

**Oregon Section ARES/RACES Operations Manual  
And Statewide Communication Plan  
Appendix D  
The Oregon ARES Digital Network (OADN)**

**Purpose**

The purpose of the Oregon ARES Digital Network (OADN) is to provide for the development and implementation of a statewide backup digital emergency communications network serving two primary purposes. First, the network should serve the needs of the County Emergency Manager in providing reliable digital communications between the County EOC and outside agencies, which includes Oregon Emergency Management (OEM). Ideally, this system should provide for the restoration of SMTP email to all users, since this is the most widely used record communications methodology today. Secondly, for those Counties with the need, it should provide reliable digital communications between specific locations within the County, such as evacuation centers, response agencies, incident locations and the County EOC.

**Background**

The OADN is a “virtual” network, not an ARES-owned or controlled physical network. It incorporates, by reference, the existing excellent packet networks of District 1 and the Southern Oregon Amateur Packet Radio Association (SOAPRA). Around Oregon, the packet network is primarily owned and operated by individual node and system operators, some of whom have associations with Oregon Section ARES/RACES, and some who do not.

OEM is one of the most important recipients of digital traffic under emergency operations in the State. Disaster declarations and Situation Reports (SITREPS) are among the most important documents that must be submitted before a County EM can request outside assistance. These are messages that are too lengthy and complicated to be passed over voice nets via ARRL Radiogram. It is therefore incumbent that the OEM ARU be equipped to receive and originate digital traffic using whatever digital system a County or any other local, State, or Federal Emergency Management Agency might employ.

Recently, the OEM ARU reordered their systems priorities. The Winlink 2000 (WL2K) digital EMCOMM system is now the primary backup system and network topology in use at OEM’s ARU. However, a gateway node, and packet station for all-RF, end-to-end terrestrial packet has been retained, and OEM’s ARU is committed to maintaining that capability for those who prefer to use legacy packet.

Please respect that the OEM ARU packet station is a mail drop, not a forwarding BBS. The OEM ARU is not equipped to handle large volumes of BBS forwarded Traffic or bulletins. Occasional test messages (perhaps weekly) from County EOC packet stations are welcomed and will be replied to as soon as possible. Remember that the OEM ARU *is not* OEM; it is not manned 24/7. It is structured much like a County ARES program, with a once-monthly 2-hour meeting, and is not manned unless activated.

## **Recommendations**

Oregon Section ARES/RACES leadership recommends that counties adopt the WL2K digital EMCOMM system, and pursue a robust legacy packet local area network.

The two systems are complimentary, not mutually exclusive. WL2K adds a layer of capability to serve your local Emergency Manager that is not possible with legacy packet; yet, legacy packet can be a more effective tool for getting hard-copy text and messages around a local impact area suffering telecommunications and/or Internet outages.

The recommendation offers several advantages:

- It integrates existing amateur radio technologies (HF transceivers, VHF/UHF transceivers, some Terminal Node Controllers (TNC), existing Windows based computer platforms) with newer but proven technologies (the Internet, new TNC's for Pactor II and III, and advances in computer programming) to provide a significantly higher performing system.
- In its fully developed form it provides client-to-client messaging using a familiar e-mail like program, Airmail, which is transparent to the end-user client and requires little or no amateur intervention.
- The installation of the additional hardware involved differs little from existing packet/Pactor systems.
- After software installation both the training of the amateur operator involved in using the system and the end-user client is minimal.
- The system is significantly more robust than legacy packet/Pactor, requiring less maintenance, training and incurring less downtime.

## Matching the Winlink 2000 System to County Requirements

Each County Emergency Coordinator (EC)/RACES Officer (RO) will need to work closely with their respective County Emergency Manager to determine system requirements for their County.

Basically, four general configurations present themselves.

1. In some Counties, generally the less populated, rural and remote areas of the state, the 'last mile' capabilities of a TelPac gateway might not be useful and the primary requirement may be for a Pactor station using HF radio to connect to a site where radio traffic can be forwarded by the Internet.
2. In other Counties, where two or more communities each support a TelPac gateway in support of each other's 'last mile' requirements, they might wish to mutually support a single HF Pactor station in case the whole area loses access to the Internet and all of their messages have to be forwarded by HF radio.
3. In some of the more urbanized areas County Emergency Managers may want to take advantage of the additional ability to use VHF packet radio to send traffic within the county from specific geographic locations such as Fire Stations, Police or Sheriffs Substations, or Hospitals, or support the communications of Incident Commanders on-site at emergency locations back to the County EOC.
4. In a few Counties with extensive EOC/ECC operations the County Emergency Manager may want to have a system installed at the EOC that allows the client end-user to directly enter email-like messages without the use of an amateur operator at all, in a 'transparent to the user' system. These messages would then be routed throughout the State digital system by a combination of VHF packet, HF Pactor and the Internet with a minimum of guidance by an amateur operator.

Complete information on the Winlink system can be found at:

<http://www.winlink.org/>

For a current list of Winlink Public Mail Boxes (PMBO's)/Remote Mail Servers (RMS's) see: <http://www.winlink.org/positions/PMBOPositions.aspx>

For a current list of Winlink TelPac Gateways see:

<http://www.winlink.org/positions/telpacpos.aspx>