<table>
<thead>
<tr>
<th>Rev</th>
<th>Section</th>
<th>Description of Change</th>
<th>Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Initial release of revised document</td>
<td></td>
<td>September 2012</td>
</tr>
<tr>
<td>1</td>
<td>3.14 Recovery of Human Remains</td>
<td>Initial release of POG on Recovery of Human Remains and handout from OSHA.</td>
<td>April 2014</td>
</tr>
<tr>
<td>2</td>
<td>1.15 Fit for Service</td>
<td>Initial release of POG on Fit for Service</td>
<td>November 2014</td>
</tr>
<tr>
<td>3</td>
<td>1.11 First Aid</td>
<td>Initial release of POG on First Aid</td>
<td>December 2014</td>
</tr>
<tr>
<td>4</td>
<td>3.09 HETS</td>
<td>Update and changes to Helicopter External Transport System (HETS). POG is now titled Class D Fixed Line (CDFL).</td>
<td>December 2014</td>
</tr>
<tr>
<td>5</td>
<td>3.03 Swiftwater Rescue</td>
<td>Revision of POG as new standard in B.C., with Qualification Competency Matrix, and a List of Recognized Swiftwater Courses.</td>
<td>February 2015</td>
</tr>
<tr>
<td>6</td>
<td>1.01 Exposure to Diseases</td>
<td>Revised to update references and change “SAR” to “GSAR”</td>
<td>October 2016</td>
</tr>
<tr>
<td>7</td>
<td>1.02 CISM</td>
<td>Changed PEP to EMBC, change “SAR” to “GSAR”</td>
<td>October 2016</td>
</tr>
<tr>
<td>8</td>
<td>1.03 Personal Protective Equipment</td>
<td>Updated references, and change “SAR” to “GSAR”</td>
<td>October 2018</td>
</tr>
<tr>
<td>9</td>
<td>1.04 Safety Officer</td>
<td>Revised to provide additional information on role and responsibilities</td>
<td>May 2017</td>
</tr>
<tr>
<td>10</td>
<td>1.06 Risk Assessment</td>
<td>Updated to reflect the use of RADeMS</td>
<td>May 2017</td>
</tr>
<tr>
<td>11</td>
<td>2.06 Chainsaw Bucking Operations</td>
<td>New, to clarify permitted use and requirements</td>
<td>May 2017</td>
</tr>
<tr>
<td>12</td>
<td>3.07 Cave Rescue</td>
<td>Revised to correct terms and removed Cave Rescue internal procedures</td>
<td>May 2017</td>
</tr>
<tr>
<td>13</td>
<td>2.02 ORV Operations</td>
<td>Extensive revisions to align with new provincial regulations and feedback, previously titled ‘ATV Operations’. Also replaces 2.03 ‘Snowmobile Operations’.</td>
<td>June 2017</td>
</tr>
<tr>
<td>14</td>
<td>2.03 Snowmobile Operations</td>
<td>Cancelled, now included in 2.02 ORV Operations</td>
<td>May 2017</td>
</tr>
<tr>
<td>15</td>
<td>2.05 Watercraft Operations</td>
<td>Definitions; added competency</td>
<td>August 2018</td>
</tr>
<tr>
<td>No.</td>
<td>Section</td>
<td>Changes/Updates</td>
<td>Date</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>16</td>
<td>All P.O.G.</td>
<td>Changed “SAR Volunteer, SAR Group etc.” to “GSAR Volunteer, GSAR Group etc.” in most POG’s</td>
<td>October, November 2018</td>
</tr>
<tr>
<td>17</td>
<td>3.02 Rope Rescue</td>
<td>Updated references</td>
<td>October 2018</td>
</tr>
<tr>
<td>18</td>
<td>1.15 Fit for Service</td>
<td>Added Cannabis to external influences</td>
<td>November 2018</td>
</tr>
<tr>
<td>19</td>
<td>1.09 Alcohol and Drugs</td>
<td>Changed ‘EMBC business’ to ‘EMBC activities’</td>
<td>April 2019</td>
</tr>
<tr>
<td>20</td>
<td>3.15 Floodwater Response</td>
<td>New, to provide GSAR personnel the required knowledge to safely respond to a floodwater incident</td>
<td>May 2019</td>
</tr>
<tr>
<td>21</td>
<td>1.02 CISM</td>
<td>Removed reference to Road Rescue</td>
<td>January 2021</td>
</tr>
<tr>
<td>22</td>
<td>1.03 PPE</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>23</td>
<td>1.04 Safety Officer</td>
<td>Corrected typographical errors</td>
<td>January 2021</td>
</tr>
<tr>
<td>24</td>
<td>1.15 Fit For Service</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>25</td>
<td>2.01 Vehicle Response Safety</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>26</td>
<td>2.02 ORV Operations</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>27</td>
<td>2.05 Watercraft Operations</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>28</td>
<td>2.06 Chainsaw Bucking Operations</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>29</td>
<td>3.01 Ground Search and Rescue</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>30</td>
<td>3.02 Wildland Rope Rescue</td>
<td>Changed name from Rope Rescue, added reference</td>
<td>January 2021</td>
</tr>
<tr>
<td>31</td>
<td>3.02a Wildland Rope Rescue</td>
<td>New, BC SAR Wildland Rope Rescue Competency Matrix</td>
<td>January 2021</td>
</tr>
<tr>
<td>32</td>
<td>3.04 Flat Ice Rescue</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>33</td>
<td>3.07 Cave Rescue</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>34</td>
<td>3.08 Avalanche Response</td>
<td>Updated references – Changed title to Winter Response</td>
<td>January 2021</td>
</tr>
<tr>
<td>35</td>
<td>3.09 Helicopter Class ‘D’</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>36</td>
<td>3.10 Hover Exit</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>37</td>
<td>3.11 Civil Emergency</td>
<td>Updated references, removed references to LUSAR</td>
<td>January 2021</td>
</tr>
<tr>
<td>38</td>
<td>3.12 Canine Search</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>39</td>
<td>3.13 Mounted Search</td>
<td>Added reference for convergent volunteer</td>
<td>January 2021</td>
</tr>
<tr>
<td>40</td>
<td>3.14 Recovery of Human Remains</td>
<td>Updated references</td>
<td>January 2021</td>
</tr>
<tr>
<td>41</td>
<td>3.16 Tidal Operations</td>
<td>New, to provide GSAR personnel the required knowledge to safely operate in the tidal water zone.</td>
<td>January 2021</td>
</tr>
<tr>
<td>Section</td>
<td>Number</td>
<td>Title</td>
<td>Issued/Revised</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>-----------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>General</td>
<td>1.01</td>
<td>Exposure to Diseases</td>
<td>October 2016</td>
</tr>
<tr>
<td></td>
<td>1.02</td>
<td>Critical Incident Stress Management</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>1.03</td>
<td>Personal Protective Clothing and Equipment</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>1.04</td>
<td>Safety Officer</td>
<td>November 2018</td>
</tr>
<tr>
<td></td>
<td>1.05</td>
<td>Team Evacuation</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.06</td>
<td>Risk Assessment</td>
<td>May 2017</td>
</tr>
<tr>
<td></td>
<td>1.07</td>
<td>Traffic Control</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.08</td>
<td>Emergency Communications</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.09</td>
<td>Alcohol and Drugs</td>
<td>April 2019</td>
</tr>
<tr>
<td></td>
<td>1.10</td>
<td>Training Standards</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.11</td>
<td>First Aid</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.12</td>
<td>Animal Threats</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.13</td>
<td>Hazmat Awareness</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.14</td>
<td>Safety Briefings/Debriefings</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>1.15</td>
<td>Fit for Service</td>
<td>January 2021</td>
</tr>
<tr>
<td>Transport</td>
<td>2.01</td>
<td>Vehicle Response Safety</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>2.02</td>
<td>ORV Operations (formerly ATV Operations)</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>2.03</td>
<td>Snowmobile Operations CANCELLED/REMOVED</td>
<td>May 2017</td>
</tr>
<tr>
<td></td>
<td>2.04</td>
<td>Helicopter Operations</td>
<td>November 2018</td>
</tr>
<tr>
<td></td>
<td>2.05</td>
<td>Watercraft Operations</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>2.06</td>
<td>Chainsaw Bucking Operations</td>
<td>January 2021</td>
</tr>
<tr>
<td>Response Type</td>
<td>3.01</td>
<td>Ground Search and Rescue</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.02</td>
<td>Wildland Rope Rescue</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.02a</td>
<td>Wildland Rope Rescue Competency Matrix</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.03</td>
<td>Swiftwater Rescue</td>
<td>November 2018</td>
</tr>
<tr>
<td></td>
<td>3.03a</td>
<td>Swiftwater Rescue Training Competencies</td>
<td>February 2015</td>
</tr>
<tr>
<td></td>
<td>3.04</td>
<td>Flat Ice Rescue</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.05</td>
<td>Underwater Recovery/Rescue</td>
<td>November 2018</td>
</tr>
<tr>
<td></td>
<td>3.06</td>
<td>Mountain Rescue</td>
<td>November 2018</td>
</tr>
<tr>
<td></td>
<td>3.07</td>
<td>Cave Rescue</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.08</td>
<td>Winter Response</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.09</td>
<td>Helicopter Class ‘D’ Fixed Line (CDFL)</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.10</td>
<td>Hover Exit/Entry Operations</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.11</td>
<td>Civil Emergency</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.12</td>
<td>Canine Search and Rescue</td>
<td>January 2021</td>
</tr>
<tr>
<td></td>
<td>3.13</td>
<td>Mounted Search and Rescue</td>
<td>October 2018</td>
</tr>
<tr>
<td></td>
<td>3.14</td>
<td>Recovery of Human Remains</td>
<td>November 2018</td>
</tr>
<tr>
<td></td>
<td>3.15</td>
<td>Floodwater Response</td>
<td>May 2019</td>
</tr>
</tbody>
</table>
### SAR Safety Program

