TELECOM
Warren County · Ohio

IMPORTANT RADIO SYSTEM BULLETIN

This bulletin addresses several issues that our users are having with their portable and mobile radios. Please read it entirely and distribute to every member of your department that uses a radio.

Issues Covered

1. Your radio needs tuned at Telecom if...

2. APX6000 Recall

3. Your display shows 'Out of Range'

4. Setting up your Scan List

5. Reverb/Echo

6. Talking over Someone

7. Car Antennas

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1. Your radio needs tuned at Telecom if…

☐ It is a mobile radio—in-car/desktop. Call our Radio Team at x3251 to schedule your drop-off. Radios that have been tuned have a small red sticker on them. Law vehicles can come to the parking lot and we'll pull it out and keep it for the day. Fire service has been pulling radios out and bringing in boxes. We didn't foresee the need because of the 30 Watts they put out, having an outside antenna, and having 9 towers for it to reach. However, untuned radios aren't decoding the digital data coming into them.
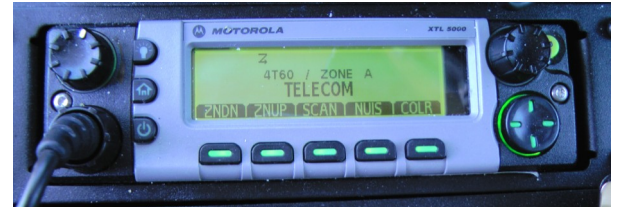
☐ Your audio levels fluctuate – if transmissions alternate between loud and soft.

BONK

☐ You hear a 'Bonk' - this can mean one of three things, one requiring tuning: your radio can't reach the system.

☐ Scan Issues – if your scan list is programmed and your radio is set to scan (shows the Z symbol in top right corner), but your radio isn't scanning - it isn't hearing the radio system's data channel correctly.

☐ Your Display says 'Out of Range' while in Warren County. Your radio may also need programmed if it hasn't yet received the new digital talkgroups (have X in front of them), starting in Zone A.

OUT OF RANGE

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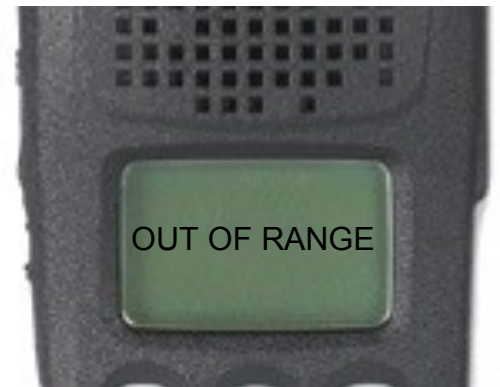
2. APX6000 REPAIR

On May 29th, we distributed a Telecom Safety Alert with Motorola's 3-page Field Service Bulletin regarding a fault in the APX6000 radio.

This is a Motorola issue unrelated to Warren County's digital radio system performance. See the next 3 pages of this alert for their FIELD SERVICE BULLETIN with specifics.

PROBLEM: Warren County's APX 6000's fall within a serial number range that need repaired. If a shoulder microphone or headset is attached, when keying up, the radio frequency energy is directed back into the radio through the shoulder microphone or headset confusing the radio and causing an 'ERROR' message to appear on the radio's display. The radio is incapable of transmitting out.

PUBLIC SAFETY IMPLICATION:

■ Fire departments – do not use APX radios inside a fire until they're sent for repair. Do not use shoulder microphones or headsets at all. You can unknowingly experience this error since radios are stored in pockets/holsters.

■ Law enforcement/probation officers – cease use of shoulder microphones and headsets immediately. The quick solution is turn off / turn on your radio to remove the error. But if you're involved in a high-risk / compromising incident when the error occurs, it's not safe to turn your attention away from the incident and toward your faulty radio.

TEMPORARY SOLUTION: disconnect all shoulder microphones and headsets. If you see the error, turn off / turn on your radio to remove the error.

PERMANENT SOLUTION: Motorola is offering NO-COST REPAIR – Telecom is negotiating the procedure for Warren County agencies. We are unsure if we'll have loaner XTS radios for your department while yours are out for repair – that is to be determined.

