



Welcome to SFARC, Auburn, CA

Sierra Signals



P.O. Box 6421 Auburn, CA 95604

December 2018

<http://w6ek.org> info@w6ek.org

At The Key of SFARC:

PRESIDENT

Orion Endres, AI6JB
AI6JB@ARRL.NET

VICE PRESIDENT

Michael Perry, KK6GLP
mrpry2@gmail.com

SECRETARY

Bruce Anderson, K6BAA
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TREASURER

Sharron Griffith, KK6RGV
sharron@suddenlinkmail.com

DIRECTORS

Greg Dolkas, KO6TH
Mark Graybill, W8BIT
Brian Gohl, AI6US

FIELD DAY CHAIRMAN

Gary Frerking, KC3PO

REPORTERS

Satellites: Greg, KO6TH
Sunshine: Richard, WA6RWS

GROUPS io

Dennis Gregory, WU6X

PIO

Carl Schultz, WF6J

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
Casey McPartland, W7IB
Bob Brodovsky, K6UDA
Al Martin, NI2U

NEWSLETTER EDITOR

Barbara Anderson, W6EVA
anderson51@wavecable.com

WEBMASTER: Herb Garcia, KM6JBI

VOLUNTEER EXAMINER

Al Martin, NI2U



Calendar of Events

December 15th:
Club Christmas Party

December 25th:
Merry Christmas



December 29th:
Club Breakfast

January 1st, 2019:



Inside this issue

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- *Path 65 The Vindication of Thomas Edison*
- *Board Minutes*
- *General Minutes*



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

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DONATION DEADLINE IS SATURDAY DECEMBER 15, 2018



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Christmas Gift Drive For Camp Fire Kids



As most know, the Camp Fire in Butte County recently ranked as the most destructive wildfire in California history. We have come to the conclusion that organizing a Christmas gift drive for the children would be the best use of our support effort. Helping ease the holiday stress for parents that don't have the time, energy, or money to shop for gifts, while they are dealing with fire insurance, rebuilding and/or relocating, is our goal.

If you, your office, neighborhood or any other group wish to contribute, please contact me for a pick up or drop off time and location. If you wish to send wrapped or unwrapped gifts to our office please send to: United Country Real Estate | California Properties, 190 Sacramento St. Auburn, CA 95603.

If the gifts are wrapped please note the age and gender. As one of my family's traditions, and since we will be having Santa deliver them, please fill the From: _____ section on any tags as From: SANTA. I hope as a large United Country Family, we can all show support and help the children of the Camp Fire forget about the loss for a day, and also show them how compassionate and far reaching America's support for each other can be. We will be scheduling the delivery to Paradise between December 21st-24th. Please have any donations to us before December 15th. Thank you All! Happy Holidays to you & your loved ones!



Call or Text
Tyghe Richardson 530.320.5554



Sierra Foothills Members Christmas Potluck Party

December 15th
6:30 pm

Auburn Veterans Memorial Hall
100 East Street, Auburn

Click on this graphic to RSVP to the potluck

Annual Canned Food Drive to Benefit
Auburn Interfaith Food Closet



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Path 65

The Vindication of Thomas Edison

By Fred Jensen, K6DGW

We spent this last Veterans' Day driving home from our daughter's wedding in Ridgecrest CA, the "Main Gate Town" for China Lake Naval Air Warfare Center. It's about a 350 mile trip on US395 along the eastern front of the Sierra Nevada which is far more stark [and beautiful] than the much more gentle western slope. Leaving Ridgecrest, the only sizable town is Bishop until Minden/Gardnerville in Nevada, and one tends to measure the size of the other settlements by the speed limit through town. Lone Pine has a traffic signal, Olancho is a 35 mph town, Cartigo a "resume speed" wide spot, Walker, a 45 mph metropolis. Incidentally, Walker is home to probably the best Texas BBQ you will find out here on the western frontier. Being Veterans' Day, nearly all of them, regardless of size, had flags out and signs of an earlier parade which was comforting to an old veteran.



The reason for this short article however has nothing to do with US395, its towns and wide spots in the road, or Texas BBQ. The Pacific DC Intertie, aka "Path 65", beginning at Sylmar on I5 north of Los Angeles runs north up the Owens Valley, repeatedly crossing back and forth over the highway on its way to the a large switching station on the Columbia River. It is immediately recognizable from the fact that it has only two conductors instead of the normal three for 3-phase AC lines, and its insulators are longer than the others one usually sees. Many of the towers are guyed pylon designs seen at the left. Each of the two conductors consists of two fairly heavy strands. It carries the inexpensive power from the Columbia River dams south to Los Angeles.

It normally operates as a two-wire DC circuit at +/-500 KV between the conductors [hence the long insulators]. It can be operated with the conductors in parallel against ground [the "ground electrode" at Sylmar is actually submerged in the Pacific Ocean off Will Rogers State Beach]. The line is rated at 3,100 megawatts which works out to 3,100 amperes at 1,000 KV. It isn't quite DC as in current from a battery, the "DC" is generated from 12-phase 60 Hz AC and has a 720 Hz ripple.

