

W6VIO Calling



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



Volume 37, Issue 4 w6vio@arrl.net; <http://jplarc.ampr.org> **April 2014**

President:	Stephen Townes, WB4ILW	4-7525	EmComm. Mgr:	Christopher Carson, KE6ABQ	3-3888
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Secretary:	Rob Smith, W6GRV	3-7937	W6JPL Trustee:	Eric Archer, N6CV	4-7350
Treasurer:	Chuck Sarture, KG6NF	4-2706	WR6JPL Trustee:	Jim Lux, W6RMK	4-2075
Director at Large:	Jim Marr, AA6QI	3-1528	WR6AZN Trustee:	Bill Wood, W6FXJ	760-256-9576

Upcoming Events:

- Every Monday: Emergency Communications Net: Noon, on WR6JPL 224.08/(-)/156.7 & 445.20/(-)/103.5, or WR6AZN 223.96/(-)/156.7 on Table Mountain.
- JPLARC Board of Directors (BOD) meetings: Normally, the first working Friday, every month, from Noon to 1pm in 180-703C. Call-in: 818-354-3434 ID 7373. **Next is May 9th.**
- **QST, QST, QST**: JPLARC Regular Membership meetings: Second working Friday every month from Noon to 1pm in 180-703C. Call-in: 818-354-3434 ID 7373. Slides (if any) broadcast via meetingplace.jpl.nasa.gov, ID=7373. **Next is April 25th. Guest speaker: Mike Tope W4EF discussing "Remote Station Control".**

In this issue:

This issue covers:

- New JPLARC email address
- 2014 Dues were due January 31st.
- March regular membership meeting (3/28).
- Board of Directors meeting (4/11).
- Field Day 2014 planning update.
- Emergency communications (cont'd).
- ARRL Membership
- How to sign up for the JPLARC email reflector.
- For Sale.
- Future membership meetings & speaker topics.

New JPLARC Email

Address:

By Jim Marr AA6QI

The JPLARC has a new email address: w6vio@arrl.net that now appears in the header of this newsletter (see above).

This email address allows anyone anywhere (JPLARC member or not) to send questions or information to the JPLARC, augmenting the [jplarc](http://jplarc.ampr.org) email reflector that requires a person's email address to be subscribed before they can send email to it.

Email sent to this address is forwarded to the JPLARC Vice President, Courtney Duncan N5BF, who will then take appropriate action.

2014 Dues:

By Jim Marr AA6QI

The JPLARC Bylaws provide that annual membership dues are to be paid by January 31st of each year. So far we have 44 dues-current members for 2014, with a few 2013 members yet to rejoin for 2014. If you do intend to join or renew for 2014, please complete the membership application form located on the [jplarc](http://jplarc.ampr.org) website at <http://jplarc.ampr.org/applic.pdf> and submit it with your annual dues to Rob Smith either in person at a meeting or at the mail address in the upper left corner of the application. We look forward to having your participation in the club for 2014.

March 28th Regular Membership Meeting:

By Jim Marr AA6QI

Present were: Gary Block[†] KJ6IZX, Bob Cesarone WA9JIB, Walt Ciszczon[†] KK6DUL, Courtney Duncan^{†*} N5BF, Jorge Gonzalez[†] KI6BJB, Mark Lysek[†] AG6TD, Jim Marr^{†*} AA6QI, Steve Noland[†] WA6KLC, Lenoard Reder[†] KB6DVG, Chuck Sarture^{†*} KG6NF, Rob Smith^{†*} W6GRV, Jan Tarsala[†] WB6VRN, Mike Tope[†] W5EF, Bill Weber[†] N6CI, Les White[†] KN6JU. On the phone: Dayton Jones[†] K6DJ and Merv Macmedan N6NO.

Note: † indicates a regular member, and * Indicates BOD member. For a regular meeting quorum, the JPLARC Bylaws require a majority of the BOD (4) and at least five other regular members, so we had a quorum.

Vice President Courtney Duncan opened the meeting explaining that President Steve Townes was on travel and then commenced with introductions around the room.

