P.O. Box 6421 Auburn, CA 95604 **October 2015** http://w6ek.org info@w6ek.org

At The Key of SFARC:

PRESIDENT
Tyghe Richardson, KD6MLH
tyghe@tjrauctions.com

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k6uda@att.net

SECRETARY
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DIRECTORS
Birton Gilbert, N6UG
Robert Bell, W6RBL
Jim Jupin, WA8MPA

FIELD DAY CHAIRMAN
Mark Graybill, W8BIT

REPORTERS
Satellites: Greg, KO6TH
History: Gary, KQ6RT
Misc Radio: Fred, K6DGW
Sunshine: Richard, WA6RWS

WEBMASTER:
Birton Gilbert, N6UG

REPEATERS
145.430 (-0.6 MHz/PL 162.2)
440.575 (+5.0 MHz/PL 162.2)
223.860 (-1.6 MHz/PL 110.9)

CLUB NET
Thursdays, 7:30PM, W6EK/R
145.430

CLUB MEETINGS
Second Friday of the month,
7:30PM at the Auburn City Hall,
1215 Lincoln Way, Auburn CA

CLUB BREAKFAST
Last Sat of the month at Mel's Diner
1730 Grass Valley Hwy, Auburn 7:30AM

NET CONTROL OPS
Dave Jenkins, WB6RBE
Norm Medland, W6AFR
Bob Brodovsky, K6UDA
Al Martin, NI2U

NEWSLETTER EDITOR
Barbara Anderson, W6EVA
anderson51@wavecable.com

ARRL PIO:
Carl A Schultz, WF6J

VOLUNTEER EXAMINER
Al Martin, NI2U

Inside this issue:

Calendar of Events

October 3rd:
SFARC Picnic

October 3rd & 4th:
California QSO Party

October 9th:
Club Meeting

October 10th:
Cystic Fibrosis Bike Ride

October 16th – 18th:
Pacificon

October 24th:
Enduro

October 31st:
Club Breakfast

October 31st:
Placer ARES Field Meeting

We encourage members to receive Sierra Signals via email to save the Club the cost of reproduction and mailing

From the Mic

By Tyghe Richardson – KD6MLH, President

This month is the Auction commonly known as the white elephant sale, so we need your old and unwanted gear. If you are like most of the members, we have been gathering items for months! Don't miss the opportunity to buy some cool gear!! See you on the block!

We also have the picnic this month, October 3rd at the Applegate Park from 11:00 am to 3:00 pm. We will have fun and a chance to relax before the fall season gets going. The club will be providing the main dish, so please bring a side. You can sign up (what you'll be bringing) on the W6EK website or send me an email.

See you in October!!

The 2015 Preparedness Fair on Saturday September 19, 2015, was a success with a steady stream of visitors to the SFARC booth, outside this year and near the front corner of the lawn.

The mast mounted VHF antenna and doublet antenna running between two trees caught people's attention, as did our audio from 2 meter, public safety, and HF. The solar index was over 100, so 40 meters and 20 meters were livelier than usual, and the New Jersey QSO Party was active (we made contact with New York on the first try).

We had over twenty visitors, and a dozen or more were asking how to get their ham license. The predominate interest was in preparedness, staying in touch with family and friends if and when power and cell service are lost. A few already had Baofeng handhelds and wanted to do more with them. Many asked specifically when and where they could take the exam.

Big thanks to Mike, KK6GLP for the mast and antennas, and especially his handling of so many questions about getting started in Amateur Radio. Thanks also to Birton, N6UG for his many additions to the discussion and for bringing his impressive mobile which was parked in front of our booth.

Sierra Foothills ARC and Amateur Radio were well represented today.

Jef, N5JEF

MISCELLANEOUS RADIO

QRQ

INT QRQ: Shall I send faster?
QRQ: Send faster [or QRQ 80: Send at 80 WPM]

Generally speaking, when it comes to getting your QSO buddy to change his sending speed, QRS ["Slow Down"] gets most of the action and many new-ish hams may not even know that there's an alternative Q-signal to speed him up. CW QSO's on the air generally range from a few WPM to around 20 - 25 WPM or so. Contest QSO's are generally faster, running anywhere from 25 WPM to 40+ WPM [slow for D4C]. However, there are a few CW operators who have a lot of fun conversing much faster. How fast? Most consider 60 WPM a slow jog, and 80 WPM a moderate trot.

