

ORCA NewsLetter

Oakland Radio Communication Association
Oakland, California

September 11, 2004 The next meeting will be on the first Saturday, September 11, 9:00 AM at Fire Station 1 media room, 1605 Martin Luther King at 17th Street, Oakland.

President's Corner



The "dog days of summer" have finally passed along with the notoriously poor summertime hf propagation conditions. Hopefully, you've had some fun on the VHF/UHF bands or tinkered with your favorite radio project.

It sure was fun hearing about Doug's (**N6TQS**) fascinating DXpedition to **T33C** at last month's meeting and what a great turnout for August. The Board meeting also exhibited a lot of the great energy that currently fuel's the club's activities.

This Fall will be time to get back down business starting with our September meeting (moved to September 11 to avoid Labor Day weekend) when David, **WB6NER**, will role out the ECHO system upgrades along with planning our participation in Ala-

ameda County's Annual emergency preparation drill which will serve as our SET for this year. ORCA's annual meeting has been moved to October 2 and will include a training session on the new emergency management software rolled out by the OES. Just in the nick of time as we face a potentially troublesome fire season.

For inspiring stories of recent responses of the Amateur Radio Service to true disaster conditions simply look up the reports of ARES/RACES activities in connection with Hurricane Charlie on the ARRL and

other websites. Amateur Radio truly is the only fail safe communications resource when the chips are down!

Back to the hobby, the August issue of CQ magazine contains the results of the 2003 CQ World Wide DX Contest. On page 109 under the results for Multi-operator Single Transmitter North America is the score for Amateur Radio Station **WW6OR**:

112,112 total points
(is there a reward for symmetry?)
262 QSOs
73 zones
and 123 total countries
(symmetry again!)

Sure looks like we should enter another contest soon!

73, Jim **K6JAT**

Special points of interest:

- The Satellite Beacon
- Hams Wanted
- Ham Radio in ICS
- New/Renewal Membership form
- Board Election at October 2 meeting

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This Months Meeting

ECHO system upgrades deployment starts.

- Help is needed on
- 1) ECHO: ham equipment in Oakland fire stations Starts in September!
 - 2) Skyline High radio room
 - 3) Chabot Space & Science Center radio station
 - 4) EOC Radio Room

Please note, the City of Oakland SET is September 23rd!
Board Elections moved to October 2nd meeting.

Hams Wanted

The Bikeathon fundraiser, Bike Against the Odds, is looking for SAG drivers and Amateur Radio communications. This year's event will be on Sunday, October 24 from 7 AM to 3 PM.

For more information or to volunteer please contact Mike Pompa, **KB6MP**, at mikep@pdarrl.org or evenings 510-531-8209. Mike will send volunteers a short questionnaire to help place you in an appropriate role.

Last year's experience shows that mobile rigs were a necessity on half of the routes, so we are hoping to attract hams who are willing to drive their mobile equipped vehicles with SAG (Supplies and Gear). This means you will drive with a bike mechanic or first aid/EMT, and may have to stash a bike or two on a bike rack, or deliver cases of water/food to a rest stop. Of course, with rest stops and the main event at Lake Merrit, there are plenty of opportunities for HT equipped volunteers to help with communications.

Routes cover from 12-65 miles, all on streets of Oakland, Orinda and Moraga.

The organizers are the Breast Cancer Fund, which focuses on breast cancer prevention and the Oakland Yellow Jackets bicycle group. This year's ride is in honor of KTVU's Faith Fancher, who passed away on the day of last year's ride.

Ham Radio in the ICS

Information from <http://www.emcomm.org/ARCT/> to expand on the Amateur Radio ICS information that appeared in the President's Corner in June.

EMERGENCY AND AUXILIARY LICENSED AMATEUR RADIO COMMUNICATIONS ORDERING RESOURCE GUIDE

In order to bring amateur radio emergency and auxiliary communication (EMCOMM) resources into compliance with Incident Command System practice and procedures, the follow nomenclatures should be used when amateur radio EMCOMM services are "ordered" during a ICS event. Each "TYPE" team is designed to provide 24/7 coverage, and will be dispatched with its own supervisor who will also serve as the liaison to the incident Communications Coordinator (COMC).

It is proposed that this will be included in the NICC Resource Ordering manual and be used by ICS Logistics personnel for all major (including non-fire) events.

ARCTs

ARCT Type 1 (Full field station and 4 mobile/portable units)

- Complete amateur radio emergency/auxiliary communi-

cations team for single or multiple agency communications.

