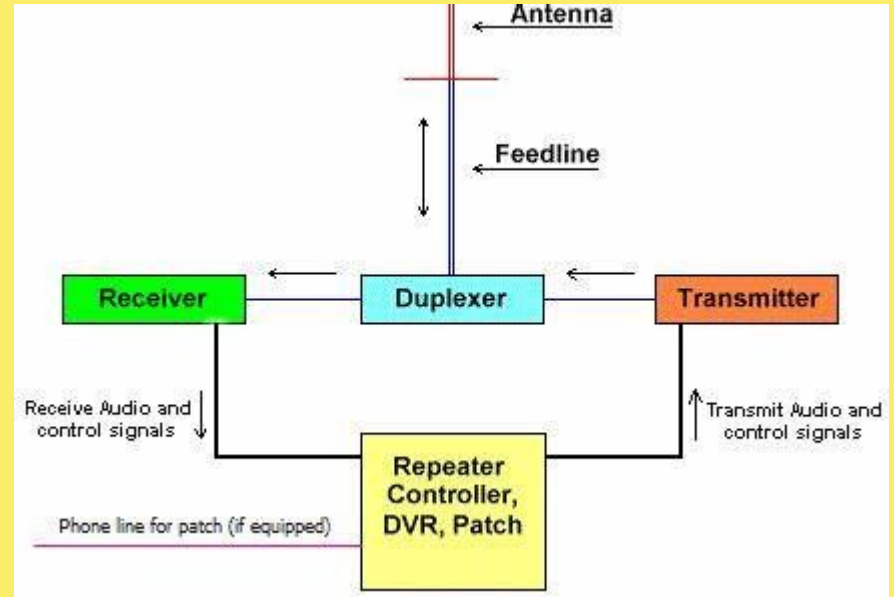


Repeater Operation

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What is a repeater

- A repeater is an automatic radio-relay station, typically located on a tall structure like a tower or building.
- Repeaters operate in full duplex, meaning they can receive and transmit simultaneously.
- Key components of a repeater:
 - Antenna
 - Feedline
 - Duplexer
 - Receiver
 - Controller
 - Transmitter







Allstar and Echolink: Accessing Repeaters Remotely

- What is Allstar?
 - Allstar is a network that links repeaters and individual radio stations via VoIP (Voice over IP), allowing amateur radio operators to connect to repeaters over the internet.
 - It uses the Allstar Link protocol, which is based on the open-source Asterisk PBX (Private Branch Exchange) software, providing robust linking capabilities between repeaters worldwide.
- What is Echolink?
 - Echolink is another VoIP-based system that allows licensed amateur radio operators to connect to repeaters, radio nodes, and other amateurs via the internet.
 - Operators can connect using a computer, smartphone, or directly via a radio linked to an Echolink-enabled repeater.

The South Lyon repeater uses Allstar node 454050 and is also available via Echolink.

General Repeater Operation

- Calling on a quiet repeater.
 - Avoid calling "CQ" on a repeater, as it is uncommon practice (though technically allowed).
 - Instead, make a typical call such as:
 - "This is [Callsign], mobile and monitoring (Repeater Name)."
 - Or, "This is [Callsign], monitoring (Repeater Name)."
- Calling when people are talking
 - Wait until one of the participants unkeys their microphone (usually indicated by a courtesy tone). Then, key up and say your call sign. One of the participants will acknowledge your call and include you in the conversation.
 - For people talking on a repeater leave a few seconds between transmissions to allow others to jump in.

General good practices

- Do not repeatedly kerchunking a repeater if testing a radio. This is annoying to all monitoring a repeater.
- Do not have a roger beep turned on on your radio. As they are transmitted.
- Phonetic alphabet does not need to be used for general use. There are uses on a repeater.
 - If sending traffic and words need to be spelled.
 - If your callsign can not be understood do to band conditions or a tricky callsign
- Make sure if using Allstar or echolink that you are only connected to one repeater at a time or you are creating a linked network.

Nets

- What is a net
 - A net is a gathering of amateur radio operators on a scheduled frequency at a set time. Nets can both be formal and informal
 - Example: The SLAARC formal net takes place every Sunday at 8:00 PM EST on 147.040 MHz, with a PL tone of 110.9 Hz.
 - Informal net thursdays at 10:00 pm - “our not a net round table”
- Formal net operation
 - The Net Control Station (NCS) is responsible for managing the net, including:
 - Starting the net
 - Calling for check-ins
 - Tracking the order of stations that check in
 - Ensuring proper net operation

Nets

- **Net Control Station (NCS) Preamble:**
 - The NCS typically begins the net with a preamble, which outlines the purpose of the net and sets the tone for the session.
 - The preamble also provides important information such as the net's structure, frequency, and any special instructions.
- **Check-in Procedure:**
 - During the preamble, the NCS will specify how check-ins should be conducted.
 - For example, the NCS may request that stations with traffic (information to pass) or announcements check in first, followed by mobile stations, and then general check-ins.

Nets

- Formal nets continued
 - NCS will run through each station checked in.
- Checking in to a formal net
 - Wait for the NCS to be taking check-ins. Do not jump in between stations.
 - To check into a net:
 - Key up, say "This is..." and then unkey briefly to ensure the frequency is clear.
 - If no one else is speaking, key up again and give your call sign.
- When checking into a net make sure you give all the information that is requested by the NCS
 - This can be name, location, traffic, ect.
 - Listen for the NCS to confirm you callsign and info as they may have missed some of it and need it repeated.

Nets

- Wait for the NCS to call you and then transmit your information.
 - This could be just a update like our Sunday night nets are or it could be traffic that needs to be moved from one station to another.
 - If a net has a section where the NCS is looking for questions or a station to do something just answer with your call sign and wait for them to acknowledge you. Then give the information. This way if more than one station as information the NCS can move through the list quickly and orderly.

Repeater Problems

1. Check for Known Issues: Before assuming the repeater is malfunctioning, check with the repeater owner or operator, or visit the website or Discord for any known maintenance or outages.
2. Troubleshooting Steps:
 - a. Ensure you're on the correct frequency and using the correct PL tone or access code.
 - b. Verify your radio settings like power output and signal clarity.
 - c. Try using another radio to confirm it's not a local issue.
3. Reporting a Problem:
 - a. If the repeater is unresponsive or behaving unusually, report the issue to repeater owner or club, providing details like the time and observed behavior.

Linked Repeaters

- Repeaters can be linked via the internet or RF
- When keying- up a linked network there can be a delay of seconds across the network.
 - This should be taken into account when transmitting.

W8IRA/R Coverage Map

