



VACAVILLE, CALIFORNIA

VACA VALLEY RADIO CLUB

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May 2009

President's Message

Presidents Message May '09

Well it's May already, the year is flying by quickly and soon will be summer! This past weekend was the longest running Fair in California, the Dixon May Fair. I found out way too late that they were looking for an organization like ours to help out with lost children and lost property. Maybe next year we can be involved in this event.

Next month we are going to have a couple of fun events for your enjoyment. The first is the PIZZA PARTY at Round Table Pizza at Alamo Plaza. The second is "Field Day". Looks like Field Day will be held at Larry's W6OMF El Rancho in Allendale. Last year we had to cancel due to smoky conditions. This year we are planning to run late into the evening after our BBQ!

That's all for now. Hope to see all at the meeting Wednesday the 13th of May, 7:00 PM for the business meeting and 7:30 PM for the general meeting.

73' Your Prez Mike W6MAV.

Mike W6MAV

Space Shuttle Atlantis Blasts Off!

STS-125 is set to blast off this Monday morning about 11:00am local time. You can listen to the communications between the shuttle and ground control throughout the mission by monitoring the N6ICW repeater dedicated to this broadcast. The frequency for that Mt. Vaca repeater is 147.405 MHz no PL. Just listen. <http://www.n6icw.org/>

This mission is a maintenance and upgrade mission for the 19 year old Hubble telescope.

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DXing and Sunspots

By Jerry Olive, KD6WKY

As we go through our studies to get our amateur radio licenses we learn about the sun spot cycle and how it affects communications and the ionosphere . I remember studying sunspots in eight grade science class and having to graph out the sunspot cycle for what seemed like the beginning of time.

I learned there was an actual cycle to sunspots that peaks about every 11 years or so. Right now we're suppose to be moving up the chart off a bottom spot on this cycle, but it seems like it's taking much longer than usual.

Mike W6MAV sent me a news particle about cycle 24 and how weak it is predicted to be compared to the other cycles. I have seen several articles about cycle 24 over the past year or so and all of them seem to have jumped the gun saying that cycle 24 was headed up. Well...we're still scraping the bottom of the cycle as the months go forward so predictions are just that, predictions.

Even now at the bottom of the cycle, DXing is possible and happens all the time 24/7. In the past month I have worked 52 DX stations including two new countries.

I worked a nine year old boy Yoshi KHØUA on Saipan last week one evening on 2Øm phone. Yoshi and his family, all hams, of course, were vacationing in Saipan from Japan. Since I have been to Saipan I was able to discuss with Yoshi some of the history of the island appropriate for a nine year old boy.

I worked a new country OGASAWARA IS. JAPAN when I worked JD1BMD on 2Øm CW. That station as been on the air for awhile over the past month, but I could never hear him when I noticed a spot for him on the clusters.

I don't pay much attention to these things but the European commercial short wave radio stations have

moved off of the 40m band. What made me think of this was when I was able to work Jan OZ1ADL of Denmark on 7.1783 MHz LSB one evening. No big deal right? Well, maybe not but I was only using 100w and my dipole antenna.

I looked up Jan's call sign on QRZ.com and noticed he was a contester and quite an accomplished radio amateur. We will view one or two of his You Tube postings at the club meeting this month. Jan seems to be a very entertaining guy on You Tube.

There have been lots of JA's (Japan) and RU's (Russians) on the air the past few weeks. Now remember we have no sun spots so there is no DX, right? I heard and worked XU7XXX Cambodia on the 20m band last week. I heard but did not work Svarbard Island this morning.

Don't get me wrong, I'll gladly welcome sun spots when they get here, but I'm not going to wait for them to make DXing better.

Having just attended the International DX Convention in Visalia, CA I'll give you some information about that at the club meeting as well. We all had a good time.

April Meeting Minutes

The meeting was called to order at 7:11pm local time by club president Mike Vieira W6MAV with a hardy welcome to everyone.

The March club meeting minutes were read and approved as submitted with a voice vote.

We had a raffle but I can't remember who won it. Sorry.

VACA VALLEY RADIO CLUB—2009 ELECTED OFFICERS

President: Mike Vieira, W6MAV
Vice President: Open and taking resumes!
Secretary: Jerry Olive, KD6WKY
Treasurer: Bob Hewitt, W6HEW

BOARD OF DIRECTORS

Director: Skip Lawson, AF6HC
Director: Chris Jones, KD7TQO
Director: Antonio Del Rio, N6ZGB
Director: Glen Mitchell W6JLX

APPOINTED POSITIONS

Net Control Chairperson: Open
Activities Chairperson: Board of Directors
Newsletter Editor: Jerry Olive, KD6WKY
Newsletter Publisher & Distributor: Bob Hewitt, K6HEW

Old Business—We discussed the March of Dimes and Field Day as club activities that are up coming. We discussed what we could to support these community events.