There are a number of DC interties around the world and they offer two important characteristics. The first is that the current occupies the entire volume of the conductors. The alternating magnetic field of AC forces the current to travel on the surface of the conductors [the "skin effect"], significantly reducing their power carrying capacity. In fact, the conductors on one of the first 230 KV AC lines from Hoover Dam to Los Angeles, which passed a half-block from where I grew up, were hollow ... no current would flow in the center if it were a solid conductor anyway so they reduced the weight and cost by making them hollow. The second characteristic is that DC transmission does not require that the connected grids be in phase with each other. Keeping two widely separated AC grids in phase is difficult at best and commonly not possible without introducing instabilities that can lead to collapse.

Economics drives the design of DC lines, and they are only economical at very high voltages and fairly long lengths. The absence of the third conductor is an obvious saving, as is the reduction in weight on tower/pylon design. For a given target capacity, the conductors can be smaller [and lighter and cheaper]. Offsetting this is the cost of the very high voltage rectifier/inverter stations at the ends.

AC on the other hand offers a huge advantage: Transformers. When you generate DC, you are stuck with the voltage at which you generated it whereas generating AC allows you to optimize the entire system. Generation at very high voltages is inefficient because of all the insulation required, while transmission at very high voltages minimizes the “I squared R” losses in the transmission lines.

I normally drive the northern half of this route, it is narrow in the Walker River Canyon and quite mountainous, and Andrea will drive the southern part. We usually switch at Erik Schat's bakery in Bishop. On the Veterans' Day drive in the Owens Valley below Bishop, I was just watching the scenery and counting the number of times we crossed Path 65 when it occurred to me that it would be sweet revenge for Thomas Edison to be in the car with us and see the DC transmission line.

It is usually said that Edison's greatest invention was the electric light bulb, but I disagree ... I believe his greatest invention was the Power Company. He was a shrewd businessman and realized right away that he could make a great deal more money selling electricity than he could selling light bulbs. People would buy a light bulb once-- to use it they had to buy his electricity over and over. It hasn't changed. Printers are cheap, and we buy it once. Ink/toner is not cheap and we buy it repeatedly.

Edison was a believer that electricity should be generated, transported, and sold as direct current, citing the “skin effect” as one reason, and he believed it was safer. Others, notably George Westinghouse, believed that AC was the way to go, however a major problem with AC was motors -- no one could figure out how to make one work efficiently. I think Nikola Tesla should get the title of “Father of Alternating Current” because among many other things, he invented the AC induction motor. Unfortunately, his skills and behavior leaned more toward “mad scientist” than “businessman” and eventually he sold all his AC patents to Westinghouse for a tiny fraction of what the royalties would have been worth.

A battle of sorts raged at the end of the 19th century over the AC vs DC question, and for its time was quite acrimonious.. At one point, when the electric chair was being proposed as a method of execution and as a slap at George, Edison proposed that it operate on AC and we would then refer to the recent executive as “having been Westinghoused.” One wonders how it would have been if Twitter had already been invented. In the end, however, and once the motor problem had been solved, alternating current prevailed and direct current for power generation and distribution slipped into history. The ability to optimize the pieces of the system using transformers was just too valuable. But, just as the LORAN-C navigation system on 100 Khz briefly revived the concept of a spark gap transmitter, very high voltage DC transmission lines dot the planet today and, I hope, vindicate Tom, even if they would have been technically and economically impossible in his day.

Cheers to the New Year! 2019



BOARD OF DIRECTORS MEETING MINUTES

November 9, 2018

The SFARC Board meeting for November commenced at 1800 hours at the Mel's Diner restaurant in Auburn.

Roll Call: All officers and Directors were present with the exception of VP Mike-KK6GLP and Director Mark-W8BIT. Guests included Al- NI2U, Bob-K6UDA, Doug-W2VX, Dennis-WU6X and Andrew-K6OP.

REPORTS and DISCUSSIONS

President's Report: Orion-AI6JB submitted the agenda and asked for officer, board and committee chair reports.

Secretary's Report: Bruce-K6BAA had nothing to report.

Treasury Report: Sharron-KK6RGV submitted monthly financial report to the board. Sharron advised a donation of \$ 91 was received from "In faith" which will be applied to the general fund.

Directors:

Brian-AI6US updated the board on the field day location/relocation committee.

Repeater: The board discussed issues regarding the repeater lease.

OTHER DISCUSSIONS

VE: Al-NI2U advised the last secession resulted in two technicians and one extra. Al advised he is resolving a scheduling issue with the Raley's for the testing /meeting room.

WEB: Herb-KM6JBI reviewed his club web page activities.

Digital Repeater: Bob-K6UDA advised he has identified a potential replacement for the club 2 meter repeater using a Yaesu Fusion C4FM system. Additionally, Burton-N6UG has a D-Star repeater available for 440. Orion tasked Bob to come with a plan for implementation.

