

W6VIO Calling



Jet Propulsion Laboratory Amateur Radio Club
PO Box 842, La Canada CA 91012-0842

Volume 39, Issue 5 w6vio@arrl.net; <http://jplarc.ampr.org> May 2016

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Director at Large (2016):	Steve Townes, WB4ILW	4-7525	WR6AZN Trustee:	Bill Wood, W6FXJ	760-256-9576

Upcoming Events:

- **Emergency Communications Net:** Every Monday at Noon, on WR6JPL 224.08/(-)/156.7 & 445.20/(-)/103.5, or WR6AZN 223.96/(-)/156.7 on Table Mountain.
- **JPLARC Regular Membership meeting:** Second working Friday every month from Noon to 1pm in 180-703C. Call-in: 818-354-4044 ID-number: **997 183 539** (without the spaces). Slides (if any) broadcast via JPL WebEx (same ID-number). Next is May 20th: **Jim Marr AA6QI, "Making and using quadrifilar helicoidal antennas for working amateur satellites."**
- **JPLARC Board of Directors (BOD) meeting:** Normally, the first working Friday, every month, from Noon to 1pm in 180-703C. The next BOD meeting will be **June 3rd**. Call-in: 818-354-4044 ID-number: **997 183 539** (without the spaces).
- **For more upcoming events, including upcoming licensing classes, see the ARRL Los Angeles Section website:** <http://www.areslax.org>

In this issue:

Topics in this issue:

- Regular membership meeting April 22nd
- BOD meeting May 6th
- ARRL Membership
- Equipment for sale (reduced)
- Future membership meetings & speaker topics
- JPLARC organization chart

Regular Membership Meeting April 22nd

By Jim Marr AA6QI

Present were: Paul Averill[†] KM6BZX, Randy Branson WB6NCT, Janet Cameron[†] KG6JNO, Jonathan Cameron^{†*} KF6RTA, Bob Ceserone WA9JIB, Nancee Darling[§] K8NBD, Chris Gaylord^{†*} W6YTB, Jim Lux W6RMK, Mark Lysek[†] AG6TD, Josh Miller^{†*} KB3UUS, Steve Noland[†] WA6KLC, Mike Roche[†] N6XLK, Carlos Slythe KK6MYQ, Lew Soloway[†] AC6LS (formerly KK6QJE), Steve Townes^{†*} WB4ILW. On the Phone/JPLWebex: Chris Carson^{†*} KB6ABQ, Jim Marr[†]

AA6QI, Walt Mushagian[†] K6DNS, Chuck Sarture^{†*} KG6NF, Rob Smith[†] W6GRV.

Note: † indicates a 2016 regular voting member (i.e., JPL/Caltech/Retiree and 2016 dues paid), and * Indicates a 2016 BOD member. For a regular meeting quorum, the JPLARC Bylaws require a majority of the BOD (four or more) and at least five other regular members. We had all 6 BOD members, 10 other regular members and 4 guest or non-members (total of 20 attendees), so we **did** have a quorum.

Secretary's Report: We currently have 51 total members, of which 49 are licensed, 42 are voting, and 69% are ARRL members. Nancee Darling K8NBD (our guest speaker for today) was approved as a Guest Member by the BOD at the last BOD meeting.

President's Report:

JPL Fair Participation: The JPLARC has been asked to participate in a JPL fair on Affinity and Interest Groups (the new name for what were formerly called Recreation Clubs) to be held on the JPL Mall September 2nd. We have agreed to participate, with participation to consist of staffing a table with flyers/handouts and demonstrations. This will be a combined JPLARC and

JEARS event. Planning will begin at the next BOD meeting. Volunteers will be needed so please contact Jonathan if you can help.

Equipment Inventory: Jonathan still needs help to complete the equipment inventory. Please contact him if you can help.

Vice President's Report: Upcoming talks were discussed (see list at the end of this newsletter). We still have October and November guest speaker slots open and have a number of candidate topics to fill them.

Guest Speakers: We had two guest speakers (Figure 1): Nancee Darling K8NBD discussing ALERT and Randy Branson WB6NCT discussing the ARRL NTS.