New Business— We had no new business this month.

Program—Mike Vieira W6MAV had a fine presentation on IRLP and how it works. We did a radio check using IRLP using the Dallas cluster. Thanks Mike.

The May program will be presented by Jerry Olive KD6WKY with information on the International DX Convention in Visalia.

The meeting was adjourned at 9:00pm local time on a voice vote.

Submitted by Jerry Olive KD6WKY

Get Well Wishes to Skip AF6HC

I received an email this morning from Skip AF6HC indicating that he is feeling better. Skip has been over at UCSF visiting a team of doctors that were very interested in his heart.

Skip is at home resting now. You can send him an email at AF6HC@arrl.net. I know he'd appreciate it. Be prepared to receive a replay sometime during the middle of the night. Skip is a night owl.

Ham Jargon

AFC - Automatic frequency control. Used in FM receivers to prevent drift.

antenna farm - Ham's dream -- lotsa room for big, long, antennas

birdie - Spurious signals produced in a receiver - usually a product of mixed intermediate frequencies within the radio.

california kilowatt - a power setting above the legal limit

critical angle - The angle at which a radio signal is refracted in the ionosphere. Lower angles generally result in greater distance transmissions.

cloud warmer - an antenna which radiates most of the transmitted energy nearly straight up.

delta-loop antenna: a variation of the cubical quad with tri-

angular elements

director - an element in front of the driven element in a Yagi or Quad and some other directional antennas.

D-region - D-layer: The lowest region of the ionosphere found approximately 25 to 55 miles above Earth; it fades away quickly after sunset and sometimes does not form at all on short winter days. The main impact of the D-layer on radio propagation is to absorb energy from signals passing through it.

DXpedition - Radio expedition to remote and rare locations

Amateur Radio Quiz: Calculation Calisthenics

By H. Ward Silver, N0AX

- 1) What is the reactance of a 0.001 μF capacitor at 60 Hz? 1 kHz? 1.82 MHz?
- 2) The free-space wavelength of a 146.34 MHz signal is how many meters? Feet? Inches? Centimeters?
- 3) In order to keep your self-supporting tower upright at the maximum expected wind-load, you need a base that weighs 15000 pounds. If concrete weighs 150 pound per cubic foot, how many cubic yards are required? Cubic meters?
- 4) Using a velocity factor of 66 percent, what is the length of the following transmission lines in feet?
 - a. 1/4-wavelength at 3.550 MHz
 - b. 1/2-wavelength at 443.5 MHz
 - c. 1 wavelength at 14.350 MHz
- 5) A counterweight for the new Zepp antenna needs to be at least 30 pounds to keep the wire taut. All you have is a pile of 1 kilogram weights. How many are required?
- 6) The weekend project is to put up a 1/4-wavelength sloper for the State Emergency Net on 3975 kHz. How long is the antenna in feet, assuming a 95 percent velocity factor? If it's attached to your tower at a height of 55 feet and the lower end must be at least 8 feet above the ground, how far from the tower base will the end be?
- 7) Calculate the VSWR for the following combinations of forward (Pf) and reflected (Pr) power:
 - a. Pf = 95 W, Pr = 5 W
 - b. Pf = 1400 W, Pr = 65 W
 - c. Pf = 10 W, Pr = 0.15 W

THE VVRC WELCOMES YOU

The Repeater is Published by the Vaca Valley Radio Club, PO Box 143, Elmira, CA 95625-0143, An ARRL Affiliated Club. Founded 1987, Chartered 1988 General Meetings: 2nd Wednesday of each month at 7:30 PM 420 Vine Street Fire Station.

Wheelchair accessible

d. $P_f = 800 \text{ W}$, $P_r = 22 \text{ W}$

- 8) The finest subdivision of the Maidenhead Grid Square system are the 5'x2.5' sub-squares. Assuming 60 nautical miles per degree, what are the dimensions of the sub-squares in kilometers?
- 9) Willy's new rotor is rated to operate properly to -40° C . Billy just bought one rated to -40° F . Whose will operate at the colder temperature?
- 10) A tuned circuit must resonate at 10.105 MHz. Choose the proper value of inductance or capacitance that completes the circuit:
 - a. 680 pF
 - b. 4.7 μH
 - c. 220 pF
 - d. 1.5 μH
- 11) The wattmeter shows 1200 W going into the dummy load. What is the peak voltage appearing across the load?
- 12) A power tube requires 25 cubic feet per minute of cooling air, but you only have a squirrel-cage blower rated to deliver 1 cubic meter per minute. Will it suffice?
- 13) What is the length in both feet and meters of half-wave wire dipoles at the following frequencies, assuming a 95 percent velocity factor?
 - a. 1.850 MHz
 - b. 7040 kHz
 - c. 24.900 MHz
 - d. 50.120 MHz
- 14) Convert the following between linear ratios and dB:
 - a. A loss of 1 dB equals a loss of how many percent?
 - b. A power gain of 8 is a gain in how many dB?
 - c. What is the voltage ratio corresponding to 6 dB?
- 15) A full-wave loop antenna for 3.6 MHz is 278 feet in circumference. If the loop is to be formed into an inverted triangle with a 120 foot horizontal section that is 75 feet above the ground and the remaining two sides are equal, by how much will the apex clear the ground?

