

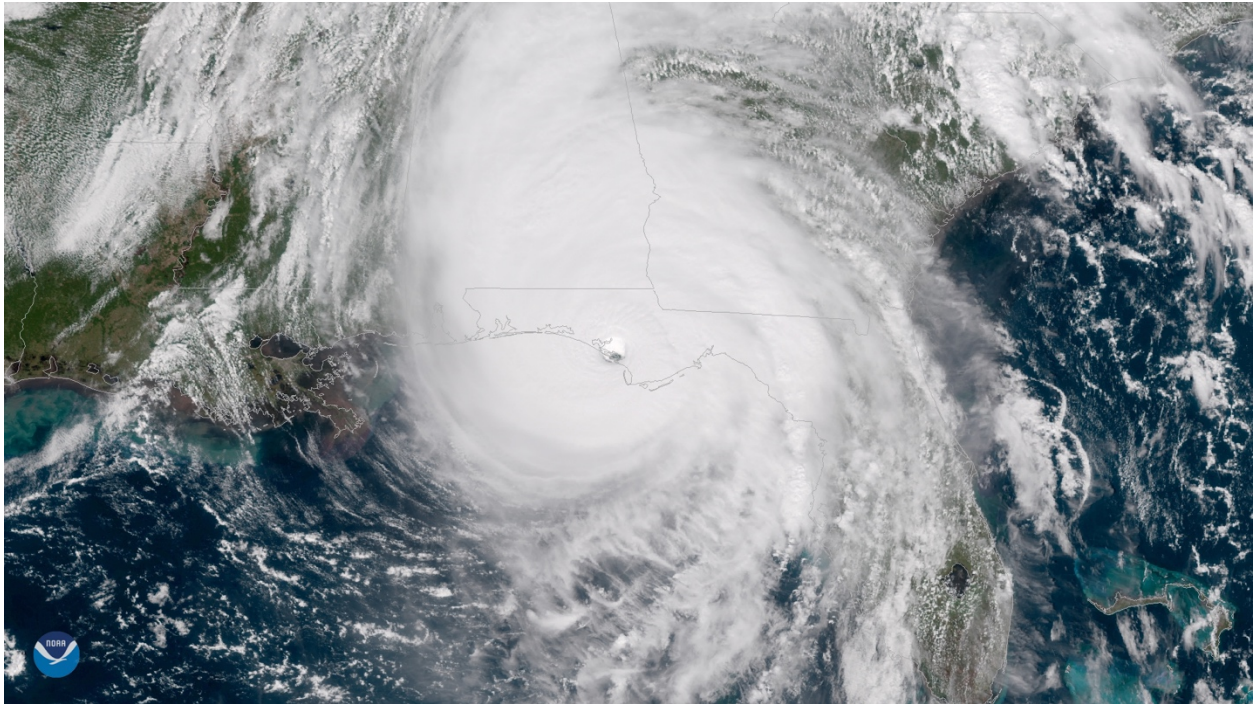
**Hurricane Michael**  
**North Florida Section After-Action Report**



**ARRL North Florida Section**  
**Section Emergency Coordinator**  
**Karl Martin KG4HBN**

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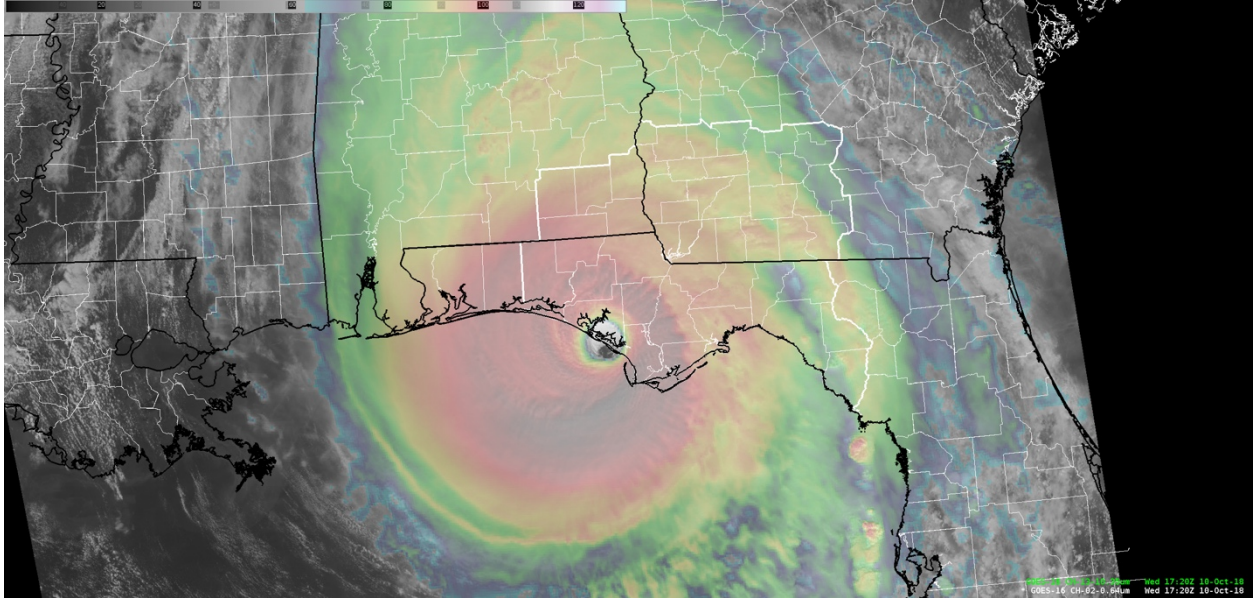
## **Introduction**

