for more information on D-Star.



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TechTalk #52 - Buddy, Got the Time?

“or: The Adventure of the NIST Time Standard WWVB”

by Bob Eckweiler – AF6C

Time is something we all take for granted unless we're late for an important event. However, for a ham in China and a ham in the US to schedule a QSO and show up on the same frequency and at the same time requires that time be universal around the world. This universality is so important countries of the world put politics aside and agreed on a standard, the second. Since frequency is the reciprocal of time, defining the second also defines the Hertz.

Originally, the second was defined relative to the mean solar day. There are different types of day on earth, two being the solar day and the sidereal day. The solar day is the period between two successive points when the sun reaches its highest point in the sky. Since the earth's orbit is elliptical, and the earth's axis is tilted with respect to the sun's orbit, a solar day varies throughout the year. The mean solar day is the average of the solar days over the year. It is divided into the hours, minutes and seconds we are familiar with. A sidereal day is the time it takes the earth to make one complete rotation on its axis. Since the earth actually rotates on its axis a bit over 366 times in one year, a sidereal day is shorter than a solar day by about 4 minutes. Sidereal time is used extensively in astronomy as a reference for finding astronomical objects.

The Modern Second Defined

As science expanded, a more accurate way to measure a second was needed. Again the world's scientists agreed on a new standard. One second under the International System of Units (SI) is equal to 9,192,631,770 cycles of a specific radiation of the cesium atom at a specific temperature.

Highly accurate Cesium clocks are expensive. NIST, the National Institute of Standard and Technology is responsible for keeping the time standard in the US. NIST was formerly known as The National Bureau of Standards (NBS). The NIST time and frequency laboratory is located in Boulder, Colorado. It averages multiple high precision Cesium clocks to define the second for the US. NIST also coordinates US time with other nations through the SI based in France. Time based on the coordinated cesium time standard

is called Universal Coordinated Time or UTC (The strange abbreviations are because the French put the adjective after the noun.) UTC is the standard for civil time that we commonly use for day-to-day time. UTC is based on an atomic time scale, but it also has to have a celestial reference; otherwise, midnight may occur in the middle of the day!

Universal Time comes in at least four additional flavors. Two are UT0 and UT1. UT0 is determined by modern observation of the daily motion of astronomical bodies. It is uncorrected for the earth's polar motion that results in an error related to the observer's position on the earth. UT1 is UT0 corrected for polar motion and is the same everywhere on the earth. Since the earth's rotation speed varies, it is accurate to within ± 3 milliseconds per day. Two other universal times are UT1R and UT2. They are used for special purposes and not of interest to the layperson.

Since UT1 has a celestial reference, it is used to reference UTC to the motion of the solar system. Over a period of time an error increases between UTC and UT1. To keep UTC coordinated with UT1 a leap second is added to UTC on occasion. This is done when needed to keep UTC within ± 0.9 seconds of UT1. Determining when to add a leap second is the job of the International Earth Rotation and Reference Systems Service (IERS⁽¹⁾). Leap seconds may also be subtracted, though this has never been needed. Currently about four leap seconds are added for every five years - usually on the last day of June or December. If one needs to know UT1 to an accuracy higher than about 1 second, NIST provides UT1 correction data along with its UTC time information.

WWV and WWVH

As the "keeper of time" for the United States, NIST provides services to calibration laboratories, broadcast stations, businesses and others who need varying degrees of accuracy of time and frequency. One such service is WWV/WWVH that transmits voice time signals on accurate frequencies in the HF band at 2.5, 5.0, 10, 15, and 20 MHz. Most hams are familiar with WWV and WWVH and use them to set their clocks and also as a frequency reference. One problem with the NIST HF standard transmissions is that propagation causes varying signal travel time over a fixed path, and that can result in significant time errors. While not critical for **WWVB – continued on Pg 5**

TechTalk - WWVB – continued from Pg 4

most ham use, this error can be intolerable for certain users. WWV is located in Fort Collins, Colorado. WWVH is located on Kauai, Hawaii.

