Ohio ARES Digital ICS Messaging Capability

Executive Summary

A survey was designed to gain a perspective of the capability of the Ohio ARES groups in handling digital ICS-type messages between their served agency and the Ohio EOC. The survey was not intended to be extensive. Rather, it intended to touch upon several key areas with the intent of providing information to the ARES DECs and ECs and their volunteer radio operators regarding strengths and potential areas needing to be addressed. These capabilities involve the system of station radio operators, the equipment at their disposal, and their integration into the processes of their served agencies. In addition, OHDEN net management will use this information as a basis of discussion with the ECs in the development of the OHDEN training and certification plan as well as the effort to increase the effectiveness of OHDEN as a whole. This plan must be designed to meet the needs of the ECs' organizations in their service to the community.

Those polled in the survey were the DECs, ECs, and those that have checked into OHDEN from the first of July through the third week of August, 2020 if their emails were available and they had not opted out of receiving emails through ARESConnect. The polling statistics are presented in the following table.

DEC/ECs Invited	77
DEC/ECs Responded	26[1]
DEC/EC Response Percentage	33%
non-DEC/ECs Invited	41
non-DEC/ECs Responded	22
non-DEC/EC Response Percentage	54%
Total Invitations	118
Total Responses	48
Total Response Percentage	41%
Total Served Counties Associated with Respondents	31
Total non-County Served Agencies Associated with Respondents	3

Invitation - Response Statistics

The invitation-response statistics reveal a 14% margin of error for a 95% confidence level. Stated another way, we would expect up to 14% error 95% of the time in predicting responses to these questions for all 88 counties. This error margin assumes that all 88 counties have ARES groups that serve them. In other words, if a new ARES group should pop up tomorrow in a county that lacks one today, the error margin is unchanged.

---

[1] There were actually 28 responses from DECs and ECs. One was frivolous. The other was an error on my part in sending an invitation twice to the same EC. Both responses were removed from the data set.

Normally in an analysis such as this, the responses from DECs (and the SEC, for that matter) would not be pooled with the other responses since their position is indirect in service to a county. However, all DECs and the SEC specified a specific county as their served agency so their data was pooled with the ECs.

The survey asked the following:
1. What is your served agency.
2. How would your EOC get ICS messages to/from the Ohio EOC on 80-meters?
3. How would your EOC get ICS messages to/from the Ohio EOC on 160-meters?
4. How many people in your group are trained and are authorized by your served agency to operate from the EOC when active?
5. How many people in your group, either from the EOC or including the station that would be providing a link in your county, would benefit from additional training for getting ICS messages between your EOC and the Ohio EOC?
6. Does your EOC have a computer with fldigi installed and available to an EOC staff member for them to complete an ICS message form?

Questions two and three, isolated from their multi-choice answers, offer little insight into the intent of the question. The questions with available answers are presented later in this document.

Note that for simplicity, county EOC to/from Ohio EOC is specified in the survey but technically, the capability is identical for county to county EOC messaging.

General Conclusions

The general conclusions derived from the responses are listed below. There is a hint of editorialization.

- For 80-meters and especially 160-meters, the ARES groups typically rely on a digital radio link from the EOC to an HF radio station in their county for message relay by NVIS.
- Significant effort or resources will be necessary to make 160-meters NVIS effective in Ohio for handling digital messages in times when 160-meters offers the best or only NVIS solution.
- There are stations that operate NVIS that also have a direct digital link to the Ohio EOC (or the county station at the Red Cross). This is significant in that, should the Ohio EOC radio operators become overloaded during a major incident, these direct-link stations could act as buffers. Expectations, here should be tempered. There were responses that reported direct link capability that were rather distant from Franklin County. This raises a red flag and poor wording of the question may have created error in determining the true capability. More investigation is required.
- Counties that have no means of handling digital ICS message traffic is a concern. This situation is certainly under represented since the survey has both selection and response bias. This means that, besides the DEC and ECs, we only asked

stations participating in OHDEN to respond (selection bias). Also, invitees may not have responded at all for fear of being judged for not having this capability (response bias).

- Winlink RF is a well recognized mode for emergency traffic. This is an important tool in our toolbox.
- 34% of respondents indicate that, in their ARES group, there are less than four people trained and authorized to operate from the EOC. 66% of respondents indicate greater than or equal to four are trained and authorized. These are raw numbers and not normalized to the size of the ARES group in the county. The figures are meant mainly for the ECs to ponder and as a subtle basis for question five regarding training.
- Also not normalized to the size of the ARES group are the figures regarding the need for training. The question was seeking a qualitative response and indicates merely that people generally believe they would benefit from training to handle digital ICS message traffic and that the number of those with that belief is significant. This also translates to people being open to the concept.
- It is generally the radio operator that completes the ICS form as opposed to using the non-expert mode of FLMSG by an EOC staff member. This is likely an advantage since the radio operator will have significantly more experience in using the software compared to an EOC staff member.