This report reviews the Timeline of events, Successes, Lessons learned, Notable Observations and Summary. The information in this document includes observations, suggests and improvements from the North Florida Section, operators deployed and others view points.

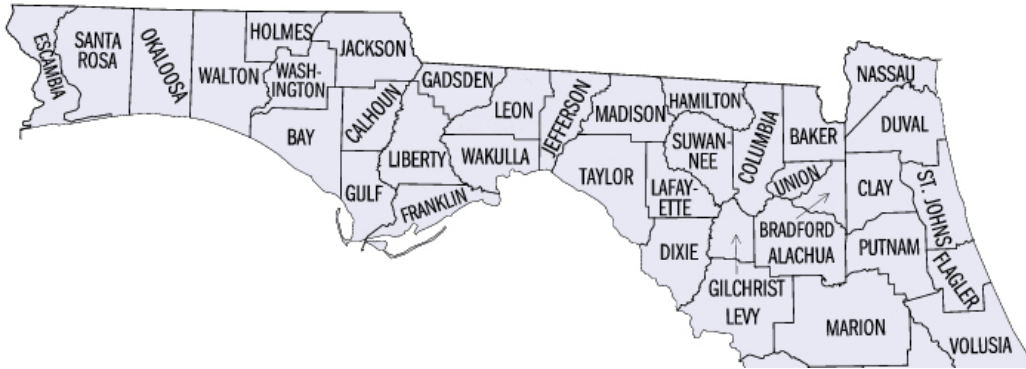
This report is for future improvement and not to point blame on any person or originations. After action reports are essential for learning and improving. I encourage everyone to make an AAR. This way others can prepare for the next event that affects our communities.