Christmas Party: December 15th, at the Auburn VFW Hall. Chip-KM6MDF's wife Pam will chair the Christmas party and will be assisted by Barbara-W6EVA.

Groups io/Contests/DX : Dennis reported:

1. Groups.io at 126 members. Non-members can post, but the post must be moderated before the going "live".
2. Contests: November is CW Sweepstakes (Nov 3 to 5th) and Phone Sweepstakes (Nov 17th to 19th) Orion advised there was a good club turnout for the California QSO Party.

Feather Banner: Sharron-KK6RGV to finalize purchase.

Hamfest: March 16th 2019.

Youth Ham Scholarship: AI-NI2U presented to the board the modified scholarship proposal and advised \$ 715 is available. Greg-KO6TH made a motion to approve, seconded by Brian-AI6US, passed unanimously.

New Business

Orion-AI6JB advised the VP Mike-KK6GLP proposed elimination of the general meetings Tec-Ten segment to allow more break time. Orion suggested the presentations should be adjusted by the VP when necessary.

Meeting adjourned at 1855. Submitted by *Bruce Anderson, SFARC Secretary*

GENERAL MEETING MINUTES

November 9, 2018



The SFARC General meeting for November commenced at 1930 hours at the Auburn City Hall Rose Room, President Orion-AI6JB presiding. All Officers and Directors were present with the exception of VP Mike-KK6GLP and Director Mark-W8BIT. Orion led approximately 35 members and guests in a Pledge of Allegiance to the flag. An introduction of Officers, members and guests followed.

REPORTS:

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

Sunshine: Orion-AI6JB advised Richard-WA6RWS has been hospitalized. A get well card was available for members to sign.

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: Sharron-KK6RGV reported on the club's finances.

Club Elections: Carl-N6CKV administered the election for officer and director positions. Carl read the list of unopposed nominations and Sharron-KK6RGV made the motion to accept, Peter-K2LRC seconded, passed unanimously:

President: Orion-AI6JB

Vice-President: Brian-AI6US

Treasurer: Jeff-KM6RGO

Secretary: Michele-WH7QC

Board: Dustin-W6YUE
Gerry-WA6E
Greg-KO6TH

VE's Report: AI-NI2U gave the results of the most recent VE session.

Satellite: Greg-KO6TH reviewed pending space launches to include a geosynchronous amateur satellite.

PIO: Carl-WF6J briefed members on his duties as Public Information Officer.

WEB: Herb-KM6JBI reviewed his club web page activities.

Groups io: Dennis-WU6X gave members information on why it is beneficial to join the group and enjoy the full potential of the site.

Contests: Dennis-WU6X updated members on upcoming contests and encouraged members to participate as a club.

ARES: Carl-N6CKV updated members on ARES activities and advised of a "Red Flag" warning.

Refreshments/Drawing: Chip-KM6MDF handled this evening's refreshments. A refreshment chair is still needed as Chip is volunteering on an interim basis. Doug-KM6QET reviewed the evening's prizes.

JOTA: Orion-AI6JB thanked those members who assisted at the Beale AFB event. Advised there were 58 scouts and 32 cub scouts with 102 QSO's. The kids had a good time!

Club Picnic: Brian-AI6US awarded a G5RV antenna and a Dutch Brothers gift card prize to members who won events at the September club picnic.

Christmas Party: December 15th. Chip-KM6MDF's wife Pam will chair the Christmas party and will be assisted by Barbara-W6EVA.

Hamfest: March 16th 2019.

Librarian: WA8MPA invited members to utilize the library.

Youth Ham Scholarship: AI-NI2U presented to the membership, the final approved student scholarship fund.

Presentation: Bob-WE6C gave an informative and well received presentation on Smith Charts Part II.

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 **Mel's Diner** 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.

Meeting adjourned at 2130. Submitted by *Bruce Anderson, SFARC Secretary*

LOOSE PARTS

DAVE BLAZEK



Norse Code

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2019 MEMBERSHIP APPLICATION

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

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

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

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

Dues / Donations:

Membership: yearly* \$22.00 or 20x____ Name Badge: \$ 10.00/15.00 Yes (special name) _____

Associate: yearly* \$ 7.00 Repeater Donation: \$ _____

Auto Patch Donation: \$ _____ Newsletter Booster: \$ _____

Misc. Donation: \$ _____ Christmas Donation: \$ _____ ARRL member? (Yes/No/Life) _____

TOTAL: \$ _____ Please add \$1 if paying via PayPal

*Prorated dues for NEW Members/Associates Only

July \$ 20 /6 October \$ 14/3 + following year

August \$ 18/5 November \$ 12/2+ following year

September \$ 16/4 December \$ 10/1 + following year

New - - - New - New -

Multi-year DISCOUNT Membership

***\$20 per year for 2 or more years (new or renewal)**

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

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

Rev. 11-13-2018