

Michigan Inter-County Organizational Network (MICON)

For

NWS - APX

What is MICON? What is its purpose, and how does it interface with the National Weather Service?

- Mission and Responsibilities
- Communications Equipment

MICON-APX Mission and Responsibilities

MICON is the acronym for the Michigan Inter County Organizational Network. APX is the designator for the Gaylord Area Weather Service office located in Gaylord MI. The Amateur Radio call sign WX8APX is the official NWS MICON call sign from the Gaylord Area Weather Service Office in Northern Michigan. There are three other MICON regional networks set up to serve the State of Michigan. They include *MICON-GRR*, *MICON-DTX*, and *MICON-MQT*. These networks are setup to provide communications between the NWS offices in Michigan and the counties under their warning responsibility area. MICON-APX has the responsibility to provide two way communications for 25 Counties consisting of, *Alcona, Alpena, Antrim, Arenac, Benzie, Charlevoix, Cheboygan, Chippewa, Crawford, Emmet, Gladwin, Grand Traverse, Iosco, Kalkaska, Leelanau, Mackinac, Manistee, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, and Wexford* counties. Each of these Districts has a District Emergency Coordinator (DEC) appointed by the State Section Emergency Coordinator (SEC). The ARRL DEC for MICON-APX & MQT is Lyle Willett, AB8CB.

The primary mission of MICON- APX is to provide communications with any or all of the 25 counties during a severe weather event. The network is activated during all severe thunderstorm and tornado warnings/watches. Each county operates and is responsible for their own 2 meter Skywarn net. They run their nets independently of the MICON Net, (which provides the radio link to NWS-APX). All local Skywarn Nets / MICON Nets, in the NWS-APX Weather Service area, are required to use the approved NWS – APX Skywarn Net Preamble / Policy / Procedure adopted 15 April, 2004.

The MICON network operates under the "Key Station" concept. That is, the operator at the NWS only communicates with one key station from each of the 25 counties in the APX Service area. This is achieved by utilizing a common frequency on 2 meters. The current primary frequency for the network is 147.140 Mhz (PL 141.3). This is the K5EKP repeater located at the Mt Tom site in MIO, MI. The secondary frequency is 145.270 Mhz (PL____), the W8TVC repeater located West of Traverse City, MI., *All*

linked to Gaylord, MI. At the present time these two repeaters will not cover the total 25 county area, so linking other repeaters in order to reach the outlying counties is being developed. (*Network Under Development & APX MICON Policy will be updated as system(s) added.*)

During all watch and warning situations, the primary responsibility of the network is to collect severe weather reports from any of the affected counties. The NWS uses this information, along with other reports and radar correlation, to make informed decisions when issuing severe weather warnings and statements. It is also MICON's responsibility to notify counties of potential severe weather observations or trends. These reports are issued by NWS personnel, and are not observations and commentary by MICON net control operators.

In the case of damage resulting from a severe weather event, the NWS may request that Amateur Radio Operators in, or near, the region provide damage assessment reports. This request(s) are coordinated by the County EC / AEC, and in all cases safety considerations for the observer is of prime importance.

The secondary mission of MICON-APX is to provide "Four Season" weather reports and observations. These reports may include rainfall amounts, snow depths, flooding, fog and icing observations. Contact the NWS-APX for up-coming classes on 4-Season weather reporting.

MICON-APX has plans to maintain a 24 hour on-line packet system that logs weather observations on a hard copy printer. Connect to WX8APX-5 on 145.76 Mhz. to log your report. This is not a mailbox. When you connect you will be connected directly to the printer. Send a file, or type your report, and issue a Control C - disconnect, to terminate your connection.

Another method of providing weather information to and from the counties is by the Automatic Packet Reporting System (APRS). MICON-APX plans to incorporate a 24 hour APRS station operating on 144.39 Mhz. The call sign is WX8APX. This computer mapping system monitors automated and manual weather reports and displays them in real time. There are currently up to ___ automated weather stations on the network, depending on band openings. These remote weather stations are monitored during severe weather events to spot trends in wind speeds and directions, as well as temperatures and rainfall. This type of display is also very useful in displaying 4-season reports throughout the year.

During severe weather activation the MICON NCS will (time permitting) place tornado and funnel reports on the network. These tornado symbols will be seen by APRS stations throughout the region.

MICON Communications Equipment

Here is a brief description of the radios, antennas, and computer systems used to support voice and packet communications. This example consists of the station setup at NWS-DTX and is presented here only to assist with developing a list of equipment for each of the other NWS Offices.

All of the radio and computer equipment is mounted in a console located near the operations area of the NWS office. This console supports the following radio and computer equipment.

FM Radio Tri-band Kenwood TS-742 Transceiver (45 watts on 440 Mhz.)

Packet Radio (APRS) KDK 2 meter (25 watts on 145.39 MHz.) with KPC-3 TNC and Pentium 100 SVGA computer

Packet Radio Icom 25H (25 watts on 145.76 Mhz.) (Inter County, 4 seasons) with KPC-3 TNC and Serial Printer

Net Control Computer 486 DX 33, VGA, running Net Control Software

HP parallel printer (center of console) and log file

SmartDisplay (Net Status Display) scrolling billboard

Adjacent to the console, there is a slave printer and WSR-88D monitor / display from the main radar doppler console. The printer prints out all of the warnings and statements that are issued, while the display keeps the operators up to date with what the forecasters are watching.

Outside, the radios are connected to several antennas on an 80 ft. tower. The 2 meter and 440 voice antennas are part of a Comet tri-bander, mounted at the 75 ft. level. The Inter-County 4 season packet antenna is a Comet 2 meter antenna at the 80 ft. level. The APRS antenna is a short 2 meter antenna mounted on the roof of the NWS building. Each feedline is routed through Poly Phaser lightning adapters.

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