# Hurricane Michael Path of Destruction

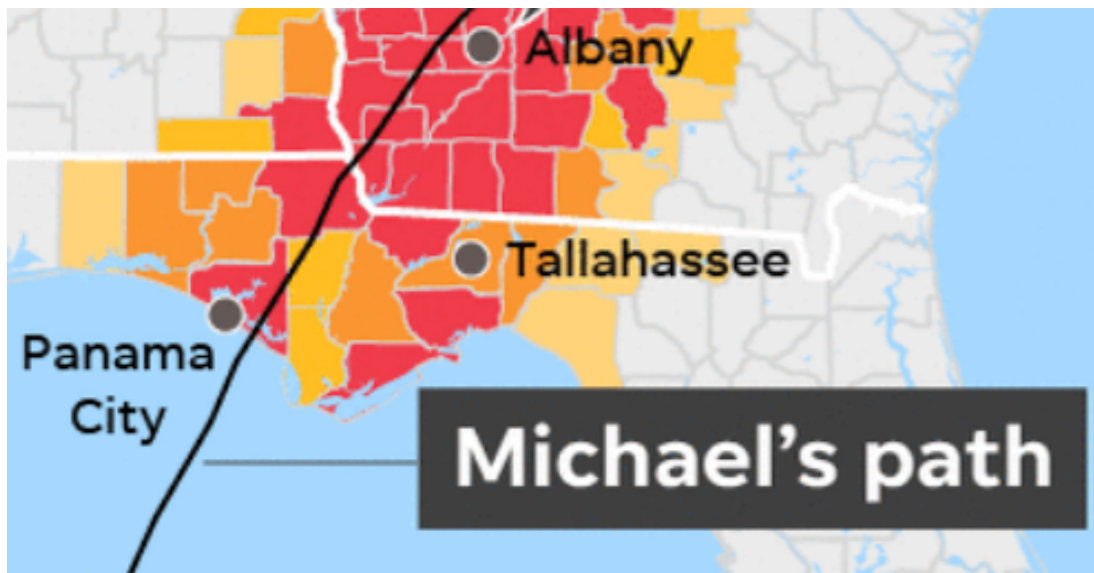
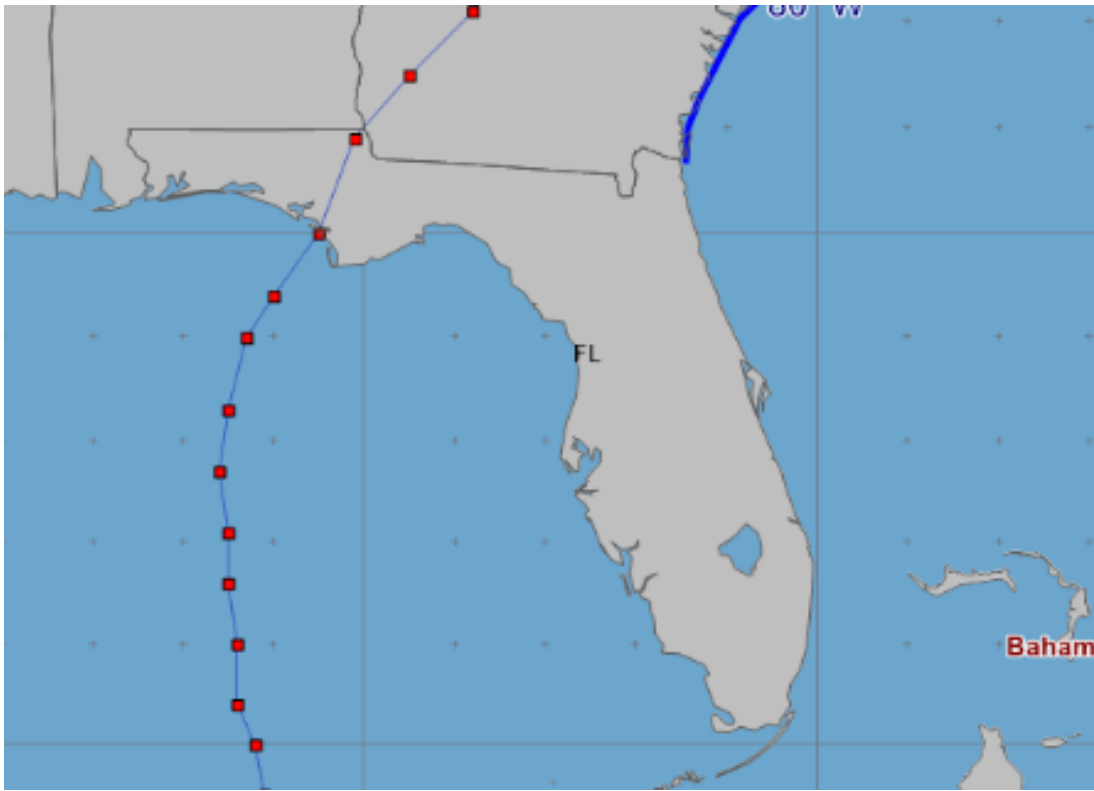
## Landfall



## Area Counties



## Michael's Path





## Time Line of Events

### I. **October 8 Monday**

1. Monday morning contacted Section Manager requesting to go to level III: Monitoring.
2. 1700 Michael Advisory #9 Category 1 Wind Speed 81 MPH Movement 7 MPH.
3. 1800 Activation level III
4. I emailed Emergency Coordinators alerting them of the heightened level and to start preparations.

### II. **October 9 Tuesday**

1. Contacted Section Manager requesting Level II: Partial Activation.
2. 0800 Michael Advisory #11A Category 2 Wind Speed 100 MPH Movement 12 MPH.
3. 0800 Activated Level II.
4. Emailed Emergency Coordinators alerting them to Level II, get operators ready to deploy.
5. 1700 Michael Advisory #13 Category 3 Wind Speed 121 MPH Movement 12 MPH.

