Greater Lansing Skywarn



Lansing Area / Ingham County Amateur Radio Public Service Corps https://www.lansingarpsc.com/

Presentation Slides 3-15-2021

What is ARPSC?

Michigan Amateur Radio Public Service Corps (ARPSC)



The Michigan Amateur Radio Public Service Corps (ARPSC) includes the Amateur Radio Emergency Services (ARES), Radio Amateur Civil Emergency Service (RACES), National Traffic System (NTS) and Skywarn, a service provided in cooperation with the National Weather Service.

Objective

Develop a volunteer organization by unifying the Amateur Radio Emergency Service (ARES), the Radio Amateur Civil Emergency Service (RACES), the National Traffic System (NTS) and SKYWARN into one continuous and seamless organization called the Michigan Section ARPSC.

ARPSC Focus on Skywarn?

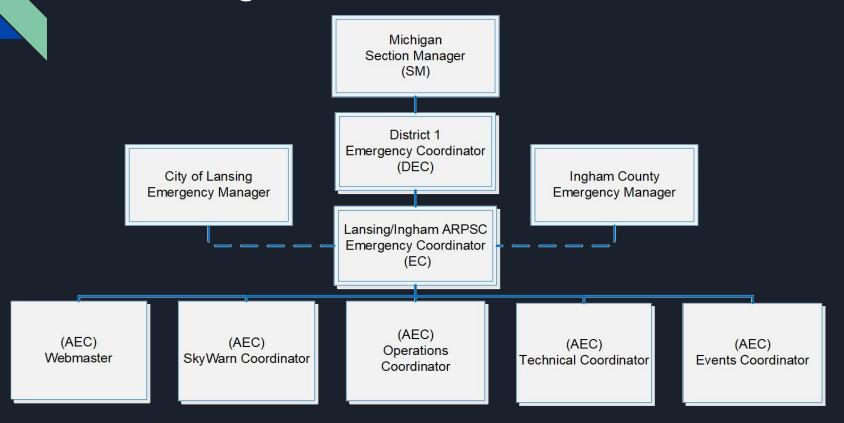




The United States is the most severe weather-prone country in the world. Each year, people in this country cope with an average of 10,000 thunderstorms, 5,000 floods, 1,200 tornadoes, and two landfalling hurricanes. Approximately 90% of all presidentially declared disasters are weather-related, causing around 500 deaths each year and nearly \$14 billion in damage.

SKYWARN® is a National Weather Service (NWS) program developed in the 1960s that consists of trained weather spotters who provide reports of severe and hazardous weather to help meteorologists make life-saving warning decisions. Spotters are concerned citizens, amateur radio operators, truck drivers, mariners, airplane pilots, emergency management personnel, and public safety officials who volunteer their time and energy to report on hazardous weather impacting their community.

ARPSC organization structure:



When do we start a net?

- ARPSC Skywarn members monitor WX
- Start a net during a watch or when a warning is expected
 - Timing of a net depends on how close severe wx is to our area and availability of operators
- Once we start a net, we will ask for check ins and log them
 - We do a roll call at the end of the net, so let Net Control know if you need to leave before the net is completed
- Our Skywarn Frequency is 145.39 PL 100
 - o Backup is the 146.94 PL 100





Condition Green

- Monitoring for potential severe weather in the future
- General Amateur Radio traffic is allowed
- We will start taking check-ins now
- Periodic announcements will be read regarding severe weather potential

- This is your time to get ready for possible severe weather.
- Take this time to get familiar with what sort of severe weather is expected
- Go to weather.gov, put in your zip code, and look for the Hazardous Weather Outlook

Condition Yellow

- Net Control takes complete control at this point. All traffic must go through Net Control Operator
- Severe weather is imminent or occurring in the local area
- Spotters are asked to give storm reports using the "Time - Event -Location" or TEL format.
 - Make sure you speak slowly! It is normal to speed up speech while giving reports, but they need to be documented!

- At this time we are taking only first-hand trained Spotter reports of severe weather such as:
 - Tornados, Wall Clouds, winds in excess of 50mph, hail of any size, severe storm related damage.
- We ask spotters to NOT report general sky conditions (rain, thunder, lightning) or what is on radar
- Radar updates will be given as appropriate.

Condition Red

- Things have got serious. This is usually due to a strong Severe Thunderstorm or Tornado Warning.
- Only priority reports are accepted at this time. Only looking for first hand Spotter reports of the location of:
 - Wall Clouds, funnel clouds, or tornados IF SIGHTED.
- Damage reports should be restricted to down electrical lines, blocked roads, or any life threatening situations!