Survey Data

Percentages are used in the presentation of the survey data. However, with a small sample size, it can give a false sense of precision so it is advised to consider the count value as well as percentage when analyzing the data.

We had hoped to be able to pool the data from the responses provided by the DEC/ECs with those provided by the non-DEC/ECs. However, there was a large enough difference in the response between the two groups to warrant a separate presentation of the responses. Keep close track of the yellow highlighting in the response data to remind which group the data represents.

The responses are presented in graphical then tabular form. If there was a textual component to the responses such as "other" followed by a fill-in-the-blank, the textual responses are presented after the table.

County Served Agencies of Respondents (Question 1)

The following table lists the counties associated with an ARES group providing a response. This implies that the served agency is associated with a county-level jurisdiction. Those not associated with a county-level jurisdictions are listed in the next section. Several respondents included additional served agencies but these are not included in this report.

|		
Ashland	Guernsey	Montgomery
Coshocton	Hamilton	Morrow
Clinton	Jefferson	Noble
Columbiana	Knox	Portage
Cuyahoga	Licking	Richland
Defiance	Lorain	Seneca
Delaware	Lucas	Scioto
Fairfield	Mahoning	Shelby
Franklin	Medina	Warren
Gallia	Meigs	
Greene	Miami	

Non-County Served Agencies of Respondents

Again, these are the primary or sole served agencies indicated by respondents.