### III. **October 10 Wednesday**

1. 0200 Michael Advisory #14A Category 4 Wind Speed 130 MPH Movement 12 MPH.
2. Requested Section Manager to go to Level I: Full Activation
3. 0900 Activated Level I
4. 0900 Activated North Florida Emergency Net on 3.950Mhz.
5. 11:12 Alerted Emergency Coordinators North Florida Emergency Net moved to 7.251Mhz.
6. 11:13 National Hurricane Center (NHC)/State Emergency Operations Center(SEOC) on State Amateur Radio Net(SARNET).
7. 1300 Michael made landfall Advisory #16A Category 4 Wind Speed 155 MPH Movement 14 MPH.
8. 1340 Requested Emergency Coordinators & District Emergency Coordinators to make a list of deployable operators. I gave requirement<sup>B</sup> given to me by SEOC Point of Contact.(POC).
9. 1630 Received message to start coordinating operators for deployment.

**IV. October 11 Thursday**

1. Received request from State POC to start preparation 9 operators to be deployed. 8 for grid locations and 1 for SEOC. (SERT Mission 1).
2. I was on the phone all day with SEOC, ARRL HQ, SFL section and WCF section.

**V. October 12 Friday**

1. 1200 Given SERT Mission 2 from SEOC by American Red Cross ARC requesting "Numerous" operators.
2. 1500 Alerted Emergency Coordinator 's that the first group of operators will be deployed on October 13<sup>th</sup> early morning due tonight and should start arriving between 0700 and 0900.
3. 1600 American Red Cross requested 5 operators, only able to spare 2.
4. 1615 ARC request operator for Honeywell Community Center.

**VI. October 13 Saturday**

1. 1145 Asked Emergency Coordinator 's for as many operators as possible with the same criteria. (Was given the list of 30 shelters needing operators.)
2. 1239 SERT Mission #3 operators needed for Bay , Bozman, Northside and Rutherford.

**VII. October 14 Sunday**

1. 1315 Received updated shelter list. 26 Shelters, 8 Closed, 2 opening soon, Ed Fraser Mem Hospital Macclenny Opened. 16 opened in total.
2. 1627 shelter update list 1 change, NWF Raider Area Consolidating.

**VIII. October 15 Monday**

1. 0015 Received email from State POC while sleeping, overnight communications stated the deployed operators had a confrontation at County . Operators were dispatch to return home, All deployments except Jackson county on hold. <sup>A</sup>
2. 0830 Received County Liaison list, contact each EOC to confirm shelter and EOC needs. Deployment resumes.
3. 0917 Contact SEOC POC reporting County issue resolved and operators sent home and requested full report. <sup>A</sup>
4. 1203 New shelter list. Northside Elm, NWF Raider Arena and Rutherford High Consolidating. Liberty County SN, Ed Fraser Mem Hospital and Macclenny Elm Closed.
5. 1555 2 operators arrived Bay County Emergency Operations Center, turned away not needed.
6. Asked for assistance from another section to sort all operator applications for deployment.

**IX. October 16 Tuesday**

1. 1034 New list of shelters with 16 total shelters, 2 consolidating, 1 pending, 13 open.
2. Had an tissue with 1 operator that had to be sent home.

**X. October 17 Wednesday**

1. 0714 Received 3<sup>rd</sup> request (Priority) for operators to go to Bay County EOC. Sent operator to Bay EOC
2. 0946 New shelter list. NWF Raider Arena removed, FSU School and Roulhac middle consolidating.

**XI. October 18 Thursday**

1. I was told by North Florida Emergency Net acting net manager that the net would be closed due to previous arrangements. I began looking for a replacement.
2. 3<sup>rd</sup> operator sent to Bay County EOC turned away. As SEC decided not to send any more operators to Bay EOC.
3. 2000 Volunteers started North Florida Emergency Net till 2230.



**XII. October 19 Friday**

1. 0630 New shelter list. 11 shelters open.
2. 1500 No new shelters, shelters with operators are closing or have full communications. Sending home.

**XIII. October 20 Saturday**

1. 1930 Shut down North Florida Emergency Net. Net operated for ten days from the hours of 0600 – 2200.

