



GALENA FIRE DEPARTMENT
Standard Operating Guideline
ICE AND WATER RESCUE

Randy A. Beadle
Fire Chief Signature

January 1, 2021

SOG: 043

Effective: 01Apr13
Revised: 01Jan2021
Page: 1 of 5

Purpose: To establish standards for GFD operations when facilitating ice or water rescue incidents, including safety considerations, responsibility, precautions, notification, safety considerations, and resources.

First Arriving Officer

The first arriving Officer on the scene will be responsible for implementing Incident Command as per GFD policy. The Incident Commander should begin a size-up that includes:

- Secure any witnesses that may assist in identifying the problem and locating the victim(s).
- Determine the need for additional resources (personnel, vehicles or equipment). If additional resources are necessary, the IC shall make the requests immediately.
- Request Emergency Medical Services.
- Request MABAS card for Ice Rescue.
- Assess for hazards to determine the full scope of the incident.
- Assign a Safety Officer (SO) responsible for identifying the hazards and adjusting operations to ensure maximum working conditions. If it is not possible to secure hazards, the SO shall notify all personnel of the hazards and advise the IC so that an action plan can be established. Some hazards associated with water rescue operations would be: volume, velocity, and temperature of water, floating debris, unusual drop-offs, hydraulic effects, and depth of water. In case of an Ice Rescue, a survey of the ice conditions should be completed. The formula is $(\text{Thickness of ice})^2 \times 50 = \text{weight bearing capacity}$, therefore a 2" thickness $\times 2 = 4 \times 50 = 200$ lbs. capacity.). A simple rule of thumb is:
 - 1 inch = Stay Off!!
 - 2 inches = One person
 - 5 inches = One snowmobile
 - 7 inches = group activities
 - 8 inches = one automobile
 - 9 inches = several snowmobiles
 - 10+ inches = light truck
- Decide on Rescue or Recovery. Based on the conditions present and the hazards to rescuers, the IC will have to make the decision to operate in the rescue or recovery mode. If the IC determines that the operation will be run in the rescue mode, rescue should begin quickly.
- Decide on an action plan. Command should establish an action plan as soon as possible. The step-by-step plan should be communicated to all personnel involved in the rescue.
- Establish Group or Sector Commanders as needed (i.e. Staging, EMS, Rehab, PIO).



ICE AND WATER RESCUE

The following chart can assist in making the decision to Rescue or Recover:

<i>Water Temperature (degrees)</i>	<i>Exhaustion / Unconscious</i>	<i>Survival Time</i>
32.5	Under 15 minutes	15 to 45 minutes
32.5 - 40	15 to 30 minutes	30 to 90 minutes
40 - 50	30 to 60 minutes	1 to 3 hours
50 - 60	1 to 2 hours	1 to 6 hours
60 - 70	2 to 7 hours	2 to 40 hours
70 - 80	3 to 12 hours	3 hours to Indefinite
Over 80	Indefinite	Indefinite

If the victim has gone under the water and the water is below 70 degrees Fahrenheit, rescue attempts should not exceed a period of 90 minutes from time of disappearance (or time of dispatch if patient was missing prior to arrival). A recovery effort should begin.

If the patient has gone under and the water is above 70 degrees Fahrenheit, rescue attempts should not exceed a period of 60 minutes from the time of disappearance (or time of dispatch if patient was missing prior to arrival). A recovery effort should begin.

Rescue Operations

Rescue operations should be conducted from low risk to high-risk order. Make verbal contact with the victim as soon as possible. Communication with the victim is crucial to the rescue process yet it is often overlooked. Talking helps to reassure the victim and helps determine the victim's condition and level of consciousness. Due to hypothermia and shock, a patient might not be able to respond back to you but the potential exists that he/she can hear and understand you. Keep talking even if there is no response. Based on the degree of the victim's response, decisions can be made regarding the level of risk needed to facilitate a rescue. Rescues should be conducted with the least amount of risk to the rescuer necessary to rescue the victim. The order of water rescue from low risk to high risk shall be:

- TALK the victim into self-rescue. If possible, the victim can be talked into swimming to shore or assisting the rescuers with his/her own rescue.
- REACH - If possible, the rescuer should extend his/her hand or some other object, such as a pike pole, to remove the victim from the water.



ICE AND WATER RESCUE

- **THROW** - If the victim is too far out in the water to reach, rescuer(s) should attempt to throw the victim a throw bag or some piece of positive flotation such as a rescue ring. Downstream personnel should be in position during the actual rescue operation. If the victim is able to grab the throw bag, the rescuers can then pull the victim to shore.
- **GO** - If the above attempts fail, the IC should consider putting a rescuer in the water to reach the victim. This is a very high-risk operation. Only rescuers with the proper training and equipment should be allowed to enter the water. Prior to the rescuer actually proceeding into the water, he/she shall discuss the action plan, including specific tasks and objectives, hazards and contingency plans. The rescuer shall never enter the water without the benefit of a lifeline.

Rescue Team Assignments

Each rescue team should have a minimum of two rescuers.

Team #1 – Team #1 will attempt to rescue the victim through the use of the Talk, Reach or Throw methods of rescue. Rescuers shall attempt to reach the victim by using pike poles, inflated fire hose, ladders, life rings or rope. All rescuers will don life jackets.

Team #2 – During Team #1's attempts at rescue, Team #2 shall start to suit up in a dive or Gumbo suit and prepare life-line hookup and prepare to enter the water if Team #1 fails to retrieve the victim. The grab ring should also be prepared with another lifeline for entry with the rescuer.