- Capability: Short range (VHF/UHF) and long range (HF) voice and digital communications for tactical, logistics, health/welfare, administrative, and other radio traffic. Is not dependant upon any outside power source or infrastructure.
- 12 persons including one supervisor and one assistant supervisor. Consists of one ARCT (Type 2 or 3) base station; and four Type 4 units (mobile, portable, or "rovers".

ARCT Type 2 - (Field/base station)

- Capability: Short range (VHF/UHF) and long range (HF) voice and digital communications for tactical, logistics, health/welfare, administrative, and other radio traffic. Is not dependant upon any outside power source or infrastructure.
- 4 (or more) licensed and registered AROs with one or two vehicles.
- 2 must be General class (or higher).
- May be assigned to a specific agency, or for AUX/EMCOMM. at a staging area, CP, EOC, etc. for multiple agency service.

ARCT Type 3 - (Field/base station / no digital)

- Same as ARCT TYPE 2 but without digital capability (VHF packet and/or HF pactor).

ARCT Type 4 (Mobile/portable field units)

- 2 licensed and registered AROs with one or two vehicles.
- Technician class or higher (At least 1 General or higher if available.)
- VHF FM (minimum) equipped, HF mobile/portable desired.
- May be assigned to a specific agency or to supplement/relieve an existing multi-agency ARCT.

ARCT Type 5 - (Mobile/portable field additional support unit)

- 1 individual licensed and registered ARO with vehicle.
- Technician class or higher.
- VHF FM (minimum) equipped.
- Rarely (if ever) ordered singly.
- May be assigned to a specific agency or to supplement/relieve an existing ARCT.

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Oakland Radio Communication Association

Club: WW6OR
Repeater: WB6NDJ

New Membership and Renewal Form

New Member Renewal

Family membership—number of additional Hams: _____

Name _____

Call _____ License: E__ A__ G__ T+__ T__ N__

Address _____

City _____ State__ Zip_____

Email _____

Newsletters will be emailed only to members who specifically request them. All others will receive them by mail. Email?

Best Phone (_____) _____ Alternate Phone (_____) _____

Best is a: cell work home Alternate is a: cell work home

Are you an ARRL Member? Yes No

Family Hams name/call sign/license class:

Please remit a photocopy of your FCC license (and any Family Ham licenses) with a check payable to "ORCA" to

ORCA
P.O. Box 21305
Oakland, CA 94620-1305

2005 new members: \$30.00 up to March 31, 2005
2004 members renewing for 2005: \$30.00 due by February 28, 2005
[\$22.50: 4/1/05-6/30/05; \$15: 7/1/05-9/30/05; \$7.50: 10/1/05-12/31/05]
2005 additional family Hams: \$5 each other Family Ham (not prorated)
2006 dues will be accepted: \$30, plus \$5 each other Family Ham

Final acceptance of this application and membership in ORCA with repeater privileges is subject to review and/or approval by the ORCA Board.

I agree, for myself and for any Family members included in this application, to abide by the rules and regulations set forth in the ORCA Bylaws and the applicable repeater operating procedures.

Date: _____ Signature: _____

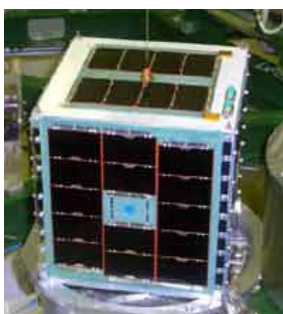
The Satellite Beacon ●●●● ●● ●●●● ●● ●●●● ●● ●●●● ●● ●●●● ●●

By Emily Clarke W0EEC
VP, Project OSCAR and AMSAT Area Coordinator

So You Want to Work AO-51?

AMSAT-OSCAR-51 is the newest satellite launched by AMSAT. It is the strongest satellite in the sky other than the ISS, and is one of the most complex satellites currently in operation. It has many subsystems and as some have said, "it has something for everyone" including simultaneous voice and packet operations. In this article I'll focus on making a voice contact.

Launch and Checkout



AO-51 was launched from the Baikonour Cosmodrome in Kazakhstan on June 29, 2004 and was inserted into a sun synchronous orbit which allows it to be over the same geographical location basically the same time every day. For us in North America, this happens in approximately 11am for the descending (north to south) pass, and late evening (11pm) for the ascending pass. It underwent

testing for 30 days after launch, and was turned over to amateur access on July 30th.

