

Relay

July 2009

Volume 39, Number 7

July Club Meeting

Date: Friday, July 24, 2009**Time:** Socializing at 7 pm, Meeting at 7:30**Place:** Covington School, 205 Covington Road, Los Altos**Speaker:** Michael Wright, K6MFW**Topic:** K6BEN ATV Repeater System

Summary: The K6BEN ATV repeater system, located high in the eastern foothills of San Jose, is a cross-band repeater for amateur television transmission. Repeater output is in the 70 cm band on the same frequency as cable channel 57. Consequently, you can "watch" the repeater from an analog TV tuned to cable channel 57 merely by connecting your rooftop antenna to the TV's cable input connector and pointing the antenna toward Mount Hamilton. More details are at http://k6ben_svatv.tripod.com/. Michael Wright, K6MFW, will describe the system and the equipment needed to get started in this fun aspect of Amateur radio.

Raffle Prizes: 1st prize: Garmin eTrex H handheld GPS receiver.2nd prize: ARRL 2009 Handbook. 3rd prize: ARRL Repeater Directory.

The club offers refreshments (great coffee, great cookies) and technical advice at the meeting: Bring your questions for Dr. Know-It-All and get great answers. Be sure to attend for an enjoyable evening.

Pre-Meeting Dinner: There is a pre-meeting dinner at 6:00 pm for those who would like to attend. We meet at the Beausejour Restaurant, 170 State St., Los Altos. There are Great Early Bird specials.

June Meeting Report

Nimit Hongyi, K6XOX (FARS Board Member), talked about his repeater/scuba trip to Thailand. He showed pictures of climbing the mountain to install the repeater, at which point he found out it did not work – so down the mountain to fix the controller. Climbing back the second time ended in a successful installation.

Mikel Lechner, KN6QI, FARS President (see picture with the President's Corner at right), gave an overview of the FARS website. He showed the calendar, meeting information, how to use the roster, how to sign up for field-day, and how to use the logging software.



Nimit Hongyi, K6XOX
June Speaker



Robin, John, and Byron
Raffle Winners

There were four prizes at the June meeting. First Prize, a Yaesu VX150 2 meter hand held with 1400 mAh battery and stand fast charger was won by John Mezak, K6RDX. John also won the 2nd Prize, an ARRL 2009 Handbook. The 3rd Prize, an ARRL 2009 Repeater Directory was taken home by Byron Beck, KG6UOB. Fourth prize a video of the history of Electronics in Sunnyvale was won by Robin Lee, KI6YTA. The Wish You Were Here (WYWH) number for Kevin Weiler, K6XXX, was chosen. Unfortunately, Kevin was not present to claim the prize.

President's Corner



Membership Meeting. Our next regular membership meeting is Friday, June 24th at 7pm). Our speaker this month is Michael Wright, K6MFW who talks about "The K6BEN ATV Repeater System." More details and directions to the meeting at

<http://www.fars.k6ya.org/meeting>.

Electronics Flea Market. The next Electronics Flea Market is scheduled for August 8th and is hosted by the Palo Alto Area Chapter, American Red Cross.

Am-Tech Day. The next Amateur Radio Technology Day is scheduled for July 25th. We are into our fifth year of Am-Tech Day at SLAC. Talks at Am-Tech Day include:

1:30PM - **History of Radio Part 1**

2:30PM - **The California Kilowatt**

Pink Foster, K7ILA, who was due to speak, is not able to make it this month. There is always a lot of activity and interesting programs, so be sure to check it out. Check the web site (www.fars.k6ya.org/amtechday/) or the email list (www.fars.k6ya.org/mail/) for the date and program information.

Amateur Radio Field Day. Thanks to everyone who participated and helped out. We had a lot of help with the setup and just enough help with the takedown. We had a great time at the BBQ (thanks to Peter Griffith, WA6VAQ). Thanks to Phil Hawkins, KA6MZE for organizing Field Day. Thanks to all the station captains: Paul Zander, AA6PZ, Charlie Morrin, KI6FXY, Nimit Hongyi, K6XOX, and Michael Pechner, KI6QNZ. I want to thank Martin Liberman, KD6WJW for handling the Field Day report. I want to thank everyone else who showed up and provided their invaluable assistance.