Figure 1: Left to right: Nancee Darling K8NBD, Janet Cameron KG6NJO, Jonathan Cameron KF6RTA, Randy Branson WB6NCT, and Carlos Slythe KK6MYQ

First Guest Speaker: Nancee Darling K8NBD.

ALERT stands for the Altadena Local Emergency Radio Team, a community emergency radio effort, with the following mission statement: *"to facilitate radio communications throughout Altadena and surrounding communities during emergency events."* ALERT members work with the Altadena Sherriff's Station, Community Emergency Response Teams (CERTs), Neighborhood Watch Programs, and Map Your Neighborhood (MYN) activities. ALERT supports community resilience before, during and after a community-wide crisis.

Brief History: ALERT's first monthly radio communications meeting was held November 8, 2012 with 3 people and has since grown to having 12 to 23 people at these meetings. Four goals set in 2012 were met in 2015. Participation in the ALERT Monday evening net (8pm on the W6MPH repeater on 145.18MHz) increased from 2 to 25 check-ins. Now also practicing on simplex, 220MHz and Yaesu's FUSION digital mode.

ALERT's 2012 Goals: (1) Educate and help people practice with Family Radio Service (FRS) radios; (2) Educate and help people practice with General Family Radio Service (GMRS) radios; (3) Identify and practice with other amateur radio operators; and (4) Have in place a protocol for communication with the Altadena Sheriff's Station and practice using it. These four goals were finally considered met in 2015, so it took several years to meet them.

ALERT started with two interested radio operators who wanted to know how to integrate community into radio communications. Today it has grown to involve multiple elements of radio communication (Figure 2).



Figure 2: ALERT's local radio communication elements

- Team Goals
- Support Community Events
- Celebrate Participation
- Meet knowledgeable, helpful, patient and forward thinking people

Figure 3: Factors contributing to ALERT's growth

Several factors have helped keep ALERT focused and growing (Figure 3). These include: (1) keeping clear team goals; (2) supporting community events, such as Altadena home tours and the Baker 2 Vegas race; (3)

celebrating participation annually; and (4) getting out and meeting others who can contribute to ALERT's improvement and growth.

ALERT's 2016 goals (Figure 4) include: (1) A special Nixel channel has been set up with the Altadena Sherriff's department allowing the Sherriff to communicate needs to ALERT members; (2) Continue to reach out to Map Your Neighborhood (MYN) and Community Emergency Response Teams (CERT) for radio operators; (3) Continue to encourage (but not require) members to take the four FEMA courses shown in Figure 4; (4) Increase impromptu practice scenarios via ALDRADIO Nixel or other means; (5) Practice collaboration with local radio teams; (6) Learn and practice digital capabilities (e.g., Yaesu's FUSION) using one of ALERT's simplex frequencies (ALTA-4); (7) Practice and maintain off-power-grid capabilities; (8) Create and use radiograms for non-ham to non-ham public use.

- ❖ Continue with ALDRADIO Nixel
- ❖ Continue to reach out to MYN and CERT for radio operators
- ❖ Encourage team members to take FEMA 100, 200, 700 and 800 courses
- ❖ Increase impromptu call out practice scenarios
- ❖ Practice collaboration with local radio teams
- ❖ Learn and practice digital capabilities using ALTA-4
- ❖ Practice and maintain off grid capabilities
- ❖ Create and use radiograms for non-ham to non-ham public use

Figure 4: ALERT's 2016 goals

- TEAM: Baker 2 Vegas, AC100, Community Events, Field Day, ARES, DCS, CERT, MYN
- LEARN MORE: radios, antennas, NTS, Emergency Preparedness, read QST, ARRL, Emergency Management (magazine)
- INDIVIDUAL IMPROVEMENT: VE (Volunteer Examiner), Skywarn, Upgrade license, FEMA courses, LAECT (Los Angeles Emergency Communication Team) teach/learn from other radio operators

Figure 5: A variety of interests is key to any viable radio team

In conclusion, the success of ALERT has resulted from there being a lot of people involved who have diverse interests (Figure 5) so that everyone involved is continuously learning, keeping interest levels high.

Find out more about ALERT at <http://altadenaradio.com>, which lists all of the frequencies used and meeting times/ places. Also see the Alert Flyer (Figure 6).