#### Exposure to Diseases

**PURPOSE:** To establish procedures for managing and reporting exposure of all GSAR volunteers to diseases including airborne, blood borne, blood or body fluids, non-impact skin – injection, inhalation, absorption, ingestion and exposure.

**GUIDELINE:** GSAR volunteers will exercise caution and utilize proper protective equipment where exposure to diseases is a concern. All exposures will be documented and reported to the GSAR leader and or manager, documented in the GSAR group first aid record and reported to EMBC.

**PROCEDURE:** Proper protective equipment, including the wearing of latex gloves and face/nose/eye/mouth protection, will be utilized at all incidents where exposure is possible.

EMBC will provide Hepatitis B vaccine injections to volunteers who face the risk of exposure to body fluids during GSAR operations.

If exposure occurs, the volunteer will follow proper first aid treatment including identifying the source, if possible, and recording all pertinent data as it relates to the incident.

Notify the GSAR leader immediately of the incident, who will report the incident to EMBC.

The First Aid Reporting Form will be completed by the GSAR leader and EMBC will complete the Employer Report before forwarding to WorkSafe BC.

Any GSAR volunteer who is exposed to communicable diseases will be offered testing and treatment by a responsible medical authority.

**REFERENCE:**
- EMBC Policy 1.04 Hepatitis B Prevention/Post Exposure Follow-up
- Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment
- Provincial Operating Guideline 1.04 Safety Officer
- Provincial Operating Guideline 1.11 First Aid
# SAR Safety Program

## Exposure to Diseases

---

**Issued:** Sept 2012  
**Rev:** Oct 2016

---

## Common Communicable Diseases and Their Precautions

The following list is provided by the JIBC Paramedic Academy for the information of SAR volunteers. Note that use of universal precautions will protect responders from all those listed.

