

Maintaining and Improving Safety on ARES Deployments

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Topics

- Author's Background
- When Safety Procedures are Ignored or Don't Exist...
- What is Our Purpose?
- The Language of Safety
- Safety Practices and Meetings During Deployment
- Equipment Safety

Topics

- Rural or Remote Deployment Hazards
- Our Glorious Glowing Gear
- Feeling Run Down?
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- Summer Fashions
- If I Were a Gladiator...
- These Are a Few of My Favorite Things...
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Author's Background

- 26 year resident of Tennessee
- 32 year resident of Alaska
- Overnight camped, skied and hiked at -20 F (separate occasions)
- Endured temperatures to -55 F
- 13 years of active Scouting leadership
- Amateur radio license Advanced in 1982
- Project and Program Manager for Providence Healthcare for 14 years in Alaska and Washington before retirement in January 2018
- Radio license Amateur Extra in 2019 in Spokane
- Member Spokane ARES since 2019, ACS since 2021
- Member Park County, MT (Gardiner) ARES since 2018
- Since 2018, lived in Gardiner, MT three months each year to visit Yellowstone National Park daily and observe wildlife

When Safety Procedures are Ignored or Don't Exist or Aren't Considered...

- River fording near-fatalities
- Boy Scout Jamboree fatalities (after my time)
- July, 2005, Ft. AP Hill, Virginia
- Scout leaders and friends
- Scott Powell, Scout Ranger of Camp Gorsuch
- Ron Bitzer, a member of my church
- Michael Shibe, a strong Scout leader

When Safety Procedures are Ignored or Don't Exist or Aren't Considered...

- Spangle Deployment Exercise 2022
- Team deployed a dipole antenna
- Supported by three tripods and fiberglass masts
- Wiring above ground was identified on three sides
- A work halt was called until we could correctly position the tripods and verify no contact with assumed power lines if a mast and tripod tipped over
- Accounted for 10' clearance distance recommended by ARRL

What Is Our Purpose?

- Give those on deployment a structure that reinforces safe behaviors
- Educate them through equipment training exercises and by example so that they can identify risky, unsafe behaviors
- Pair the less experienced with those most experience. Teach by mentoring and by example
- Give them language to talk about safe and unsafe behaviors
- Empower them, regardless of experience level or age, to loudly and clearly call out unsafe behavior
- Some vehicle assembly lines allow anyone to shut the line down, regardless of their title or seniority

The Language of Safety

- Would it be safe to...?
- Who knows this equipment best?
- What's the best, safest way to...?
- Would you show me how to safely...?
- I'd like to try that. What's the safest way to do that?
- Would it be safer to...?

Safety Meetings and Practices During Deployment

- Before Leaving Spokane County Emergency Management Garage
- En Route Coordination
- On Arrival
- As Needed During Placement of Trailer and Satellite Dish
- Before Tear-Down
- At Return to Garage

Safety Meetings and Practices During Deployment

- Before Leaving Spokane County Emergency Management Garage
 - ID Safety Officers
 - Chris Barnes, EM
 - ARES/ACS EC or AEC
 - Review any dangerous weather conditions as provided by W7UWC and AA7RT
 - Describe the travel route
 - ID the travel team
 - Specify communication methods, radio types and frequencies
 - Specify meeting point and ETA
 - ID drivers, vehicles, and passengers: who rides with whom
 - On Deployment Log
 - Collect emergency contact names and numbers on deployment log
 - Note any emergency medications needed and confirm the on-person location of each medication

Safety Meetings and Practices During Deployment

- Before Leaving Spokane County Emergency Management Garage
 - When helping drivers, maintain visibility in vehicle side mirrors when on foot
 - Stand where you can continually be seen
 - Cross the safety chains underneath the trailer tongue and hook each to the towing vehicle
 - Plug in brake and turn signal lights for each trailer
 - Use caution when lifting: protect your back and hands
 - Be aware that sharp edges can cause crush, pinch or pressure injuries
 - Walk around and inspect the all vehicles and all trailers before leaving