American Red Cross
Beavercreek Township Fire Department
Memorial Health Systems

Responses from DEC/ECs

Q2 - How would your EOC get ICS messages to/from the Ohio EOC on 80-meters? (multiple answers are OK) <mark>Responses from DEC/ECs</mark>
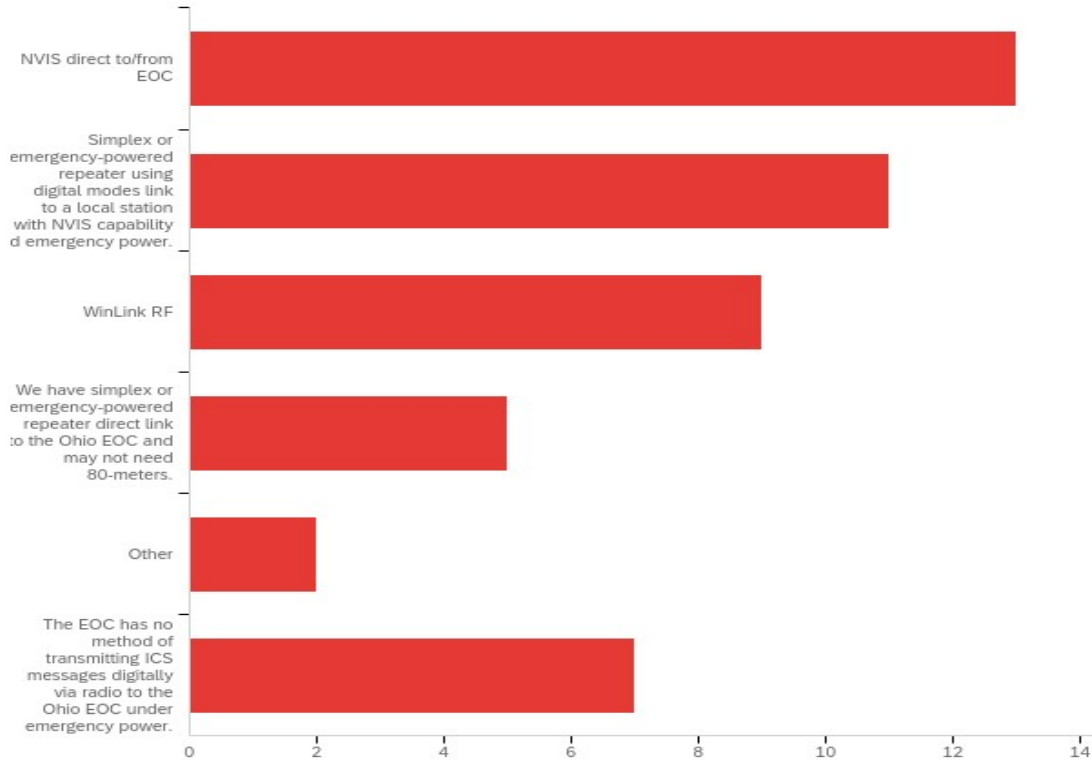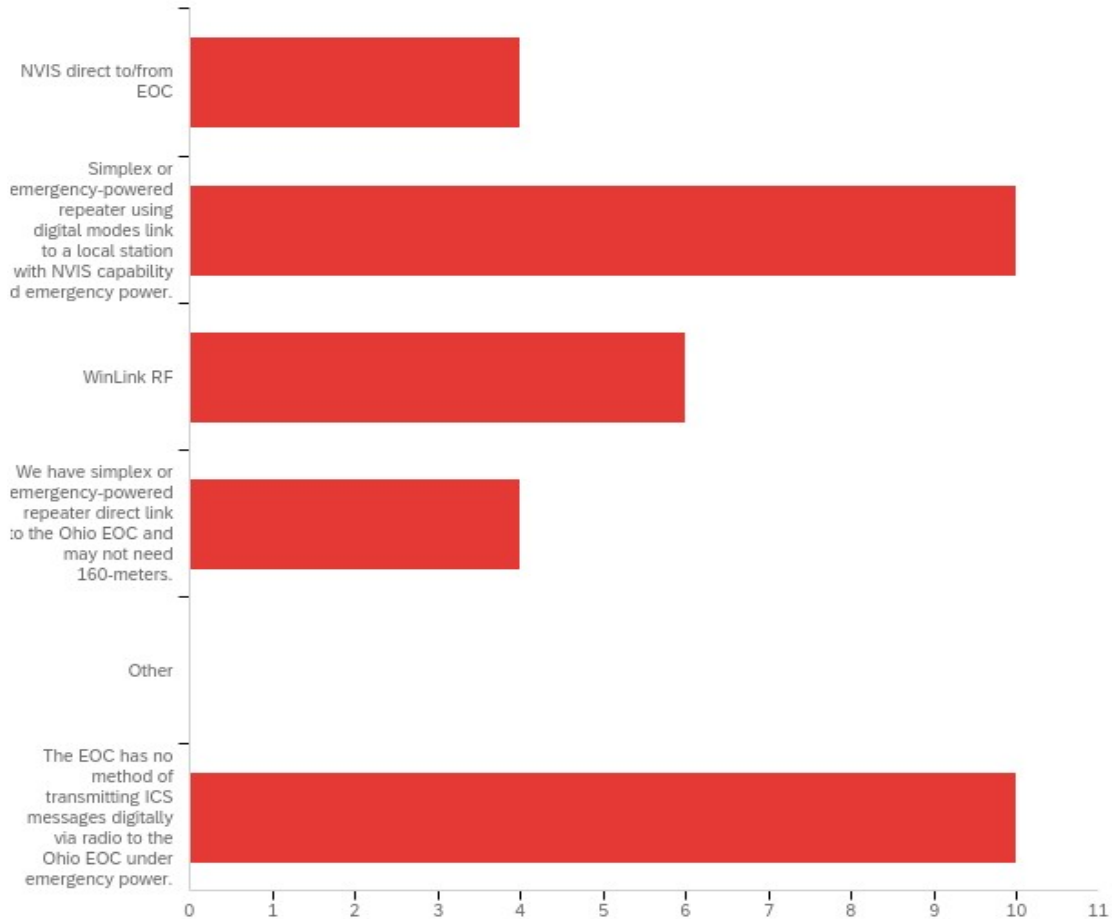