Mission Statement for ALERT
 The goal of ALERT Altadena Local Emergency Radio Team is to facilitate radio communications throughout Altadena and surrounding communities during emergency events. ALERT members work with the Altadena Sheriff's Station, Community Emergency Response Team (CERT), Neighborhood Watch programs, and Map Your Neighborhood (MYN).
 ALERT supports community resilience before, during, and after a community-wide crisis.

More information:

- Volunteer to share your radio experiences at Map Your Neighborhood (MYN), Community Emergency Response Team (CERT) and Neighborhood Watch (NW) Meetings.
- Look at FEMA IS-317 for Introduction Community Response Teams
- AltadenaRadio.com for more information
- Encourage your neighbors to practice with FRS (Family Radio Service), basic walkie-talkie radio, GMRS (General Radio Service) in addition to ham radio.
- Involve your neighborhood in meetings that promote safety, first aid, and emergency preparedness.
- Get to know your neighbors; they are YOUR first responders during an emergency.
- Prepare your family at home, in the car, at work or school
 - ✓ Food for three days to three weeks to three months
 - ✓ Water, one gallon per day per person at a minimum
 - ✓ Remember that your pets will also need water and supplies
 - ✓ Plan for shelter during all possible weather conditions
 - ✓ Sanitation, prevent disease
 - ✓ First aid training and supplies, minimize trauma
 - ✓ Written copy of your out-of-state contact and emergency family numbers as cell phone towers may be down.
 - ✓ Battery/generator/solar back up for your immediate communication, medical/household needs.
 - ✓ Know your neighborhood amateur radio people. Become an ACTIVE Amateur radio person ☺

ALERT nets are held every MONDAY @ 8PM on the TELCO repeater: 145.180 (-) PL 156.7 (input 144.580)
 Find more information about all radios: AltadenaRadio.com
 NanceeDarling@mac.com
 TimEldridge@gmail.com

Figure 6: ALERT Flyer

Second Guest Speaker: Randy Branson WB6NCT discussing the National Traffic System (NTS). Randy is an Official Relay Station (ORS) for the Los Angeles Section NTS where Kate Hutten K6HTN is the Section Traffic Manager.

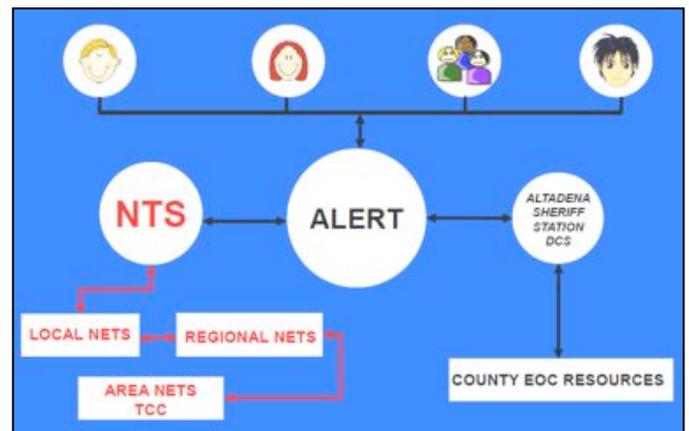


Figure 7: ALERT and NTS work together

Figure 7 shows how local neighborhood people work with ALERT to effect communications between the Los Angeles Disaster Communication Service (DCS) and to

the National Traffic System (NTS). DCS is associated with the Sheriff's stations, consists of amateur radio equipment and is manned by amateur radio operators. The Altadena DCS station is almost ready to come on line. DCS provides the link to the County Emergency Operation Center (EOC) for requests for services during emergencies.

The NTS provides a means for health and welfare information to pass from local individuals to anywhere else within the continental United States.

- The "RELAY" in American Radio Relay League (ARRL) started in 1915 as a formal system to relay messages around the country
- Transmit & Receive Modes: Voice, CW and Digital
- NTS Works Together With ARES
- Any Level License Amateur May Participate
- ARRL Field Organization Appointments: ORS, DRS and Section Traffic Manager

Figure 8: What is the National Traffic System (NTS)?

Figure 8 provides some background on what the NTS is/does and its relationship with the Amateur Radio Emergency Service (ARES). The NTS has ARRL Field Organization appointments consisting of Official Relay Station (ORS), Digital Relay Station (DRS), and Section Traffic Manager (STM).