Safety Meetings and Practices During Deployment

- En Route Coordination
 - Repeater or simplex
- Expect blind spots
- 800 MHz
- ARES 2m backup

Safety Meetings and Practices During Deployment

On Arrival

- Gather all participants
- Review objectives of deployment
- Show location of First Aid equipment in Communications Trailer
- Prepare for safety site-survey to ID potential hazards
- Conduct site-survey, marking hazards with flagging tape
- Regroup and report all hazards
- Update the Deployment Log with info from late-comers
- Establish work teams...request/assign if no volunteers
- Establish buddy system, pairing more experienced with less experienced

Safety Meetings and Practices During Deployment

- As Needed Before Placement of Vehicles, Trailers and Equipment
- If any of the above require special handling to unload or set up, call it out
- Some equipment like the satellite antenna system has moving parts. Observe those specific safety rule

Safety Meetings and Practices During Deployment

Before Tear-Down

- Gather the group to discuss any newly discovered hazards
- Remind them to factor their fatigue and eagerness to return home into their actions

Safety Meetings and Practices During Deployment

At Return to Garage

- Debrief on what went right, what could be improved
- Identify any equipment failures or repair needs

Equipment Safety

- Equipment that may create safety hazards
 - Ladders
 - Always test stability
 - Always brace
 - Deployment of folded ladders
 - Heavy awkward loads in tight locations

Equipment Safety

- Equipment that may create safety hazards
 - Large locking mechanisms (e.g. trailer rear doors)
 - Tripod leg folding braces
 - Generators
 - Electrical connectors
 - Liquid fuel
 - Carbon monoxide hazard if enclosed

Rural and Remote Deployment Hazard

Eastern
black-legged tick,
Ixodes scapularis



Western
black-legged tick,
Ixodes pacificus



Relative size



-  Adult female
-  Adult male
-  Nymph
-  Larva

Rural or Remote Deployment Hazards

- Ticks
 - Potential carriers of debilitating diseases
 - High school teacher almost died of Rocky Mountain Spotted Fever
- Lyme Disease victims: Shania Twain, singer songwriter, and multiple friends. Long term health issues lasting decades
 - Readily spread by deer and other wild herbivores
 - Tuck long pants into socks and use insect repellent
 - Don't wait until they bite you, catch them when they are crawling
 - Doctor's advice: inspect every square inch of skin
- Field expedient shelter: vehicle, Communications Trailer, tarp, space blanket, blanket and strong flashlight

Rural or Remote Deployment Hazards



Rural or Remote Deployment Hazards

- Snakes
 - Rattlesnakes (pygmy and timber), copperheads,
- Step over logs and onto rock piles carefully...probe with stick or hiking poles when in doubt
- Don't put your hands where you can't see them
- Don't climb or pull yourself up and come face to face with a surprise

Rural or Remote Deployment Hazards



Rural or Remote Deployment Hazards

- Spiders
 - Brown recluse, black widows
- Fond of darkness, old woodpiles, old buildings
- Don't put your bare hands where you can't see them
- Don't crawl in dark spaces and come face to face with a surprise

Rural or Remote Deployment Hazards

Dogs

- Always ask, “Is it OK to approach?”
- No leash laws
- May form packs that are aggressive and can threaten
- Multiple dogs may combine to protect their owner, then threaten or attack

Rural or Remote Deployment Hazards

Terrain

- Snow and ice
- Muddy and slippery
- Rocky and difficult to traverse
- Sloped
- Holes created by burrowing animals
- Barbed wire
- Heavy brush with poor visibility

Our Glorious Glowing Gear

- High visibility safety yellow clothing with reflective tape
- Hat, pants, and jacket preferred
- Weather and windproof preferred
- Check Costco

Feeling Run Down?

When are you in trouble?

- Heat exhaustion
- Unaccustomed to high temps since lived in Alaska
- Heat index over 100 F
- Clearing brush and burning in large bonfire
- Extreme headache, muscle weakness, nausea
- Required:
 - Immediate cooling under air conditioner
 - Glucose-rich fluids (lemonade made with sugar)
 - Feet raised

Feeling Run Down?