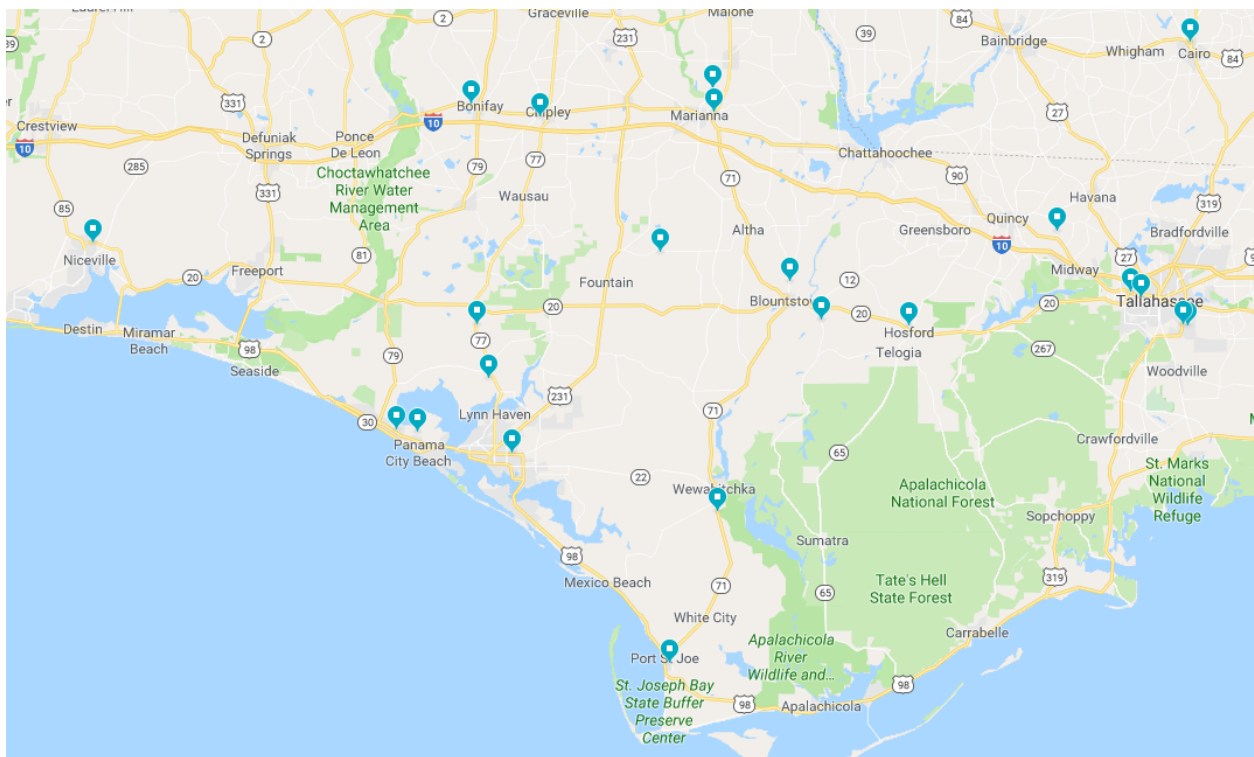
**XIV. October 21 Sunday**

1. Making sure people arrive home safe.
2. Compiling documents for reports.

**XV. October 22 Monday**

1. 1400 Sent out to everyone Activating Stand Down level.

**Map Showing Shelter Locations in The Affected Area**



## Successes

Successes	Improvement
SEC being POC with SEOC POC made exchanging of information fast and timely.	Due to a misunderstanding, The Tri-section guidelines were not followed correctly. The POC should have been the Tri-Section POC.
Using the North Florida email group to get information to the Emergency Coordinator 's and District's went well.	Suggest requiring Assistant Emergency Coordinators, Emergency Coordinators and District Emergency Coordinators to be on the list.
Working with ARRL to get operator requests out went smoothly.	The only issue was Florida Statute confusion.
SARNET  The system worked wonderfully beside the issue with the one repeater closest to Honeyville Shelter. The newly installed generator malfunctioned. Florida Department Of Transportation had it working within 48 hours.	Need to create net manager position for SARNET system working with Tri-section
Sending in operators with 7-day supplies and rotating them out every five days keeps people fresh and if there is a delay, they have supplies for two extra days.	
I began using a premade document with mission number, explanation of mission, frequencies and tips.	Create a preformatted letter with contacts, list of frequencies, Mission letter, and tips to help the operators during their deployment. Make sure it clear.  Include: POC at location, ICS-217, SERT Mission and chain of command POC.
NCS's did an excellent job of keeping everyone informed and up to date.  NCS's being outside the affected area worked well.  Great idea keeping everyone up to date on weather, power restoration, and road conditions	Suggest looking into a system that all NCS can communicate with one another and share the information in one place where all other NCS know the changes live. An online system would help with NCS's being spread out.  All NCS's need to keep notes of verbal traffic over the air with ICS-214  NCS must enforce the use of ICS-213 or radiogram when passing formal traffic.

