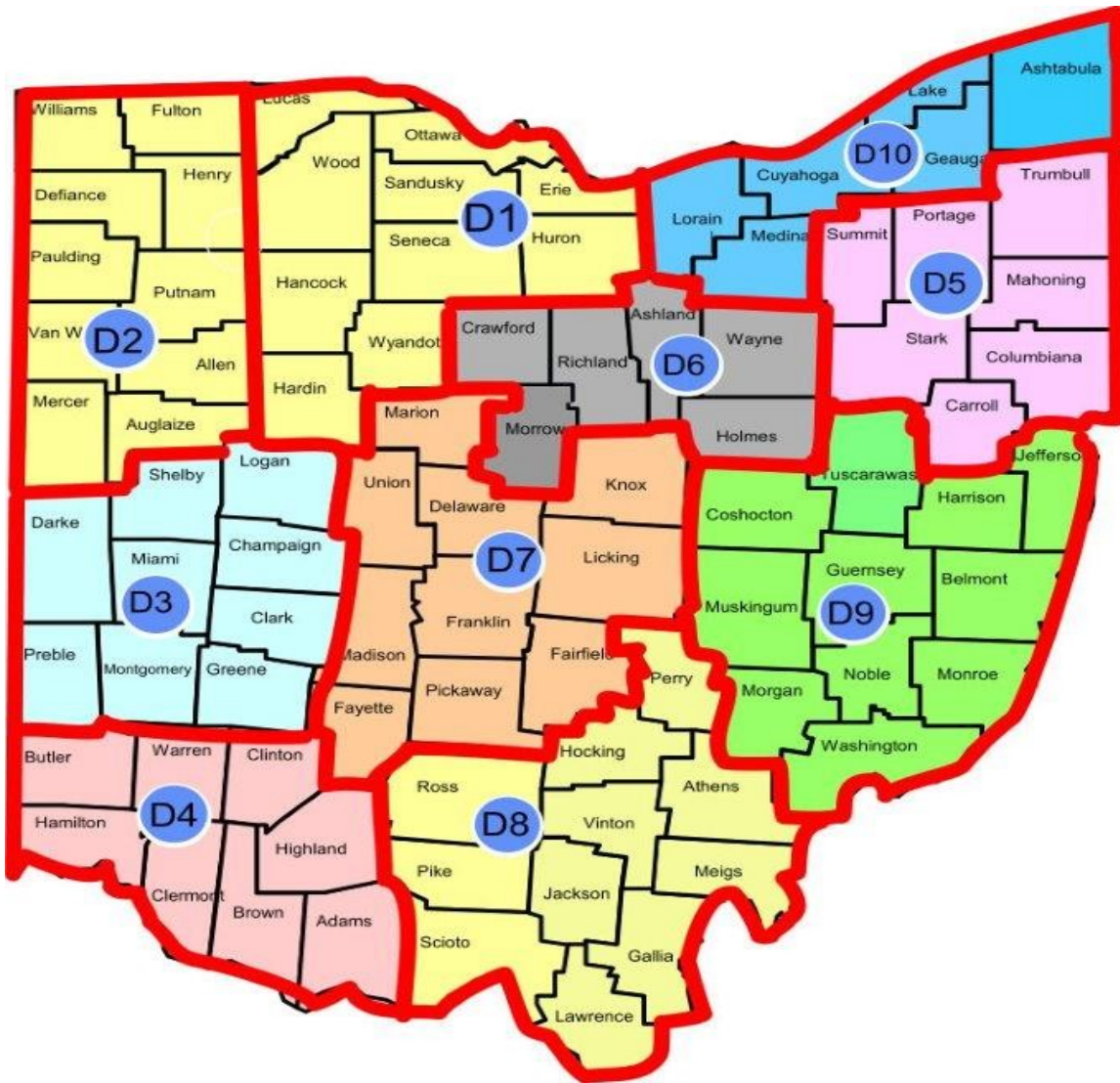




OH DEN OPERATING PLAN



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Foreword

Definition of the Ohio Digital Emergency Network

The Ohio Digital Emergency Network (OHDEN) is a system of people, equipment, and the medium in which those people operate that equipment in service to the community. Specifically the people are volunteer amateur radio operators licensed to operate their equipment by the Federal Communications Commission. Their equipment consists of radio transmitters and receivers, antennas and feed lines for radio communications, computers, and all the associated supporting equipment. The medium is the airwaves, typically, for OHDEN, it's the surface of the earth to the ionosphere.