Team #3 – Will also prepare the same as Team #2 and will serve as the backup team.

Any remaining members should be used to secure the scene and for crowd control.

Assessing the Victim

Once the rescuer(s) have reached the victim, they should do an immediate assessment of the victim and determine the exact method of entrapment. If the victim is conscious, the rescuer should determine if the victim could assist in his/her own rescue. If the victim is unconscious, the rescue must be quick. If the victim can assist in his/her own rescue, the rescuers should proceed with the rescue action plan. The victim should be brought to shore as soon as possible.

As soon as the victim is brought to safety, the patient should be covered with warm, dry blankets and immediately treated for shock, hypothermia and exhaustion.

Safety Concerns

- Ensure that it is safe for rescuers to work and that adequate back-up is provided.
- Be aware of the training and experience of the firefighters on the scene.
- Ensure that sufficient staffing is available to accomplish the mission.
- Make sure that there is enough safety equipment for all personnel operating at the incident, and ensure that all rescuers operating near the ice or water are wearing a life jacket.
- No rescue should be initiated without a back-up team and shore support.



ICE AND WATER RESCUE

Additional Considerations

- HEAT - Consider rotation of crews.
- COLD - Consider the effects of hypothermia on victim and rescuers.
- RAIN/SNOW - Consider the impact of rain or snow on the situation.
- TIME OF DAY - Provide for lighting and maximum personnel for operations.
- Consider the effect on family and friends; keep family members informed.
- Consider the news media and react accordingly.
- Remember that no one is dead unless they are warm and dead.

Line Tenders

- First check thickness and condition of ice (snow covered, smooth, rough surface or broken).
- It is recommended that a minimum of six (6) inches of ice is necessary to support multiple persons, and that 12 (twelve) inches is necessary to support any vehicle.
- Minimum of three people needed to attempt an ice rescue.
- Land personnel near water's edge must wear life jacket.
- Minimum two line tenders per tethered rope.
- Use different colored line ropes for sled and rescue personnel on ice.

Ice Rescue Extraction Sled

- All ice rescue personnel must be familiar with sled operation and equipment: Gumby Suit, Buoyance Sling, and line tending procedures.
- Sled undercarriage has a four foot nylon covered cable attached to "D" ring anchor to attach haul line from shore.
- Sled undercarriage has an anchor "D" ring at other end for other attachments.
- Sled's deck has two small compartments with black nylon covers fastened via Velcro
- Front compartment contains two red handed "Rescue Ice Awls" attached to a nylon cord for rescuer to ride and gliding sled to victim.
- Rear compartment contains a long red nylon strap attached to a "D" ring, to secure unconscious victim, or second victim to sled during recovery operations.
- Near the rear compartment there is a large metal ring, and attached to a metal "D" ring there is a long Black anchor strap labeled "Attach to Rescuer".
- Sled bottom middle surface has large metal ring with a large yellow nylon hand strap and long yellow anchor strap with a "D" ring.

Proper Application and Procedure for Safety Equipment and Lines

- Rescuer needs to don "Gumby Suit" then release air from suit by squatting and pulling open the neck collar.
- Anchor "D" rings are held with opening to bottom, and then pushed downward for quick anchor.
- Prepare yellow "Independent Positive Rescue Sling" by: first securing the sling two-finger widths away from the top rubber "blister ring", then adjust the "black sizing strap" for either an adult/child.
- Rescuer should don the rescue sling over their non-dominant shoulder and rest it across their heart with the "Sizing strap" facing outward.
- Rescuer should attach appropriate lines via "D" ring anchor(s).



ICE AND WATER RESCUE

- Before leaving shore review with line tenders and/or (I.C.) how you plan to rescue victim i.e. in-water, from ice surface, front approach, rear or side, self-rescue sled reach, or sling with sled tow.
- Before leaving shore need to recheck lines: separate color for rescuer and sled (yellow, red, white or orange nylon rope).
- Before leaving shore pull out two red "ice awls" from deck compartment.
- Before leaving shore hook sled in-haul line to tender team.
- Before leaving shore rescuer and line tender (s) review hand signals.
- One hand touches top of rescuer's head signals "OK". Arm stretched, fist tight over rescue's head means "Stop". Rescuer waves stretched arm overhead in a circle means "pull me back".

Cold Water Rescue Sled Operation

- Rescuer is attached to the long black nylon strap that is attached to rear 'D' ring on top surface of sled.
- Mount the sled and glide towards victim using the awl; or walk pulling the sled if large amount of snow on ice.
- Broken into water or broken ice on sled.
- Crawl out of water and pull sled out once you are on secure ice.
- Stop one sled length (6') away from victim and if conscious yell instructions.
- Extend a Bangor Pole to victim for self-rescue, if available.
- Dismount sled to your weak side then slide/crawl to victim with sling readiness.
- Grab victim with your strong hand using other hand to grab sling.
- Place sling over victims secure arm/head then pull their other arm into sling.
- Sling should now be under both victims' armpits.
- Wrap sizing strap around sling and secure it tight so they are buoyant.
- Pull sled to you with tether strap.
- Place sled between self and victim.
- Pull ½ of sled into water while line tender maintains tension on the line.
- Attach victim to large metal ring with clip on Rescue Sling.
- Rescuer gets into water from victims side or back position.
- From behind victim assist them onto sled.
- Place victim's hands on sled if they are unable to hold on.
- Signal line tender (extended arm overhead in a circle motion) you are ready to move towards shore.
- Line tender must wait several seconds before pulling sled so rescuer can get into position between victims legs.
- Both victim and rescuer are pulled to shore.