Rob Smith announced that the Pasadena Radio Club (PRC) W6KA has agreed to do a joint Field Day with the JPLARC at the Pasadena Art Center in their parking lot. The JPLARC Field Day Committee met yesterday to go over some options for what the level of participation might be. Paul Gordon N6LL, the PRC Field Day chair will be meeting with interested personnel from both clubs next Monday at 5PM in the Art Center parking lot to discuss leadership roles for the various functions. Last year, PRC had two SSB stations, a CW station, and a VHF/UHF station. More information will be provided in the April issue of W6VIO Calling after an agreement is reached with the PRC Field Day Committee.

Jim Marr AA6QI announced that the JPLARC now has a general email address: w6vio@arrl.net. This email allows folks who don't have access to the jplarc email reflector to interact with the club (e.g., other clubs asking for presentation support, etc.). Currently, emails to this address are passed to our Vice President, Courtney Duncan N5BF. This email address will also appear in the newsletter's header. Jim Marr took an action to work with Bill Wood to add the email address to our club website home page.

Guest Speaker:

Jim Marr AA6QI and Jan Tarsala WB6VRN provided a talk titled "CW - the Why and the How." This talk covered: Why learn CW; International Morse Code Characteristics; History of Morse Code; CW vs. other modes; Where CW still shines; Who can use CW; Learning CW; Learning CW references; How to get practice; ARRL code practice files; Keys & keyers; JPLARC rigs with CW; Operating CW; QRP & CW-only rigs; CW decoders; FISTS; and Discussion/wrapup.

In the "Learning CW" portion of the talk, extensive discussion took place about the Farnsworth and Koch methods of learning CW, during which Jan Tarsala and Courtney Duncan both relayed stories of their wife/daughter learning CW within weeks using the Koch method and both endorsed that method as the only reliable method for learning Morse Code. Links were provided for PC, Mac and mobile phone applications for training using the Koch method.

Handouts of the presentation were provided during the meeting but anyone wanting a copy of the presentation in .pdf form should contact Jim Marr by email.

BOD Meeting April 11th

By Courtney Duncan N5BF, edited by Jim Marr AA6QI

Present: Courtney Duncan* N5BF, Jim Marr* AA6QI, Chuck Sarture* KG6NF, Steve Townes* WB4ILW, Bill Weber N6CI.

Phone: Walt Mushagian K6DNS, Mike Tope W4EF.

* indicates BOD member; a BOD quorum was present (requires 4 of the 6 BOD members to be present).

VP Report: New w6vio.arrl.net email [ed.- see newsletter header above] now comes to Courtney.duncan@jpl.nasa.gov. No traffic yet.

Treasurer's report - Chuck Sarture KG6NF:

Beginning Balance: \$ 2,855.71

Deposits: + \$ 55.00 - 2014 membership dues
+ \$1,284.00 - Equipment Sales

Withdrawals: - \$ 62.00 - Club PO Box Rental
- \$ 115.00 - GAP antenna repair

Ending Balance: \$ 4,017.71 .

Financials: Did better than expected on equipment sales so far (see Figure-1 in the March issue of W6VIO Calling); not finished yet (still a few items to sell). Marr bought manual for our DEMi 432-28 transverter (presented receipt); ours is of the first DEMi design of this series of transverters; 30W out on weak signal portion of 70cm band; asking \$50.00 (current version sells for \$500.00). Dentron Clipperton L amplifier power cord wasn't good; Marr replaced last night (presented receipt). Moved-Seconded-Passed (MSP) that Marr & FD Committee is authorized to spend what is needed for FD preparation up to the \$380.00 in the 2014 JPLARC budget. MSP that Lux is approved up to the \$500.00 budgeted for "B35A Upgrades - Embedded PC." Other items in the repeater category are waiting on a proposal from the repeater committee.

Guest speakers for upcoming general meetings: [ed.- see the end of this newsletter for this list.] Just added speaker Gary Wong W6GSW for an August 15th discussion of the 2.4 GHz Broadband Hamnet (formerly Ham Meshnet).