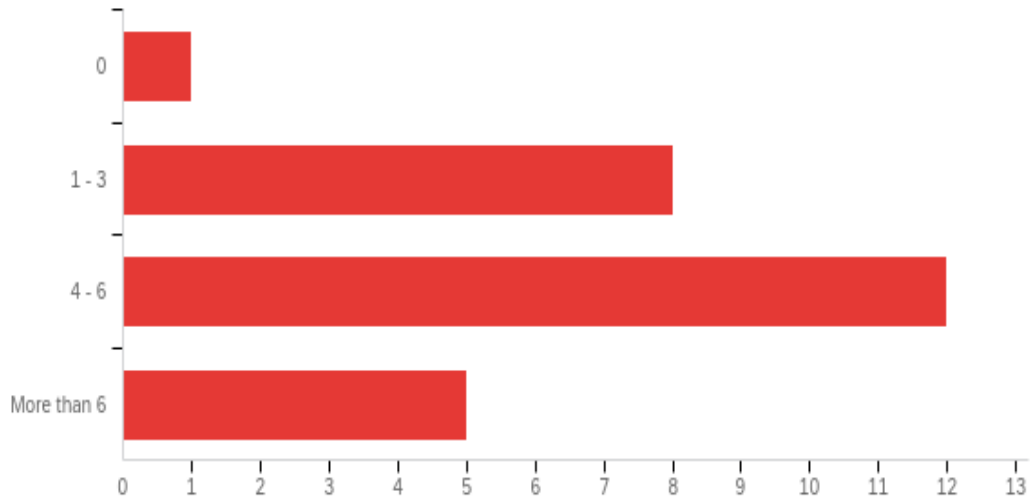| #	Answer	%	Count
1	NVIS direct to/from EOC	27.66%	13
2	Simplex or emergency-powered repeater using digital modes link to a local station with NVIS capability and emergency power.	23.40%	11
3	WinLink RF	19.15%	9
4	We have simplex or emergency-powered repeater direct link to the Ohio EOC and may not need 80-meters.	10.64%	5
5	Other	4.26%	2
6	The EOC has no method of transmitting ICS messages digitally via radio to the Ohio EOC under emergency power.	14.89%	7
	Total	100%	47

Q2 TEXT - Other

Other - Text
Local relay to County Control Station at Red Cross, then 80 or 2 meters to W8SGT
Winlink on the SHARES HF network using Pactor 3.

Q3 - How would your EOC get ICS messages to/from the Ohio EOC on 160-meters? (multiple answers are OK) <mark>Responses from DEC/ECs</mark>
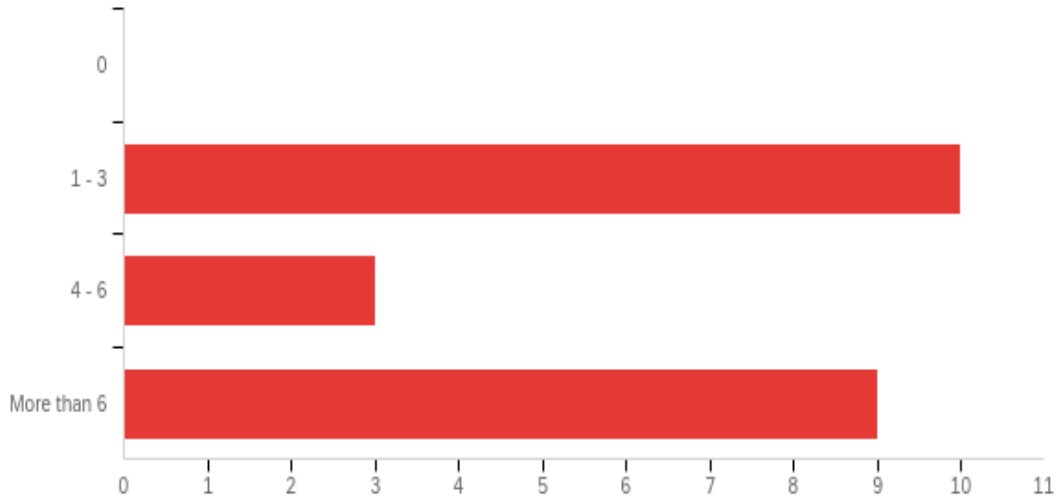

#	Answer	%	Count
1	NVIS direct to/from EOC	11.76%	4
2	Simplex or emergency-powered repeater using digital modes link to a local station with NVIS capability and emergency power.	29.41%	10
3	WinLink RF	17.65%	6
4	We have simplex or emergency-powered repeater direct link to the Ohio EOC and may not need 160-meters.	11.76%	4
5	Other	0.00%	0
6	The EOC has no method of transmitting ICS messages digitally via radio to the Ohio EOC under emergency power.	29.41%	10
	Total	100%	34