When AO-51 was first turned on it's first over the East Coast it was estimated that over 500 amateurs attempted to use the satellite. Three reported having QSOs, while the other 497 were left scratching their heads. When the satellite passed over central North America 80 minutes later, those 500 stations were joined by another 500 from the west coast. Two stations reported having QSOs. At 30 minutes past midnight AO-51 showed up out over the Pacific ocean. Estimates are that 200 people on the west coast stayed up, and about 8 QSOs took place. I was one of the lucky ones.

So what happened?

AO-51 is a low earth orbit satellite (LEO) mode J-FM (V/U) voice repeater, the same as launching your local repeater in orbit, except for one very significant difference. Instead of having a range of 50 or so miles, it can be accessible to the entire country at one time. While this may sound beneficial at first, the results can be disastrous. If you've ever heard a double on your local repeater when the net control calls for check-ins, think of the results when 500 stations suddenly try to check in to the same repeater at the same time. It's a pileup.

Quite a lot of the pileup results from people who have never heard a satellite before but key up to "just to make sure it's there". There are also those who can hear it, but don't have on the required 67Hz PL tone. Although AO-51 will not repeat those signals, they can jam weaker signals and prevent them from getting through. Lastly an FM re-

peater is not designed to handle that many simultaneous signals, so they double, triple and... well, you can see the results are predictable.

How Will I Ever Get In?

The good news is that in the weeks following activation of AO-51 the load has lightened and it's easier to get it if you plan ahead and avoid the pileups. Many people are able to work Echo successfully and I have consistently been able to get in at 5 watts with both an Arrow antenna and a 1/2 wave whip. Aruni **VE4WMK** who is 10 years old uses an HT with an Arrow and is very successful following using very simple techniques that I posted in article on the AMSAT website entitled "12 Suggestions for Handheld Transceiver Users". Here are some of the basics:

1. Listen First. If you can't hear other stations, you can't work them. AO-51 is very strong (only the ISS is stronger) so almost everyone can hear it on a good HT with a good whip antenna, the dual-band Arrow yagi or the dual band Elk log periodic that are sold at most flea markets in the area.
2. Keep your squelch off. Although Echo is strong, it's not strong enough to break your squelch in most cases.
3. Make sure you have your PL tone set to 67hz. Like most repeaters, even if you get a chance to get in, you won't without the PL tone set. Don't try to use tone squelch either, as Echo does not transmit a 67Hz PL tone back on it's downlink.
4. Don't use a vertical antenna. Whips and ground plane antennas should be tilted so that the vertical is 90 degrees off the elevation of the satellite.
5. Know where the satellite is. Keep a tracking program nearby where you can reference it. If you are handheld outside, use a handheld computer running PocketSat or PetitTrack to reference the satellite's position.
6. Use Dual Headphones! I can't stress this enough. Your brain is the best DSP there is, and if you only hear the signal through one ear, your brain can't filter out the noise nor can it react quickly to call signs.

How Should I Prepare?

When you decide to work AO-51 for the first time, some preparatory steps will help.

- Visit the AMSAT website and visit the Echo Project page to make sure you have the correct frequencies. The AMSAT website also has online pass predictions in the Tools section which will calculate the passes for your location.
- Try listening on one pass nearby (over 30 degrees of

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Money and Members

With this edition I bid you adieu as far as the Money and Members column. By this time in October, I expect we'll have a new Treasurer and that person will put their own imprint on this space. Thanks for all your support and cooperation over the years, and for your dues and donations! We couldn't do it without you all. I'm pleased to be able to leave the books in good order and the treasury in a healthy state.

The Satellite Beacon - Continued

(Continued from page 4)

elevation) and see how well you are receiving. If you can't hear the satellite, you may need to improve your receive antennas.

- Try to arrange a sked with another station. It's easier to make a contact with someone who is experienced on the satellites than cold calling. That contact can also help you determine how well your signal is doing.
- Plan on working a pass away from populated areas (see the map white spots are high density population areas.) If you can work to the north or west or over the ocean, your results will be better because statistically there are fewer people.

Most of all, don't get discouraged. AO-51 is reprogrammable from the ground and they have made some improvements to it already. For example, initially the power was set to 330mw, then 500mw and now is set for 1W. AO-51 can operate up to 7 watts, but it is unlikely they will increase power over 2W since most stations now receive AO-51 full quieting.