Committees: Discussed possible chairpersons for the standing committees identified in the JPLARC Bylaws.

EmComm: Chris Carson KE6ABQ is the logical chair - to be approached by Marr. **Education:** Courtney Duncan N5BF agreed to be the vector for Education (licensing) to local opportunities and resources; this can be the function of the Education committee for this year.

Publication/Membership - Steve Townes will help Rob Smith.

Repeater - Function as is.

Internet Services - Need to get away from all of the old aging machines upstairs for the email exploder, web site, Echolink/IRLP; Smith and Marr have

passwords for the email exploder for membership maintenance; Duncan suggests micromanaging the Internet Services committee with specific tasks for specific people; Marr will make a list and we'll work it by approaching individuals for tasks.

Station Facility - All of the government equipment is in Mike Tope's name; Tope declined to chair the facilities committee. Need to reopen the conversation with Bob Develle about the 173 move since the parking structure is due to open in august (meaning a traffic circle in the East Gate location) as there has been no apparent progress on a replacement building. Building 180-R6 occupancy is apparently no longer threatened but not thought to be useful in earthquake communication since 180 itself is likely to be yellow or red tagged.

Ran out of time so didn't get to the work list items this meeting.

The meeting adjourned at 1:00 PM.

2014 Field Day Planning Update:

By Jim Marr AA6QI (& the FD Committee)

Field Day (FD) 2014 (June 28th & 29th) is now just two months away and plans are firming up for our joint FD with the Pasadena Radio Club (PRC) in the large parking lot of the Art Center off of Lida Street just a hop-skip-&-jump on the other side of the 210 freeway from JPL. Several JPLARC'ers participated in the PRC 2013 FD (AA6QI, KC6FSP, W6EJJ, WB6KZE) and had a pleasant, relaxing time, while also meeting new ham friends.

This year, JPLARC will be providing the CW station (and serving as the CW Station Captain), antennas, & some infrastructure items (generator, table, tent, etc.). The PRC will have a VHF/UHF station, two (three?) SSB stations, and a digital station (PSK-31). Lunch and restrooms are at the Art Center, there will be a Saturday evening potluck dinner and a Sunday morning pancake breakfast.

Setup will begin at 7AM Saturday morning, contest operations begin at 11AM and run continuously through Sunday 11AM, followed by teardown.

We hope that JPLARC members will come out and participate. To that end, an email FD interest survey was sent out a couple of weeks ago. If you can fill it out and return the survey form, it would help us better plan how to divvy up the effort for preparation and execution of FD. We'll accept any level of participation that you'd like to offer.

This year, we've also invited the Caltech ARC to join the JPLARC and PRC clubs.

JPL ARC EmComm

By Jim Marr AA6QI

As advertised last month, I'll briefly discuss the Incident Command System (ICS) structure and how it might apply to an event like the ARRL Field Day.

Recall from last month that the ICS is described in FEMA course IS-200. I won't be able to more than touch on a bit of the material in that course so please refer to the course itself for more details. The illustrations in this article came from the recently released Auxiliary Communications Field Operations Guide (AUXFOG) from the U.S. Department of Homeland Security, Office of Emergency Communications.