Let's start with some Morse code mechanics and the "speedometer" plus some history.[1] First off, the "Morse code we use today is an outgrowth of what became American Morse in the mid-19th century. It was used on telegraph circuits [i.e. wires], they used "sounders" which emitted clicks and clacks, and the code included intra-character spaces. "C" was "click clack space click clack biggerspace click clack. Click when the armature was pulled down by the magnet, clack when it was released and struck the much bigger frame. Translated to radio systems, "CQ" in American Morse is "dit dit pause dit bigger pause dit dit dah dit" which to most of us sounds like "I E F." In American Morse, what we call "F" was "Q". As a young teen, my friends and I would get on 80 CW in American Morse figuring no one could copy us. You will occasionally hear American Morse on 80 CW, either from teens, or adults behaving like teens. ☺

Out of American Morse, mainly on the railroads, grew the continental code in Europe. It was modified several times, and finally became official as "International Telegraphic Alphabet #1" [ITA-1] which we call International Morse Code, even though it isn't the code that Sam Morse invented.[2] For the record, the five-level teletype code which we loosely, and incorrectly, call Baudot is ITA-2.

The specifications for ITA-1 are quite simple. The basic time unit is the dot-time or DT. It is the duration of a single "dit" and, at 5 words per minute is 240 ms long. A dash is 3 DT. The space between the code elements [dits and dahs] is 1 DT. Complete characters are followed by a 3 DT space, and words are followed by a 7 DT space. American Morse is a bit more efficient [perhaps 15%] than ITA-1 for English text just because of the way it is constructed. It has a more "ditty" sound and the more common English letters are shorter.

The term "words per-minute" was defined by the number of times a standard word could be sent in 60 seconds. Originally, and unofficially, that word was MORSE which in ITA-1 comprises 50 DT. Somewhere along the way as the telegraph developed, the standard word became PARIS [also 50 DT] and the legend [possibly urban ☺] harks to the establishment of the Prime Meridian.

> *After much discussion, it was finally decided at an international conference in Washington DC that the Prime Meridian [i.e. 0º longitude] would be the meridian passing through the Royal Observatory in Greenwich, England,[3] and that Universal Time was the time at that longitude, which slowly became Greenwich Mean Time [GMT]. With one exception, all the world's countries participating at the conference agreed to this. The one exception was France … of course … who wanted the meridian of the Palace of Versailles in Paris to be 0º longitude. In fact, for several years, they did just that so you never sent INT QTR[4] to a French ship because you'd get the local time in Paris, not Universal Time. While the rest of the world could just ignore them, this was quite burdensome for the French and they eventually capitulated to Greenwich. Legend has it that the standard word was changed to PARIS to get them to do that.*

While it is historical fact that France was the only hold out on 0º longitude [they abstained from the otherwise unanimous vote], which shouldn't surprise anyone, the rest of the legend has the unmistakable characteristics of a fabrication, but PARIS it is. So, send PARIS 10 times in 60 seconds and you're sending at 10 WPM. Send it 80 times for 80 WPM, and it sounds pretty continuous.

As soon as a mechanism for measuring telegraphic speed came along, it was inevitable that competitions would be staged,

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1 You're surprised?

2 In truth, Sam didn't really invent American Morse, his assistant Alfred Vail did. Sam was very skeptical.

3 There is in fact a stainless steel line in the brick walkway at the observatory marking 0º longitude. It has recently been discovered that it is about 100 meters off of the real 0º however. Score one for GPS.

4 "What is the correct time?"

since the “competition gene” is usually on the Y-chromosome and most telegraphers were male then. They were common at fairs and other gatherings, there weren't a lot of standards about how they should be conducted, and many of the results are thus somewhat to very suspect. However, the accepted record holder for ITA-1 was Ted McElroy at 77 WPM, set in 1939, which stood for close to 60 years. He also held the speed record for American Morse, and when I was first licensed in 1953, anyone associated with Morse code knew about Ted McElroy. He had been manufacturing and marketing telegraph keys and semi-automatic “bugs,” and billing himself as the “World Champion Telegrapher” no doubt enhanced their sales. He also entered typing contests and is reported to have won many at 150 WPM.

To set the record, he copied 77 WPM of newspaper text on a typewriter. That he did this is undoubtedly true. Occasionally, people have raised minor issues regarding using plain text, that he might have read the newspaper prior to the test, and others, but basically, it appears that he really did copy at 77 WPM. If you send enough plain text English for long enough and then count the letters sent and divide by five, you're going to come very close to the speed you'd record using the standard word.