Email Notices. Subscribe to the FARS Announcement list (www.fars.k6ya.org/mail/) to receive reminders of FARS activities and other news.

de Mikel, KN6QI

FARS Homebrew Contest in September

It's time to dust off those projects and get them ready! The September meeting will be the Annual FARS homebrew contest. The projects presented at past homebrew contests have been very interesting and ingenious. The best projects will receive prizes. So, finish those projects and bring them to the September meeting to show them to your fellow HAMs and others. If you don't have a project, please come to watch the presentations and vote on the winners.

Upcoming Events

Jul 24	7:00 pm, Club meeting , Covington School
Jul 25	8 am to 9 pm, Am-Tech Day , SLAC NAL
Aug 6	7:30 pm, Board Mtg at the Los Altos Town Crier
Aug 8	Electronics Flea Market hosted by PAARA
Aug 15	8 am to 9 pm, Am-Tech Day , SLAC NAL
Aug 28	7:00 pm, Club meeting , Covington School
Sep 25	7:00 pm, FARS Homebrew Contest
Thursdays	8:00 pm, FARS net, 145.230(-), 100 Hz PL

See more events, [FARS Calendar](http://www.fars.k6ya.org/events/calendar) <<http://www.fars.k6ya.org/events/calendar>>

CLUB INFORMATION

President: Mikel Lechner, KN6QI
Vice President: Steve Stearns, K6OIK
Treasurer: David Cooper K6WA
Secretary:
Radio Officer: Phil Hawkins, KA6MZE
Training Officer: Kevin Weiler, K6XXX
Relay Editor: Mark Hardy, K6MDH

FARS Board: Dick Baldwinson N6ATD, Peter Chow AF6DS,
Robert Flemate KE6TFU, Nimit Hongyim K6XOX,
Gerry Horn K6TXD, Charlie Morrin KI6FXY,
Barbara Neuhauser AE6RM.

K6YA Trustee: Phil Hawkins, KA6MZE
FARS Web Page: <http://www.fars.k6ya.org>
Download Relay: <http://www.fars.k6ya.org/relay>

Club members and non-members are encouraged to subscribe to the FARS Announcement list by browsing www.fars.k6ya.org/mail, clicking on Subscribe/Unsubscribe and following the instructions under "Subscribing to fars-announce."

You may submit announcements to the FARS Announcement at fars-announce@svpal.org. The list is moderated and messages will be posted as approved by the list moderator.

Contact the FARS board of directors at fars-board@svpal.org

Club meetings are held at 7 PM on the fourth Friday of each month except January (Winter Banquet); and sometimes there are changes for June (for field day) and Nov. & Dec (for holidays).

Annual club membership is \$20. Club badges are \$9. Visitors are always welcome! Directions in this newsletter. Talk-in: N6NFI (145.23-, 100 Hz) or W6ASH repeater (145.27-, 100 Hz).

FARS Relay is the official monthly newsletter of the Foothills Amateur Radio Society. Contributions to the newsletter from members, family, and guests are earnestly solicited! Contributions are subject to editing and/or compression. All readable forms welcome.

Here is how to reach the editor:

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Mail: P.O. Box 2248
Santa Clara, CA 95055
Voice: 408-243-0701 (Before 9 PM, preferred)
Email: mark.af6do@gmail.com, At FARS meetings.

Transmission Line Terminations: Free Primer

This free paper details the 5 types of termination strategies commonly used with transmission lines -- parallel, AC, Thevenin, Series, and Diode -- and summarizes their strengths and weaknesses, so that you can best choose for your projects.

<http://www.ultracad.com/mentor/transmission%20line%20terminations.pdf>

Satellite Tracking Website

This is a real-time satellite tracking website (<http://www.n2yo.com/>) that shows locations for over 15,000 satellites and other objects. It shows the location of the International Space Station and you can find a listing of times that the ISS (or other objects) will pass over a particular location. There is also a link to amateur radio satellites. Of course, more information about amateur satellites can be found at www.amsat.org.

Maker Faire Award



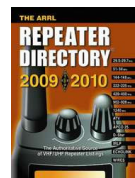
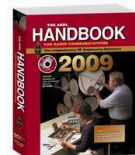
Bill Dale, N2RHV, ARRL Santa Clara Valley Section Manager presented a certificate of appreciation to Michael Pechner, KI6QNZ, for his extensive work at the Maker Faire. You can find further information on the Maker Faire in last month's newsletter

(<http://www.fars.k6ya.org/relay/Relay0906.pdf>).

July Raffle Prizes



1st prize is a Garmin eTrex H handheld GPS receiver. Perfect for outdoor enthusiasts on a budget, eTrex H comes with a high-sensitivity GPS receiver that locks onto satellite signals quickly and maintains accuracy — even in the toughest conditions. And just like the popular eTrex, this little yellow wonder combines an intuitive interface and a rugged exterior into a lightweight handheld that fits in the palm of your hand. (from the Garmin website, www.garmin.com). 2nd prize is an ARRL 2009 Handbook. 3rd prize is an ARRL Repeater Directory.



WiFi on Field Day or "Is that a Telephone?"



Some of you may have noticed something a little different at this year's FARS Field Day. It was a

telephone sitting on the table near the radio station. A few were curious and asked about it. Well it was an Internet Telephone.

I thought it might be an interesting and useful experiment to set up an Internet phone service for Field Day to help with communications between stations. But, since running more cables across the field was not particularly appealing I decided to set up a wireless LAN. So with a couple of WiFi boxes and IP phone I had acquired at the flea market and borrowing a couple more units from Nimit, K6XOX and Phil, KA6MZE I went about it.

At each station I set up a WiFi box and connected it through a short LAN cable to an IP phone. Then I set up a small IP phone call router called OpenSER to handle the call routing. I tied each station's WiFi box into the WiFi LAN that Nimit had set up and assigned extension numbers to each phone.

The result was a simple station-to-station communication system. It worked very well across the entire field and worked well in the presence of electric generators, HF and VHF transmitters. In fact it worked so well, I'm sure we could use the network to more things at next year's Field Day.

- de Mikel, kn6qi

Pictures from the FARS Field Day



Loading the Equipment to take to the Field Day Site



Good food and friendship at the BBQ



Setup the HF Antenna



Setup CW/Digital Antenna



Setup the Satellite Antenna



Inflating the balloon with helium



Launching the balloon



The 160-m Antenna, balloon on station

Pictures from the FARS Field Day (cont.)



Tuning the 160-m balloon lifted antenna



The HF Antenna



The Beverage antenna



Operating the HF Station



Operating the CW/Digital Station



Checking out the GOTA Station



Operating the VHF/Satellite Station



Training Material at the Ready

Field Day 2009 160/80 Meter Experiences

My idea as field day captain for the past four years is to bring something new to each Field Day every year. Field Day 2009 saw the successful deployment of a 165 foot vertical antenna which was lifted by a 6 foot helium filled balloon. (Fig.1) This vertical antenna was designed as a $5/8$ wave antenna for 80 meter operation and worked well on 160 meters as a $1/3$ wavelength antenna with the use of an MFJ tuner at the base of the antenna, this vertical antenna used sixteen 50' ground radials, this antenna worked as the transmit antenna. For receive capability, a Beverage antenna that is 300 feet long and five feet off the ground; was deployed on the Field Day site. The Beverage antenna is a traveling wave antenna terminated at one end with a resistor equal to the characteristic impedance of the antenna, at the other end of the antenna is a 9:1 balun to match the antenna to the radio. Okay, but we are talking about two different antennas, one transmit and the other receive ported into the same radio, the answer to this is an automatic transmit and receive switch (T/R switch). Because of high loss incurred by the antenna being so close to the ground, a preamplifier is required to increase the signal to noise ratio (S/N) in order to pull the wanted signals out. What I needed was a pre-amp and a T/R switch in one box, and what I found was an Ameco PT-3 pre-amp that would suit these needs.

During the Friday before Field day, I spent most of the day putting up the Beverage antenna so it could be tested that evening. The vertical antenna would not be deployed until Saturday night due to 160 and 80 meters not being active during the day due to D layer absorption. So after deploying the Beverage antenna and setting up the GOTA station, I began testing the Beverage antenna. To test a Beverage antenna I listened to WWV and WWVH on 2.5 and 5.0 MHz. Because a Beverage antenna is directional and the antenna had it's major lobe facing Northeast while the null faced Southwest that meant that WWV located in located in Fort Collins, Colorado (Male voice) would come in strong while WWVH located in Hawaii (female voice) came in weak if this antenna had directionality. The results indicated that the antenna had the expected directionality. During the daytime the GOTA station worked 20 and 15 meters while at night the station worked 160 and 80 meters as non-GOTA, thus the 3A category. Next was to put up the 165 foot vertical antenna.