<b>Successes</b>	<b>Improvement</b>
<p>Passing Situation Report to the next operator went smoothly.</p>	<p>Before leaving the area, they had been informed of who they were replacing, the personal contact information and after arriving both sides sat down for 30 minutes and covered what had happened to that point.</p>
<p>Winlink</p> <p>This system worked very well on getting a large amount of text and information in and out of the area using radio or internet-based email.</p>	<p>Winlink was limited due to equipment and operators with knowledge. I feel this system strategically places would be good for reports to the SEC/SEOC, Sitreps, and updates.</p>
<p>Using simplex UHF for inside shelter communications worked well.</p>	<p>Two stations in the same location or between 2 separate shelters. 2M was blocked more than 70cm due to brick walls.</p>
<p>A procedure was not always followed on arrival</p>	<p>Most people on arriving at their assigned location informed the shelter manager they had arrived. The operator worked with shelter manager on a position closest to the manager.</p> <p>A operator also recommended to check in with logistics chief as well.</p>
<p>NVIS antenna was the primary type HF antenna.</p>	<p>Note: Height ranged from 5ft to 20ft high. All worked as expected and for 90% of Florida.</p>
<p>Email</p> <p>Email worked fine for getting massive amounts of information and documents to operators before being sent into the area.</p>	<p>Email was not used as a major communications form to contact operators.</p>
<p>Phone</p> <p>As expected, using phones outside the affected area work perfect for answering questions.</p> <p>Texting</p> <p>Texting worked very well for quick questions and position reports.</p>	<p>Note: Phones and texting were never primary or secondary line of communications. It was a useful tool if it was working and would keep non-essential information off the net. In most cases after the storm and the deployable cell towers were in place. Operators would see full bars on their phone and would think they had a fully working phone. In reality, most calls from outside the area would drop when called or never ring the phone, systems would tell the caller the number had been disconnected or the caller would hear ringing, but the phone would never ring the user.</p>

## Lessons Learned

What can be improved	Recommendations
Misinformation and rumor control.	As time progressed, misinformation became an issue. There were discussions on nets by some NCS's and Net Manager 's of rumors and here say. Because of this people monitoring took information as accurate and would pass this along. Some news agencies received the information as coming from officials. Everyone should be trained in how to handle misinformation and what not to say on a net.
Credentialing and Background check's	There needs to be a way to credential operators, before and during the event. ARRL or Tri-sections should work to resolve it. Suggest all Emergency Coordinator 's keep an updated list of background checks and expiration dates if the background check has one.
Not enough North Florida Emergency Net & SARNET NCS to run a 24h net	Have multiple NCS all over NFL section if NCS in one area have to evacuate or station damaged there is more NCS to run 24h. SARNET has no net manager. Suggest Tri-section choose a person to be SARNET Tri-section manager and have them select a minimum of 2 to 3 NCS's in each section.
An ICS-213 or radiogram must be used in tactical and resource requests.	Suggest NTS or IS-213 traffic classes throughout the section. When requesting resources, personnel or supplies, it must be in ICS-213 or ARRL Radiogram.
Operators leave the assigned location without contacting NCS or leaving the site without another operator in place.	If someone needs to leave the radio for any length of time, they must alert NCS. If they need to go off-site, they have to have another op on the radio and keep an HT if in simplex range.
FDEM recommendation	Operators need to have credentials. A detailed plan needs to be developed by ARRL that have full guidelines to ensure agencies are served and coordination guidelines to include ARC, Human services and Counties served.

What can be improved	Recommendations
Deliberate interference.	<p>On both HF and SARNET they had stations deliberately interfering with the net. The only way to stop this was to move to another frequency (HF) or leave the repeater for a short time. (SARNET).</p> <p>An emergency net needing to move off-frequency is Unacceptable. Deployed stations might have no other means of communications (Honeyville Community Center). A station outside the disaster can email, call or use different ways to arrange another frequency. When stations have been deployed, they have no other communications.</p> <p>When an emergency frequency is quiet, passing weather conditions or asking for check-ins is a way to keep the frequency open for stations that might need to use the frequency for emergency use and keep deployed stations informed of changing conditions.</p> <p>These incidents were not reported to me until the end of the event, and by then no action could be taken.</p>
Make sure all volunteers have all the information they need before leaving to the location.	At the start of the event, there was confusion of 2 SERT missions in play. The first group was under the impression they were working under ARC when in reality they were working with ARC but under FDEM. Need to include more mission specific details.
Operators can't deploy before landfall because not knowing exactly where the system will make land, not knowing where they may be needed and putting operations in danger caught.	<p>Due to the scale of this event, some request became delayed.</p> <p>Suggest deploying resources three counties away from predicted landfall. This way they can be deployed quickly.</p>