As news of his record spread, a story grew up with it that when the code started, he lit a cigarette, poured a cup of coffee, and drank about half before sitting down at the typewriter and starting to pound out the copy. When the code run finished, he is alleged to have continued typing for several minutes. You can believe this or not, but it too carries a high probability of being apocryphal.

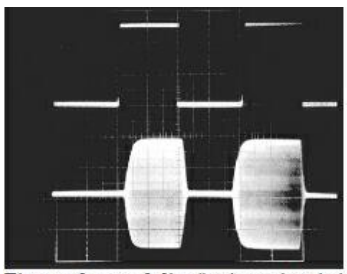
Way back in 1951 or 52, HSCW [High Speed CW] got started and folks were claiming speeds well in excess of Ted McElroy's record. I was very skeptical at first, and wondered if they had changed how code speed was computed, or were reporting in some different manner. After all, Ted was the unquestioned champion when I was a kid and new ham about that time, and I was pretty sure his record continued to stand. When I heard that a HSCW competition had been been won at 123 WPM, I became *really* skeptical to the point of disbelief.

My first move to track this down was to find out what is the shortest duration tone that still sounds like a tone and not just a click. The answer turned out to be “pretty short,” in the range of 1-2 ms if the frequency is adjusted to optimize the test. My second question was, “What is the minimum dot-time that allows one to distinguish between a 1 DT tone and a 3 DT tone [i. e. distinguish a dot from a dash].” I haven't found the answer to that yet.

However, corresponding with several of the QRQ crowd, it became obvious that none of them make record copy of what is being sent.[5] It is all “head-copy”, and it usually isn't prepared text as in Ted's case, it's a conversation. I can head-copy W1AW at 35 WPM [fastest they run code practice and qualifying runs] just fine, I tend to hear the shorter words and syllables instead of letters. It appears that they're hearing short strings of words, and because it's a conversation, upcoming words and word-groups are a lot more predictable.

Now, don't get me wrong, they really <u>are</u> carrying on a conversation at 80 WPM or faster, there's no fraud here, but trying to compare that with Ted's record copy on a typewriter is an apples-oranges thing. Instead of newspaper text, Ted could have been copying messages to be delivered, or even cipher groups which must be exact to be decrypted correctly which you can't do if you're the only one in the room that knows what's being sent and you don't write it down. Most of those I corresponded with emphasized that they were into HSCW for fun and nothing else.

So … is there an upper limit on HSCW? Well, I'm sure that at some speed, a human can't tell the difference between a dot and a dash, and that would be like the velocity of light in physics … you can't go faster if you can't distinguish dots and dashes. I'm also sure that that limit depends on the human being. I've heard reports that a European ham successfully copied a call sign at 200 WPM, but I don't know how many he got from RufZ before he finally got one right.



First and second dits (horizontal scale is 10 ms/division).

Coupling the reception of CW with record copy [a la Ted McElroy] complicates the “how fast?” equation quite a bit since typing speed becomes another limit. Furthermore, head-copy is a “hear – understand” operation. Record copy is “hear – process – translate to fingers – type” operation.

If you're copying on the radio, there are some physical limits too. To suppress key clicks, we shape the keying waveform to “round off the corners” of the square wave from the key. For most contemporary transmitters, that means a rise and fall time in the general vicinity of 4 ms or so. In the illustration, the top trace is the key closure, the bottom is the RF from the transmitter, and the dot speed is 60 WPM. Many [such as Elecraft] shape the waveform to what's called a

5 I also discovered that this group is fairly sensitive to questions and almost automatically assumed that I was contacting them to expose a fraud in their claims. It took several exchanges to reassure them that I was genuinely interested in what was going on and that I had no other agenda

raised-cosine function to further reduce spurious emissions. It's pretty easy to see that any keying pulse [i.e. dot-time] must be longer than 5-6 ms, or the transmitter won't reach full power. A 5 ms dot-time corresponds to about 185 WPM.

There's quite a bit on the Internet regarding HSCW with a lot of examples. There is some software that you can use for practice too …

RufZ: Often used in call sign copy competitions, sends real call signs which you type back into the program and it scores them. It has several modes, you can set the initial speed, and when you copy correctly, the speed climbs slowly. When you start making errors, the speed comes down a bit. RufZ has an on-line database [I've never used it] where you can submit your results to compare with others.