- Wireless!
- Use a small HT or a big Base Station
- Messages utilize a "Standard Format" which facilitates Traceability and Accountability
- Nets meet daily, NTSD 24 hrs. a day, 365 days/year
- Messaging speed, Digipeaters vs Email

Figure 9: Advantages of NTS messaging

Figure 9 lists some of the advantages of NTS messaging ("when all else fails").

Figure 10 lists some of the benefits of regularly handling routine traffic.

Randy provided a handout that described the NTS and provided information about local NTS Nets and

Resources. One side of this handout is reformatted into Figure-11.

- Provides daily practice passing messages during times of "Non-emergencies"
- Teaches direct net operations
- Hones basic radio skills (Phone, CW, Digital)
- Promotes responsibility and accountability
- Elmering opportunities

Figure 10: Some benefits of routine traffic handling

National Traffic System

NTS Nets & Resources

Los Angeles Net
TuTh 2030 FAPA Repeater System

Southern California Net (SCH/V)
MWF 2100 146.385 +/-146.2

Southern California Net (SCH/CW)
TuTh 1900 3.537 MHz

Sixth Region Net RN6 Cycle 2 (LSB)
TuTh 1530 7.275 MHz

Sixth Region Net RN6 Cycle 4 (CW)
Daily 1945 3.575 MHz

Sixth Region Net RN6 Cycle 4 (CW)
Daily 2130 3.575 MHz

Northern California Net (NCN/CW)
Daily 1900 3.533 MHz

Daily 2100 3.533 MHz

Note: All times are local (standard or DST)

NTSD Hub Station
K6ROK
3591.9, 3593.9, 7065.9, 7100.4, 7102.4,
14098.4, 14098.7, 14112.4, 14113.9 MHz
(center frequencies)

Los Angeles Section Traffic Manager

Kate Hutton K8HTN
PO Box 60212
Pasadena CA 91116

K8HTN@arrl.net

Los Angeles Section:
ARRLAX.org
follow "National Traffic System" link
LAX_NTS Email Reflector:
groups.yahoo.com/group/LAX_NTS/

Figure 11: NTS Nets & Resources

Randy showed a map of North America divided into NTS traffic regions.

Figure 12 shows an example ARRL Radiogram that is used by the NTS for originating messages. Figure 13 shows an example ALERT radiogram that uses a slightly different format than the standard ARRL Radiogram.

ARRL - the national association for Amateur Radio™
RADIOGRAM

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
614	R	C	KI0JO		OCALA FL		APR 10

TO: JONATHAN M CAMERON KF6RTA
1140 HASTING RANCH DR
PASADENA CA 91107
PHONE NUMBER: 626 531 0942

FROM: RANDY BRANSON
WB9NCT
PHONE: (921) 738-8402
WB9NCT@ARRL.NET
ALTADENA CA 91001

CONGRATULATIONS ON YOUR LICENSE UPGRADE

TO: EXTRA A MOST WORTHY
AND: DESERVED ACHIEVEMENT 73

TOM KIBID

Figure 12: Example ARRL Radiogram

INSTRUCTIONS: Provide the required information within the outlined block area below. Please clearly print all information. Actual message text is to be printed using ALL CAPITAL LETTERS, ONE WORD PER LINE WITH NO PUNCTUATION.

THIS MESSAGE IS GOING TO:

First Name: RANDY Last Name: BRANSON

Address: 2705 SAINT JAMES PL.

City: ALTADENA State: CA Zip Code: 91001

Telephone: 626 998-8403

Email:

MESSAGE TEXT TO BE 25 INDIVIDUAL WORDS OR LESS

WE ARE OK HERE AND 5
WILL CALL WHEN SERVICES RESTORED 10

FROM: RICHARD AND BETH DATE: 4-12-16 TIME: 4:30 AM PM X

YOUR CONTACT INFORMATION:

Name: RICHARD FLEMORE
Phone No: 626 941 6672
Email: RFLEMORE@aol.com
Street Address: 2667 SANTA ROSA ALTADENA CA 91001