- Other reports should be delayed until we are out of Condition Red to allow all priority and emergency traffic to pass without delay.
- Once imminent danger has passed, we may go back to Condition Yellow (if more severe weather is expected) or to Post Event Operations (if we expect the severe weather threat is over)

Post Event Operations

- Once the severe weather threat is over, Net Control will call for any first hand Spotter reports that had not been called in, especially if we had just been in Condition Red.
- If there isn't widespread damage, a roll call is taken at this point, checking out all participants, and the repeater is returned back to normal Amatuer use.

In case of widespread damage:

- If there has been widespread damage, we will spend time doing a damage assessment. This may include Spotters giving reports of damage that they have seen.
- During long duration events, we may use the 146.94 repeater to conduct a damage assessment while the Skywarn net continues on the 145.39

Net Rules / Procedures

- Check in
 - Give call slowly and phonetically, with your name and location
- All traffic through net control in Yellow and Red
- Check out at end, so let us know if you need to leave before the net is completed
- Make only severe weather related reports, not general sky conditions

- If you have any emergency or priority traffic, please butt in!
 - Give your callsign and say "Emergency traffic" or "Priority Traffic"
 - We will give priority to this type of traffic
- Make sure that Net Control acknowledges you before you continue with your report
 - It can get crazy if multiple stations try to give reports at the same time

What to report during a net

- Spotters are asked to give storm reports using the "Time - Event -Location" or TEL format.
 - Make sure you speak slowly! It is normal to speed up speech while giving reports, but they need to be documented!
- Tornados, Wall Clouds, winds in excess of 50mph, hail of any size, severe storm related damage.

- The information that you report in this net is passed onto the National Weather Service in Grand Rapids.
- Keep in mind that they are looking for first hand reports from trained spotters.

Reporting Hail Size

 When reporting hail, make sure to give a size, or compare it to something that has a set size, NOT marbles!

Image source:

https://www.weather.gov/boi/hailsize

Estimating Hail Size

Diameter Size (Inches)	Description	
1/4	Pea Size	
1/2	Mothball, peanut, USB Plug	
3/4	Penny Size	
7/8	Nickel Size	
1	Quarter Size	
1 1/4	Half Dollar Size	
1 1/2	Ping Pong Ball Size	
1 3/4	Golf Ball Size	
2	Lime or medium sized Hen Egg	
2 1/2	Tennis Ball Size	
2 3/4	Baseball Size	
3	Large Apple	
4	Softball	
4 1/2	Grapefruit	
> 4 1/2	Probably a record sized hailstone for Idaho or Oregon Freeze it, Measure it, Notify the NWS.	
	(Inches) 1/4 1/2 3/4 7/8 1 1 1/4 1 1/2 1 3/4 2 2 1/2 2 3/4 3 4 4 1/2	

Reporting Estimated Wind

- If estimating wind, use resources such as the Beaufort Wind Estimation Scale
- Give evidence of how you estimated the wind speed, and whether any damage was caused to healthy or rotten trees
- NWS is generally more interested in damage from the storm reported with detail, which they can use to estimate storm strength

Image source:

https://www.weather.gov/ilx/swopwindscale

Beaufort Wind Estimation Scale

Beaufort #	MPH	Description	Specification
0	<1	Calm	Smoke rises vertically
1	1-3	Light Air	Direction of wind shown by smoke drift but not by wind vanes
2	4-7	Light Breeze	Wind felt on face; Leaves rustle; Wind vanes moved by wind
3	8-12	Gentle Breeze	Leaves and small twigs in constant motion; Wind extends light flag
4	13-18	Moderate	Raises dust, loose paper; Small branches moved
5	19-24	Fresh	Small trees begin to sway; Crested wavelets form on inland waters
6	25-31	Strong	Large branches in motion; Whistling heard in telephone wires; Umbrellas used with difficulty
7	32-38	Near Gale	Whole trees in motion; Inconvenience felt walking against the wind
8	39-46	Gale	Twigs break off trees; Wind generally impedes progress; Mobile homes may shake
9	47-54	Strong Gale	Slight structural damage occurs; Mobile homes, sheds, roofs, lanais, and RV's suffer minor damage
10	55-63	Storm	Small trees uprooted; Moderate damage occurs to mobile homes and RV's; Brick and wood frame houses receive minor structural and roof damage; Some signs blown down
11	64-73	Violent Storm	Moderate sized trees uprooted; Large branches snapped off trees; Chimneys and road signs toppled; Significant mobile home damage; Power lines downed
12	74-95	Hurricane	Mobile homes overturned; Large trees and branches downed; Moderate roof damage to wood and brick homes; Minor pier damage

What <u>NOT</u> to report during a net

- We ask spotters to <u>NOT</u> report the following:
 - General sky conditions
 - Rain, heavy or not
 - Lightning / Thunder
 - Radar updates

- Different NWS County Warning Areas (CWAs) have different requirements for reports
 - Some want heavy rain reports
 - Some don't want wind below a certain level
 - Grand Rapids NWS wants wind reports for 50mph and greater
 - Some don't want small hail
 - Grand Rapids NWS wants all hail reports

How things have changed since COVID

Pre COVID

- Nets would be run at Lansing EOC
- We would fill multiple positions at the EOC
 - Net Control
 - Radar Operator
 - o Logger
 - NWS Chat

During COVID

 We are working remotely with multiple operators listening in from their home locations



Why use Amateur Radio for Skywarn?