When are you in trouble?

- Hitting the wall...Winter hike
 - Glycogen reserves exhausted
 - Little glucose available for your muscles
 - You are hypoglycemic
 - Layperson's terms: temporary diabetes
- Rusty robot...I could not take more than 3 foot strides
- Hiking buddy recognized symptoms
- Solutions
 - Water, glucose and caffeine
 - REI:: caffeine and glucose gummies

Feeling Run Down?

When are you in trouble?

- Hitting the wall...Summer
- Training for 5K race 2022
- Hill climb at end of jog/walk
- Higher than normal air temperature
- Neared top of hill and suddenly felt total energy drain
- Barely able to walk the ½ mile home
- No ID, no buddy, no water, no snack, no cell phone, no one else on the trail

Feeling Run Down?

- The actual 5K race 2022
- Higher than normal temperatures
- Dizzy near end of race
 - Heat induced
 - Lack of fluids
- Refreshed with extra water at water stations

Winter Fashions

- Wool or fleece
- Construction worker clothing
- Hat
- Hoody to protect back of neck
- Layers
 - Dependent on body type, age, metabolism, immediate health, body fat, meals
 - Essentials
- Weather
- Windproof
 - Five or six on torso
 - Three to four on lower body
- Footwear with felt removable liners

Summer Fashions

- Heat
 - Heat exhaustion
 - Sunburn
- Blisters and tissue swelling

- Clothing essentials
 - Cotton
 - Synthetic wicking fabric (Under Armour)
- Beware high nylon content
 - Wide-brimmed hat

If I Were a Gladiator...

- Leather gloves
- Long pants (zip-offs)
- Long sleeve shirt
- Sun hat, ball cap, beanie
- Eye protection (stainless steel antenna wire)
- Ear protection (plugs or muffs)
- Footwear (leather preferred)
- Knee pads or kneeling cushions

If I Were a Gladiator...

As required:

- Helmet
 - Rock climbing or construction
 - Useful under vehicles or trailers
- Life jacket, climbing gear, climbing rope
- Bear spray (not repellent)
 - Hook onto belt with carabiner, worthless in your pack

These Are a Few of My Favorite Things...

- Personal ID
- Insurance cards
- Smartphone
- Tourniquet
- Bandanna
- Headlamp
- Watch
- Flagging tape
- Painter tape
- Duct tape
- Sharpie

These Are a Few of My Favorite Things...

- Multi-tool
- Slip joint pliers (Channellock)
- Screwdriver with Phillips and slot bits
- Pocket knife (open with one hand)
- Adjustable wrench (Crescent)
- Tweezers
- Needle nose pliers
- Little Hottie toe warmers
- Compass

These Are a Few of My Favorite Things...

- 100' paracord
- Lighter
- Super glue (single dispenser)
- Bread wrapper twisty
- 4"x4" piece 2x4
- Hiking poles
- Ice spikes for boots
- Solar charged battery with USB port
- Personal first aid kit
- 4"x4" gauze squares, tampons, absorbent pads
- Insect repellent
- Folding chair or stool

Don't Touch Your Dial!

- Messing with setup menus on any radio or modem may interrupt successful communications that are critical during the deployment!
- Icom 7300
 - Display adjustments from front panel are OK
 - ***-DO NOT USE THE “SET” MENU ITEM***
- Do not change setup configurations in supporting software such as WinLink, SoundModem, FT8, fldigi, JTAlert

Appendix

- [Scout Leaders Die at Boy Scout Jamboree](#)
- [CDC: Tick-Borne Diseases](#)
- [CDC: Protecting Yourself from Ticks and Mosquitoes](#)
- [Shania Twain 10-year Recovery](#)

What is Risk?

Risk = Worst Possible Outcome * Probability

- Examples

- Asteroid strike (out of our control)
 - Risk = astonishingly low
- Grab bare electrical wires with wet hands (within our control)
 - Risk = extremely high
- Grab bare electrical wires with thick rubber gloves (within our control)
 - Risk = Very low but non-zero