<table>
<thead>
<tr>
<th>Disease</th>
<th>When Contagious</th>
<th>Precautions</th>
</tr>
</thead>
</table>
| Hepatitis A (infectious)             | From 1 week before onset of jaundice to 1 week after onset | • Good handwashing before and after patient contact.  
• Wear personal protective equipment for direct contact with excreta and contaminated articles.  
• Sanitary disposal of feces and urine by ambulance personnel. |
| Hepatitis B and C (blood)            | As long as carrier state exists | • Good handwashing before and after patient contact.  
• Wear personal protective equipment when handling blood, body fluids, or contaminated equipment. |
| AIDS (acquired immune deficiency syndrome) | Always | • Good handwashing before and after patient contact.  
• Avoid direct contact of skin and mucous membranes with blood, blood products, excretions, and secretions of patients likely to have AIDS.  
• Wear personal protective equipment when handling blood, body fluids, or contaminated equipment. |
| Chicken pox                          | Highly contagious 2 days before lesions (pox) appear and while they are present | • Apply a mask to patient’s face and cover the body with a sheet.  
• Good handwashing before and after patient contact.  
• Ambulance personnel will double-bag articles soiled by discharges from the nose and throat. |
| Tuberculosis (TB)                    | Highly contagious until 2 weeks after start of effective treatment | • Good handwashing before and after contact.  
• Wear personal protective equipment including a specialized mask.  
• Careful disposal of sputum and soiled articles (double-bag) by ambulance personnel. |
| Herpes simplex I (cold sores)        | When the cold sore is first visible until it crusts over and disappears | • Good handwashing before and after patient contact. |
| Pertussis (whooping cough)           | From onset until 5-7 days after starting antibiotics | • Good handwashing before and after patient contact.  
• Wear personal protective equipment. |
| Meningitis                           | Always | • Good handwashing before and after patient contact.  
• Wear personal protective equipment, including a mask, before going near patient.  
• Careful disposal of soiled articles and discharge from nose and throat by ambulance personnel. |
| Measles                              | 10 days before rash and 7 after rash appears | • Ambulance personnel will double-bag articles soiled with secretions of nose and throat.  
• Patient should wear mask and be covered with a sheet.  
• Good handwashing before and after patient care. |
| Mumps                                | 18 days before swelling until swelling subsides | • As for measles |
PURPOSE: To ensure that all EMBC GSAR volunteer members are provided with Critical Incident Stress Management services when required.

GUIDELINE: The GSAR group will make arrangements to ensure Critical Incident Stress assistance and intervention is provided as necessary.

PROCEDURE: The GSAR leader and or manager shall ensure that defusing and/or debriefing sessions are held following any significant or critical incident.

When required, the GSAR leader and or manager shall arrange for follow-up assistance for any GSAR volunteer requesting further assistance.

Any incident encountered by a GSAR volunteer that causes them to experience a distressing reaction may be considered for Critical Incident Stress intervention.

The GSAR leader and or manager will make every effort to minimize exposure to critical incidents without interfering with any on-going operation.

All GSAR leaders and or managers and volunteers will be alert for acute stress reactions in themselves and their teammates. The GSAR leader will provide support, encouragement and consultation and will, where necessary, implement the appropriate steps at the scene to assist the GSAR volunteers in dealing with stress reactions.

**Intervention process:**

Upon recognition of the need, or upon request by a GSAR volunteer at the scene, the GSAR leader and or manager will initiate the following steps in the intervention process:

**Defusing:** may be asked for by any GSAR volunteer participating in an incident and will take place as soon as possible after return to the unit’s headquarters. Any obvious signs of distress and/or depression by any GSAR member present will be noted by the person facilitating the defusing session and a recommendation will be made that a full debriefing session take place. Only GSAR volunteers involved in the incident will participate in the defusing. Arrangements will be made to hold a formal debriefing, if necessary. A defusing is not a critique of departmental operations at the incident, nor will a person’s performance be discussed.
Debriefing: if necessary, will be arranged by the GSAR leader and or manager and will be held as soon as possible after the incident. Debriefings will be only for those members involved in the incident. Assistance through Emergency Management BC can be requested.

Follow-up Assistance: will be provided by the BCSARA CISM team and or EMBC as necessary. Where the GSAR leader and or manager is aware of an individual problem or receives a request from a GSAR volunteer, follow-up assistance or referral through Emergency Management BC shall be arranged.

Training:

Critical Incident Stress general awareness and management training should be provided to all GSAR volunteers.

REFERENCE: BCSARA Critical Incident Stress Management Program
PURPOSE: To provide for the use of protective clothing and equipment by GSAR volunteers.

GUIDELINE: Appropriate personal protective clothing and equipment will be worn by all GSAR volunteers during any exercise, training or operational task.

Personal protective clothing and equipment includes, but is not limited to:

- clothing to protect from the weather and environment;
- limb and body protection worn during use of chainsaws or other equipment;
- helmets, face/eye protection, footwear;
- high visibility/distinguishing apparel;
- respiratory protection, and;
- Personal Flotation Devices (PFDs).

For GSAR operations on or near a roadway where there is a risk to GSAR volunteers, they are to wear hi-visibility apparel, such as a hi-visibility vest worn over a team jacket.

For GSAR operations away from roadways, GSAR volunteers are to wear apparel which is readily identifiable. This may be team jackets, vests (high-visibility or otherwise), and/or helmets or caps that contrasts with the environment.

PROCEDURE: The GSAR Leader will be responsible to ensure that GSAR volunteers follow Operational Guidelines, training materials and policies regarding the use of personal protective clothing and equipment.