Return Completed Form to
ALTADENA SHERIFF STATION

THIS SECTION TO BE COMPLETED BY AMATEUR RADIO OPERATOR

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
8	W	C	K8NBD	10	ALTADENA CA	1630L	APR 12

OP NOTE (Delivery Inst.):

OP NOTE (Servicing Inst.):

NTS NET USED TO SEND MESSAGE

Los Angeles Voice Net (LAN/V)

Southern California Voice Net (SON/V)

NED Digital (NED/D)

MESSAGE TAKEN BY: K6FRG-JUT DATE: 4-13-16 TIME: 2030L

Figure 13: Example ALERT Radiogram

For more information about the ARRL NTS, see the link: <http://www.arrl.org/nts-manual>.

BOD Meeting May 6th

By Jim Marr AA6QI

Present were: Jonathan Cameron[†] KF6RTA, Chris Gaylord[†] W6YTB, Josh Miller[†] KB3UUS, Steve Townes[†] WB4ILW. On the Phone: Chris Carson[†] KE6ABQ, Jim Marr[†] AA6QI, Walt Mushagian[†] K6DNS, Chuck Sarture[†] KG6NF.

Note: † indicates a 2016 regular voting member (i.e., JPL/Caltech/Retiree & 2016 dues paid), and * Indicates a 2016 BOD member. For a BOD meeting quorum, the JPLARC Bylaws require a majority of the BOD (four or more) to be present. We had six BOD members present so we **did** have a quorum.

Treasurer's Report: Chuck reported that the IC-27H, TR-9130m IC-471A, and IC-471H have been sold, with the proceeds of the sale being added to the treasury. Treasury beginning balance was \$5,399.02, equipment sales added \$175.00, producing an ending balance of \$5,574.02.

Membership Report: Secretary Chris Gaylord reported that we currently have 51 total members, of which 42 are voting members and 69% are ARRL members.

JEARS report: Chris Gaylord reported that the JEARS badging process has finally been sorted out. He is planning to hold bi-monthly JEARS meetings in preparation for the Great Shakeout exercise, with the first one to be sometime in May. There will be a JEARS table at the JPL Safety Day next Thursday from 9am to Noon. Chris will give thought to how off-lab personnel might assist JEARS.

NASA HF Net: JPL is ready to participate (although noise levels with the vertical antenna at B329 can be S5 to S9+ across all bands during the day per Steve Townes). The net is 9:30am every Wednesday.

Armstrong Center Eagle Horizon Drill was held for Armstrong on Monday with JPL support. Were able to make contact via the Table Mountain link by linking the Table Mountain 220 & 440MHz repeaters (thanks to NO6B). Were not able to make contact with Armstrong via HF radio (nor were other centers that participated: Johnson, Marshall, Goddard & Kennedy). We also had difficulty hearing the other centers. There is some discussion about a NASA Amateur Radio Club Only net.

Repeater Committee: Met on April 12th. Discussed details of mounting a crossbar on the telephone pole to the north of the repeater enclosure, B35A, and have begun purchasing materials for it. Also discussed progress towards restoring rebroadcast of ISS audio on the 2m repeater.

Field Day (FD): Jim Marr provided a brief update on preparations for FD 2016 (June 25th & 26th). The Pasadena Radio Club (PRC) has a FD Chair and will hold their first planning meeting on Tuesday, May 10th. FD will be again held in the Art Center parking lot, as it has for the past two years, and the PRC is looking to the JPLARC and CITARC to provide the CW station again this year. Jim will be holding a JPLARC FD Committee meeting in the near future. There was also a brief discussion of logging programs for both general operation and contest logging.

Publicity/Membership Committee: Steve Townes WB4ILW noted that there are a lot of folk who subscribe to the JPLARC email exploder but who are not current dues paying members; Steve plans to contact these folk about joining/re-joining the club. Steve also discussed signage for the JPL Interest Fair and for the B329 shack.

FT-1000D Master Oscillator: Purchased and installed a new TCXO (Temperature Controlled Crystal Oscillator) for the FT-1000D in B329 due insufficient tuning range in the original one and were able to zero beat WWV by ear. Still plan measure with a frequency counter in the near future.

