Nittany Amateur Radio Club
W3GA
76 Repeater

General Operation Overview

The 76-repeater serves the State College area and is an open machine; you do not need a PL tone to access the repeater. However, during severe stray input interference from other repeater systems, the repeater may at times require PL to gain access. It is a good idea to always transmit the PL tone (146.2 Hz). All modern two-meter radios have this feature, and transmitting this tone will allow you full access when the repeater is in the PL mode. Note that during periods when the repeater's "stray input eliminator" is active, you will need to transmit the PL tone to have access to the repeater.

The repeater always transmits its own PL tone of 146.2 Hz. It is recommended that you program your receiver's tone squelch function (CTCSS) to 146.2 Hz. This will eliminate many sources of local interference that enter your radio directly, i.e. signals not coming from the repeater such as computer and security systems. This type of interference tends to open your receiver's squelch with annoying noise bursts as you drive around town.

The NARC control operators can assist you if you have any questions.

Repeater Features

Repeater Voice ID #1 (repeater at rest)

ID #1 is the longer of two voice IDs and is used when the repeater has been at rest for a period in excess of ten minutes. When the repeater is keyed, the voice will send ID #1. This ID is longer than ID #2, and includes additional information about the repeater. This ID may change from time to time. Example: "THIS IS THE NARC W3GA REPEATER".

Repeater ID #2 (repeater active)

This is the shorter of the two voice IDs. If the repeater is in operation with a QSO in progress, and it is time to identify, the voice will send ID #2. This ID is short so as not to interfere with the QSO in progress. Example: "W3GA" This ID is also used as the final ID of the ten-minute ID period. The repeater will not talk over top of you; it will wait to ID until you let up on your mic key.

CW ID

The CW ID is sent only if a repeater user transmits during voice ID. Example: The repeater sends, "W3GA/R" in international Morse code.

Repeater formats

The 76-repeater supports multiple operational formats. This allows the repeater's operating parameters to be tailored to specific communication applications. Each format can support independent IDs, messages, timer settings, and courtesy tones. Each format has a unique courtesy tone, which is used to identify the repeater's current format. Currently the 76-repeater is programmed for the following operational formats:

Normal operation format

Stray-input noise reduction format (PL required)

Specialized Courtesy Tones

The 76-repeater has the ability to generate unique courtesy tones depending on the repeater's mode (format) of operation. The tones may consist of one or two tones played in sequence. These tones change with the repeater's usage and are currently set as follows:

Normal Operation – one low tone beep

Stray-input reduction mode – one high tone beep

Stray Input Interference Eliminator

From time to time, stray inputs from other repeater regions will plague any repeater. This interference is characterized by a weak signal that continually brings up the repeater. Typically you can hear only one side of a conversation. This interference can go on for several hours. The 76-repeater will be set to PL access (146.2 Hz) during periods of severe stray-input interference. This eliminates stray-input interference by insuring that the repeater accepts only signals intended for the State College repeater. A control operator will reset the system when the interference abates. This mode of repeater operation is indicated by a dual courtesy tone.

Repeater Control

The 76-repeater is operated by the Nittany Amateur Radio Club of State College, PA. A control team monitors repeater operation, maintains equipment, and offers assistance to repeater users. Repeater use, policies, and rules are determined by the Nittany Amateur Radio Club.