So why should we use Skywarn on Amateur Radio to report severe weather?

- The NWS is looking for spotter reports from trained spotters.
- Skywarn nets help gather a large amount of information over a wide area
- It cuts down on the amount of people contacting the NWS during a severe weather event

 Reports can be pushed right to them using NWS Chat, which is available to Emergency Managers and Media



Want to help out?

- Volunteering as a Skywarn Spotter
 - Membership is not required in the ARPSC
 - Should have taken Skywarn training in last three years
 - If you haven't been able to attend in person, the NWS recommends online training.
 - Spotter Training resources:https://www.weather.gov/grr/spottertraining
 - https://www.meted.ucar.edu/training course.php?id=23 direct link
- Volunteering as a Net Control Operator
 - Must be a member of the ARPSC



ARPSC Requirements?

Complete the following online ICS classes:

IS-909: Community Preparedness: Implementing Simple Activities for Everyone

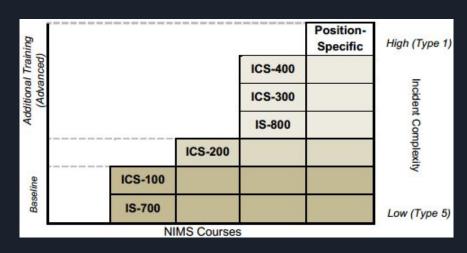
IS-100.C: Introduction to the Incident Command System

IS-200.B: ICS for Single Resources and Initial Action Incidents

IS-700.B: An Introduction to the National Incident Management System

Must pass a City of Lansing background check.

Attend meetings and volunteer for events.



Why is all that important?

It's important that we know how to interact with public safety agencies and speak their language.

Gives our served agencies a single point of contact for AuxComm.

Provides us the opportunity to use our skills and privileges to support our served agencies and the public!



Training the 2021 Edition

Grand Rapids NWS is offering NO in person training, and it appears there won't be a virtual training hosted by GRR NWS.

There are options, though:

- Go to:
 https://www.weather.gov/grr/spottertraining
- Check out the MetEd Course
 - Print off a record of completion for your records
- Look into Online sessions that are offered by nearby NWS offices
- Stay tuned on the list-serv and Facebook for updates for other training

Training the 2021 Edition

NWS Grand Rapids Weather Spotter Training Schedule

There will be no in-person Weather Spotter Training classes offered by NWS Grand Rapids in 2021. We are currently investigating hosting a small number of virtual sessions this spring. Any spotter training that is scheduled will be posted on this page along with NWS Grand Rapids Home Page.

If you are looking for some training in the meantime, you can take <u>this online MetEd course</u> through the COMET Program. You can also learn more about meteorology and our atmosphere at <u>JetStream - An Online School for Weather</u>. Once you have completed training, contact the Emergency Management office in your city/county to find out what you can do to become involved with their spotter program.

Please e-mail us with any questions: nws.grandrapids@noaa.gov

Looking for courses held in nearby regions of Michigan?

Southeast Michigan (NWS Detroit)

Southwest Michigan/Michiana (NWS Northern Indiana)

Northern Lower Michigan (NWS Gaylord)

Any Questions?





Thanks for viewing this presentation!

Please feel free to reach out with any questions at WX8MOJ@arrl.net!

Our website, with information on joining the Lansing Area / Ingham County APRSC is at:

https://www.lansingarpsc.com/

Facebook Page at:

https://www.facebook.com/LansingInghamARPSC

Links Mentioned in Training

- ARPSC Membership Requirements
 - https://www.lansingarpsc.com/membership-requirements/
 - This link includes the four classes needed and background check form
- Grand Rapids NWS
 - https://www.weather.gov/grr/
 - Click map for a forecast, and check out "Hazardous Weather Outlook" for details
- Mobile friendly NWS
 - https://mobile.weather.gov/
- GRR NWS Spotter Training Page
 - https://www.weather.gov/grr/spottertraining
- Storm Prediction Center
 - https://www.spc.noaa.gov/
 - Check out Convective Outlooks for specific days
- Spotter Network
 - https://www.spotternetwork.org/
 - Spotting App with training and location services