Required personal protective clothing and equipment will be largely dependent on the weather conditions, the type of operational task, terrain and any specialty rescue procedures that are required to be undertaken by the GSAR volunteer.

All GSAR volunteers are responsible for their safety and will utilize proper protective equipment as prescribed within these guidelines and training materials.
All personal protective equipment will be approved by the GSAR group. No alterations to any equipment shall be done except where pre-approved by the manufacturer.

Under no circumstance is any aspect of personal safety to be sacrificed in order to increase the speed of the emergency operations.

Damage to personal protective equipment will immediately be reported to the GSAR leader and or manager, who will have the article inspected for replacement or repair as necessary.

Personal protective equipment will be inspected regularly for defects; a record is to be maintained of these inspections and the results.

Personal protective equipment will be washed regularly as per the manufacturer’s guidelines to remove any build-up of contaminated materials.

GSAR volunteers who respond to any exercise, training or operational task without appropriate personal protective equipment will be limited to duties they have suitable protective gear for, or not allowed to take part in the exercise, training or operational task, at the determination of the GSAR leader.

REFERENCE:
- Provincial Operating Guideline 1.04 Safety Officer
- EMBC 2.02 Task Authorization
- EMBC Policy 5.04 Public Safety Lifeline Equipment Repair/Replacement
- WorkSafe BC OSH Regulation 8.24 standards for High Visibility Clothing
- Transport Canada Approved Personal Flotation Devices
PURPOSE: To provide guidance on the role of Safety Officers in ensuring the health and safety of all GSAR volunteers during training, practice and response.

GUIDELINE: GSAR Leaders are responsible for the safety of GSAR volunteers participating in training, practice or response.

During a response, part of the SAR Manager’s role is to act as the Safety Officer unless that position is filled by an appropriately qualified individual. It is recommended, if possible, that a Safety Officer other than the SAR Manager be appointed.

If operational circumstances warrant, one or more Assistant Safety Officers may be appointed; the ASO reports to the Safety Officer.

PROCEDURE: The role of a Safety Officer is to monitor safety conditions and develop measures for ensuring the safety of all assigned GSAR volunteers and any other responders. The Safety Officer will:

- Obtain task briefing from the SAR Manager.
- Participate in incident planning sessions and review the Incident Action Plan for safety implications. If proposed tactics are potentially unsafe, assist in identifying safer options.
- Identify hazardous conditions or environments associated with the incident. Undertake formal risk assessment, utilizing the Response Assessment and Decision Making Support (RADeMS) tool.
- Create and maintain the Safety Plan (ICS305), identifying hazards and mitigations.
- Review and approve the Medical Plan (ICS206), prepared by Logistics. If necessary, assign a Rapid Intervention Team (RIT).
- Supervise general responder care, including access to nutrition, hydration, rest, etc. Particular attention must be given to responder fatigue. If necessary, because of dangerous animals, supervise armed escorts (ref. POG #1.12).
- Ensure basic personal protective equipment (PPE) is available and being used by all field members. In the event of a known hazard, ensure task-specific PPE (e.g. PFD) is available and volunteers are qualified in its use. (ref. POG #1.03)
• Ensure responders have appropriate training, skills and equipment for their assignment prior to field deployment. This is especially important when personnel are from an outside resource or convergent volunteers.

• Ensure safe practices are being followed in the field. If it is not feasible for the Safety Officer to attend, assign an Assistant Safety Officer (ASO) to ensure safety at remote sites. If an ASO is needed, a suitably qualified member should be assigned this role.

• Multiple high-risk operations may require ASO’s at each site.

• In the case of imminent danger, both the Safety Officer and ASO have emergency authority to immediately terminate unsafe acts.

• Ensure the unsafe situation is corrected immediately. If this is not possible, other mitigation strategies must be discussed with the SAR Manager and the Operations Chief.

• In the event of an accident, incident with loss or near miss the Safety Officer investigates and makes recommendations to prevent recurrences:
  - Ensure accident scene is preserved for investigation.
  - Ensure accident is properly documented, including statements of those involved, photographs, diagrams, etc.
  - For serious injuries or death, work with SAR Manager and EMBC Regional Manager to notify all necessary authorities (police; WorkSafe; coroner; etc.).
  - Prepare necessary reports, including recommended corrective action. (As a minimum, a GSAR group’s Accident/Incident Investigation Report must be completed.)
  - A more detailed approach to accident/injury investigation and reporting, including sample forms, may be found in the GSAR Safety Program Guide.

**Demobilization**
• Ensure safe practices are observed during the demobilization phase of any operational or training task. This is very important, as responders may be fatigued.

• In conjunction with the SAR Manager, coordinate critical incident stress, hazardous materials, and other debriefings, as necessary. (ref. POG #1.02)

REFERENCE: BCEMS Standards – ICS 100

Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment

Provincial Operating Guideline 1.02 Critical Incident Stress Management

Provincial Operating Guideline 1.12 Animal Threats

Provincial Operating Guideline 1.06 Risk Assessment
PURPOSE: To establish a procedure to ensure that all GSAR volunteers are promptly alerted when an evacuation is required during training, practice or response.

GUIDELINE: When the SAR Leaders or Safety Officer determines that a risk within an area may soon deteriorate to the point where GSAR volunteers may be in imminent danger, an emergency evacuation signal will be issued.

PROCEDURE: When the GSAR Leaders or Safety Officer determines it is necessary for the crews to evacuate an area the following procedure will be followed:

The GSAR Leaders or Safety Officer will broadcast a priority message over the radio that all personnel are to evacuate the area immediately and will sound a pre-established audible signal (eg: sounding of air horns continuously).

Upon evacuation, all GSAR volunteers are to report to the GSAR Leaders or designated area.

When evacuation is complete the GSAR Leaders will conduct a roll call of all GSAR volunteers involved at the emergency scene.

