

LUNENBURG FIRE DEPARTMENT

STANDARD OPERATING GUIDELINE

TITLE: Severe Weather Operations

NUMBER: 4.12

DATE IMPLEMENTED:

APPROVAL:

REVIEW DATES:

REVISION DATES:

PURPOSE: This SOG is to provide guidance to Fire Department personnel encountering Severe Weather conditions during field operations. For the purposes of this SOG, the definition of severe weather is any weather condition which creates an increased risk when responding to or operating at an incident.

This SOG covers preparation and operations before, during and after weather events which are encountered on an infrequent to frequent basis in the New England Region. These include: Prolonged Rains/Flooding, Thunderstorms/Lightning, Tropical Storms/Hurricanes, Heat Waves, Tornadoes, and Snow/Ice Storms.

As no two incidents may be alike, Officers must consider a Risk/Benefit analysis during any operations in adverse or severe weather conditions and be prepared to alter, suspend or terminate operations should conditions change rapidly.

I. General Safety Guidelines

a. Hail

- i.** Hail may be encountered infrequently during both summer and winter storms.
- ii.** If operating in hail conditions, personnel shall wear PPE including eye protection.
- iii.** Consideration must be given to providing adequate protection for patients or victims who may be exposed.
- iv.** Officers should use discretion to determine if personnel should seek shelter

b. Flooding/Moving Water

i. Personnel Safety

- 1.** PFD's shall be worn when in proximity (10') to:
 - a.** Water of Unknown depth
 - b.** Water known to be over 3' in depth
 - c.** If water is moving and over 2' in depth, consider use of lifelines as well.
- 2.** Do not attempt in-water rescues unless trained
- 3.** Avoid Open manholes, runoffs, drainages ditches
- 4.** Consider all water runoff to be contaminated.
 - a.** Decon all personnel who enter water

ii. Apparatus Safety

1. Do not drive apparatus through water or unknown depth.
2. Do not drive apparatus through moving water more than 2' in depth
3. Consider that water depths can change rapidly

c. Lightning

i. Storms accompanied by lightning are common during the summer months. A storm does not necessarily have to be severe to produce dangerous lightning. If thunder is audible, the potential for a lightning strike is present.

ii. Safety Considerations

1. Personnel not actively involved in emergency operations should remain inside apparatus during lightning events.
2. Aerial, ground ladder, and any elevated operations (including roofs) should be halted during lightning conditions. (This includes Squad 3's light tower)
3. Personnel should avoid carrying or using long metallic tools
4. Pump Operators should seek shelter in a fully enclosed cab. If necessary to remain at pump panel, do not lean against apparatus and minimize contact with apparatus.
5. Personnel should avoid hilltops, open spaces, wire fences, metal clothes lines, exposed sheds and any elevated, electrically conductive objects
6. For exposed personnel with no shelter, avoid the highest object in the area. If only isolated trees or other tall objects nearby, the best protection is to crouch in the open, keeping twice as far away from isolated tall objects as they are high

d. Wind

i. Personnel operating in wind conditions of sustained 35 mph will wear the following minimum PPE

1. Helmet (Brush or Structural)
2. Bunker Coat or Brush Coat
3. Eye Protection

ii. Use of aerial ladders should be discontinued in winds of sustained 35 mph or greater

iii. Sustained Winds in excess of 50 mph

1. Operations should be limited to critical fire/rescue operations only.

II. General Staffing Guidelines

- a.** Staffing Plans may be short term or long term, depending on the type of conditions encountered. In determining Staffing Levels, the following should be considered:
 - i.** Anticipated call volume of incidents
 - ii.** Additional tasks which may be need to be performed by the Fire Dept.
 - iii.** Duration of the incident
 - iv.** Personnel availability and rotation.
 - v.** Consideration must be given to rotate personnel for rest and to allow them to tend to personal and family concerns. Personnel can easily become burnt out on long term incidents
- b. Staffing Plans**
 - i.** When possible, arrangements for staffing should be initiated 24-48 hours before the expected onset of the severe weather. For long term or major incidents, staffing should be planned 48-72 hours beyond the anticipated point that operations will return to normal.
 - ii.** Scheduling should be planned in 12 hour blocks. Personnel available to work 6 hour shifts may be accommodated when possible. When possible, personnel should not be assigned more than 48 hours consecutively, without at least a 12 hour break before returning to duty.
 - iii.** Shifts assigned should be 0600-1800 and 1800-0600. Adjustments may be made by Chief/OIC as needed.
 - iv.** Personnel assigned to normal daytime staffing shall be assigned their regular shifts and considered part of the staffing.
 - v.** Personnel scheduled for shift work shall be considered "on duty" for the entire period and are expected to be at the Station for their assigned shift. Personnel are responsible for finding their own coverage if they have accepted a shift.
 - vi.** Personnel not assigned to the schedule are welcome to stay at the Station. However, unless authorized by the OIC or Duty Officer and assigned as part of the Duty Crew, these personnel shall only be paid "per call" when calls are toned out. Furthermore, personnel on assigned shifts shall have right of first refusal on bunks in bunk rooms.
- c.** The following are "Minimum Manning" staffing guidelines which can be applied to incidents as needed. Staffing levels at each level can be adjusted by the OIC or Duty Officer as needed.
 - i.** Level 0- Normal Staffing
 - ii.** Level 1- 3 personnel.
 - 1.** Ideally- 1 Officer, 1 FF/EMT/MPO, 1 FF/EMT
 - 2.** At a minimum, at least 2 EMT's, one of whom is a FF/EMT and a FF/MPO
 - iii.** Level 2- 7 personnel
 - 1.** 1 Officer, 1 FF/MPO, 2 FF's and 3 EMT's or FF/EMT's