MorseGen: MorseGen was written by Julian, G4ILO, who passed away recently. I believe his web site is still alive however and maintained by others which is good, it was a treasure chest of information and software. MorseGen will, among other things, send Morse from a text file. A few years ago, I made an annual pilgrimage to Atascadero CA to spend a few days with my Cal Poly roomie at his place there. It's close to a 5 hour trip down I-5 and west on CA 41/46 to Paso Robles, FM stations slip away south of Stockton, most of the AM stations are low power and not in English, and I had exhausted my library of music.

I began saving things I wanted to read before my trip as text files, and used MorseGen to convert them to CW at about 25 WPM, my "sweet speed" for idle copy. The program will create .wav files, which I then burned onto CD's and "read" on the trip. It was a nice diversion from all the hokey signs along the road blaming the lack of water on Congress.

MorseRunner: MorseRunner is sort of a clone of MorseGen in that it can send random groups, text, and create .wav files. Like RufZ, it also has the ability to score your copy, and is used in many of the HSCW competitions.

If you use the "type what you copy" features of these programs you can set the speed to 77 WPM, have it send plain text, and stack yourself up against Ted. One of my crewmates at the coastal marine station had a McElroy Deluxe bug with a base that looked like a polished slab of marble. He transported it in a polished wooden box with satin padding, and just before I left for college, he let me use it on my last watch. I can still remember how smooth that bug was. I can also remember the open-frame Underwood mill at my position and I really doubt it could be operated at 150 WPM, even if I was capable of trying to do that.

73,

Fred K6DGW
Now a citizen of the Silver State [DL came last week, NV tags on the truck ☺]

BOARD OF DIRECTORS MEETING MINUTES
September 11, 2015

The SFARC Board meeting for September commenced at 1800 hours at the Sizzler restaurant in Auburn.

Roll Call: All officers and Directors were present. Also present were guests Al-NI2U, Orion-AI6JB, Jef-N5JEF and Andrew-N6REW.

REPORTS and DISCUSSIONS

President's Report: Tyghe-KD6MLH began discussion on qualifications for life membership. Birton-N6UG commented that other clubs used years of membership in addition to other qualifiers. Bob-K6UDA suggested it should be reserved for service above and beyond during a number of years and recognized by club members. Tyghe said it should be weighted heavily towards years of service. Richard-WA6RWS suggested it should also recognize club members who have served in various club positions. Tyghe concluded the topic stating the qualifications would be decided by the board. Burton made the motion to keep nominations within the board for extraordinary service and years of membership. Bob seconded and the motion was unanimously passed and adopted.

Vice President's Report: Bob-K6UDA had no points for discussion.

Secretary's Report: Bruce-K6BAA had no points for discussion.

Treasurer's Report: Richard-WA6RWS reported net cash on hand at the beginning of August of $8839.58; deposits of $189.96, expenditures of $446.22 with an ending balance of $8583.32. Club membership stands at 126.

Orion-AI6JB reviewed his work on the Ham Fest and advised the event will be scheduled in March 12th 2016. Bob-K6UDA has reserved the same site in Loomis

Meeting adjourned at 1828. Submitted by Bruce-K6BAA, Club Secretary

GENERAL MEETING MINUTES
September 11, 2015

The SFARC General meeting for September commenced at 1930 hours at the Auburn City Hall Rose Room, President Tyghe-KD6MLH presiding. All Officers and Directors were present with the exception of Director Robert-W6RBL. Tyghe led approximately 39 members and guests in a Pledge of Allegiance to the flag. An introduction of Officers, members and guests followed.

REPORTS:

Past minutes: Minutes were approved as posted in the Newsletter on motion.

President's Report: Tyghe briefly discussed the agenda and reviewed this evening's board meeting.

Vice President's Report: Bob-K6UDA asked for volunteers for future Ten Tech presentation.

Secretary's Report: Bruce-K6BAA requested input for the club newsletter; advised a welcome letter was available for new members and guests, and a reminder to the membership to sign the attendance sheet.

Treasurer's Report: Richard-WA6RWS reported net cash on hand at the beginning of July of $8839.58; $189.96

in deposits, expenditures of $446.22 and a balance of $8583.32. Richard announced that Fred-K6DGW, a longtime member who has contributed greatly to the club, has moved to Sparks Nevada. His popular newsletter articles will cease after the first of the year. Fred will be missed!

VE's Report: Al-NI2U, VE reported 7 candidates, resulting in 4 new techs, 1 general and 2 new extras.

Repeater Report: Richard-WA6RWS reviewed the repeaters status and future upgrades. All three repeaters are currently linked.

Refreshments/Drawing: Jason-KK6RXT reviewed items planned for the drawing. Scott-K6SVW reported on refreshments for the break.