Q4 - How many people in your group are trained and are authorized by your served agency to operate from the EOC when active? Responses from DEC/ECs
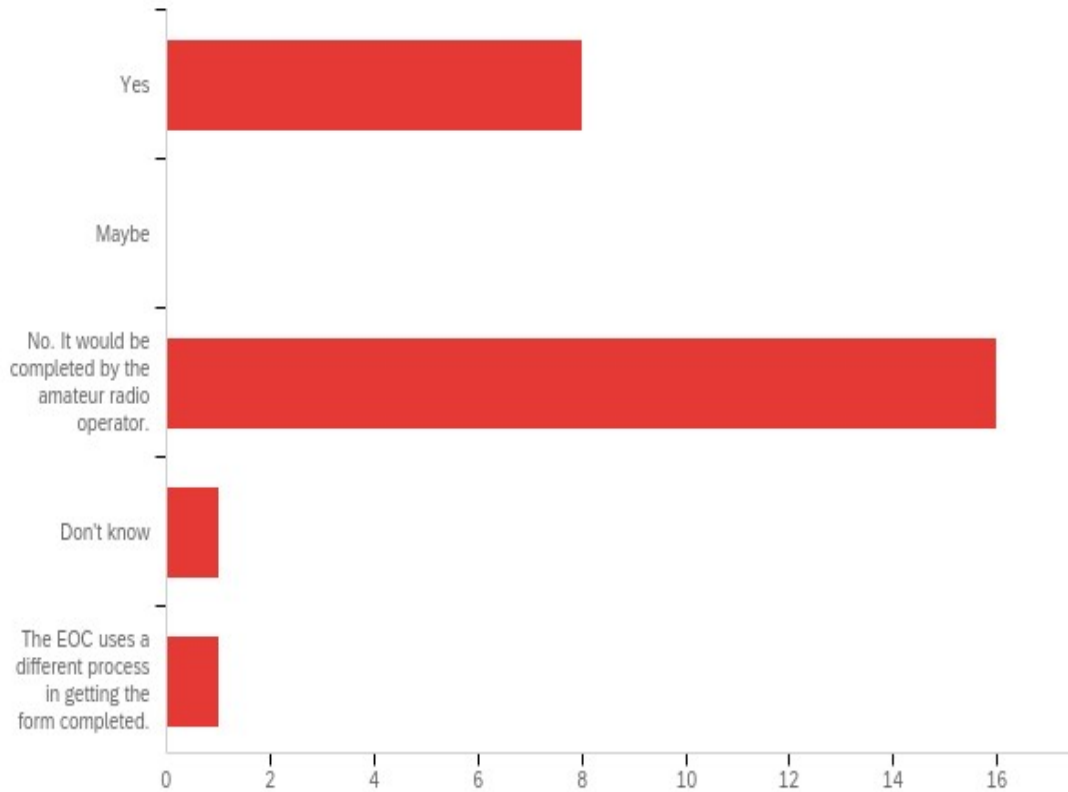

#	Answer	%	Count
1	0	3.85%	1
2	1 - 3	30.77%	8
3	4 - 6	46.15%	12
4	More than 6	19.23%	5
	Total	100%	26

Q5 - How many people in your group, either from the EOC or including the station that would be providing a link in your county, would benefit from additional training for getting ICS messages between your EOC and the Ohio EOC? ==Responses from DEC/ECs==

#	Answer	%	Count
1	0	0.00%	0
2	1 - 3	45.45%	10
3	4 - 6	13.64%	3
4	More than 6	40.91%	9
	Total	100%	22

Q6 - Does your EOC have a computer with fldigi installed and available to an EOC staff member for them to complete an ICS message form? <mark>Responses from DEC/ECs</mark>