WWVB

To provide a more accurate time standard, NIST also operates a transmitter on VLF. Station WWVB is located in Ft. Collins, Colorado. WWVB transmits at 50KW ERP on 60 KHz (yes – 60,000 hertz) simultaneously using two separate 36 KW transmitters and two separate but nearly identical antennas. Each antenna consists of a wire top-hat suspended between four 400' towers and a vertically radiating down-lead that drops from the center of the top-hat to a building that contains an automatic helix antenna tuner. Unlike WWV and WWVH, WWVB doesn't transmit voice or tones. Instead it transmits a pulse width coded time signal. VLF signals are more accurate because signal travel time is less variable, especially when in ground-wave range. An observer who knows the distance between his station and the WWVB transmitter can correct for transmission time.

WWVB Modulation

WWVB transmits a steady 60 KHz carrier that is modulated by dropping the level by 10 dB at the beginning of each second. The carrier remains low for 0.2, 0.5 or 0.8 seconds before returning to full power. These times correspond to a zero bit, a one bit or a frame reference (or position marker) bit. One bit is sent per second. See **Figure 1**.

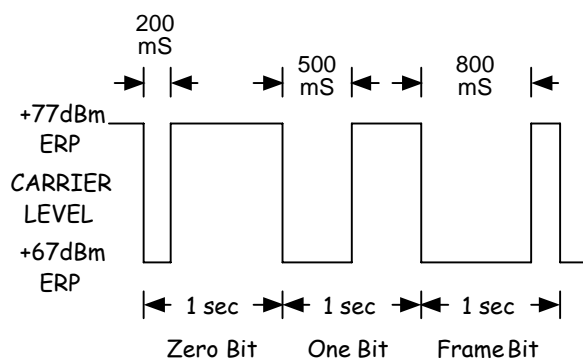


Figure 1 – WWVB Time Code Bit Patterns.

There are seven frame reference or position marker bits sent each minute. The frame reference bits occur at 0 and 59 seconds to mark the beginning of the minute. The position marker bits

occur at 9, 19, 29, 39, and 49 seconds to synchronize the data. The other bits are binary coded decimal values (see sidebar) and give the current minutes, hours, day of year (1 to 366), sign^[2] of UT1 time correction, UT1 time correction, year (last two digits only), leap year indicator, leap second pending indicator^[3], and daylight savings time^[4] indicator. **Table 1** (on Pg 15) gives the details. Reserved bits are not currently in use and are sent as a zero bit. In addition to its unique time code, WWVB identifies by shifting its carrier phase 45° at 10 minutes past the hour and returning it to normal five minutes later. The WWVB time code is represented in **Figure 2** (on Pg 14).

Self-Setting Atomic Clocks

The WWVB signal is used by many consumer 'self-setting' atomic clocks. Their performance varies with location, propagation and nearby interference sources. In 1999 WWVB power was increased, as was the antenna size, to improve performance. This made the use of 'self setting' clocks a lot more reliable. Usually these clocks set themselves only once a day, though they may try more often if their last attempt was unsuccessful. The rest of the time they rely on an internal crystal oscillator that should keep the clock accurate to less than a second over a 72-hour period (but as the wise ones say; "your mileage may vary".)

Listening for WWVB

Few ham receivers receive below 100 or 150 KHz. However, with a simple VLF converter you can receive almost down to DC. Heathkit and Palomar both made VLF converters that convert 10 - 500 KHz up to a ham band such as 3.51 to 4.0 MHz. If you have the capability to receive 60 KHz, give it a try. Put your receiver on CW, tune to 60 KHz and then slowly tune off frequency. If you hear a carrier that seems to change in level once a second you are hearing WWVB. For best results listen at night. On one of the recent two-meter nets I was able to retransmit the signal for a few seconds so others on frequency could hear it. Remember, since the modulation is happening only once per second your receiver's audio and AGC circuits are doing their best to make it hard for you to hear the signal modulation.

WWVB as a Frequency Standard

If you have a good VLF receiver and VLF antenna in the open and clear of interference sources, **WWVB – continued on Pg 14**



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

It's that time of year again. The OCARC annual ham radio auction is Friday, October 20th at 7:00pm.

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

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



Please visit the OCARC website (www.w6ze.org) for a map and auction rules.