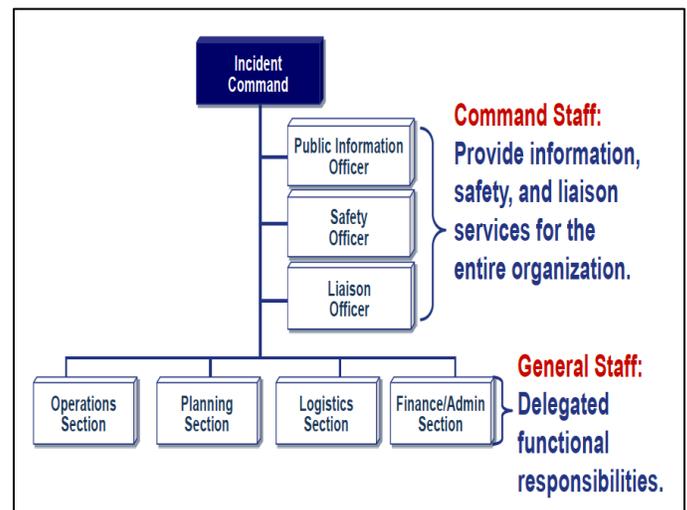


Figure 1: Incident Command System - Basic Organization

The ICS structure, Figure-1, is fully scalable, from as small as one person doing everything to incidents involving hundreds to thousands of individuals and is suitable for emergency or nonemergency situations. The ICS structure can be dynamic even during a single situation, expanding and contracting as the situation requires. It can also be used for planned events (e.g. ARRL Field Day).

The following descriptions of each of the ICS components is taken directly from IS-200. Refer to Figure-2 for a graphical presentation of this hierarchy.

Incident Commander (IC): The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

Command Staff: The Command Staff consists of:

Liaison Officer: A member of the Command

Staff responsible for coordinating with representatives from cooperating and assisting agencies. The Liaison Officer may have Assistants.

Public Information Officer: A member of the Command Staff responsible for interfacing with the public and media or with other agencies with incident-related information requirements.

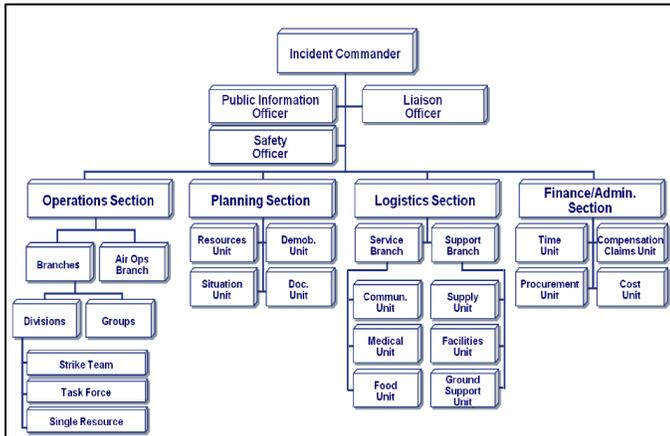


Figure 2: Expanded ICS Organization

Safety Officer: A member of the Command Staff responsible for monitoring and assessing safety hazards or unsafe situations, and for developing measures for ensuring personnel safety. The Safety Officer may have Assistants.

General Staff: The organization level having functional responsibility for primary segments of incident management (Operations, Planning, Logistics, Finance/ Administration). The Section level is organizationally between Branch and Incident Commander. Sections are as follows:

Operations Section: The Section responsible for all tactical operations at the incident. The Operations Section:

- Directs and coordinates all tactical operations.
- Is typically one of the first organizations to be assigned.
- Expands from the bottom up.
- Has the most resources.
- May have Staging Areas and special organizations.

The Operations Section includes:

Branch: That organizational level having functional, geographical, or jurisdictional responsibility for major parts of the incident operations. The Branch level is organizationally between Section and Division/Group in the Operations Section, and between Section and Units in the Logistics Section. Branches are identified by the use of Roman numerals, by function, or by jurisdictional name.

Division: That organization level

having responsibility for operations within a defined geographic area. The Division level is organizationally between the Strike Team and the Branch.

Group: Groups are established to divide the incident into functional areas of operation. Groups are located between Branches (when activated) and Resources in the Operations Section.

Unit: That organization element having functional responsibility for a specific incident planning, logistics, or finance activity.

Task Force: A group of resources with common communications and a leader that may be pre-established and sent to an incident, or formed at an incident.

Strike Team: Specified combinations of the same kind and type of resources, with common communications and a leader.

Single Resource: An individual, a piece of equipment and its personnel complement, or an established crew or team of individuals with an identified work supervisor, that can be used on an incident.

Planning Section: Responsible for the collection, evaluation, and dissemination of information related to the incident, and for the preparation and documentation of the Incident Action Plan. The Planning Section also maintains information on the current and forecasted situation, and on the status of resources assigned to the incident. This Section includes the Situation, Resources, Documentation, and Demobilization Units, as well as Technical Specialists.

