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S.O.P #: TACTICAL OPERATIONS MANUAL # 33

SUBJECT: ICE RESCUE OPERATIONS

DIVISION: EMERGENCY OPERATIONS

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Objective: To serve as a guide for all Fire Department personnel operating around and in the ice rescue environment during emergency and non-emergency operations.

### Section 1: **Purpose**

This SOP is to be followed by all Fire Department members in assisting and developing strategic and tactical decision making while conducting operations around and in the ice rescue environment during emergency / rescue and non-emergency / recovery operations. This guide by no means circumvents the use of training, practice, experience, and judgment by an individual while operating at an ice rescue related event. The well-being of emergency and civilian personnel is not to be risked for an activity that is not essential to the immediate protection of life.

### Section 2: **General Guideline**

Ice formation is dependent upon the ambient temperatures and the rate at which the water that forms that ice is moving. In general, ice is not safe to walk on unless it is at least 3 - 4" thick. This is achieved after several days of sub-freezing temperatures. For the purposes of general safety, it should not be assumed that ice is safe to bear weight unless confirmed by someone with the proper training to do so.

### Section 3: **Definitions**

**Assistant Safety Officer Rescue:** This position is in addition to the Incident Safety Officer. This position will primarily be concerned with the scene and personnel safety in the Warm and Hot zone.

**Awareness Level Provider:** A provider that has received formal training in ice rescue and is able to identify hazards.

**Boat Operator/Crew Member:** A Surface Ice Rescue Technician- Boat Operator/Crew Member is an entry-level position within an ice rescue team that can perform a rescue with a boat as a platform while operating under power, paddle, line, or push. They must also meet the requirements to be a Surface Ice Technician.

**Cold Zone:** This is defined as the area outside the warm and hot zone. This zone is where non-equipped, non-trained and civilians must be located.

**Hot Zone:** This is defined as the ice. Surface Ice Technician level trained rescuers only are permitted in this area.

**Ice Mantle:** The edge of the ice through which the victim plunged.

**Ice Rescue Team Leader:** This position is a supervisory-level position within an ice rescue team that manages rescuers on searches and rescues from shore and in/on the ice/water while operating in the ice rescue environment.

**Incident Commander (IC):** This person is responsible for all aspects of an emergency response including quickly developing incident objectives, managing all incident operations, and deploying resources. The IC is responsible for the safety of all persons involved in the incident.

**Operations Level Provider:** This person is a provider that has received formal training in Surface Ice Rescue and who identifies hazards, uses equipment and applies limited techniques specified in the NFPA 1006/1670 standards.

**Point Last Seen:** The area where a witness saw the victim plunge through the ice.

**Rescue Branch Director / Group Supervisor:** This position will be responsible for the supervision of all assets involved in rescue/recovery operations in the Hot and Warm Zone.

**Surface Ice Technician Level Provider:** This is a provider who has received a certification from the Professional Qualifications Board in Surface Water, Swiftwater or Surface Ice Rescue and who identifies hazards, uses equipment, and applies advanced techniques specified in the NFPA 1006/1670 standards.

**Warm Zone:** Generally within 10 feet of the water/ice. Entrance to this area is for properly equipped awareness level rescuers or higher.

#### Section 4: Notification and Response

Due to the fact that ice rescue events are time compressed to save the victim(s), specialty resources, such as USAR 17, swiftwater rescue team 35 or 48 as well as a dive team be should be requested early in these events. The standard running assignment for a person who is trapped in the ice is as follows:

Single Person Rescue: 1 BC, 1E, 1T, 1 Squad, 1 Swift Water, 1 Dive Team, 1 Dive Unit, **1 USAR**, 1M, 1 EMS Supervisor.

Mult. Person Rescue: 1 BC, 1E, 1T, 1 Squad, 1 Swift Water, 1 Dive Team, 1 Dive Unit, **1 USAR**, 2 M, 1 EMS Supervisor

#### Section 5: Safety

A. To ensure the safety of all personnel, the Incident Command System will be used on all ice rescue operations regardless of whether they are emergency or non-emergency incidents. Command will implement the following:

1. Request an ice rescue assignment if not dispatched.
2. Establish Level II accountability.
3. Secure the witness or reporting party and locate the **point last scene** if the victim is or is not visible. Mark the location on the shore so incoming technical teams will have a starting point if a search is needed.
4. Ensure that all personnel within the Hot and Warm zone are wearing the proper PPE. This PPE does not include any component of structural firefighting gear.
5. Use appropriate PPE that shall include an approved Type III or Type V Personnel Flotation Device.
6. Ensure that personnel entering the Hot Zone are equipped with a Type V PFD, a water rescue helmet, and thermal protection to include a dry suit or ice rescue suit.
7. Tether all personnel entering the Hot Zone to shore via a shore attendant or to a floating platform such as a boat, if warranted.
8. If the ice rescue event is in the moving water environment, no tether lines shall be attached to any rescuers

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unless they are utilizing a blowout style PFD. The event will be considered a swiftwater rescue event (refer to SOP Tactical 23).