REFERENCE: Emergency Communications Operational Guideline

Provincial Operating Guideline 1.04 Safety Officer
PURPOSE: To ensure GSAR volunteers are aware of their role in safety by providing guidance on assessing risk during training, practice and response.

GUIDELINE: The goals of the British Columbia Emergency Management System (BCEMS) are to be considered at all times. These are:

- Provide for the health and safety of all responders
- Save lives
- Reduce suffering
- Protect public health
- Protect government infrastructure
- Protect property
- Protect the environment
- Reduce economic and social losses

To fulfill the number one objective of BCEMS, Emergency Management British Columbia (EMBC) develops policies under which GSAR Volunteers operate, including The Public Safety Volunteer Lifeline Safety Policy. The Search and Rescue Safety Program Guide and Provincial Operating Guidelines provide additional direction and guidance specific to Search and Rescue related activities.

The British Columbia Search and Rescue Association (BCSARA) through New Initiatives Funds (NIF) developed the Response Assessment and Decision Making Support (RADeMS) tool to assist GSAR Leaders in identifying hazards and reducing risk. The card and reference guide are designed to be used by SAR Managers and Safety Officers in the context of the overall response, and by Team Leaders specific to their team assignment. All GSAR volunteers should be aware of these tools, and familiar with their use, as part of the safety program.

PROCEDURE: All responses to GSAR incidents are different in some form or another, be it in location, environment and/or severity; the variables are infinite. A straightforward ground search in a rural area may at first appear as a low-risk endeavor, but multiple hazards can compound to present significant risks. Such risks are not always apparent at the outset and
consequently any risk assessment/management strategy must always be dynamic and respond appropriately.

SAR Managers conduct risk assessments during initial contact regarding a potential response based on information provided. Assessment of risks continues as more information is available including subject profile, weather, terrain, known hazards in area, and considering resource availability.

On-site risk assessment includes surveying the area of operation for potential dangers, such as:

- tree snags, rock falls, other risk from falling objects
- crevasses, cornices, caves or cliffs,
- avalanche terrain/conditions,
- bears, cougars, and other animal threats,
- chemicals or other hazmat concerns,
- riverbanks, swiftwater

GSAR Leaders/Safety Officers will conduct the risk assessment or if required engage Subject Matter Experts such as Avalanche Technicians, Conservation Officers, Swift Water Rescue Technicians.

GSAR Volunteers are to conduct ongoing risk assessments, utilizing RAdEMS, when moving through terrain or other environments. Undue risks are to be reported to the GSAR Leader/Safety Officer. Should a risk assessment determine that GSAR Volunteers would be at risk that cannot be reduced to what is considered acceptable for the type of operation, then any response activity is to be halted until the risk is within acceptable parameters and/or other appropriate resources respond.

REFERENCE: Fit for Service Provincial Operating Guideline 1.15
Response Assessment and Decision Making Support training
http://host.jibc.ca/gsar/
EMBC Policy 2.12 Search and Rescue
Purpose: To provide traffic control to ensure safety for all GSAR volunteers, other emergency responders, patients and members of the general public when the operational task involves activities in a traffic area.

Guideline: Traffic control is not a GSAR function. However, it is recognized that in some responses, such as assistance to local governments and Police during evacuations or a rope rescue beside a roadway, GSAR Volunteers may need to be involved in traffic control.

The GSAR Leaders will ensure that effective traffic control is established at all emergency incidents where GSAR Volunteers are working close to an active roadway.

Procedure: Where traffic control is required to provide a safe working area, the GSAR Leaders will request the Tasking Agency to provide or arrange for the provision. Should the Tasking Agency indicate they are not able to provide traffic control, the EMBC Regional Office should be contacted through the ECC for assistance.

GSAR volunteers may provide temporary traffic control to ensure GSAR volunteers safety. Only GSAR volunteers trained in emergency scene traffic control will provide traffic control.

During the course of an incident, the GSAR Leaders will ensure a safe working area for GSAR volunteers.

Roles and responsibilities for traffic control during evacuations are outlined in the Civil Emergency OG and the RCMP Evacuations Protocols.

Reference:
- Provincial Operating Guideline 1.04 Safety Officer
- Provincial Operating Guideline 1.06 Risk Assessment
- EMBC 3.11 Civil Emergency
- RCMP Evacuations Protocols
PURPOSE: To support GSAR Volunteer safety when participating in training, response or practice by ensuring access to communications in the event of injury or threat to their safety.

GUIDELINE: GSAR Groups and GSAR Leaders will ensure that GSAR Volunteers are trained in the use of, and provided with, a means of communicating with incident command or other appropriate source of assistance during training, response or practice.

PROCEDURE: Training in the use of, and legal requirements of, communication equipment will be provided before a GSAR Volunteer participates in any activity which may require use.

Training will include:
- proper procedures for use, orientation of antennas/equipment,
- battery replacement,
- frequency/channel selection,
- emergency communication protocols.

Before placing into use, communication equipment is to be checked for battery level. Spare batteries should be provided if anticipated usage may exceed battery life.

Communication equipment must be suitable for the type of deployment, terrain/environment, compatible with other equipment, and provide adequate range.

Communication checks (transmit and receive) will be conducted before communication equipment is placed in use and on a pre-established schedule during deployment. Checks do not apply to emergency beacons, which should not be activated unless with test equipment, or in an emergency.

Care should be taken to ensure the transmit function of radio equipment is not inadvertently activated, e.g.: a push-to-talk microphone that catches on equipment. This may cause an emergency frequency to be rendered unusable.
Prevent “radio feedback” when transmitting by maintaining adequate distance between radio and pager or other equipment.

If a serious injury or threat to safety requires immediate assistance, priority access to air, marine, or land VHF radio channels can be gained by calling “Mayday, Mayday, Mayday” followed by assigned call sign and nature of the emergency.