## Notable Observations from Operators or Observers

Subject	Improvement
Repeaters and HF antennas, cell towers and 911 system took quite a blow in the affected area. If it impacted our area, we would need to rely more on simplex and HF mobile.	We have initiated and simplex net. I am encouraging our members to improve their antennas. Those that can go mobile with HF radio and antenna are encouraged.
First thing in the morning we would check our antennas before transmitting in case of damage	Anything can happen during the day or night to your outdoor equipment. You should check all your equipment before using it.
The situation with the operators should have been handled differently.	One might immediately ask the operators to cease operations, remain in place, and then in the stabilized situation, proceed to (1) ask for further details as to the reported "confrontation", (2) contact the operators to inquire for their side of the incident, (3) provide them with the name(s) of the persons making complaint against them, and (4) ask for corroboration from other witnesses at the Emergency Operations Center. These actions might possibly have allowed the rumor to be squelched and an immediate recognition of the lack of need to send further operators to the County EOC; avoiding the two further inappropriate mission assignments that actually occurred.

## Summary

There is no way you can ultimately be ready for a disaster that affects a large area like Michael. You can prepare, plan and simulate such an event but every deployment is different and being flexible is critical. The movement, intensity and how quickly it intensified caught everyone off guard. In less than 18 hours Michael went from a category 2 to a category 4.

Hurricane Michael was a learning experience for everyone. Most plans in place worked as expected, some needed to be adapted to work better, but others need to be changed or updated. The operators that participated during Michael did a fantastic job. People from all across Florida came out to help. Some operators lived a few streets away while others came from hundreds of miles away. This response was a team effort, and without everyone's help, we could not have accomplished what we did for Florida and our communities.

The North Florida Section was tasked to cover over 30 shelters, County EOC's and the State EOC. All of these locations were covered except for a few shelters and EOC's that felt operators were unnecessary.

What we set out to do was accomplished, and I feel this makes the mission a success!



## Acknowledgment

I want to thank every that helped in any way during this disaster. It was due to their efforts and skills in communications that made this mission a success. Everyone had a hand in this effort, from the people that took time out of their lives and families to go to an area they have never been and help people they may never see again, operators that checked into and operated nets. It's people like this that show the community just how crucial amateur radio is for emergency communications. These people make me proud to be an amateur radio operator.

Starting a week before landfall, I was in constant contact with Kevin Bess KK4BFN NFL Section Manager. He was always an email or phone call away. He gave me the opportunity to be Section Emergency Coordinator, and during Michael, he was there to help and support in the job I was appointed to do.

Steve Szabo WB4OMM former Section Manager was also a phone call away and was a big help in getting up to speed on procedures, contacts, and good advice.

Florida's tri-section leadership was there helping during the entire event. I want to thank them for their help and support.

## Appendix A

This summary is to identify verbal communication issues of assignment management during Hurricane Michael. This summary is to provide background and solutions to prevent communications issues in the future deployments of Amateur Radio Operators.

### Situation

This situation ended up being a chain of misinformation, rumors, and misunderstandings. Multiple missions were created to support different needs; this will be identified as an after action improvement. The case in point was all specific locations whether duplicate or not, needed communications. The conflict that has been identified by timeline of missions and after action reports is that the mission assigned to this specific situation was not the mission that the county POC had requested which caused confusion and miscommunications between the operators sent out, the agency they were to serve, and the ARES POC that was managing the missions for the Amateur Operators.

This mission assigned to the operators for this specific county was for a shelter agency and not the county EOC. The county EOC has also a mission requesting multiple teams of operators that was filled in the previous mission already, but the County's Incident Management Team was unaware of the situation. The after action improvement to correct this will be to provide the county POC with all missions assigned to their county to insure that there are not duplicates and under-utilized resources. The operators were not fully aware of the agency they had been deployed under. This will be an after action improvement to provide the operators with a single mission, and if there is a change a re-assignment mission number and orders to insure that they and the requester are on the same page.