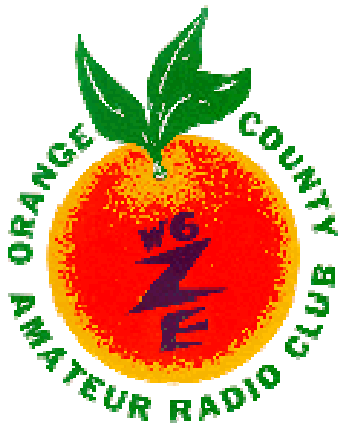
The Orange County
Amateur Radio Club "OCARC"

P.O. Box 3454

Tustin, CA 92781

Web: <http://www.w6ze.org>

Email: ocarc_info@w6ze.org

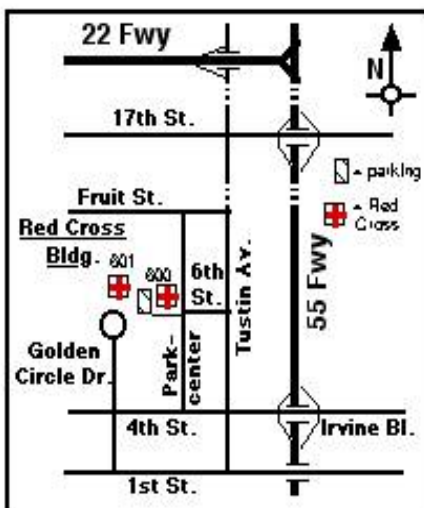


Orange County Amateur Radio Club Annual Ham Radio Auction Friday, October 20, 2006

The OCARC Annual Auction will take place on Friday, October 20, 2006 at 7:00 p.m. at the American Red Cross facility (George M. Chitty Building) located at 600 Park Center Drive, Santa Ana. The room will open at 6:00 p.m. for registration, set up and viewing. All buyers and sellers are welcome.

AUCTION RULES:

1. Only ham radio or electronic equipment/items will be auctioned (no fishing equipment, etc.)
2. Buyers and Sellers must register at the door with the OCARC treasurer. There is **NO registration fee**.
3. 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.
4. Sellers should number each item in their lot. A tag should indicate the minimum bid they expect.
5. Auction bidding will take place as follows (and at the discretion of the auctioneer):
 - \$0.00-to-\$5.00 bidding will take place in \$0.50 increments
 - Over \$5.00-\$50.00 bidding will take place in \$1.00 increments
 - Over \$50.00-\$100.00 bidding will take place in \$5.00 increments
 - Over \$100.00 bidding will be in \$10.00 increments
6. 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 a fee of 10% of the selling price for items sold by OCARC.
7. A special table will be set up for donated items. The proceeds of donated items will go to OCARC.



The American Red Cross Building
600 Park Center Drive
Santa Ana, CA
Second Floor, Room 208*
(Enter from the West side)

Note:

If the door is locked and no one is there to let you in, call W6ZE on the talk in frequency for admission into the building.
TALK IN: 146.55 MHz Simplex

*Room is subject to change

OCARC

Member Spotlight

-- N6VNI --

by Dan Dankert N6PEQ
n6peq@dxer.com



In this month's Member Spotlight, we are featuring a short Q&A session with a newer member of OCARC. He may be new to the club, but he has been active in ham radio for many years. In the spotlight is George Jacob, N6VNI, from La Habra, California.

RF: What year were you first licensed as a ham, and how old were you at the time?

N6VNI: 1989 at the age of 42.

RF: What were your previous call signs (if any), and in what years did you hold these previous call signs?

N6VNI: KC6CPW from March to May of 1989.

RF: How did you originally get interested in amateur radio?

N6VNI: I had enough of playing around with the Chicken Band (CB).

RF: Did you have any Elmers? If so, who were they?

N6VNI: Bob KD6DA & BOB AB6KA.

RF: What is your favorite band and why?

N6VNI: 40 meters. I like working the noon-time net out of Reno, NV, and running phone patch traffic from down south with boats in Mexican waters.

RF: Do you prefer CW, SSB or Digital?

N6VNI: SSB first, CW second and Digital third.

RF: What aspects of amateur radio do you most enjoy and have a passion for, and why?

N6VNI: Being a Volunteer Examiner (VE) and helping young kids get their first tickets.



RF: Tell us about your most memorable or favorite QSO that you have had.

N6VNI: The first time that I worked Vlad "UA0FF" on 10 meters from my truck.

Member Spotlight – continued from Pg 8



RF: Do you have a funny story that you care to share about a chasing a DX station?

N6VNI: None.

RF: Have you ever received an “OO” notice?

N6VNI: I have never received an “OO” notice. *(Am I the only one in the club that has received an “OO” notice??.... N6PEQ)*

RF: What persuaded you to join OCARC?