2. Provides staffing for 1 Engine (Crew of 4) and 1 Rescue (Crew of 3)
3. If not enough EMT's, a FF can be assigned as 3rd person on Rescue
- iv. Level 3- 11 Personnel
 1. 2 Officers, 2 FF/MPO, 4 FF's and 3 EMT's or FF/EMT's
 2. Provides Staffing for 2 Engines (4/each.) and 1 Rescue (3 on Crew)
- v. Level 4- All Available personnel staff Station
 1. Engines 1, 4, Squad 3 and Ladder 1 should be staffed with at least 3-4 personnel each.
 2. Rescues 1 & 2 should be staffed with a min. of 2 EMT's and preferably 3.
 3. Engines 2 & 5 should be staffed with 2 FF's if available. Personnel can be detailed from other companies
 4. Command Car should be staffed with a Chief Officer or Captain as a Shift Commander
 - a. If Command Car is not available, use M1.
- vi. For long term incidents, consider establishment of EOC with other Depts. in the Training Room. Make contact with following agencies:
 1. Police
 2. DPW
 3. Emergency Management
 4. Town Hall/ TA
 5. Council on Aging
 6. Board of Health
 7. Utilities (UNITIL, Verizon, LWD)

III. Severe Winter Weather

- a. General Staffing Guidelines
 - i. Basic Winter Storm Warning (6-12")- Level 0 or Level 1 Staffing at OIC/Duty Officer's discretion
 - ii. Major Storm- (12-18" and/or wind/icing conditions)- Level 2 or Level 3 Staffing
 - iii. Severe Storm- (18"+, blizzard conditions, high winds, heavy ice, prolonged storm.) Level 3 or Level 4 Staffing; Consider calling in additional Dispatcher
- b. Pre-Storm-
 - i. Fuel –
 - ii. Chain Saws
 - iii. Apparatus
 - iv. Station Cans
 - v. If Severe Storm, if possible make sure Station Generator is operational and fueled if possible

- vi. Make sure shovels are on all Apparatus
- vii. Sand buckets full of sand on M1
- viii. Prepare Vehicle chains for mounting if needed
- ix. Monitor Storm.
- x. Plan for personnel to be on duty at least 1-2 hours before conditions deteriorate
- xi. Make arrangements for food

c. During Storm

- i. Keep Station driveway, walkways and apparatus doors clear of snow accumulation
- ii. Dispatch calls as normal. Still calls can be dispatched directly over in house.
- iii. Chains to be affixed to apparatus once snowfall exceeds 5-6"
- iv. Assign 2 FF/EMT's to Rescue 1. 3rd FF/EMT can be assigned as well or can respond with M1 to assist on EMS Calls.
- v. Consider use of Engine 5 as 2 piece- company with Engine 4 if conditions become treacherous
- vi. Service/hazard calls- Investigate only. Do not tie up apparatus on arcing wires and water problems. Have units clear unless life hazard
- vii. Have spare chain saws in M1 and with Engine 4 if possible.
- viii. If conditions deteriorate (sustained winds in excess of 50 mph, severe ice, 2"+/hr. snow accumulations) consider holding all non-emergency calls/alarms until after storm. Limit amount of apparatus responding on all but possible structure fires to 1 Engine only

d. After Storm

- i. Maintain staffing until conditions have reasonably returned to normal (Roads passable, call volume returning to normal, power restored)
- ii. For Severe Storms, consider implementing **Storm Damage Assessment Procedure**