Bonus: What is the speed of light in furlongs per fortnight?

Visit the Repeater online courtesy of Bob K6HEW at:
<http://users.cwnet.com/hewbob/vvrc>
 Club repeater in Vacaville: W6VVR 145.470 MHz(-) pl 127.3

The W6VVR net call is Tuesday evenings at 7pm on the club repeater. All are invited to participate in this weekly meeting on the air. 73!

Additional local repeaters

WV6F 224.200(-) WV6F 440.025(+)

W6BRA Repeater 224.540 MHz, PL 118.8 Hz, net call Wednesday evenings at 7pm except for club meeting nights.

Answers

- 1) 2.65 MΩ, 159 kΩ and 87.4Ω
- 2) 2.05 meters; 6.72 feet; 80.7 inches, and 205 cm (wavelength in meters = 300/f [MHz])
- 3) 3.7 cubic yards or 2.83 cubic meters (15000/150 = 100 ft³ with 27 cubic feet/cubic yard)
- 4) (a) 45.7 ft (b) 0.73 ft (c) 45.24 ft
- 5) 13.6, so use 14 weights at 2.2 lb/kg
- 6) 35.5 feet. The antenna is 58.9 feet long with a vertical drop of 47 feet, so the horizontal run is $\sqrt{(58.9^2 - 47^2)}$
- 7) (a) 1.6: 1; (b) 1.55:1, 1.28: 1; (c) 1.4:1 (use the formulas in the Transmission Lines chapter of *The ARRL Handbook*)
- 8) The sub-squares are 5.75×2.88 miles or 9.26×4.63 km.
- 9) Trick question -- both rotors are rated exactly the same. -40° C and -40° F are equal temperatures.
- 10) (a) 0.36 μH; (b) 53 pF; (c) 1.13 μH; (d) 165 pF
- 11) 346.4 V peak; 244.9 V rms.
- 12) Yes. Divide cubic meters by 0.028316 to get cubic feet. The fan can deliver 35.3 cfm.
- 13)(a) 253 feet or 77.1 meters; (b) 66.5 feet or 20.3 meters; (c) 18.8 feet or 5.73 meters; (d) 9.34 feet or 2.85 meters. Length in feet = 468/f (MHz)
- 14) (a) 20.6 percent; (b) 9.03 dB; (c) 2
- 15) The 120 foot flat top leaves 79 feet on a side. Each half of the loop becomes a right triangle with a hypotenuse of 79 feet and one side of 60 feet, leaving $\sqrt{(79^2 - 60^2)} = 51.4$ feet of vertical drop so that the ground clearance is 75-51.4 = 23.6 feet.
- Bonus:* 1.803×10¹² furlongs/fortnight. A furlong is 40 rods, a rod is 16.5 feet and a fortnight is 14 days.

ARCALA EXTREMES AT OH8X FROM THE FAR NORTH

Arcala Radio, OH8X, located in the Far North at the Arctic Circle under the Aurora Belt, captured the imagination of a team of Finnish radio operators gathering around the fireworks to think. Their subject was not only to change the order of North and South in competitive amateur radio but also to assist in making sure that the stream of radio contacts would keep coming in regardless of our aging brotherhood. And thinking is what they did; in the wee small hours of the morning they came

up with the Mission of Arcala Extremes to convey a message throughout the world and to invite all in their ranks to join and share in the thinking of that bright Northern Night.

Here the Older Types felt a need to pay back something that had enriched their lives spiritually and professionally, and they reached out to a group of Younger Types to set targets and create a new language. They forced themselves to do the impossible, breaking old barriers and competing for the souls of today's smart youth. We challenged Arcala Extremes to do the impossible, not only swapping North and South, but also seeking others to join in the fun and approaching young on their own terms, encouraging the competitive urge of youngsters to make the impossible possible in the course of their own lives through radio communication experience and related exciting theories.

Arcala Extremes is headquartered in Finland while operating in a European context. The message is global, and the experience is for us to share. Read about the Arcala Mission and let your imagination fly to do your share of impossible. When we meet over the airwaves, we will then have something valuable to share and be proud of. The world is at our fingertips.

