PALOS VERDES AMATEUR RADIO CLUB

Suggested DMR Operating Methods and Protocols

In many ways DMR requires operating procedures that are very different from the analog FM methods that have been used for decades. Radio programming, understanding DMR networks, and additional on-air courtesy all require some study and implementation.

This list provides ten operating suggestions that will help those new to DMR build a good foundation for successful DMR communication.

This guide was provided by the Idaho Amateur Radio Emergency Service with thanks to Ray - W7CIA, and ARRL Idaho Section Manager, Dan Marler - K7REX for allowing PVARC to use this information.

In addition to the DMR operating guide, this document also provides three scripts for Network operations that should be announced prior to any DMR or analog Network event. It is important that a station operator be assigned to provide these announcements prior to every Net.

DMR NETWORKS ARE A SHARED RESOURCE
Networked DMR communications is a shared resource, with imposed latencies (delays) that require a high level of **ETIQUETTE** applied to radio operation. Operators must visualize that their communications may not only be heard by hundreds, or thousands of DMR users, but that resources are being tied up by communications and may deny other users access. Users should invoke a higher level of operational courtesy, and a stronger adherence to structured protocols to avoid denying access to other operators.

THE ART OF LISTENING FIRST
Nowhere is the importance of listening first more applicable to radio operation as it is with DMR, and especially networked DMR. When you arrive on channel, listen for a minimum of 30-seconds to get a sense as to whether the repeater or the talk-group is in use. If the repeater or talk-group is in use, listen for a while to acquire conversational context, and then intelligently decide whether you can or should interject in the conversation. Do not interject to mislead or take-over a conversation. Rather, wait until the conversation is completed before interjecting if you mean to change topics or focus.

AVOID EXCESSIVE ANNOUNCEMENTS

Announcements should be used sparingly. Many operators on DMR are in the habit of announcing their presence on DMR. Many of these announcements occur without applying the Listen First technique described above. There is a time when such announcements are sensible, but far more often than not, such announcements are disruptive and annoying. An announcement may be necessary to notify other repeater users that the repeater is now on a specific talk-group. But for most other purposes, such announcements are unnecessary. If an announcement is made, for the sake of notifying other repeater users that a specific talk-group is in use, the announcement should be made only once, and should not be periodically repeated. Operators should not make themselves a nuisance by periodically and repeatedly announcing their call sign and that they are listening to a specific talk-group as doing so literally drives other operators, who may be waiting for a call, to move to another talk-group. Remember: A talk-group is a wide-area resource, used far beyond the scope of your local repeater or hot-spot, and requires being courteous to other operators by using the resource sparingly. Over use of announcements tends to deter station operators from monitoring or communicating on a talk-group.

ALLOW OTHER STATIONS TO COMPLETE A CALL

DMR latencies can make it difficult to complete a call if another station responds to a call that is not directed toward them. Unlike other operating modes, such as analog FM simplex or analog FM repeater operations, a station that is not targeted in a call and that responds, even with a simple query to ask if they were called, can cause the targeted station to not be heard. There may be no indication that doubling has occurred. If you think that your station may have been called but are not certain because you did not actually hear the call, it is important that your first response is to wait in order to allow for the targeted station to respond. It is far better to wait 10 or 15 seconds, and then, if the channel is clear, make a query to ask if your station was called than to respond when uncertain and deny the calling station and called station the opportunity to establish contact. This operating principle employs the primary Amateur Radio operating skill of always listening first.

AVOID TALK GROUP HOPPING

Talk-group Hopping is a process where a station makes a call on a talk-group, waits a very short period of time, and then moves to the next talk-group before repeating this same process. Talk-group hopping is both disruptive to communications and an abuse of a shared network resource. Talk-group Hopping should be strongly discouraged.

AVOID UNNECESSARY NETWORK BANDWIDTH CONSUMPTION

If all parties in a QSO are operating on the same repeater, and networked resources are not required to support the QSO, move off of the Brandmeister Network talk-group and carry on the QSO on the LOCAL talk-group as configured for the repeater that you are operating on. Do not unnecessarily consume networked bandwidth. If all parties to a QSO are not on the same repeater, then this is a situation where network utilization and the act of occupying a talk-group is justified.

USE OF EXTREMELY LARGE AREA talk-groups

Talk-groups that cover an extremely large area should not be used for conversation. Rather, these talk-groups should be used to make a call, and then move off to a less used talk-group to conduct your conversation. For example, use USA 3100 to make a call and then move off to a state-wide talk-group, such as California 3106, to conduct your conversation. Do not deprive others from making a call by using such large area resources for conversation.

ALWAYS LISTEN FIRST

Of the utmost importance is to listen to the frequency prior to making a call. If you observe that the frequency is already in use, wait until the frequency is no longer in use before making a call. If someone else made a call, allow time for the station that they called to respond before making your call (note that the calling station will likely repeat the call). If the call is an emergency, you may break in at any time to make an emergency call. If the call is not an emergency, but is urgent or time critical, you may break in and, when acknowledged, explain that you would like to make a quick call and will vacate the frequency shortly if allowed to make a quick contact (most Amateur Radio operators will accommodate such a request). If the frequency is not in use, you are free to make a call.

DMR PUSH-TO-TALK TALK-GROUPS AND STATION IDENTIFICATION

If you are using a Push-To-Talk Talk-Group (i.e. a dynamic talk-group on a repeater or any talk-group on an OpenSpot), and cycle your push-to-talk switch to change talk-groups, **DO NOT issue a station identification until you have listened first to determine if your identification will result in interference to a QSO that is already in progress.** FCC regulations do require identification on a frequency, but you have up to 10-minutes to perform that action. A talk-group is not a frequency, and if, after listening and determining that the talk-group is in use and not available for your use, you move to another talk-group, you can identify (after listening first) on that talk-group and still meet the FCC requirements for station identification. Do not interrupt other users by announcing your call sign over an existing QSO.

TREAT TALK_GROUPS LIKE A HOME WHERE YOU ARE A GUEST
Networked DMR should not be visualized as a peer-to-peer resource that is limited in scope to the sphere of local repeater coverage foot-print. Networked DMR operation is a wide-area resource and demands a higher level of awareness of its wider scope, along with an extra dose of operational courtesy, to ensure that all users are accommodated and that operations on the talk-group do not repel the very operations for which the talk-group was established.

Network Alerts to be announced prior to any network event.

Network Alerts for Analog Nets
To be announced on DMR Timeslots one and two

QST, QST, QST

K6PV is a dual mode repeater. The Palos Verdes Amateur Radio Club will be conducting a Net, on the Analog channel of the K6PV repeater in five minutes. The cooperation of all amateurs on this Talk Group will be greatly appreciated.

This is (give your call sign)

Network Alerts for DMR Nets
To be announced on Analog FM

QST, QST, QST

K6PV is a dual mode repeater. The Palos Verdes Amateur Radio Club will be conducting a Net, on the DMR channel of the K6PV repeater in five minutes. The cooperation of all amateurs on this Frequency will be greatly appreciated.

This is (give your call sign)

Network Alerts for Special Events (repeat regularly)
To be announced on DMR Timeslots one and two

QST, QST, QST

K6PV is a dual mode repeater. The Palos Verdes Amateur Radio Club is operating a special event on the Analog channel of the K6PV repeater. The cooperation of all amateurs on this Talk Group will be greatly appreciated.

This is (give your call sign)