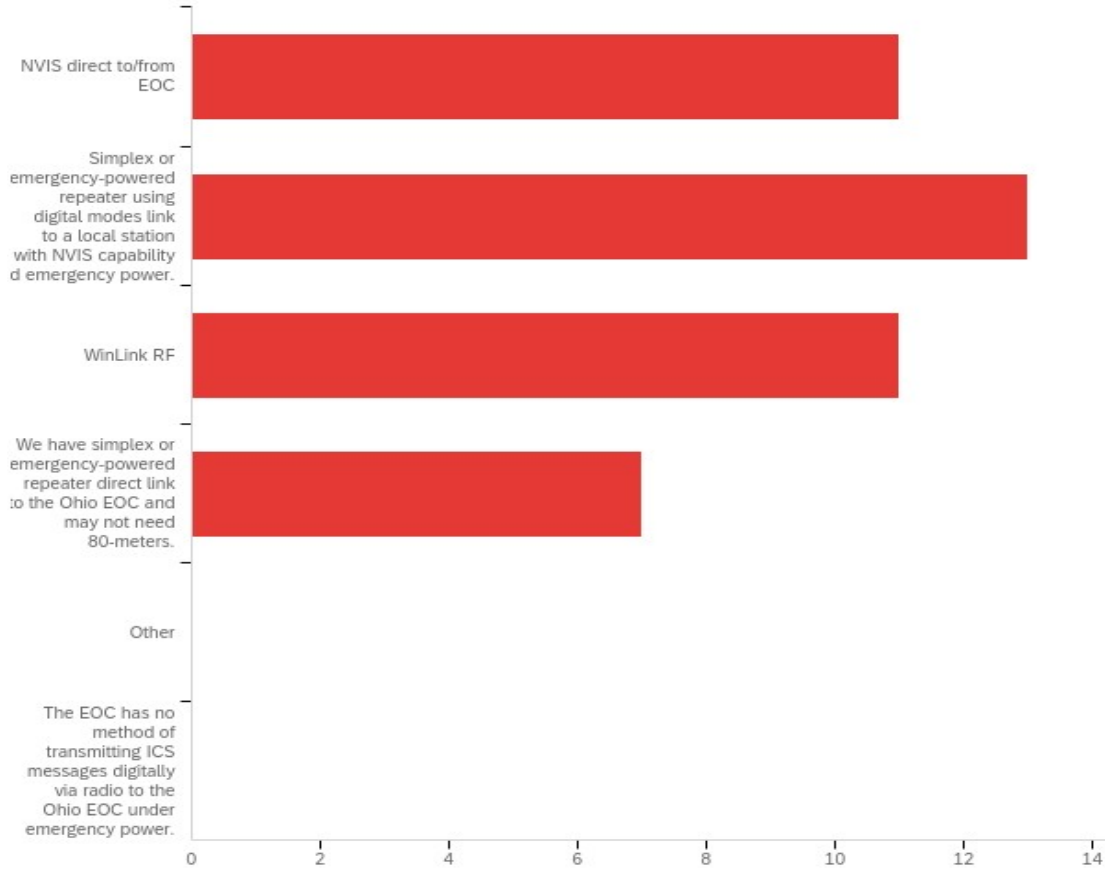| #	Answer	%	Count
1	Yes	30.77%	8
2	Maybe	0.00%	0
3	No. It would be completed by the amateur radio operator.	61.54%	16
4	Don't know	3.85%	1
5	The EOC uses a different process in getting the form completed.	3.85%	1
	Total	100%	26

Q6 TEXT - The EOC uses a different process in getting the form completed.
The EOC uses a different process in getting the form completed. - Text

There was no text provided by the respondent.

Responses from Non-DEC/ECs

Q2 - How would your EOC get ICS messages to/from the Ohio EOC on 80-meters? (multiple answers are OK) <mark>Responses from Non- DEC/ECs</mark>
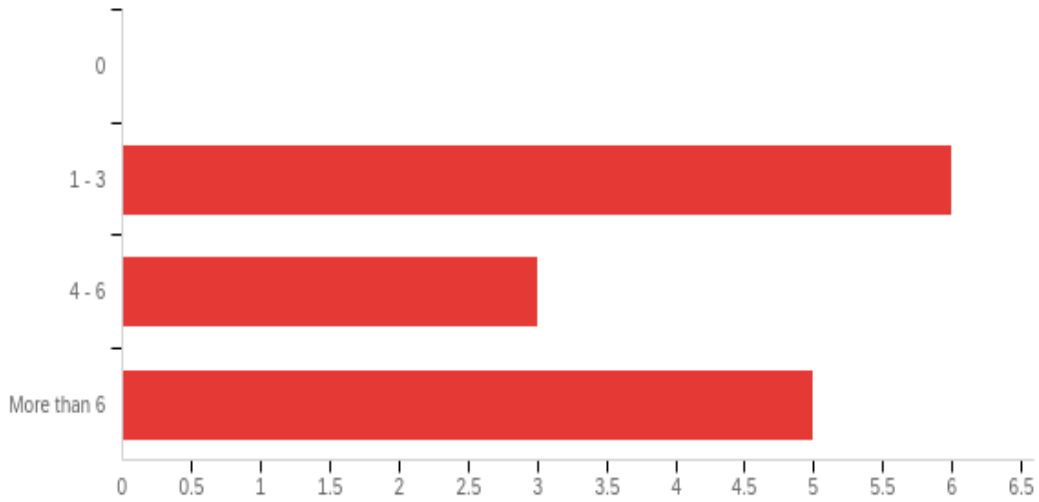

#	Answer	%	Count
1	NVIS direct to/from EOC	26.19%	11
2	Simplex or emergency-powered repeater using digital modes link to a local station with NVIS capability and emergency power.	30.95%	13
3	WinLink RF	26.19%	11
4	We have simplex or emergency-powered repeater direct link to the Ohio EOC and may not need 80-meters.	16.67%	7
5	Other	0.00%	0
6	The EOC has no method of transmitting ICS messages digitally via radio to the Ohio EOC under emergency power.	0.00%	0
	Total	100%	42