The Planning Section has responsibility for:

- Maintaining resource status.
- Maintaining and displaying situation status.
- Preparing the Incident Action Plan (IAP).
- Developing alternative strategies.
- Providing documentation services.
- Preparing the Demobilization Plan.
- Providing a primary location for Technical Specialists assigned to an incident.
- One of the most important functions of the Planning Section is to look beyond the current and next operational period and anticipate potential problems or events.

Logistics Section: The Section responsible for providing facilities, services, and materials for the incident. Includes the Service Branch (Communications Unit, Medical Unit, and Food Unit) and Support Branch (Supply Unit, Facilities Unit, and Ground Support Unit).

The Logistics Section is responsible for all support requirements, including:

- Communications.
- Medical support to incident personnel.
- Food for incident personnel.
- Supplies, facilities, and ground support.

It is important to remember that Logistics Unit functions, except for the Supply Unit, are geared to supporting personnel and resources directly assigned to the incident.

Finance/Administration Section: The Section responsible for all incident costs and financial considerations. The Finance/Administration Section includes the Time Unit, Procurement Unit, Compensation/Claims Unit, and Cost Unit.

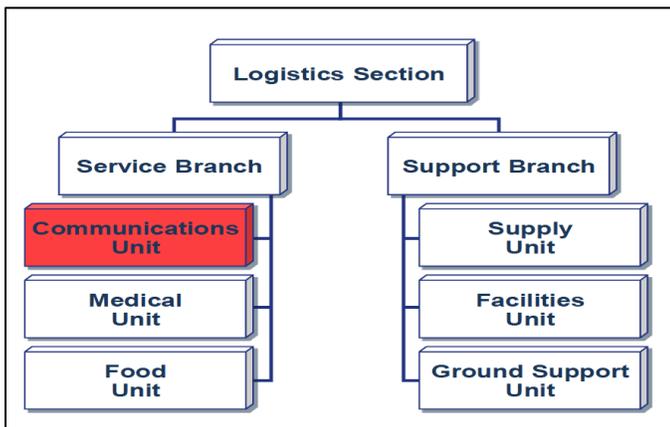


Figure 3: Logistics Section, Communications Unit

Logistics Branch (Figure 3) further details:

Service Branch: The Service Branch may be made up of the following units:

The **Communications Unit** is responsible for developing plans for the effective use of incident communications equipment and facilities, installing and testing of communications equipment, supervision of the Incident Communications Center, distribution of communications equipment to incident personnel, and maintenance and repair of communications equipment.

The **Medical Unit** is responsible for the development of the Medical Plan, obtaining medical aid and transportation for injured and ill incident personnel, and preparation of reports and records.

The **Food Unit** is responsible for supplying the food needs for the entire incident, including all remote locations (e.g., Camps, Staging Areas), as well as providing food for personnel unable to leave tactical field assignments.

Support Branch: The Support Branch within the Logistics Section may include the following units:

The **Supply Unit** is responsible for ordering personnel, equipment, and supplies; receiving and

storing all supplies for the incident; maintaining an inventory of supplies; and servicing nonexpendable supplies and equipment.

The **Facilities Unit** is responsible for the layout and activation of incident facilities (e.g., Base, Camp, and Incident Command Post (ICP)). The Facilities Unit Leader provides sleeping and sanitation facilities for incident personnel and manages Base and Camp(s) operations. Each facility (Base, Camp) is assigned a manager who reports to the Facilities Unit Leader and is responsible for managing the operation of the facility. The basic functions or activities of the Base and Camp Managers are to provide security service and general maintenance.

The **Ground Support Unit** is responsible for supporting out-of-service resources; transporting personnel, supplies, food, and equipment; fueling, service, maintenance, and repair of vehicles and other ground support equipment; and implementing the Traffic Plan for the incident.

ICS for Field Day: Ok, so how might we use this model to coordinate activities during an ARRL Field Day (FD) event? First, FD rules can be found at [ARRL Field Day 2014 Rules](#). These rules provide the context for the event. There are clearly many approaches that can be taken to field day, so here I will attempt to model the upcoming joint 2014 FD with the Pasadena Radio Club (PRC), JPLARC, and CITARC, with the PRC being the lead organization.