N6VNI: Getting burned out with a few clubs in the Orange County area. Looking for new faces and new ideas.

RF: What do you think the maximum monthly smoothed sunspot number will be for solar cycle 24?

N6VNI: I have no idea about the sunspot cycle 24. When it comes it comes.

RF: What radio equipment and antennas do you currently use?

N6VNI: I run a Kenwood TS-850S and a Cushcraft A3 triband yagi.

RF: What do you do for a living?

N6VNI: Retired and disabled.



RF: Now for the timeless question that keeps being debated! Assuming that money and the support structure is a non-issue, would you choose a full size yagi or a full size quad?

N6VNI: A full size yagi.

RF: What is your favorite QSL card that you have obtained?

N6VNI: From the Pope. *(That would be a cool “show & tell” item... N6PEQ)*

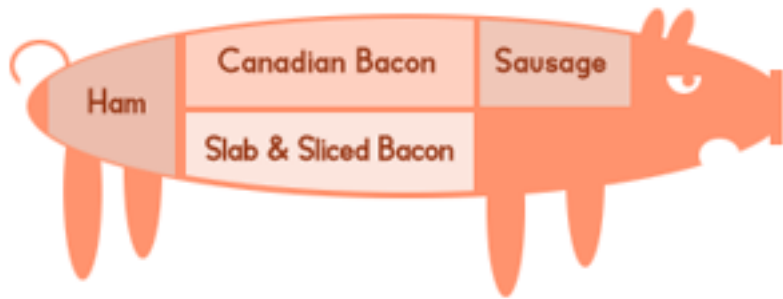
RF: How many DXCC countries have you worked?

N6VNI: About 50 on all bands.

RF: Do you have any family members that are hams? If so, who are they and what are their call signs?

N6VNI: Yes, my wife Chris “KC6TOD”, my son Andy “KC6NKC”, my daughter “KE6BUH” and my daughter-in-law “KD6DUA”.

RF: Thanks George for the interview! We sure do appreciate the time. See you at the next OCARC meeting!



Ham Cuisine

*by Dan Dankert N6PEQ
n6peq@dxer.com*

Eye-Opening Spicy Bloody Mary Ham Steaks

Ingredients:

2 smoked bone-in ham center slices, each about 1 pound and $\frac{1}{2}$ " thick
2 1/2 cups extra-spicy bloody Mary mix
1 tablespoon packed brown sugar
1 teaspoon cider vinegar
1/2 teaspoon Worcestershire sauce
Spicy Bloody Mary Salsa

Cooking Directions:

Stir together bloody Mary mix, brown sugar, vinegar and Worcestershire sauce in medium bowl. Set aside 3/4 cup bloody Mary marinade. Place ham slices in large, re-sealable bag. Pour remaining 1 3/4 cups bloody Mary marinade over ham. Close bag to seal. Turn bag to evenly coat ham with bloody Mary marinade. Place in baking dish. Refrigerate for 6-8 hours, turning bag occasionally. Remove ham from marinade. Discard marinade from ham. Prepare a medium-hot fire in grill. Grill ham, uncovered, over direct heat for 5-8 minutes or until heated through, turning ham slices over halfway during grilling and brushing often with 1/4 cup of the reserved marinade. Transfer ham to cutting board and cut into serving-size pieces. Serve with salsa.

Serves 6 to 8.

Serving Suggestions:

Grilled ham steaks are given the works with this spicy marinade. Serve with the Spicy Bloody Mary Salsa that is found in the condiment section of your local market. Grill vegetables and a baked potato round out this flavor packed meal.

Thanks to the "Other White Meat" website for this yummy recipe!

OCARC General Meeting Minutes

2006-09-15

The OCARC September General Meeting was held at the Red Cross complex in Santa Ana at 7PM on Friday evening, Sept 15th. There were a total of 39 members and visitors present. A quorum was present with all club directors present, except Tom-K6CCD and Kenan – N6CCE.

Program:

A really informative program was presented by Larry McDavid W6FUB on

“The Terminator: PowerPoles and Crimps”



Larry McDavid – W6FUB explaining how to properly crimp Anderson Connectors

Old Business:

- Willie-N8WP announced that the club election for 2007 Officers is scheduled to be held during the November meeting. Rich-KE6WWK is the Nomination Chairman. Please contact Rich if you are willing to serve on the Board next year.
- Willie-N8WP and Ken-W6HHC both reported to the membership that the board is planning to change the OCARC corporate non-profit classification from 501(c)7 to 501(c)3.