Q3 - How would your EOC get ICS messages to/from the Ohio EOC on 160-meters? (multiple answers are OK) <mark>Responses from Non- DEC/ECs</mark>
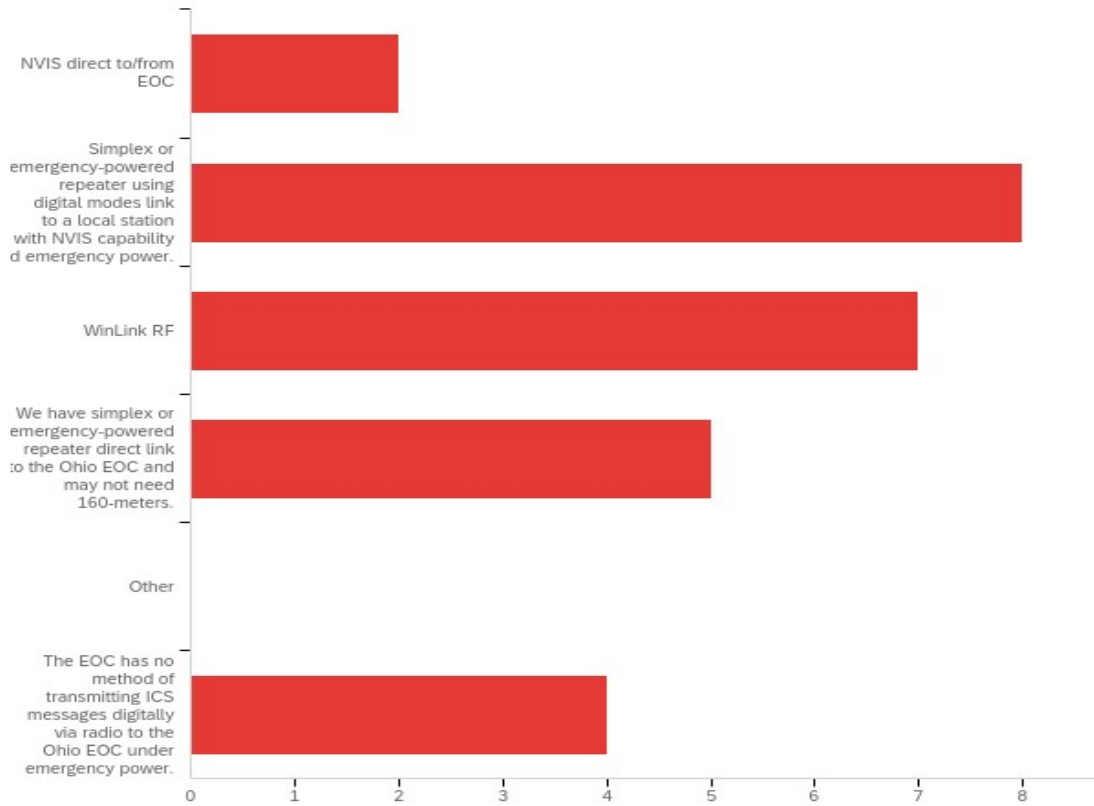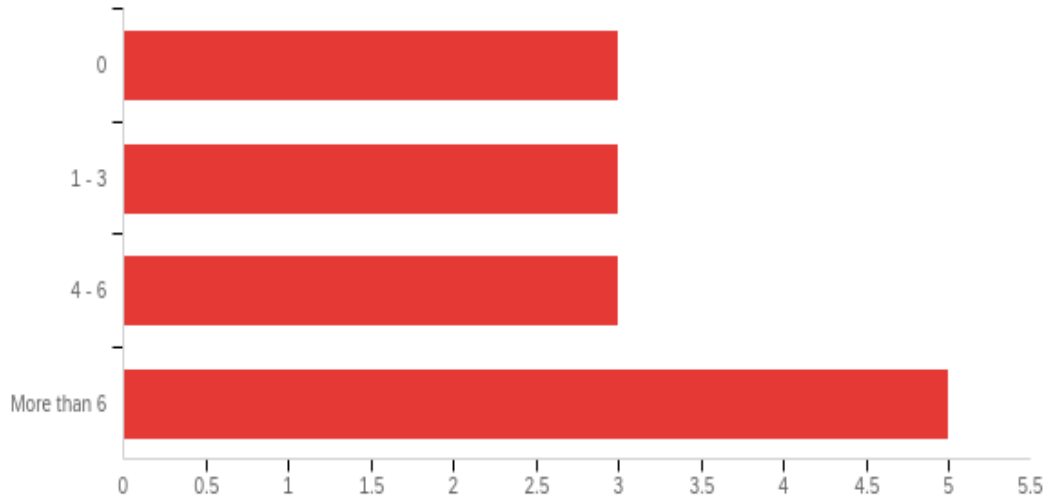