OHDEN as a System

It's important to think of OHDEN as a system designed to perform a specific function. All three pieces of the system, the people, equipment, and the medium must operate properly to perform the intended function. From an operations standpoint, the most important are the people. The equipment, although important, can be build and/or purchased and there is considerable predictability in its performance. The equipment operates pretty much out-of-the-box. People must be trained or self-train and gain experience through practice. The medium is a special case. There is virtually no control and its characteristics affecting how it supports a communication channel between transmitter and receiver are highly variable. That is not to say that it should be left out of a plan. The plan must address the flexibility required by the people and their operation of the equipment to use the medium successfully.

Legal and Organizational Basis for OHDEN

For the legal basis,

Pursuant to the Code of Federal Regulations, 47 CFR § 97.1 - Basis and Purpose:

"The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

..."

OHDEN was created by the [Ohio Section of the Amateur Radio Emergency Service \(ARES\)](#), a component of the American Radio Relay League (ARRL), a 501(c)(3) non-profit organization with a membership of amateur radio operators [nation wide](#). ~~A part of the ARRL that addresses specifically this legal basis is the Amateur Radio Emergency Service (ARES).~~ In considering OHDEN as a created system, OHDEN is easily created. However, the motivation of the amateur radio operators to train and be trained, to practice, and to learn to operate the equipment while adapting to the changing ionosphere and, to do this in a cycle of continuous improvement relies on their sense of ownership in the process.

OHDEN Vision Statement

Previous paragraphs have indicated that OHDEN has a purpose. The vision statement may be the best method to describe that purpose.

In times when normal channels of communication are overloaded or compromised, the vision of the Ohio Digital Emergency Net (OHDEN) is

- *to provide a vital communications link between Ohio counties and between those counties and Ohio Emergency Management;*
- *to provide this communication using messages consisting of ICS forms as its primary vehicle;*
- *to allow the served agencies the means of easily generating and receiving the content of these messages;*
- *to be trained and equipped to provide these messages at any time from any Ohio county; and,*
- *to assure that these messages are delivered to the intended agency in a timely fashion and without corruption.*

Intended Audience

The primary audience of this planning document is the stakeholders of OHDEN, the people with a concern for its success. The introductory sections of this document include significant background and detail, more that is necessary for operations planning. The added information is here to provide elected and appointed officials with an understanding of the value of OHDEN and the amateur radio operators that use this system.

Document Purpose

This is a planning document. Its purpose is

- to identify the goals and objectives of OHDEN
- to describe the methods necessary to meet those goals and objectives
- to quantitatively evaluate the effectiveness of those methods to meet the goals and objectives
- to use that evaluation for continuous process improvement

OHDEN History

Gary, your input needed: OHDEN was organized in 2012 under the Ohio Section of ARES to meet the specific needs of emergency and disaster preparedness and response agencies. These are typically the Emergency Management Agencies (EMA) of the 88 Ohio counties. Whereas other amateur radio network structures capable of handling message traffic were and are in existence, OHDEN station operators are typically fully integrated into the jurisdictions' EMA's and their capability is identified in the county Emergency Operations Plan.

OHDEN is currently at a point of self reflection. It has grown to having more than 30 stations

on the roster of the weekly meeting of the Network (Net). There is a Standard Operation Guide (SOG) that is well written and effective but there isn't a method to distribute it and assure that everyone is working from the latest version. There is a wide diversity in the capability and skill level of those station operators which may be due to not enough formality in training and evaluation. None of these are easy challenges to address. Complicating factors are:

- all members are volunteers with a wide range of available time
- the antennas needed for the radio bands used required significant space
- equipment for practice and training is personally owned and there is a wide range of discretionary income needed for purchase
- a reasonable level of computer skill is necessary including typing
- radio station operators are geographically separated making mentoring more difficult

All that said, through good leadership, the station operators that frequent the net are working well as a team, are protective of each other, and there is great potential moving forward.

OHDEN Goals and Objectives

All vision statements are designed to be a bit utopian. For example, it may be unwise to expect all 88 counties to participate. Even so, the vision statement provides a basis for the formation of the goals and objectives.

There could be different requirements for different responsibilities. Station operators may not all have obtained the level of training required by their jurisdiction to work from an activated EOC and all stations may not need the capability of relaying through VHF/UHF.

A Net Manager for OHDEN is assumed. This position is appointed by ARES management. It is the net manager's responsibility to facilitate implementation of this plan.