If an injury or threat to safety requires assistance, but not on an immediate basis, priority access to air, marine, or land VHF radio channels can be gained by calling “Pan Pan, Pan Pan, Pan Pan”, followed by assigned call sign and nature of emergency.

The transmission of the term “No Duff” during an exercise indicates that the information is real life and not part of the exercise.

All communications will be brief, factual and without personal content.

REFERENCE:
EMBC Ground Search and Rescue (GSAR) Training Manual
Communication equipment operational manuals
Industry Canada Spectrum Management and Telecommunications regulations
PURPOSE: To ensure GSAR volunteers do not engage in GSAR activities while under the influence of alcohol and/or drugs

GUIDELINE: GSAR volunteers will not engage in any GSAR activities while under the influence of alcohol, legal or illegal, non-prescription drugs, or prescription medication that has been identified to impair or affect an individual’s ability to drive a vehicle or operate machinery or equipment.

PROCEDURE: The GSAR leader and or manager will immediately remove a GSAR volunteer if they arrive at an exercise, training or operational task while under the influence of alcohol or drugs.

Attending any exercise, training or operational task under the influence of alcohol or drugs is a very serious and dangerous situation and will result in disciplinary action being taken.

REFERENCE:
BC Motor Vehicle Act
Criminal Code of Canada
EMBC Public Safety Lifeline Volunteer Code of Conduct Policy 1.02
EMBC Public Safety Lifeline Volunteer Safety Policy 2.06
PURPOSE: To establish training standards for GSAR volunteers to enable them to perform their duties safely and effectively.

GUIDELINE: The GSAR group will ensure all GSAR volunteers are trained and practice skills on a regular basis. Training will be to standards that reflect best common practices and as approved by Emergency Management BC.

PROCEDURE: The GSAR group will be responsible for:

- Determining training needs;
- Maintaining training records for all members, and providing access to EMBC staff if requested;
- Evaluating continuity of training;
- Scheduling and coordinating special training sessions;
- Conducting training as required, and;
- Instructing according to training schedule and utilizing applicable standards, manuals and Operational Guidelines, as well as other aids.

All GSAR volunteers will participate in training activities and maintain personal and professional competence relative to the skill and knowledge levels required of their respective position within the SAR group.

GSAR volunteers will maintain a record of their GSAR training and operational experience and provide the record to GSAR leaders and EMBC staff if requested.

Emergency Management BC will support GSAR volunteer training through courses provided through the Justice Institute of B.C. (JIBC) and other sources and approve content of courses not provided.

REFERENCE: JIBC Emergency Management Division, Search and Rescue

EMBC 1.08 Application for Training Task Number
PURPOSE: To ensure GSAR volunteers understand requirements for maintaining First Aid training, coverage for applying such training, and what levels of first aid are to be available in case of injury to a volunteer.

GUIDELINE: Individual volunteer requirements:

All GSAR volunteers are to obtain a minimum of a 7-hour First Aid course certification prior to completion of the Ground Search and Rescue (GSAR) Course and maintain¹ at least that level of certification while a registered GSAR volunteer.

Should a GSAR volunteer be unable to complete a First Aid course due to physical limitations, the volunteer may be utilized in a role within the area of the Incident Command Post (ICP) if approved by their GSAR group.

First Aid training will include, as a minimum, demonstration of the following competencies;

- identification of and performing appropriate interventions for minor soft tissue injuries, including the need for medical referral, providing follow-up care and be able to accurately complete the required First Aid Record (should the course not include record completion the GSAR group will ensure a volunteer with that training is available should injury occur).

- Identification and management of respiratory and circulatory critical interventions for responsive and unresponsive patients.

- Identification and management of bleeding critical interventions and describe how to identify and manage various medical emergencies.

PROCEDURE: It is recommended that teams (with 4 or more members) assigned outside the ICP area include a person with a minimum of 16 hours of First Aid training that includes the above requirements and the following competencies:

¹ Renewed before expiry, or scheduled to renew within 6 months of expiry
• Oxygen administration
• Spinal immobilization and patient transfer and transport
• Common environmental emergencies
• Common heat and cold related emergencies

All GSAR volunteers will carry a personal first-aid kit (suggested list attached as Appendix A) while away from the ICP when on training or response. Teams assigned outside the ICP will carry a field kit (suggested list attached as Appendix B).

Additional requirements during responses:

When the number of responders involved in activities outside the ICP exceeds 25, or the response includes specialized rescue (mountain, swiftwater, rope, avalanche), and travel time by vehicle (or by helicopter if a suitable resource is involved in the response) to a Hospital or Primary Health Care Centre exceeds 20 minutes, a person with a minimum of 70 hour First Aid (list of minimum course competencies attached as Appendix C) training or above will be assigned as First Aid Attendant.

It is recognized that SAR responses may escalate quickly; a First Aid Attendant should be in place at the earliest time possible or a plan developed to have one in place by the next operational period.

During a large response with responders in teams in various locations, the First Aid Attendant will form part of a Rapid Intervention Team (RIT), along with other specialized rescue trained personnel if likely required, within a Safety Plan that includes transportation (rotary wing if weather permits) to access, stabilize, and transport an injured responder. Members of a RIT may be assigned other roles within the ICP area provided they are immediately available to fulfil their role as a RIT member.

The First Aid Attendant may be assigned other duties, as long as medical aid is designed as their primary duty. An advanced medical kit,
that includes equipment as outlined in Appendix D, will be available at the ICP when a First Aid Attendant is required.

** Provision of First Aid to injured subjects 

GSAR volunteers are to consider their and other responders’ safety when providing first aid to subjects located during a response. A risk assessment of the location is important; focus on the subject can result in injury to responders from missed hazards. Exposure to disease can occur when treating unrelated injuries - preventative measures should be taken.