Activities: George-KG6LSB asked for volunteers for the Cystic Fibrosis Bike Ride on October 10th and the Enduro October 24th.

Yahoo: Dennis-WU6X advised the membership on the Yahoo group status. Dennis also reminded members of the upcoming club elections in November and encouraged members to run for office with the president, vice-president and two director positions open for election.

Ham Fest: Orion-AI6JB advised the Ham Fest will be on March 12, 2016 and he needs volunteers.

Club Picnic: Tyghe and Jason reminded membership of the annual Club Picnic on October 3rd 11am to 3pm at Applegate park. There will be a QLF and trivia contest for those attending.

White Elephant Sale: October 9th, the next club meeting. Clean out your shack and bid for those treasures, it will be a fun and entertaining evening for all those in attendance.

OLD BUSINESS:

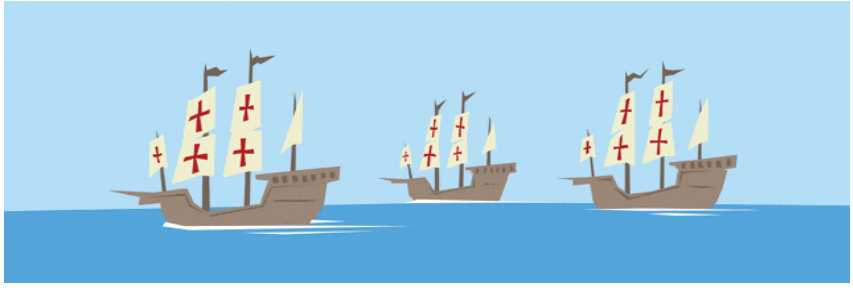
None

NEW BUSINESS: Richard advised he had a few Field Day t-shirts available for sale. Bob-N6EMS announced to members of a special event station: **W7P** he will be operating at Soldiers Meadow, Nevada September 25th. Tyghe advised members of a magnetic name tag available for sale. Al-NI2U brought in a Heathkit transceiver for members to view. Burton-N6UG briefed members about learning CW and recommended a web site: cwops.com. Richard offered members circuit boards used in the construction of a J Pole antenna.

General Announcements: The Club Net meets every Thursday at 7:30pm; Board and General Meetings occur on the 2nd Friday, Board meeting is held at **Sizzler Restaurant** in Auburn, and General meetings at 7:30pm at **Auburn City Hall**. The Club breakfast is held on the last Saturday at **Mel's Diner** in Auburn; an Elmer Net is held the first and third Wednesday night at 7:30pm on the 2m repeater. See **www.w6ek.org** for more information.

Tech-10 & Presentation: Burton-N6UG gave an excellent presentation on HF propagation that was well received and promoted a great discussion among members.

The meeting adjourned at 2100. Submitted by Bruce-K6BAA, Club Secretary



SIERRA FOOTHILLS AMATEUR RADIO CLUB
P.O. Box 6421, Auburn, CA 95604

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SIERRA FOOTHILLS AMATEUR RADIO CLUB **2015 MEMBERSHIP APPLICATION**
P.O. Box 6421, Auburn, CA 95604

Name: _____ Call: _____ Class: ___ e-mail: _____

Address: _____ City: _____ State: _____ Zip: _____

Associate Name: _____ Call: _____ Class: ____ email: _____

Phone: _____ Cellphone: _____ Application is: (Circle) New Renewal

Dues / Donations:

Membership: yearly*	$22.00or 20x__	Name Badge:	$ 7.00	Yes	(special name)_____
Associate: yearly*	$ 7.00	Repeater Donation:	$_____		
Auto Patch Donation:	$_____	Newsletter Booster:	$_____		
Misc. Donation:	$_____	Christmas Donation:	$_____	ARRL member? (circle)	Yes No
		TOTAL:	**$**_____	**Please add $1 if paying via PayPal**	

*Prorated dues for NEW Members/Associates Only

July	$ 20 /6	October	$ 14/3 + following year	**New---New---New---**
August	$ 18/5	November	$ 12/2+ following year	**Multi-year DISCOUNT Membership**
September	$ 16/4	December	$ 10/1 + following year	****$20 per year for 2 or more years (new or renewal)**

OFFICE USE ONLY: DO NOT WRITE BELOW THIS LINE

Date: _____ Treasurer: _____ Secretary: _____ Roster: _____

Payment: _____ Check Number: _____ Cash: _____ PayPal:_____

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