The goals and objectives are described below. However, these should be considered preliminary. It is important to include input from the ARES SEC downward and most importantly, the ARES Emergency Coordinators (EC's), to be sure that meeting these goals and objectives will meet the needs of their served agencies.

Traffic Handling Proficiency

Every station operator is to possess a level of proficiency in handling traffic. This would ultimately include:

1. being capable of either generating the text of an ICS form from hard copy provided by an EOC member or use the form already completed in electronic form and provided by email attachment, USB drive, or similar.
2. being capable of relaying a completed form in electronic format to and from another station outside of a net
3. being capable of checking into the OHDEN net, following protocols defined in the Standard Operating Guide (SOG), and transferring that message successfully to another station under the direction of the net control station (NCS) both on the net frequency and QSY

4. being capable of receiving an ICS form from another station under the direction of NCS both on the net frequency and QSY
5. being capable of saving that file on the computer and copying it to a USB drive.
6. keeping a log of all traffic that passes through the station, saving that log, and formatting it for their jurisdiction for after action reporting

Equipment Proficiency

As before, all stations may not be expected to be proficient in all areas.

1. being capable of both 160-meter and 80-meter operation (with 60-meter a future consideration)
2. being able to locate OHDEN-capable jurisdiction-owned equipment and placing it into operation without assistance (this may exclude any multi-person antenna deployment) within one hour
3. being capable of preparing station equipment for operation necessary to complete the Traffic Handling Proficiency

Net Control Station Proficiency

1. being capable of calling a net to order, taking roll call, acknowledging all stations, prioritizing traffic, assigning the appropriate stations to exchange traffic on net or QSY, closing the net, creating a roster, and submitting it to the Net Manager
2. being capable of efficient use of OHDEN resources when the net is operating

Methods to Meet the Goals and Objectives

Training Program

OHDEN will develop a program to meet the goals and objectives. That program will capitalize upon the expertise that exists within the OHDEN stations using willing station operators to mentor those less proficient. This approach has the added advantage of increasing the proficiency even of the mentors. The net manager will be responsible for administrating the mentor programs, selecting and gaining acceptance of both mentor and mentee pairs and monitoring progress.

The mentor and mentee will coordinate times of their sessions as well as the mechanism of communication. OHDEN will create a guideline curriculum with the purpose of preventing a proficiency element being missed but the mentor will have significant latitude. The mentor may also "teach to the test."

Certification Program

OHDEN will develop a program of certification to meet the goals and objectives. Several levels of proficiency may be considered and the desires of the station operators to fill specific functionality should be considered.

The most important aspect of this program is that it must serve to encourage participation and accomplishment. Anything in the process that works against the development of a strong team will be dismissed.

OHDEN Standard Operating Guide

The purpose of the OHDEN Standard Operating Guide is to provide guidance to radio station operators for consistent, predictable, and universal operation when operating as a net.. The SOG is the reference for efficient communications. This is a living document and periodically updated to reflect new processes and technology and for improvement. As with OHDEN itself, the SOG is owned by the radio station operators that use it.

The net manager manages the SOG and it is his or her responsibility to facilitate a review of the document by all OHDEN station operators. This is to be performed as needed but targeted at no less frequently than every two years.

Signal Strength Utility

OHDEN will use a software utility that visually provides a measure of how well every station in the net is receiving every other station in the net¹. This provides all stations on the net geographical awareness of their on signal quality but, more importantly, provide the net control station all the stations' signal qualities relating to all other stations. This utility serves the net control station operator with information to use net efficiently.

Information Repository and Exchange

Up until now, OHDEN has used facebook for information repository and exchange. It is an ill-suited repository and, for completely justifiable reasons. not everyone uses facebook. OHDEN will thus transition to something else. Options are email, a hosted website, a remote team collaboration application, or a combination. Not yet as requirements but, features to address are:

- a repository to make available all the latest documents
- a repository to make available documents in review such that all can see suggestions for change
- a method of sending messages to one, several, or all
- a means of quickly getting attention to provide important information such as an activation
- closed and private
- a central location of alternate contact information
- a training and certification database

Revision History

Version	Name	Date	Description
0.1	RJK	8/2/2020	preliminary for limited review.
0.2	RJK	8/3/2020	a few minor tweaks plus input from GH re. creation of OHDEN

¹The utility is only as good as the data it possesses and is based upon recent snapshots of measurements made by those participating in the net at that time. The weakness and the paradox is that the data is centrally located on the internet and may not be available in the event of an OHDEN activation.