GSAR volunteers are to only provide first aid to the level they are certified in, this is for their and the subject’s safety as well as to stay within policies and limitations for liability coverage.

At the first opportunity the injured subject is to be transferred to ambulance personnel.

REFERENCE:  
Provincial Operating Guideline 1.04 Hepatitis B Prevention/Post Exposure Follow-up  
Provincial Operating Guideline 1.06 Risk Assessment  
EMBC Policy 2.12 Search and Rescue  
EMBC Policy 5.07 Injury, Disability and Accidental Death Coverage
Appendix A

Personal 1st Aid Kit Contents:
- Disposable Nitrile Gloves, appropriate size (2)
- Pocket mask (1)
- Ear plugs disposable (1pr)
- 4x4 gauze pad (2)
- 3" Gauze Roll (1)
- 2" Tensor Bandage (2)
- Band aids, assorted (8)
- Knuckle bandages (2)
- Mole Skin (1 sheet)
- Alcohol swabs (10)
- Triangular Bandage (2)
- 1" Tape (1)
- Emergency Blanket (1)
- EMT Shears (1)
- Tweezers (1)
- Sam Splint (1)
- ABD Pad (1)

Please Note:
Wilderness & Remote First Aid Field Guide should be part of your kit.

SAR volunteers should carry at least 48hour supply of any required personal medicines, as well carrying the following drugs (or similar) should be considered for personal use with instructions for use and awareness of any contrary indications;

Recommended Drug List
- ASA – 325 mg –Mild Analgesic
- Antibiotic Cream – Topical Antibiotic
- Anti Histamine – Allergy Relief
- Benadryl – Allergic Reaction
- Ibuprofen – Anti Inflammatory
- Imodium – Gastro Intestinal
- Dextrose Tabs – Hypoglycaemia
- Electrolyte Tabs – Dehydration
## Appendix B

### Advanced 1st Aid Kit Contents:
- Disposable Medical Gloves (XL) (6)
- CPR Shield (1)
- Ear plugs disposable (1pr)
- Cotton Tip Applicators (2)
- Triangular bandages (2)
- 4x4 gauze pad (4)
- 3" Gauze Roll (1)
- 2" Tensor Bandage (1)
- ABD pad 8x10 (2)
- Band aids (8)
- Knuckle bandages (2)
- Mole Skin (1 sheet)
- Pressure Bandage (1)
- Steri-Strips (1)
- Alcohol swabs (10)
- Duct tape (1)
- 1" White medical Tape (1)
- Emergency Blanket (1)
- Large garbage bag (1)
- EMT Shears (1)
- Tweezers (1)
- Safety Pins (4)
- 20cc irrigation syringe (1)
- Disposable razor (1)
- Rite in Rain Book (1)
- Carpenters Pencil (1)
- 1st aid guide (1)
- Sam Splint (1)

**Please Note:**
A Wilderness & Remote First Aid Field Guide should be included in kit.
Appendix C

Minimum competencies for Advanced First Aid training with minimum of 70hrs of instruction:

- Ability to perform the Primary Assessment of a patient upon arrival at medical incident.
- Identify and manage critical interventions of the Airway, Respiration and Circulation systems as well as Spinal precautions during Primary Assessment of a medical incident.
- Identify respiratory and airway structure emergencies and manage critical interventions for conscious patients and patients with a decreased level of consciousness.
- Identify circulatory emergencies and manage critical interventions for conscious patients and patients with a decreased level of consciousness.
- Prepare patients for transportation whether in Critical or Stable Condition
- Conduct a Secondary Assessment on a medical subject
- Assess, manage, and identify the need for medical aid referral for soft tissue injuries.
- Identify and manage head, brain, and spinal injuries for conscious patients and patients with a decreased level of consciousness.
- Identify and manage abdominal injuries
- Identify upper and lower limb fractures and dislocations
- Identify and manage environmental emergencies,
- Describe how to identify and manage diabetic conditions and seizures
Appendix D

Note: This kit will also require the following items not outlined in the list above: Oxygen therapy unit consisting of Oxygen Regulator, Oxygen Tank, Non-Rebreather mask (2), and Bag Valve Mask (BVM) (1) The above list is the minimum requirements for this kit. SAR Groups may include any additional equipment to this kit that is within their scope of training.
PURPOSE: To ensure safety when GSAR groups are attending an exercise, training or operational task in an area where there are known problems with wildlife that could put the GSAR volunteer at risk.

GUIDELINE: Before a GSAR team deploys into an area where an animal threat or concern is considered to be present, all volunteers should receive a short period of instruction on dangerous animal awareness.

PROCEDURE: All persons participating in a GSAR operation will be encouraged to take the usual precautions of carrying bear spray, bear bells, bear bangers, use of bear caches, etc.

GSAR Groups that operate in areas where dangerous animals are located should, as part of their Ground Search and Rescue Course, include a period of time devoted to dangerous animal awareness.

GSAR teams observing or encountering dangerous animals will report to Command as soon as possible.

Decision to Employ Firearms

The decision whether firearms will be allowed to be brought into a search area or base camp will rest with Command. In reaching this decision, due regard should be given to:

- The likelihood of dangerous animals being in the area (from this point forward, all reference to animals will mean any animals presenting a danger to the searchers)
- The season and its effect upon animal behaviour
- Historical experience in encountering animals on GSAR operations in the search area
- The nature of any recent encounters with animals in the area
- Any other variables relevant to that GSAR operation

In weighing the various factors outlined above, Command will consider consulting a Conservation Officer and/or other expert resource.

If there are volunteers who are not comfortable working in a team with a team guard carrying a firearm, they should be given the option of
another assignment. Alternately, if a decision is made not to use firearms in a search and searchers are uncomfortable or feeling unprotected due to the potential risk, they have the right to refuse to participate in the assignment.