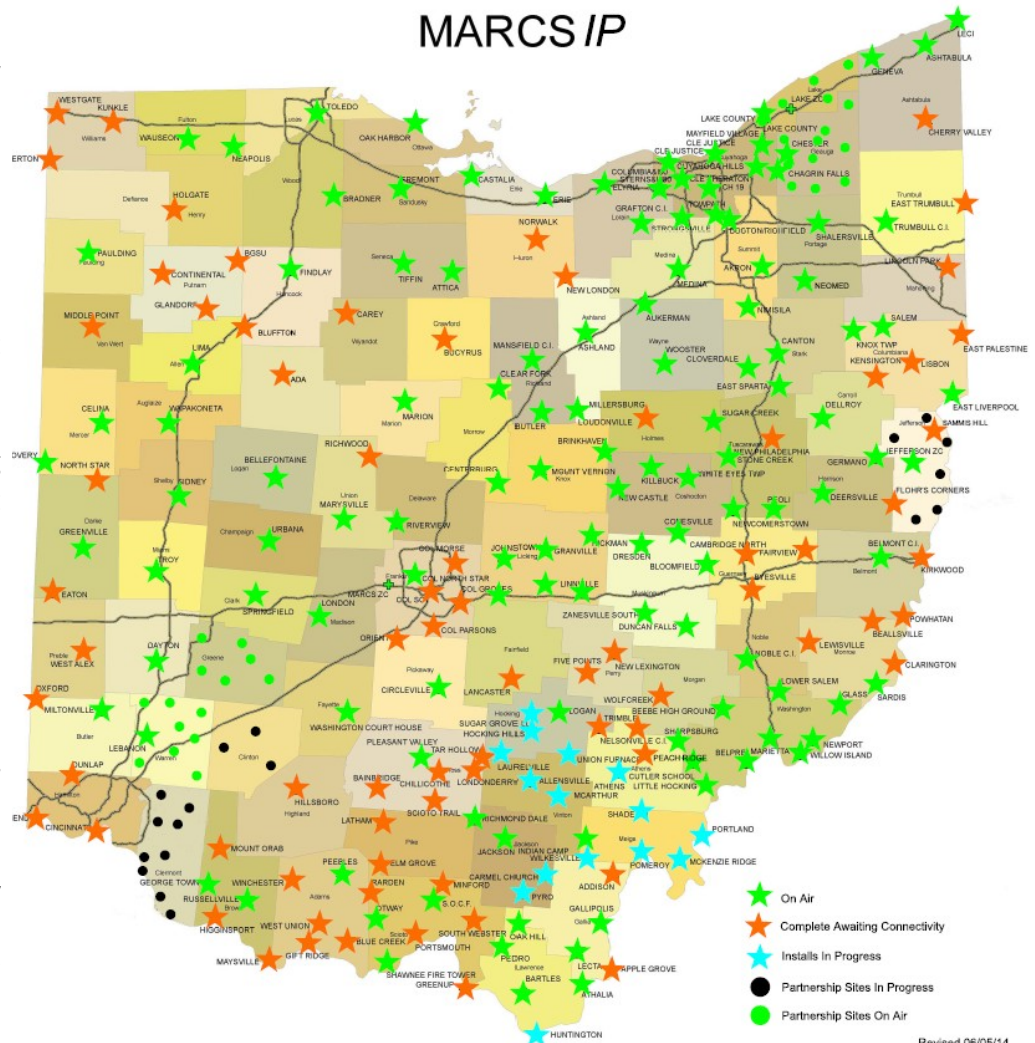*Contact the Radio Systems Team at 513.695.3251 with questions.*

3. Your display shows 'Out of Range'

OUT OF RANGE

When in Warren County - your radio needs tuned. See #1.
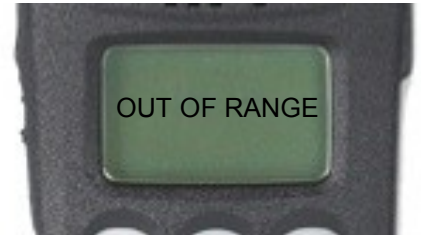
When on a Warren County talkgroup while in another County, that County most likely doesn't have MARCS IP towers (YET!) The State of Ohio's Radio System effectively has two versions running right now: 1) Version 3.5 and 2) the Internet Protocol (IP) version. Warren County operates on the latter. Because this is the newest State system and Warren County is an early adopter, they are still adding towers throughout the State and neighboring Counties are following our lead to join it. Until those towers are constructed, we will experience 'out of range' in Counties that don't house IP towers. This problem is out of our control but the benefits will come, as you'll be able to roam statewide on our local talkgroups, compared to the analog system when you lost connectivity at the county border. Certain talkgroups are programmed to roam the entire State, and they will as long as they can latch onto a MARCS IP tower. See the below map for existing and future MARCS IP towers.

PROJECTIONS: Clinton County October 2014. Clermont County April 2015. Butler County September 2014.

You can still travel to Butler County and use BC talkgroups / Hamilton County and use HC talkgroups. You will affiliate with their system towers.

MARCS IP

★ On Air
★ Complete Awaiting Connectivity
★ Installs In Progress
● Partnership Sites In Progress
● Partnership Sites On Air

Revised 06/05/14

4. Scan List Setup

When radios were reprogrammed for the digital switch, their scan lists had to be deleted, but were replaced with a default list of your Primary and Local talkgroup. Each user needs to reset their scan list (up to 10 talkgroups in XTS&XTL2500/ APX6000 and 15 talkgroups in XTS5000). Even if you press the scan button (bottom side button on portable and soft key under 'scan' on mobiles/controls stations), there's nothing to scan until you set it up.

How to program a scan list has been in our XTS2500 and XTS5000 anatomy training videos since 2011, with an additional video solely covering scan lists - www.YouTube.com/WarrenCountyTelecom or http://warrencountytelecom.com/wp/training/radio-training/

1) Press and hold the scan button - bottom side on portable, soft key under 'SCAN" on mobile.