445.20 MHz Repeater Antenna Issue: Chris Carson KE6ABQ checked the SWR on the repeater antennas and found that the 445.20 repeater antenna (a GP-9) has an SWR greater than 8:1.

Work Party next RDO Friday: Jonathan Cameron discussed three things that need addressing. (1) Remove the two remaining antennas from near B173 (the collinear dipole array and the 4-element 2m Yagi); Wants to consolidate all antennas not currently in use into C7111 currently located partway up the Mesa road; (2) Repair the 445.20 repeater antenna; and (3) Make progress on terminating the Mesa end of the some of the smaller hard lines and do SWR tests on the Yagi's on the tower. Steve Townes pointed out that the integrity of the tower should be examined and we should check whether the rotator is working (it was reported as blowing fuses in the controller before the Mesa fire that took out our earlier hard lines and other cables).

JPL Interest Fair: Wednesday 9/22/16 at 11am on the JPL Mall. We have agreed to staff a table that will be both the JPLARC and JEARS. Steve Townes will take the lead in organizing this.

Weekly Net (Noon on Mondays): Lew Soloway is currently leading the net. Will be doing check-in/check-out on the first net of every month. Jonathan Cameron would like to do a simplex net, too, and Josh Miller volunteered to organize and lead it. We may also be able to do informal nets during fire drills.

New HF Radios: The age of the FT-1000Ds is of some concern (1990's radios). These are NASA property and are used for JEARS so can be replaced using JEARS funding. It was suggested that the Station Committee be tasked to develop a good set of requirements for EmComm HF radios and then do a study of available radios against these requirements, including operating the final candidates (at, say, HRO) and studying the Yahoo groups on these radios to thoroughly understand what issues they may have (if any) that would need to be addressed.

Email Exploder: The Board briefly discussed developing a policy for what constitutes appropriate topics for

discussion via the email exploder.

ARRL Membership:

By Jim Marr AA6QI

As an ARRL affiliated club, we need to maintain at least 51% ARRL membership among our voting members.

While there are no requirements to maintain ARRL membership, there are some clear advantages to having ARRL membership. Some of these are:

- Receiving the monthly QST magazine and having access to all back issues electronically.
- Being able to subscribe to weekly ARRL news, propagation forecasts, and satellite ephemeris notifications.
- Being able to subscribe to the electronic monthly Amateur Radio Emergency Service (ARES) newsletter that may be of interest to members who wish to stay current on emergency communications.
- Member discounts on materials and training. For example, the ARRL Introduction to Emergency Communication Course is \$85 for non-members but only \$50 for members.
- You support ARRL, the only significant amateur radio advocacy organization in the U.S. that is fighting to protect our access to the airwaves.

Should those of you who are not already members and may wish to join, **please do so through the Club** rather than joining directly through ARRL. Why? If you join through the Club (new members), the Club retains \$15 of your membership fee to support Club activities. From your point of view, the amount you pay is the same either way. Even if you are a member who is just renewing, doing so through the Club nets the Club \$2, again without changing your costs at all.

To renew through the Club, see Secretary Chris Gaylord who will help you with the paperwork (don't worry, it's really simple!).

Thanks in advance for considering joining ARRL or for maintaining your membership.

Equipment For Sale

By Jim Marr AA6QI

The JPLARC Board has approved the sale of the following items and recently approved reducing the asking price by 50%. Please make your best offer to Club Treasurer Chuck Sarture. All equipment is sold as-is with a receipt from the JPLARC.

- ICOM AG-35 70cm mast mount preamp, asking \$10, **reduced to \$5.**

Future Meetings

By Jim Marr AA6QI

All JPLARC meetings are being held on non-RDO Friday's from Noon to 1 PM in 180-703C. Upcoming talks (subject to change, as always):

June 17th: Bob Dengler NO6B, "IRLP node on a Raspberry PI."

July 15th: Gary Wong W6GSW and Jon Bell KA6JON, "Winlink Messaging."

August 26th: Chris Gaylord W6YTB, "Great Shakeout Planning."

September 23rd: AMSAT's Patrick Stoddard WD9EWK, "AMSAT Future" (Patrick may be coming out to Pasadena to give this talk).

October 21st & November 18th speakers are still TBD.

Advertisements:



<http://www.hamradio.com>

2016 JPLARC Organization:

