

Oakland County Amateur Radio Public Service Corp (ARPSC)
W8OAK Repeaters – 146.900 MHz/100pl & 444.325 MHz/107.2pl
Weekly 2 meter net 8 pm every Thursday
Hospital Radio Net – 7:30 pm last Thursday of Month
Packet 144.950 MHz/1200 baud, connects made with Oakxxx or
Callsign-# to OAKBBS (W8OAK-3) with nodes at
OAKNOD (N8NM-1 Pontiac – most coverage),
OAKEOC (W8OAK-7 at EOC) or K8DTX-7 (White Lake)
APRS – 144.390 MHz
Web Site: <http://www.arpesc.com>

Meeting Minutes for 2 December 2015

On 2 December 2015 at 7 pm, Jim Richards - AB8JR, Emergency Coordinator (EC) for the Oakland County ARPSC, called the meeting to order in the County Emergency Operations Center (EOC). The order of business included:

(I). Report from Kevin Scheid – KD8ZVO, Homeland Security Division – Oakland County:

A recent GAC (Grant Allocation Committee) meeting allocated grant money for county projects, with some left for future needs. Training issues exist with some of these grants.

For many years, our county has engaged in active shooter training. This will continue with the addition of how to better form and deploy rescue responders.

(II). Report from the Emergency Coordinator (EC), Jim Richards - AB8JR:

The Addison and Davisburg receive site problems have not changed. Kevin Scheid and Jim Richards plan to visit all the receive sites to evaluate their functioning. Also, they plan to meet with Steve Murphy - N8NM, Radio Supervisor Oakland County Department of Information Technology.

Siren testing for the 2015 season is finished for this year. All 274 county sirens and 419 total sirens were checked. Expanding our ARPSC services is still in discussion and includes possible GAC funding for training. These services would include Oakland County Citizen Corps/CERT's under Mike Kuzilla.

DMR (Digital Mobile Radio) support group needs to find a new place to meet. Jim has been looking at the Arrow Antenna's OSJ 146/440 open stub aluminum J-pole for \$49 as useful to our amateur volunteers. If enough radio operators are interested, it appears a group rate could cut the cost closer to \$37.50.

(III). Presentation by Jim Richards – AB8JR, EC: Details from his recent 2015 GAC Meeting Request

At the GAC meeting, Jim made the following request for funds:

(1). A new VHF repeater. Reason is the old UHF has failed. Repair cost exceeds purchasing a new one. The new replacement will have analog and digital capability with open source DMR protocol compatible with Motorola MotoRTBO radios. Compared to the current analog repeaters, the DMR has improved technology which doubles communication capacity and improves coverage in outer fringe areas before it fades out. Such a repeater could link to Central Michigan Emergency Network (CMEN) which is a group of privately owned repeaters linked on a voluntary basis in 15 Michigan counties. Once the DMR repeater is in operation, a handheld could possibly link to any of these Michigan counties via CMEN.

(2). Completion of two antenna feedline connections to the EOC. Currently there are two installed antennas which are unused because of this. That would increase our communication capability by 50%.

(3). Replace two UHF repeater antennas which are nearing their end of life with degraded capability.

Such over-all improvements assist our ARPCS services, including Skywarn, monthly siren tests, alternate hospital emergency communications, monthly radio check tests in Oakland County hospitals, property damage assessment deployments, community activities such as the Brooksie Way Run and Woodward Dream Cruise, supporting communications in county emergencies.

Jim's presentation for funds at the GAC meeting resulted in an approved \$12,800 grant!

(IV). Presentation by Jim Richards – AB8JR: Digital Mobile Radio (DMR) – The Basics

Digital Mobile Radio (DMR) was developed in 2005 and uses European Telecommunications Standards Institute recommendations. It can be used in amateur radio. DMR uses the proprietary AMBE+2 vocoder for improved audio quality. Designed for three levels, called "tiers," the first two tiers are considered open sources that allow multiple world-wide manufacturers to produce DRM radio equipment and parts. DMR Tier I is license free and Tier II for licensed radio systems from 66 to 960 MHz. Tier III is for trunking operations with Motorola being the proprietary licensing product. DMR is already widely used in public safety, and efficiently uses the radio spectrum to transmit voice, data, and text messages. Worldwide DMR amateur radio networks already exist which are linked by internet.

DMR uses 12.5 kHz channel spacing which divides time with the effective result of providing two side-by-side 6.25 KHz channels run by a single repeater, single duplexer, and one antenna. To do this, Time Division Multiple Access (TDMA) technology is used which splits into time slot 1 and time slot 2. This permits simultaneous conversations on one channel without interfering with the other. Forward error correction improves readability.

Advantages are clear signals with no background noise which reduce the need to ask for “fills.” Its “extended usable range” doesn’t travel further, but just arrives in better shape further away from the transmit site than analog.

Definitions:

- (1). **DMR-MARC User ID** is a unique ID assigned to you by DMR-MARC.
- (2). **Time Slot** defines which side of the 12.5 kHz signal you will use.
- (3). **Code Plug** is the programming template for your radio.
- (4). **Color Code** serves the same function as a PL or DCS.
- (5). **Contacts** are the talk groups, zones, and users you wish to contact. These are loaded into your radio’s program.
- (6). **Group Call or Private Call** is chosen for your type of call.

Programming your radio:

- (1). **General Settings Tab** is for the specific settings found in the radio and includes user ID, radio ID, monitor type, etc.
- (2). **Channels** are the specific repeaters you want to access.
- (3). **Talkgroup** is the group you wish to access from local, regional, statewide, or worldwide.
- (4). **Zones** is a grouping of contacts and helps to manage a large number of possible contacts.
- (5). **Contacts** is a list of your talk groups and private call ID’s.
- (6). **Talk Around** is a button setting for simplex communications including the output frequency.

Zones Tab is basically a grouping of individual channels, which you can program for local, regional, statewide, or neighboring state channels, etc. Make sure you are licensed to use them for two way transmission. Keep in mind that DMR doesn’t connect you with the closest repeater. Your programmed radio might have an available channel such as SW2.NVI or channel member such as SW2.GRN.

Scan Tab is scanning your radio’s available channels or channel members.

Contacts Tab is a list of repeaters you want to possibly talk. It includes contact name, call type, call ID, and call receive tone.

Query? When the mike is keyed, does your call sign appear? Answer: your ID-MARC number will always show, but the call sign only if you program it.

Channels Tab allows one to enter channel mode (i.e. digital), channel name, band width, Rx frequency, RX only, Tx frequency, Scan List, Squelch, Vox, allow talk around, and other defining criteria.

Local and regional repeaters can be found by going to <http://www.dmr-marc.net>. Here, an expanding map of repeater locations can be found and information about them. Note that repeaters also have to be registered with DRM-MARC. Central Michigan Emergency Network can be found at <http://www.w8cmn.net>. This network notes that effective 1 November 2014, Mi5STATEW2 will change from group 2 to group 52. This is a linked repeater talk group in southern Michigan which is expanding to the north. Its linked repeaters provide microwave backup to internet link, and have emergency back up power.

Emergency Communication benefits: 100% useable spectrum increase, improved signal quality through the coverage area, allows for voice and data communications, allows for two simultaneous conversations, networking provides broad geographic coverage, improved interoperability with public safety, enhanced messaging, and privacy and security. DMR uses less battery power as compared to traditional FM. It is capable for encryption but illegal for hams in USA, but okay in Canada.

Getting Started:

- (1). **Buy a radio.** For instance, Connect Systems Inc. (CSI) sells a handheld MD-380 which a number of members here already own. Members mention that its mobile CS-800 digital radio has a detachable face.
- (2). **Identify your home repeater**
- (3). **Obtain a DMR MARC ID number** by going to the website. It is easy.
- (4). **Obtain a Code Plug file** and download this to your radio. DMR-MARC at www.dmr-marc.net has a member's toolbox which helps to program your radio code plugs. Jim recommends new radio users to do a lot of reading on this website and with other websites already mentioned and listed below.
<http://dmrassociation.org>
<http://www.connectsystems.com/amateur.html>
- (5). **Fill out General Settings tab and other tabs**
- (6). **Read the DMR MARC Best Practices Guide**
- (7). **Select a talk group and make a contact**
- (8). Keep in mind that that we are NOT going to abandon analog radio.

(V). AEC-Management Team Reports:

- (1). **Report from Mike Vander Veer – KD8ATK, Net Operations:**

W8OAK nets are held weekly on Thursday evening at 8 pm. More net control operators are needed and Mike will help you get started. If interested, please contact or email Mike Vander Veer at kd8atk@wowway.com.

(2). Report from Ron Miotke – WD8MNX, Technology Systems/Membership:

Steve Iannucci has become a new ham and his call sign is KE8CLK.
Congratulations Steve!

(VI). Specialty Officer/Coordinator Reports:

(1). Report of Morrie Davidson – K8SJD, National Weather Service from Jim Richards – AB8JR:

Weather for the next 10 days is expected to be up to 10 degrees higher than normal.

(VII). Miscellaneous:

(1). Oscar 85 (AO-85 or Fox-1A) was lunched 8 October 2015 and is up and running. Use it! More detail at www.amsat.org.

(2). The 2016 Annual Sno*Drift Rally will be held 29-30 January at Atlanta, Michigan. Volunteers should contact Barb Steencken (head of volunteers) at www.sno-drift.org. Pete will be running communications for the race. Ham volunteers are needed.

Respectfully submitted,
James R. Murphy, N8SML
Secretary, Oakland County, ARPSC, 3 December 2015