POLAR BEARS CAN SWIM 200 KILOMETERS, SO CAN RADIO WAVES

Amateur radio has always been part of the telecommunication landscape. Here in the Far North, inherent in telecommunication is the mystique of people using radio waves to reach out to fellow human beings around the globe with Morse, voice or data, with their innumerable variations. A two-way wireless contact is always a big thrill – a positive radio experience - that has historically driven the amateur fraternity to striking innovations. The amateur radio fraternity was the first global community in its own time.

Telecommunication is still one of the most exciting sciences that has changed our lives more dramatically than any other human endeavor in recent history. More exciting elements are yet to come, and here Radio Arcala has decided to keep its finger on the pulse, to plot a course for further progress.

While telecommunication is one of the main drivers in transforming societies from traditional livelihoods toward modern times, in Finland it resonates particularly well with the people of this country. With society's focus on advanced science and high educational standards, the telecommunication niche has pushed Finland and Finns to heights never seen before. In a way, telecommunication fits in well with an efficient lifestyle, this country's deep seasonality and its vast land mass plus the long distances of the North.

Through amateur radio, Finns have done their fair share both on their lab benches and on the bands. Following the evolution of the Finnish wireless industry, an amateur radio operator can be credited with playing a role at every pioneering stage in the history of the industry. Gladly, the Arcala team is still listening to those stalwarts, whether just relishing their stories or taking practical advice.

It is not by pure accident that the first 2M moonbounce

contacts across the Atlantic (OH1NL) and the first mammoth antennas (OH8OS) were conceived of, built and used in the Far North of Finland. There is no other country with a population of 5 million and 200+ rotating towers dotting its land area, with operating achievements to match.

It is this tradition, this history that inspires Radio Arcala not only to study, explore and utilize all the elements of the modern telecommunication science but also to participate in projects that further attract today's youth to contribute to the success story of the North.

Radio Arcala is cooperating with the University of Oulu and its Center for Wireless Communications (CWC) and is partnering with the RealXtend Platform Development Forum as the first radio station established in a 3D Virtual World.

All Eyes Are Fixed on the Starting Grid and Lights Flash!

All eyes are fixed on the starting grid - the engines are revving up - the air is thick with the smell of high octane fuel - the starting lights flash from red to green - the tarmac bears the marks of burning rubber - those leading the pack scramble to hit the first curve first - everyone hopes his gear will endure the whole race and his own juice last till the checkered flag. Everyone has his fingers crossed for optimum weather for his own smartly tuned setup. Each one hopes he will make the finish line first. Everyone wants to get to the No. 1 spot on the podium with the

biggest trophy. Kisses for the dear ones and champagne for the winners are part of the scene.

Serious amateur radio contesting today is like any competitive sport at an extreme level, whether we like it or not. To get everything out of the operator, it takes a winning package - the station and the existing propagation. And behind every successful single-operator score, there are a number of people working together with their expertise as a team.

That's what we call Arcala Extremes - a radiosport team from the Far North making a maximum effort to reach the finish line first.

The Arcala Extremes team is in the process of building the best "racing car" for Amateur Radio contesting to hit the front row when the next Solar Cycle peaks up. Apart from the team's own efforts, it also assumes the best engine supplier that we proudly stand for.

If your car is extreme and your driving strategy jells, you may have the ingredients that help you achieve all your desires as a sportsman.

Just join the spirit - and come on board in the next radio competition.

Editor's Note—More about Radio Arcala at the club meeting.



PLEASE RENEW YOUR MEMBERSHIP

VACA VALLEY RADIO CLUB, INC.
MEMBERSHIP APPLICATION / RENEWAL FORM

Please Print & Fill in Completely

Dues are delinquent January 1st

Name: _____ Call Sign _____	MEMBER Dues -----\$15.00 _____
Street: _____	Each Family Member ---\$ 2.00 _____
City: _____ Zip: _____	Student -----\$ 5.00 _____
Phone: (_____) _____ - _____ OK to Publish ?(_____) _____	Repeater/Autopatch donation--- _____
License Class: _____ ARRL Member ?(_____) _____	Call/Name badge -----\$10.00 _____
E-Mail Address _____	Optional ARRL membership
FAMILY Member (Spouse or Children)	ARRL dues-----\$37.00 _____
Name: _____ Call Sign _____	ARRL dues (Senior) -----\$34.00 _____
License Class: _____ ARRL Member ?(_____) _____	Senior is 65 yr or older with one time proof on age.
Name: _____ Call Sign _____	Total----- _____
License Class: _____ ARRL Member ?(_____) _____	Paid by CASH: _____ Check # _____

Mail to : Vaca Valley Radio Club, PO Box 143, Elmira, CA 95625-0143