Good-of-the-Club:

- Ken-W6HHC presented Willie-N8WP with a \$300 donation check from the Kei Yamachika Trust Fund (sk W6NGO) for the OCARC club. Kei-W6NGO had been a long-time club member.



Ken – W6HHC (R) Presents the OCARC with a Donation from Kei Yamachika Trust Fund

- Dan-N6PEQ announced that Heil Sound had just hired Chip Margelli – K7JA as its new Vice President of Sales and Marketing.
- Dan-N6PEQ also explained that Bob Heil K9EID is famous for his flashy clothes and shoes. So Chip was presented with a flashy pair of bright green shoes to help him on his new job.



Chip-K7JA Displays his New Career Shoes & Talks about Exciting Heil Sound Products

- Dan-N8PEQ reminded everyone that the ARRL Convention in San Diego starts on Friday, September 22. Chip-K7JA will be in the Heil Sound booth.

Submitted by Ken-W6HHC, Secretary

OCARC Board Meeting Notes

2006-07-01

The OCARC Board meeting was held at the JagerHaus Restaurant at 8AM on Saturday, 2006-10-01. There were a total of 9 members and visitors. Only three club directors were present because of conflicts with the County/City RACES Emergency Drill and the MS-150 Bike Tour. There were not enough directors present to provide a quorum for an official OCARC board meeting.

OLD BIZ:

- Dan-N6PEQ reported that AUCTION Flyers were in place at HRO. The club WEB site has rule details on rules, etc.
- Dan-N6PEQ also reported that the Christmas Party Raffle will have similar prizes to last year...including an **ICOM IC-7000** rig!!! The club has been "breaking even" during the monthly raffles.
- Kristin-K6PEQ reported that the following programs have been lined-up for coming meetings:
 - November – "Sky Warn"
 - January – "Heil Sound"
 - February – "ARRL SM Carl WX6D"
 - March – "Comet Antennas"
- There was no Financial Report available for the meeting. Ken-W6HHC, the editor for Oct, said he would publish a Financial Report in RF Newsletter [see Page 16].
- Ken-W6HHC presented a status report on research into the club's nonprofit status. He confirmed that the club is a nonprofit corporation as a 501(c)7 and can accept donations. He also reported that the task of switching is complicated and may cost as much as \$500 to apply for 501©3 status. Ken will contact the SOARA rep of OCCARO for some assistance on questions.
- Nicholas – KI6AUL will be the editor for the November club newsletter.
- Ken reported that the invoice for the club's

2007 insurance renewal (\$322) had come in and he would get it to our club treasurer, Cheryl-KG6KTT.

Good-of-the-Club:

- Dan-N6PEQ complimented Bob-AF6C on the fine work he had done to add a new page to the OCARC WEB site for people who are very new to ham radio (including not licensed, yet).
- Ken-W6HHC reported that Bob-AF6C had also put in a lot of effort to improve the front page of the OCARC WEB site so that first-time visitors can find "upcoming events" much easier and with fewer clicks.
- Ken-W6HHC discussed that Willie-N8WP had sent out a long lists of possible rules and new features for the OCARC WEB site. Ken and Willie are wondering if this should be an item for the Board to tackle or made a sub-committee task to discuss/resolve. The consensus is that it should be a made a committee effort. Dan-N6PEQ volunteered to be part of the committee.

Submitted by Ken-W6HHC, Secretary

The Next Sunspot Cycle Has Started!!

(magnetic fields of spots have begun to reverse)

Submitted by Bob Evans – WB6IXN

[Did you know that the magnetic poles of sunspots are reversed each sunspot cycle? I didn't]

Each successive solar sunspot cycle of about 11 years has the magnetic field of sunspot pairs reversed from the previous cycle. That is, the leading (first in the rotation direction) spot of each pair of sunspots has a north magnetic pole on one cycle, and a south on the next.

The first reversed sunspot appeared July 31, and another followed soon after. THIS SIGNALS THAT WE ARE BEGINNING THE NEXT SOLAR CYCLE. Sunspot pairs with the old order are expected to disappear over the next few months.

- - Thanks to the Sirius Astronomer Newsletter - -



Please support the companies that help support OCARC!