- A small square flashes in the upper right corner of the display indicating the programming mode
- SEL, DEL, and RCL display above soft keys

2) Left/right arrow between zones + scroll channel selector knob to navigate talkgroups

3) Press the button below SEL or DEL or RCL

- SEL = add the currently displayed talkgroup to the scan list, a z will appear. Press twice to add a $z_{\bullet\{}$ making it 2nd priority in your scan list. If this talkgroup and another key up at the same time, your radio will pick your second priority.
- DEL = delete the currently displayed talkgroup from the scan list
- RCL = view your current scan list roster

NOTE: Priority-one is automatically the talkgroup you're sitting on. You can't edit this.

**4) Press HOME to switch out of the programming position**

1. Long press the bottom side button with (2) raised squares until your face display changes to say 'Edit Scan' and the top display has a blinking square.

2. Soft Keys now associate with
   - 'SEL' – Select / Add. Hit TWICE to make a talkgroup your 2nd priority in the scan list (a Z. will appear above it)
   - 'DEL' – Delete the highlighted talkgroup from your scan list
   - "RCL' – press to recall what is already in your scan list

3. Left/Right arrows to navigate zones

4. Up/down arrows or scroll channel selector knob to navigate talkgroups

6/12/2014 5:42 PM
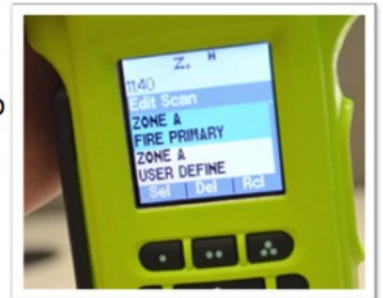
Echo / Reverb on Radio Traffic

The "echo" is digital technology's equivalent of the old analog system's "SQUEAL". Like a musical performer standing too close to their speaker on stage, old analog radios would sound a squeal if you got too close to another radio user (speaker). Alerting you to move or turn down a radio. The new digital technology blocks the squeal and continues to send the distinguishable verbal audio just with an echo effect, not as audibly offensive but equally frustrating for users.

This is a permanent caveat to the digital system that users will need to work around.

Ways for End Users to Avoid Echo/Reverb
- If talking on your mobile radio, turn down your portable so that it doesn't broadcast what you're saying right back into your mobile's microphone. Otherwise, you risk having to repeat your traffic because Dispatch/listeners couldn't understand it.
- If talking on your portable while near your mobile, turn down your mobile so that it doesn't broadcast what you're saying right back into your portable's microphone.
- If in a group of people with radios, turn away from them when transmitting.

We're working on ways to reduce the background noise on our end but end users need to take the above steps on their end.

Delayed audio feeding back into the person's portable microphone

6. Talking over Someone

- There is no "hang-time" / "white noise" / "fuzz" like on the old analog system.
- The new digital system doesn't allow talking over someone like the old system did. On analog, if Officer A was transmitting on Primary 1 with their portable, and Officer B had a stronger signal with a mobile, Officer B could potentially key up on Primary 1 during Officer A's transmission and take over the talkgroup. At the least, Officer B would think they were talking but be hitting dead air. Now on the digital system, Officer B would hear a 'BONK', not allowing them to talk over someone, and their radio would revert to receive-mode to only hear the ongoing Primary 1 traffic.
- The BONK can mean 1 of 3 things:
  1. Your radio isn't reaching the system—see Page 2.
  2. You are keying up over someone's existing traffic on a talkgroup.
  3. You and another person are simultaneously keying up on a talkgroup, fighting for the line. Neither gets the line and you need to try again.

BONK

This item reiterates the rule of listening to a talkgroup for ongoing traffic before you key up. If there is back and forth dialogue between a unit and Dispatch, let them clear that conversation before you transmit. If on an incident, every transmission is important for safety and incident progression so be patient and avoid having to re-transmit.

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7. Car Antennas

- Long Antennas—This is an ongoing issue that existed before the digital cutover and has been highlighted in the newsletter. Please make sure that your vehicle's radio antennas are properly seated into their bases and aren't corroding. We are seeing several antennas pushed too far into their bases, drastically diminishing their reception. Proper seating is to pull it out as far as you can while keeping it securely in the base. We also see cracked bases and rusting metal.

- Public Works departments who purchased new XTL1500 radios received new antennas that shouldn't experience this problem. They come ready to affix to the vehicle. However, if you didn't take our recommendation to swap antennas, make sure your existing antenna is seated properly.

- "Pepper shaker antennas" are not the proper antenna for vehicle's MDC. MDC's need 3-band antennas and these are only 1-band. Approved MDC antennas include:

your mobile radio antennas

Agencies are reporting poor mobile radio reception and transmission - with no signs of failure on Telecom's end, we wonder if antennas are being incorrectly attached to your vehicle. There is a right and wrong way to attach your antenna. Bring your vehicle into Telecom's Radio Team during business hours and they can inspect / tune your antennas, getting you back to 100%

Are they swapped?

Is it not seated correctly in the holder?

Is it missing?