9. Do not utilize boats or other watercraft unless trained and equipped to do so in the ice rescue environment.
  
10. During incidents of rescue/recovery the decision to dive or not to dive will be determined only after the Rescue Branch Director / Group Supervisor, Assistant Safety Officer Rescue and the officer from those units involved have determined that all other options have been exhausted and the water is safe enough to do so.

B. The Incident Commander (IC) should continually monitor the condition of all personnel, as well as existing and potential environmental conditions during these events. Appropriate actions with regards to tactical assignments are critical to safe operations. The minimum positions to be filled within the command structure for this type of incident shall be as follows:

Assistant Safety Officer Rescue – This position is in addition to the overall Safety Officer. This position will primarily be concerned with the scene and personnel safety in the Warm and Hot zone.

Rescue Branch Director / Group Supervisor – This position will be responsible for the rescue/recovery operations in the Hot and Warm Zone.

Ice Rescue Team Officer – This position will be responsible for the four (4) Surface Ice Technicians assigned to his/her squad and reports directly to the Rescue Branch Director / Group Supervisor.

#### Section 6: **Rescue/Recovery Operations**

A. Strategic Priorities - Most often in ice rescue and recovery operations, the strategic priorities are the same. They are:

- Locate
- Access
- Stabilize
- Transport

Each phase shall be approached as an individual challenge with efforts directed toward making a smooth transition between them. Resources shall be made readily available that are specific to the task.

B. Tactical Considerations - The Officer in Charge must fully understand that elements may affect their ability to function safely. The acronym **S.A.N.E.** below can help in the decision process.

- **S** - Simple step-by-step approach.
- **A** - Always have adequate back-up.
- **N** - Never take uncalculated risk
- **E** - Eliminate the “beat the ice” attitude.
- **You are there for a rescue/recovery because the ice is unsafe.** Don’t complicate the event by becoming another victim for the technical teams.

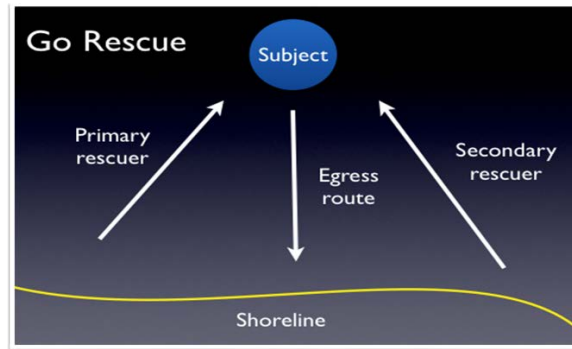
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### C. Tactics

Rescue and recovery operations for ice rescue emergencies shall begin with low-risk/low-tech options. Obviously these options shall be considered before the high-risk/high-tech options are utilized. The factors that shall be considered include the time it takes to set up and operate a system, availability and location of resources, the amount of time the victim has been in the water, and the training and experience of on-scene personnel. The tactics are:

- a. **TALK**  
The victim should receive specific instructions and information. Instruct them to hold onto the ice mantle (the edge of the ice hole). This is the only option to keep them from drowning. (Awareness Level Provider)
- b. **REACH**  
Pike Poles, shovels, inflated fire hoses, and ground ladders. (Awareness Level Provider).  
If the victim is too far from shore, the reach method may be utilized in the Hot Zone by Surface Ice Technician level providers. This method is recommended in the Hot zone so a safe distance is maintained as to not destroy or break the ice mantle which will compromise the victim's survivability. (Surface Ice Technician Level Provider)
- c. **THROW**  
Throw bags, rope, or some other flotation device. (Operations Level Provider)
- d. **ROW**  
Boat operations may consists of paddle to power. (Surface Ice Technician Level Provider)
- e. **GO/TOW**  
Trained and properly equipped Surface Ice Technicians shall perform this. Caution shall be utilized to not destroy or break the ice mantle which will compromise the victim's survivability. (Surface Ice Technician Level Provider)
- f. **HELO**  
Request for helicopters shall be jointly agreed upon between the IC and the Rescue Branch Director / Group Supervisor and Ice Rescue Team Officer due to the high-risks of this option. Only a BCoFD Helicopter Search & Rescue Technician with Ice Rescue Endorsement will be utilized.