Hamstore.Com
 Your Internet Source for Quality Used Equipment
 a division of
 Quachita Radio

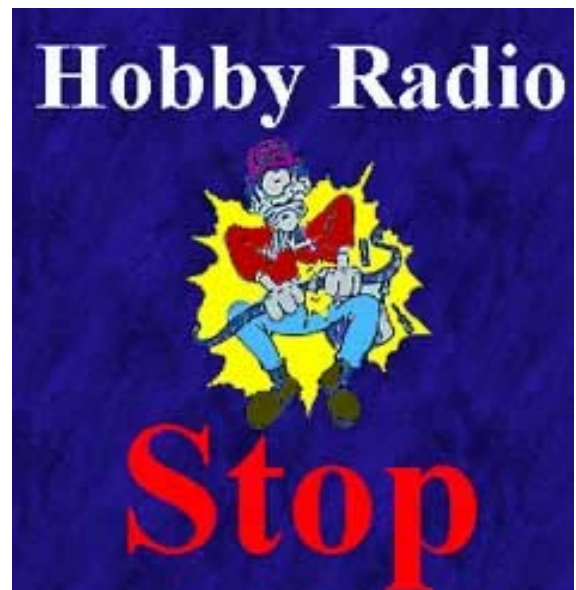


The DX Store
A Shack on the Belt Free Zone
Heil - Bird - I.C.E - Inrad - Comet
Daiwa - Alpha - DCI



 **FREE PL-259**
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Amateur Radio Equipment for DXers!
 sales@dxstore.com
www.dxstore.com



TechTalk - WWVB – continued from Pg 5

chances are you can receive WWVB reliably most of the time. Some people use large loop antennas since they are less sensitive to LF noise than wire antennas. The 60 KHz carrier frequency of WWVB is very accurate. It can be used as a reference to control a phased-locked crystal oscillator at a standard frequency such as 10 MHz. As long as the loop remains locked, the resulting standard frequency will be of laboratory quality. WWVB keeps its UTC time accurate to within 100 nanoseconds at the station site. The carrier frequency is accurate to a few parts in 10^{13} or about 2 ten-billionths of a hertz. Depending on the quality of the signal and equipment in use, a reference oscillator locked to WWVB can be accurate with an uncertainty of less than one part in 10^{12} , when averaged over a couple of days!

If you have an Atomic clock, now you can be amazed at the system behind it. If you haven't

bought one, they're very reasonably priced at Costco.

Notes:

1. The organization's name recently changed from the International Earth Reference Service and they decided to keep the original abbreviation when the name was changed.
2. A plus sign for the UT1 correction value is indicated by bits 36 and 38 being one, and bit 37 being zero.
3. When this bit is a one it indicates that a leap second will be added to UTC at the end of the current month. The bit goes back to zero after the second is added.
4. The daylight savings time bits (bits 57 and 58) are zero during standard time (ST) and one during daylight savings time (DST). On the day the time changes from ST to DST bit 57 goes to one at 0000 hours and bit 58 follows 24 hours later. On the day the time changes from DST to ST bit 57 goes to zero at 0000 hours and bit 58 follows 24 hours later.