Communications methods are also a factor in this situation due to not having readily quick deployment tools to be able to get on the air to send traffic upon arrival, instead of building infrastructure to operate. Another result of following the timeline is that there was not direct communication between the ARES POC and the operators, this communication was indirectly managed, resulting in a break in command structure of the mission. Other items identified where the agency being served was requesting operators to be relocated to non-mission locations to identify communications needs. This is not the assigned mission and is not a practice that should be continued in the future incidents.

## **Confusion the EOC.**

Due to the operators not having the correct mission requested by the Incident Management Team for the multiple operator teams, the command staff was unable to verify that these personnel were requested by the county EOC. Due to the massive amount of work being performed at this county EOC, it is necessary for personnel arriving at the EOC for tasking, that they have the correct documentation and POC to be assigned their missions. The command staff didn't understand who the operators were or why they had sent there. No personnel should request tasking from the command staff of a county EOC, they should be directly inquiring the ARES POC or the originator POC that requested them under Details>Primary Contact of the mission. Due to not having the new mission number this caused unnecessary confusion.

The county IC stated that they were not going to use the facilities and this resulted in a lengthy series of communications across HF nets causing controversy that was unnecessary to the missions that were assigned. After action improvement would be that the deployed operators communicate directly with the originator POC of the mission or the ARES POC only to insure correct directions.

## **For after action improvements:**

- Logging of communications during HF Nets, tracking of all personnel at all times, logging of all activities accurately for documentation.
- EMAC or correct coordination of out of state operators
- Single Point Communications and coordination, SEOC POC to ARES POC, to deployed resources only.
- Single Mission served only unless provided re-mission number and identified as relocated to a new location. Non mission requests must go through SEOC as a mission request by requesting agency.
- Served agency ethics and communications training
- Quick deployable resources to insure timely communications
- Deployment training

## Appendix B

- Self-sufficient for 7 days.
- Food, water and personal items.
- Radios for VHF UHF and HF for 40 and 80.
- Antennas for bands listed above.
- Alternative power, solar or generator.

## Glossary of terms

<b>2M:</b>	2 Meter (Refer to <b>VHF</b> )
<b>70cm:</b>	70 Centimeter (Refer to <b>UHF</b> )
<b>AAR:</b>	After Action Report
<b>AEC:</b>	Assistant Emergency Coordinator
<b>ARC:</b>	American Red Cross
<b>ARES:</b>	Amateur Radio Emergency Service
<b>ARRL:</b>	Amateur Radio Relay League
<b>CEOC:</b>	County Emergency Operations Center
<b>DEC:</b>	District Emergency Coordinator
<b>EC:</b>	Emergency Coordinator
<b>EOC:</b>	Emergency Operations Center
<b>FDEM:</b>	Florida Department of Emergency Management
<b>FDOT:</b>	Florida Department of Transportation
<b>HF:</b>	High Frequency (These frequencies are suitable for long-distance communication across County, State and intercontinental distances)
<b>IC:</b>	Incident Commander
<b>ICS:</b>	Incident Command System
<b>ICS-213:</b>	General Message Form
<b>ICS-214:</b>	Activity Log
<b>ICS-217:</b>	Radio Frequency Assignment Worksheet
<b>ID:</b>	Identification
<b>IMT:</b>	Incident Management Team
<b>NCS:</b>	Net Control Station (A station that controls and organizes a traffic net)
<b>NFEN:</b>	North Florida Emergency Net
<b>NFL:</b>	North Florida Section
<b>NHC:</b>	National Hurricane Center
<b>POC:</b>	Point of Contact
<b>Radiogram:</b>	General Message Form created by the ARRL
<b>Repeater:</b>	Receives on one frequency and retransmits it on another
<b>SARNET:</b>	Statewide Amateur Radio Networking in Florida ( <a href="http://www.SARNETfl.com">www.SARNETfl.com</a> )
<b>SEOC:</b>	State Emergency Operations Center
<b>SEC:</b>	Section Emergency Coordinator
<b>SFL:</b>	South Florida Section
<b>SitRep:</b>	Situation Report
<b>SM:</b>	Section Manager
<b>Tri-section</b>	The three sections in Florida. <b>NFL, WCF and SFL</b>
<b>UHF:</b>	Ultra High Frequency
<b>VHF:</b>	Vary High Frequency
<b>WCF:</b>	West Central Florida Section
<b>Winlink:</b>	Winlink2k or Winlink 2000 (A way to transmit and receive email over radio)

## Contact Information

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