Just before the pot luck barbeque, I laid down the sixteen 50 foot radials in the paved parking lot and as the Sun started to set and the wind died down the helium balloon was filled to a diameter of approximately 5 feet. The 18 gauge insulated antenna wire was attached to the balloon with a small fishing line lure swivel to counteract

balloon wind rotation which attached to the antenna. Because of the size of the antenna, a safety line of 30lb test monofilament fishing line was also attached in case of antenna breakage. Now with the antenna up it had to be matched; matching was done with an MFJ versa tuner which tuned the antenna with no real problem on 160 meters. Since this antenna is so large, it was susceptible to broadcast interference which causes problems with antenna tuning as experienced last year. So this year the society purchased a Dunestar 160 meter bandpass filter, this filter served well to eliminate broadcast noise, the Dunestar filter made tuning the MJ tuner on 160 meters very easy. Initially the first contacts were on 160 meters were using CW followed by a few SSB contacts. 80 meters saw more field day activity than 160 meters with many more contacts made. Because of the use of the T/R switch between the two antennas I could do an A/B comparison between the receive capability of the vertical antenna (TX and RX) versus the Beverage antenna (RX) and the vertical antenna (TX). These comparisons could be done on the fly during a QSO by flop-flopping between the two configurations, these A/B comparisons showed a 10-15 db difference between the two antenna configurations. Stations were worked all night on both bands with good success. Since 160 meters is a night-time winter band, there are plans in process to go back up to Maryknoll in January for the CQWW 160 meter CW contest and launch the balloon system again. This pretty much sums up the HF low band antenna performance for the FARS Field day 2009 for field day 2010 more contacts could be made if we had more operators on these seldom used bands. If you are interested in working the 160 meter CQWW contest in January, please send me an email at: sputnik@pacbell.net.

73 es TNX de
Phil Hawkins, KA6MZE



FARS Field Day 160M/80M balloon lifted antenna
(looking Southeast from Mora Hill).

Balloon is 165 feet off the ground (located in the smog layer);
Antenna is made of insulated 18 gauge wire that tethers the
balloon. (Photo taken at 5:40 AM, courtesy Jim Peterson, K6EI)

FARS 2009 MEMBERSHIP RENEWAL FORM

Date: _____

PLEASE fill out the form for all new/renewal memberships.

Name(s) & Callsign(s) & Class (E-A-G-T-N-None): _____

Mailing Address: _____

Home phone: _____ Work phone: _____

Fax (H or W?) _____ Packet BBS Address: _____

E-mail: _____ ARRL Exp Date(s): _____

Preferred modes: (e.g. HF-SSB/VHF/QRP/Other): _____

I'm willing to Elmer new hams with: _____

Special topics of interest / suggestions for club meeting speakers: _____

Dues: \$20 per year, new members add \$9 for badge fee. **Please note:** Membership runs from January 1 to December 31.

Send your check payable to FARS, to:

David A. Cooper
PMB 41
270 Redwood Shores Parkway
Redwood City, CA 94065-1173



How to get to FARS Club meetings (Visitors always welcome)

Meetings are held at the Covington Elementary School (directions below) on the fourth Friday. Socializing at 7 PM with the regular meeting at 7:30 PM. There may be changes in the meeting dates for January, June, November, and December.

DIRECTIONS:

From Interstate 280. take the El Monte exit Northeast. Cross Foothill Expressway. (A) At the first traffic light turn right on Covington. (B) Immediately at the fork take the left street (Covington). Go about 1/10th of a mile. Turn left into the parking lot. The gym is the tall building to your right with red and white stripes.

From Foothill Expwy., take the El Monte exit and go Northeast; then follow directions as above at point (A).

From US101 or El Camino: take San Antonio Road west (to Foothill Expressway). Then follow directions above at point (A).

TALK-IN via the [N6NFI](#) (145.230-; 100Hz PL) repeater or the [W6ASH](#) 145.27- (100Hz PL) repeater.