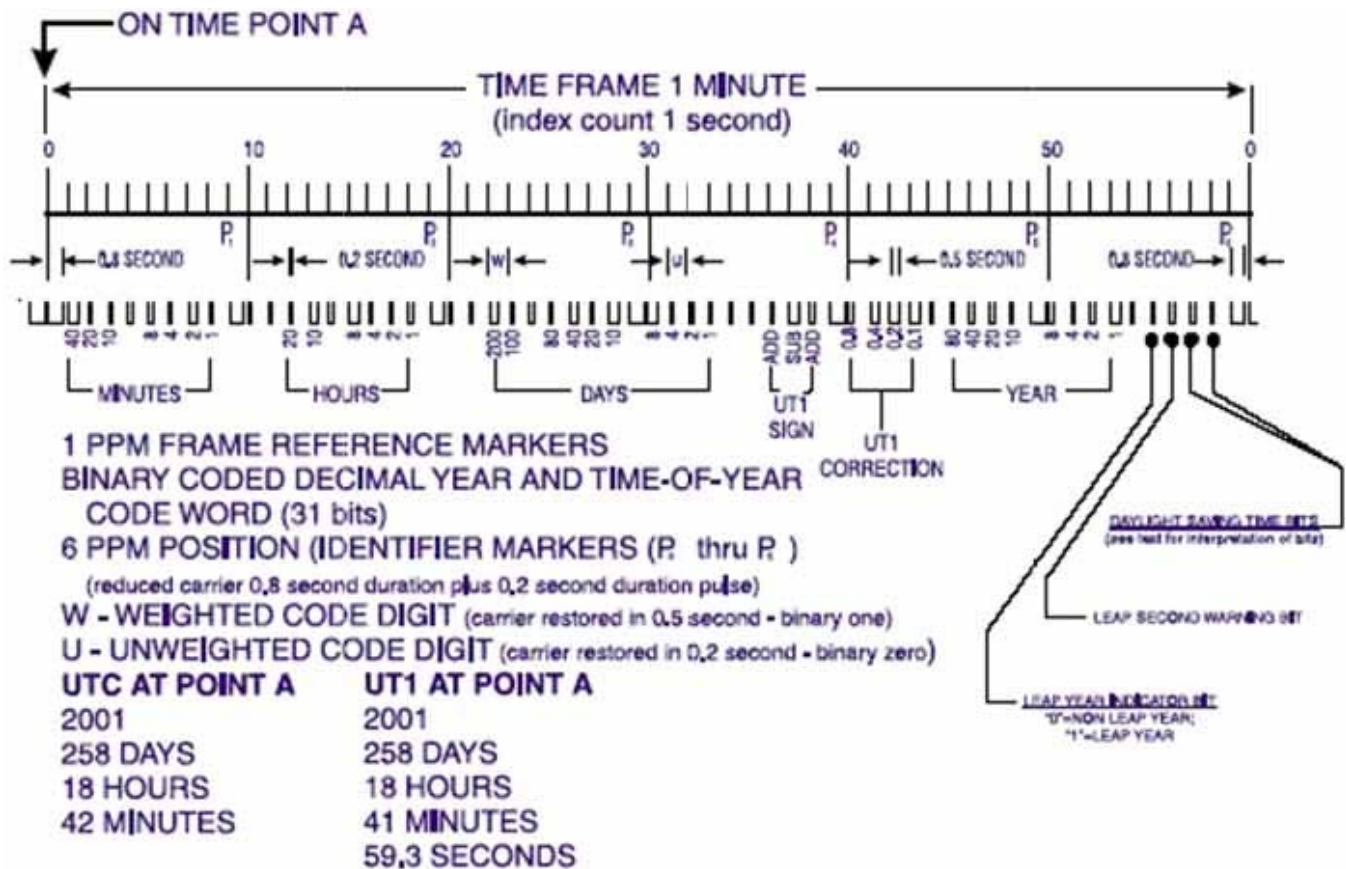


Figure 2 – WWVB Time Code Format

TechTalk - WWVB – continued from Pg 14

<u>Bit #</u>	<u>Bit Description</u>	<u>Bit #</u>	<u>Bit Description</u>	<u>Bit #</u>	<u>Bit Description</u>
0	Frame Ref. Bit, Pr	20	Reserved	40	UT1 Correction, 0.8 s
1	Minutes, 40	21	Reserved	41	UT1 Correction, 0.4 s
2	Minutes, 20	22	Day of Year, 200	42	UT1 Correction, 0.2 s
3	Minutes, 10	23	Day of Year, 100	43	UT1 Correction, 0.1 s
4	Reserved	24	Reserved	44	Reserved
5	Minutes, 8	25	Day of Year, 80	45	Year, 80
6	Minutes, 4	26	Day of Year, 40	66	Year, 40
7	Minutes, 2	27	Day of Year, 20	47	Year, 20
8	Minutes, 1	28	Day of Year, 10	48	Year, 10
9	Position Marker 1, P1	29	Position Marker 3, P3	49	Position Marker 5, P5
10	Reserved	30	Day of Year, 8	50	Year, 8
11	Reserved	31	Day of Year, 4	51	Year, 4
12	Hour, 20	32	Day of Year, 2	52	Year, 2
13	Hour, 10	33	Day of Year, 1	53	Year, 1
14	Reserved	34	Reserved	54	Reserved
15	Hours, 8	35	Reserved	55	Leap Year Indicator
16	Hours, 4	36	UT1 Sign, +	56	Leap Second Warning
17	Hours, 2	37	UT1 Sign, -	57	Daylight Savings Time
18	Hours, 1	38	UT1 Sign, +	58	Daylight Savings Time
19	Position Marker 2, P2	39	Position Marker 5, P5	59	Frame Ref. Bit, P0