IV. Severe Summer Weather (Severe T-Storms, Tornado Watches/Warnings, Hurricanes)

a. Severe Thunderstorms & Tornados

i. Preparation Guidelines

- 1. Severe Thunderstorm Watch
 - a. No special action- Monitor NWS & weather sites to keep track of conditions
- 2. Severe T-Storm Warning- Broadcast over 343 with Still Tone
 - a. No special coverage unless need determined (ie unusually severe storm or microburst)

3. Tornado Watch
 - a. Announce over "343" with Fire Tone.
 - i. Maintain Level 1 or 2 Staffing
 4. Tornado Warning (May not come until storm has already hit)
 - a. Broadcast over "343" with Fire Tone
 - b. Level 4 Staffing; All personnel report for station coverage
 - c. All personnel to maintain alert for funnel clouds and report location and direction if sighted
 - d. Consider dispersing apparatus depending on path of storm.
 - i. If funnel cloud sighted, disperse apparatus at right angles to path of funnel cloud
 - e. If confirmed storm touchdown.
 - i. Establish Command Post
 - ii. Implement **Storm Damage Assessment Procedure**
 - iii.
- b. Tropical Storm/Hurricane Warnings
 - i. Staffing Guidelines
 1. Level 3 or 4 Staffing; consider additional Dispatcher as well
 - c. Pre-Storm
 - i. Fuel
 - ii. Generator
 - iii. All Apparatus
 - iv. Chain Saws
 - v. Spare gas cans at Station
 - vi. If possible make sure Station Generator is fueled
 - vii. Secure windows and loose objects around station
 - viii. Consider dispersing apparatus to other areas in town (Need to be arranged ahead of time)
 1. Possible Dispersion Locations
 - a. DPW Garage (North End)
 - b. PJ Keating Garage (Shirley Reservoir/South Side)
 - c. Chapdelaine Truck Center? (West Side)
 - d. Water District Garage- Whalom
 2. Make arrangements for these crews
 - a. Food
 - b. Sanitation facilities
 - c. Living quarters
 - d. Spare batteries for radios
 - ix. Monitor Storm
 - x. Call in personnel well in advance of severe conditions (Min. 2-4 hours before onset)

- xi. Make preparations for food at Station and/or other sites
 - d. During Storm
 - i. Keep Driveway and apparatus doors free of debris
 - ii. Dispatch calls as normal- Still calls can be dispatched over in house for companies at HQ
 - iii. Service/hazard calls- Investigate only. Do not tie up apparatus on arcing wires and water problems. Have units clear unless life hazard
 - iv. Have spare chain saws in M1 and with Engines.
 - v. If sustained winds exceed 50 mph, consider holding all calls except emergencies
 - vi. If sustained winds exceed 70 mph, hold all apparatus in quarters.
 - 1. Park apparatus facing into Station, so windshields/cabs are protected in case of apparatus bay door failure
 - vii. Activities during Eye of Storm, if applicable, should be limited to:
 - 1. Securing Station/Temporary repairs
 - 2. Clear debris from around Station and driveway
 - e. After Storm
 - i. **Implement Storm Damage Assessment Procedure**
 - ii. Establish EOC if needed

V. **Prolonged Rain/Flooding**

- a. While our areas does not normally experience flooding requiring evacuation, we do experience an increase in “pump out” related service calls
- b. If multiple calls for pump outs begin to accumulate:
 - i. Notify Duty Officer
 - ii. Call in additional personnel as needed
 - iii. Consider additional resources for pumps (Maybe done prior to storm)
 - iv. Water Dept.
 - v. DPW
 - vi. Duty Officer or other officer shall investigate all calls for pump outs and prioritize them
- c. Keep in mind flood safety
 - i. Do not drive through high water
 - ii. Watch out for submerged/open manholes
 - iii. Electrical hazards
 - iv. Contaminated water

VI. **Storm Damage Assessment Procedures**

- a. Establish Command Post/EOC (Probably at Station)
- b. Establish sectors for apparatus to do damage assessments (Use Police District Chart)

- i.** Apparatus are assigned to each district.
- ii.** Each unit or units goes through their assigned area and catalogs storm damage. Poles/Wires down, blocked roads, damaged/destroyed homes
- iii.** Apparatus does not stop and assist except in cases of confirmed, immediate life hazard
- iv.** Units will document damage assessments and forward to CP/EOC, unless immediate life threatening situation is found.
- v.** CP/EOC will establish priorities for assistance
 - 1.** Consider need for additional assistance
 - 2.** Consider need for Full or Expanded EOC