FD Incident Commander: This would be the PRC's FD chair, Paul Gordon N6LL or his alternate. Paul would be in charge of coordinating all FD efforts.

FD Command Staff - Liaison Officer: Responsible for coordinating with the supporting JPLARC and CITARC FD chairpersons.

FD Command Staff - Public Information Officer: Responsible for arranging for and executing media publicity and the public information table (both for FD extra points).

FD Command Staff - Safety Officer: Responsible for ensuring a safe FD event for all personnel, including electrical, mechanical and RF safety. Examples include proper grounding of generators & radios, safely putting up & taking down antennas, ensuring antennas and tents are properly secured for winds, preventing trip hazards from cable runs, conducting & posting an RF safety survey, etc.).

FD Operations Section: Each Band Captain team (e.g., 40m SSB, etc.) would form a Group within this Section. As long as there are fewer than seven Band Captains, there should be no need to form Branches. Each Band Captain Group could have separate Units within that Group for the radio, logging computer plus software,

and antennas for that Band Captain Group.

There are alternative ways that the Operations Section might be organized for a FD event and it's up to the Section manager to organize the Section as best fits the FD operation from his/her perspective.

FD Planning Section: Responsible for putting together the overall FD plan and revising it as needed before and during the FD event. Responsible for documenting FD activities (logs, photos and other records such as may be required for extra points). Responsible for anticipating potential problems. Responsible for tracking resource status (e.g., generator gasoline levels, etc.).

FD Logistics Section – Communications Unit: Responsible for assisting in installation and test of radio gear and providing the resources and assistance for repairs of equipment.

FD Logistics Section – Medical Unit: Responsible for ensuring first aid supplies are on hand, administering first aid as required, and arranging for medical transport of injured personnel as required.

FD Logistics Section – Food Unit: Responsible for coordinating the Saturday evening pot luck dinner, the Sunday morning pancake breakfast, and ensuring access to the Art Center cafeteria for Saturday and Sunday lunches.

FD Logistics Section – Supply Unit: Responsible for obtaining, storing, and inventorying supplies (e.g., paper products for the Food Unit, gasoline for generators, and miscellaneous other supplies).

FD Logistics Section – Facilities Unit: Responsible for the layout of the FD site and for coordinating sleeping & sanitation facilities if required (e.g., obtaining permission to use the Art Center's restrooms).

FD Logistics Section – Ground Support Unit: Responsible for generator fueling, service, maintenance & repair. Responsible for the FD site traffic plan implementation. Responsible for providing transportation for personnel, supplies, food, equipment as required.

FD Finance/Administration Section: Responsible for obtaining needed permits to use the Art Center parking lot and for obtaining proper insurance for participants. Also responsible for tracking any costs that need to be paid for by the individual participating clubs.

FD ICS Summary: The description above for how to apply the ICS structure to an ARRL Field Day event is intended to help make the ICS organizational elements a bit more concrete than the abstract descriptions in IS-200. FD events usually have all of these elements, often done by one or a few people for the benefit of all participants. The ICS structure, though, provides a way of formally thinking about these roles and could even be

used to assign specific individuals specific roles for the duration of the FD event, noting that more than one individual may be needed to support each position in order to cover the duration of the FD event.

This introduction to the ICS has been pretty brief (although given the length of this article, it may not seem so brief), you are encouraged to take the free NIMS IS-200 on-line course, for which you are hopefully better armed to absorb after reading this article. You can find the course at:

<http://training.fema.gov/EMIWeb/IS/courseOverview.aspx?code=IS-200.b>.

I'll stop here, but hope to see you all at this year's Field Day, even if it's just to stop by and watch the action.

Next month, I'll discuss some good radio protocol practices for emergency communications.