Table 1 – WWVB Bit Description for the 60 Bits Sent Each Minute**Binary Coded Decimal:**

Binary Coded Decimal (BCD) is a simple way of expressing a decimal digit using four bits. The four bits represent a weight of 8, 4, 2 and 1 respectively. (Usually the left-most bit is the eight). By adding the bits that are one you get the decimal number. For instance if the bits are 0010 then the number is a two. 0111 equals seven, 0100 equals eight, 1001 equals nine and 0000 equals zero. Combinations, like 1100, where the bits add to greater than nine are illegal.

[Editor's Note: For comparison, Hexadecimal coding also uses four bits, but can express zero through fifteen...and not stop at nine.]

Jack Garritsen Sentenced to 84 Months for Interference

This is to inform you of the Federal Case against ex-ham Jack Gerritsen (aka Ex-KG6IRO) is now done, pending the appeals process by his court appointed attorney.

As you remember, Jack was convicted back in Dec 2005 for his 6 Federal crimes.

"You are hereby ordered to pay a fine of \$225.00 to be paid immediately, and on count 1, you are fined \$15,000.00 to be paid through the Probation dept."

"I sentence you on, Count 1, (U.S. Title 18, Section 1362, Transmitting on a Government Freq.) for a term of 84 MONTHS (7 years), with 2 years supervised probation upon completion of your sentence. On your additional counts, they will run concurrent with count 1."

"You can not OWN, POSSESS or USE any radio broadcasting equipment."

Mr. Gerritsen's will be on 2 years supervised probation when he gets out of Federal prison, and it is the courts recommendation he remain in custody in the Southern California area.

Excerpted from an ARRL Bulletin

OCARC - 9/30/2006 - Financials

Current Month Income & Expense

Financial Report for 2006 YTD

Receipts:

ARRL Membership Income	
Auction In	
Badge Income	
Badge Mailing	
Christmas Dinner Tickets	138.00
Donations - Misc	
Dues Family	
Dues Future	
Dues, Membership	
Field Day Shirts	
Interest	0.45
Kei Yamachika Trust	300.00
Raffle Reg Income	190.00

Total Receipts **\$628.45**

Disbursements:

ARRL Membership Expense	24.00
Auction Out	
Badges Expense	
Bank Service Charges	7.00
Brochure Printing Expense	
Christmas Dinner Deposit	
Donations O.C. Fair	
Donations Newslines	
Equipment Expense	
Field Day Food	
Field Day Other	
Field Day Shirts	
Insurance	
Fees	
OCARC Brochures	
PO Box Rental	
Program Speaker Expense	
Raffle Expense	163.26
Christmas Raffle, Womens	
Refreshments	
RF Printing Expense	
Supplies	
Web Page Exp	

Total Disbursements **\$194.26**

Net **\$434.19**

Receipts:

ARRL Membership Income	39.00
Auction In	
Badge Income	36.00
Badge Mailing	3.00
Christmas Dinner Tickets	138.00
Donations - Misc	2.00
Dues Family	60.00
Dues Future	20.00
Dues, Membership	727.00
Field Day Shirts	342.76
Interest	4.07
Kei Yamachika Trust	300.00
Raffle Reg Income	1,065.00

Total Receipts **\$2,736.83**

Disbursements:

ARRL Membership Expense	24.00
Auction Out	
Badges Expense	91.37
Bank Service Charges	14.00
Brochure Printing Expense	58.90
Christmas Dinner Deposit	200.00
Donations O.C. Fair	50.00
Donations Newslines	50.00
Equipment Expense	731.99
Field Day Food	368.26
Field Day Other	505.40
Field Day Shirts	456.86
Insurance	
Fees	20.00
OCARC Brochures	
PO Box Rental	40.00
Program Speaker Expense	
Raffle Expense	1,054.83
Christmas Raffle, Womens	
Refreshments	25.54
RF Printing Expense	
Supplies	2.79
Web Page Exp	89.91

Total Disbursements **\$3,783.85**

Net **-\$1,047.02**

Cash - Ending Balance - September 30, 2006

Checking Account	1,744.41
Savings Account	776.82

Cash Ending Balance **\$2,521.23**