Echo Frequencies

The following are the announced frequencies for AO-51:

Voice Uplink:	145.920 MHz FM (PL 67Hz)
	1268.700 MHz FM (PL 67Hz)
Voice Downlink:	435.300 MHz FM
Packet Uplink:	145.860 MHz 9600 bps, AX.25
Packet Downlink:	435.150 MHz 9600 bps, AX.25
	2401.200 MHz 38,400 bps, AX.25
Broadcast Callsign:	PACB-11
BBS Callsign:	PACB-12

Website References

AMSAT
<http://www.amsat.org>

The Echo Project Page
<http://www.amsat.org/amsat-new/echo/>

12 Suggestions for HT Users

<http://www.amsat.org/amsat-new/echo/EchoHT.php>

Online Pass Predictions

<http://www.amsat.org/amsat-new/tools/predict/>

So best of luck and CU on the Birds!

73, Emily **W0EEC**

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 Echo photo courtesy of AMSAT-NA.

Ham Radio in ICS

(Continued from page 2)

ICS Logistics Officers and/or Communications Unit Leaders should be provided with a current list of persons to notify to activate an ARCT.

ICS uses 4 character mnemonics.

ARCTs may be pre-existing units, but more than likely they will be assembled from existing registered EMCOMM operators at the time of the incident. Prudent EMCOMM managers will foresee the need when incidents and potential incidents occur and will begin to assemble the ARCT resource before an actual call is received.

A team may be short a member or two...notify the ICS person who is placing the order.

ICS structure also works within the ARCT.

1. ARCT Coordinator
2. ARCT Assistant Coordinator
3. ARCT Plans and Training Coordinator
4. ARCT Operations (Nets, etc.)
5. ARCT Logistics (supplies, equipment (e.g. - generators, batteries, transportation, etc. but only as applies to the ARCT
6. ARCT Records and Reports

For more info, please visit
<http://www.emcomm.org/ARCT/>

Have a good digital photo of Jim, K6JAT?
 Send it to kg6der@arrl.net and I will use it as the President's Corner picture!



September 11th Meeting: ECHO System Upgrades

Monthly events

1st Sundays Livermore Swap meet Las Positas CC
1st Saturdays ORCA ARES Oakland OES 9:00
2nd Saturdays Electronics Flea Market in Sunnyvale
2nd Fridays East Bay Amateur Radio Club
3rd Fridays Mount Diablo Amateur Radio Club
3rd Fridays Hayward Radio Club
3rd Wednesdays Rocky Ridge Repeater Group
4th Fridays Alameda Radio Club Assn. (ARCA)

East Bay Amateur Radio Club meets 7:30PM at the
Salvation Army, 4600 Appian Way, El Sobrante.

Hayward Radio Club meets at 1401 West Winton Ave in
Hayward behind Hayward Fire Station 6, next to the
Hayward Air National Guard Base.

Alameda Radio Club Assn. meets 7pm at Building 522
West Midway on Alameda Point.

Mount Diablo Amateur Radio Club and the Rocky Ridge
Repeater Group meet at Our Savior Lutheran Church,
1035 Carol Lane, Lafayette.

NOTE: The Foothill Flea Market has been renamed the
Electronics Flea Market and relocated to the Lockheed
Martin parking lot west of the Satellite Test Center (Blue
Cube) for this year starting on March 13th.

Go to <http://www.asvaro.org> for maps, dates and general
info. Hope to see you there.

Bob **WA6OIW**

Nets

Thursdays Oakland ARES/RACES Net
7:30 PM 146.88 MHz minus PL 77
Thursdays Alameda ARES/RACES Net
7:00 PM 146.88 MHz minus PL 77
Thursdays NALCO ARES/RACES
7:15 PM 147.480 MHz simplex

ORCA Officers and Board

President:	Jim Tiemstra	K6JAT
Vice Pres.:	Alan Whitman	K6ZY
Treasurer:	Bob Firehock	KE6IUE
Secretary:	Art McLaughlin	W6THD
Director:	Adele Bertaud	KE6HKY
Director:	Dave Clemes	AE6PX
Director:	Bill Hardy	KF6VOG
Director:	David Otey	WB6NER
Director:	Brian Treusch	W6LL

Ex-Officio Directors:

ARES Liaison	Mark Violet	N6RCG
Repeater Trustee	David Otey	WB6NER
RACES RO	Jim Tiemstra	K6JAT
WW6OR trustee	Jim Tiemstra	K6JAT

The ORCA NewsLetter is published monthly.
Any articles can be used with attribution.
Articles, news and photos submitted make for a
more interesting newsletter; thank you!

Please submit materials for the next issue by
August 19 to Michael **KG6DER** kg6der@arrl.net or
fax to 707 215-6124. Thanks again!

ORCA on the web:

www.qsl.net/orca