Anytime rescuers are involved in a rescue/recovery in the Hot Zone, they will always deploy as a team of 2 onto the ice. Each team will be tethered separately to a hard dorsal attachment point and each will have a shore attendant staffing their line. The only exception will be if the victim is far from shore and out of the reasonable reach of a useable lifeline. If this is the case the 2 person crew will tether to a floating platform such as an inflatable boat or an ice rescue sled.

“Go Rescue Tactical example”

Section 7: **Hazardous Materials** - All ice rescue emergencies can pose potential exposures to civilian and fire department personnel from contaminants in the water. Typical contaminants include, but are not limited to: fecal matter, parasites, pesticides, and hydrocarbons. During an ice rescue emergency the Assistant Safety Officer Rescue in conjunction with the IC must assure that any exposed personnel and equipment will be grossly decontaminated as soon as practical, if necessary.

Section 8: **Demobilization** - Once the rescue/recovery is complete the Rescue Branch Director / Group Supervisor and the Assistant Safety Officer Rescue shall confer with the IC as to an appropriate demobilization plan.

1. They will ensure that all information gathered from the incident has been properly documented and all forms completed and turned over to the Rescue Branch Director / Group Supervisor.
2. They will complete an inventory of all equipment and account for any items lost or damaged by documenting same through the chain of command.
3. Additionally, they will ensure that initial steps are underway for the proper decontamination for all personnel and equipment, if warranted.

**ICE RESCUE TACTICAL CARD**

☑	Arrival Sequence	UNIT NUMBER	INITIAL TACTICAL GUIDELINES
	<b>1<sup>st</sup> arriving piece of equipment</b>		<input type="checkbox"/> Establish COMMAND <input type="checkbox"/> PPE: Type III or Type V PFD – <b><u>NO TURNOUTS</u></b> <input type="checkbox"/> Conduct Size-up <input type="checkbox"/> Witness statement on point last seen <input type="checkbox"/> Victim at visible or missing (consider Dive Team) <input type="checkbox"/> Amount of time victim has been in the environment <input type="checkbox"/> Request an Ice Rescue assignment if not dispatched. <input type="checkbox"/> Establish Hot , Warm , and Cold zones <input type="checkbox"/> Establish level II accountability <input type="checkbox"/> Recon from shore/bank best access
	<b>RECON Group</b>		<input type="checkbox"/> Conduct Size-up <input type="checkbox"/> Identify Point Last Seen <input type="checkbox"/> PPE: Type III or Type V PFD – <b><u>NO TURNOUTS</u></b> <input type="checkbox"/> Coordinate resources to canvas the banks to identify the location of potential victims.
	<b>Ice Rescue Units</b>		<input type="checkbox"/> Conduct Size-up <input type="checkbox"/> PPE for HOT ZONE: Type V PFD, water rescue helmet, thermal protection <input type="checkbox"/> Conduct hazard assessment <input type="checkbox"/> Choose method of rescue based upon victim’s condition and conditions present.

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<b>DEFINITIONS</b>	
<b>Hot Zone</b>	Defined as the ice; Technician / Specialist level trained rescuers only
<b>Warm Zone</b>	Generally within 10 feet of the ice – Operations level rescuers and Awareness providers that are properly equipped.
<b>Cold Zone</b>	Outside the Warm Zone; this is where non-trained and non-equipped rescuers and civilians must be located
Ice Mantle	The edge of the ice through which the victim plunged

**Remember the SANE Acronym**

- S- Simple step-by-step approach. A- Always have adequate back-up.
- N- Never take uncalculated risk E- Eliminate the “beat the ice” attitude.

**You are there for a rescue/recovery because the ice is unsafe.** Don’t complicate the event by becoming another victim for the technical teams.

<b>TACTICAL CONSIDERATIONS</b>
<p><b>RESPONDER ACTIONS:</b></p> <ul style="list-style-type: none"> <li>a. <b>TALK:</b> The victim should receive specific instructions and information. (Awareness Level)</li> <li>b. <b>REACH:</b> Pike Poles, shovels, inflated fire hose, and ground ladders. (Awareness Level)</li> <li>c. <b>THROW:</b> Throw bags, rope, or some other flotation. (Operations Level Provider)</li> <li>d. <b>ROW:</b> Boat operations may consists of paddle to power. (Technician Level Provider)</li> <li>e. <b>GO/TOW:</b> Trained and properly equipped personnel shall perform this only after all options have been exhausted. (Technician Level Provider)</li> <li>f. <b>HELO:</b> Request for helicopters shall be jointly agreed upon between the Incident Commander and the Rescue Branch Director / ASO Rescue due to the high-risk option.</li> </ul>

Possible IMS Structure  
*for an ICE Rescue*