ARRL Membership:

By Jim Marr AA6QI

As an ARRL affiliated club, at least 51% of our membership must be ARRL members. Today, we have 61% as either Life (7) or Regular (20) ARRL members. That leaves seventeen 2014 members who are not ARRL 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 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, the Club retains \$15 of your membership fee to support Club activities. From your point of view, the membership fee is the same either way. Even if you are an annual 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 Jim Marr who will help you with the paperwork (don't worry, it's really simple!).

Thanks in advance for considering joining ARRL.

How to sign up for the JPLARC email reflector:

By Jim Marr AA6QI

The JPLARC maintains an email reflector (also called an email exploder) that allows members to post questions or comments that will reach the entire JPLARC membership. Only subscribed members can post to this reflector, avoiding spam from non-members, and can only do so from their subscribed email address. Sign up using the form located at <http://wr6jpl.ampr.org/mailman/listinfo.cgi/jplarc>. Recently, we have been automatically adding members of the club as they join or renew.

For Sale

By Jim Marr AA6QI

As reported last month, the JPLARC membership approved selling a number of JPLARC equipment items as shown in last month's issue Figure-13. At the time of this writing, nearly all of the equipment has been sold, with only seven items remaining, as listed below. A .pdf is available (call or email me) that provides one page descriptions of each remaining item. I am planning to make these items available through various channels in SoCal, so if you are interested in any of them, please make your offer to either me or to our Treasurer Chuck Sarture KG6NF, sooner rather than later.

Items remaining for sale include:

- Dentron Clipperton-L HF Linear Amplifier (160-15m, with the 10m mod). Drive requirement is 60-150 watts for 2kW SSB PEP or 1 kW CW output via four 572B finals. Operates on 117VAC (current configuration) or 234VAC. Asking \$400.00 or best offer.
- Down East Microwave, Inc. Model 432-28 (70cm to 28MHz transverter) - enables 30W on the weak signal portion of the 70cm band. Complete with manual. DEMi sells new 50W version for \$499.00+Tax+S&H. Asking \$50.00 or best offer.
- MFJ-8621 VHF Data Radio 2m/9600Baud (with power supply and xtals for 145.09MHz - which, paired with a TNC and computer, could give you a way to get on 2m packet radio. This is still a current MFJ product that sells for \$189.95+tax+S&H. Looks brand new, still in original box. Has crystals for 145.01 and 145.09. Asking \$25.00 or best offer.
- Quantity=2, Cushcraft 13 element 220MHz Yagi Antennas. Asking \$50.00/each or best offer.
- Telex V-220 Headset. Asking \$20.00 or best offer.

We expect that additional items will be offered for sale later in the year, all to generate funds for new Club pro-

jects (like remote HF and others).

Your wants or gear for sale?

Send your listing to me (Jim Marr via email or snail mail at 180-704) and I'll see that it gets into the next issue.

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. Call in is via MeetingPlace 818-343-3434 with ID 7373. Slides, if any, will be broadcast via <http://meetingplace.jpl.nasa.gov> also with ID 7373. Upcoming talks (subject to change):

April 25th: Mike Tope W4EF on Remote Station Control.

May 23rd: Doug Millar, K6JEY, "Sidewalk EME"

June 20th: Jim Marr AA6QI will lead the Field Day committee report (final meeting before Field Day itself).

June 28th: Field Day with the Pasadena Radio Club W6KA at the Art Center in Pasadena.

July 18th: Field Day pictures and lessons learned discussion. Initial planning for 2015 Field Day.

NEW! August 15th: Gary Wong W6GSW will discuss the new 2.4GHz Broadband Hamnet (formerly known as Ham Meshnet).

September 26th: TBD will discuss Interfacing your radio to your computer, computer logging, & electronic QSL'ing.

October 24th: Steve Townes WB4ILW, Software Defined Radios & introduction to the 2015 Officer Nominating Committee.

November 21st: N5BF, Bicycle Commute APRS & Introduction of 2015 Officer Candidates.

December 19th: Club holiday celebration at TBD.

Advertisements:



<http://www.hamradio.com>

The Burbank HRO store is offering a 5% discount on ham radio "accessories" to JPLARC members, upon presentation of a valid JPLARC membership card.