#	Answer	%	Count
1	NVIS direct to/from EOC	7.69%	2
2	Simplex or emergency-powered repeater using digital modes link to a local station with NVIS capability and emergency power.	30.77%	8
3	WinLink RF	26.92%	7
4	We have simplex or emergency-powered repeater direct link to the Ohio EOC and may not need 160-meters.	19.23%	5
5	Other	0.00%	0
6	The EOC has no method of transmitting ICS messages digitally via radio to the Ohio EOC under emergency power.	15.38%	4
	Total	100%	26

Q4 - How many people in your group are trained and are authorized by your served agency to operate from the EOC when active? Responses from Non- DEC/ECs
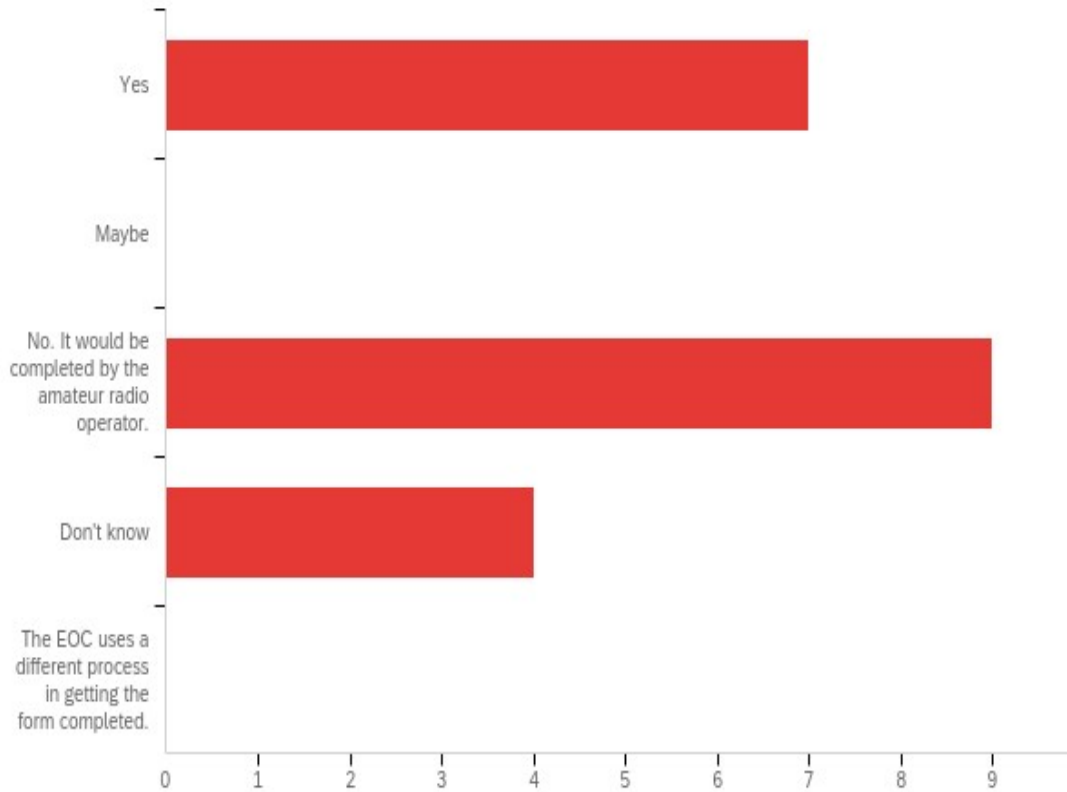

#	Answer	%	Count
1	0	0.00%	0
2	1 - 3	42.86%	6
3	4 - 6	21.43%	3
4	More than 6	35.71%	5
	Total	100%	14

Q5 - How many people in your group, either from the EOC or including the station that would be providing a link in your county, would benefit from additional training for getting ICS messages between your EOC and the Ohio EOC? ==Responses from Non- DEC/ECs==

#	Answer	%	Count
1	0	21.43%	3
2	1 - 3	21.43%	3
3	4 - 6	21.43%	3
4	More than 6	35.71%	5
	Total	100%	14

Q6 - Does your EOC have a computer with fldigi installed and available to an EOC staff member for them to complete an ICS message form? Responses from Non- DEC/ECs

#	Answer	%	Count
1	Yes	35.00%	7
2	Maybe	0.00%	0
3	No. It would be completed by the amateur radio operator.	45.00%	9
4	Don't know	20.00%	4
5	The EOC uses a different process in getting the form completed.	0.00%	0
	Total	100%	20