**Designating Persons to Carry Firearms**

Command will designate those who will be permitted to possess and carry firearms either in base camp or in the field. No other person participating in a GSAR operation will be permitted to possess or carry firearms for the duration of that GSAR operation. Any person found in violation of this policy may be discharged from responsibility in the GSAR and may also be removed from the area of the operation on the grounds that they pose an unreasonable risk to other personnel.

In determining who will be authorized to carry and use firearms in the field, Command will consider:

- Whether the person has demonstrated proficiency with the firearm and possesses sufficient common sense to safely carry that firearm and utilise it in a hazardous situation, such that it will not pose a risk to other searchers and persons in the area
- Whether the person possesses and carries a valid Firearms Licence
- Whether the person has completed an approved course of instruction on bear awareness, firearms safety, marksmanship, or CORE training
- Whether the person's firearm is of a sufficient type and calibre/gauge to adequately perform the job of protection
- The possession, carrying of, and storage of that firearm shall not violate either the laws of Canada or of the Province of British Columbia or of Municipal bylaws, or any regulations except where authorized by the police of jurisdiction for the safety of GSAR personnel

Command may designate one person in each SAR Base to possess, carry and use a firearm inside the Base Camp. Such a person will be called the "Camp Guard".
Command may designate one or more person(s) in each GSAR team to possess, carry and use a firearm outside the Base Camp. Such person(s) will be called the "Team Guard".

Those persons designated as "Peace Officers" under The Police Act R.S.B.C. shall have the authority to possess and carry firearms in the Base Camp and the SAR Area.

Base Camp

The odours and garbage which may accumulate when cooking for large numbers of people may cause the Base Camp to be a high attraction area for animals, thus raising the necessity for a minimum level of protection. At the same time, the high concentration of persons in this small area may cause unnecessary risk if firearms are carried or used imprudently.

Command may designate one Camp Guard to possess, carry, and use a firearm while in Base Camp. Command may delegate that authority and responsibility to other Alternate Camp Guards for those time periods in which the Camp Guard is off duty or otherwise occupied.

Should the use of Alternate Camp Guards be approved, the responsible Camp Guard shall draft a schedule showing the times for which responsibility passes between Camp Guard and Alternates. A copy of that schedule shall be kept at the Incident Command Post and by the Camp Guard and all Alternates. The Camp Guard’s sole responsibility will be the protection of the camp and the position reports directly to the Safety Officer.

Those persons who are appointed as Team Guards may possess and carry both their firearm and their ammunition while in the Base Camp, however, all ammunition must be physically removed from the firearm. Ammunition will be placed in the firearm only once the GSAR team has left the Base Camp, at which time ammunition may be inserted into the firearm, which has its safety engaged. The Team Leader will observe this procedure to ensure compliance with this policy. Upon completion of the SAR task and immediately before entering the outer boundary of Base Camp, the Team Guard will physically remove all ammunition from the firearm, leave the action in the open position, place it on safe, and
have the firearm physically inspected by the Team Leader before entering the Base Camp.

**Shooting A Dangerous Animal**

If a dangerous animal is posing a persistent nuisance and/or threat to the Base Camp or GSAR Team, the local Conservation Officer should be contacted to deal with the animal before it becomes necessary to take more drastic measures. The Conservation Officer Service can be contacted through the Emergency Coordination Centre (1-800-663-3456).

In the event of an animal posing a significant threat to personnel and no other reasonable measures are successful in driving that animal away or if operational necessity requires it, the Guard may take such reasonable measures as deemed necessary to kill that animal.

Before implementing any measures to kill an animal, the Guard will, if reasonable under the circumstances, warn all people in the immediate area before shooting.

If an animal is killed, reasonable steps shall be taken to ensure that all relevant information is conveyed to the local Conservation Officer and that the animal is dealt with in accordance with their directions.

After shooting an animal and ensuring that there is no further hazard, the Guard will make notes on the grid reference of the shooting incident, type and size of animal, the behaviour exhibited by the animal, to whom the incident was reported and when that report was made. These notes shall be turned over to Command and a review will be conducted on the shooting incident.

If an animal is wounded and escapes before it can be killed, this will be reported to the ICP immediately and Command, in consultation with other resource persons, may consider suspending part or all of the GSAR operation temporarily until such time as the wounded animal can be dealt with or until it is believed that the hazard posed by that animal is considered to be minimal.
Carrying and Possessing Firearms

Any person with a firearm who enters the SAR area or Base Camp without being designated to do so must immediately notify the Command team of the firearm. Unless permitted to carry a firearm by Command, the firearm must be either securely locked and/or stored with all ammunition in the person’s vehicle, or the firearm and ammunition must be turned over to the Equipment Manager for secure storage. If that person refuses to comply, Command may have that person removed from the SAR area.

Briefings

All persons who are designated as Guards will be briefed on this Firearms Policy upon designation or their arrival at SAR Base

REFERENCE:
EMBC 2.06 Public Safety Lifeline Volunteer Safety
Provincial Operating Guideline 1.04 Safety Officer
Provincial Operating Guideline 1.06 Risk Assessment
Provincial Operating Guideline 1.14 Safety Briefings/Debriefings
### Purpose:
To provide additional information on potential hazardous materials that may be encountered during search and rescue incidents.

### Guideline:
Hazardous materials may be encountered in any environment that GSAR volunteers respond in. It is critical that all GSAR leaders and volunteers are aware of such hazards. If there are any concerns, all GSAR leaders and volunteers are to leave the area and request an assessment by an expert. Hazmat response is not a function of GSAR volunteers. Hazardous Material (Hazmat) incidents are the responsibility of the provincial Ministry of the Environment, who will request appropriately trained and equipped response by Fire Departments or other resources. Federal agencies are responsible for spill response in the marine environment.

### Procedure:
Dangerous goods are moved on every mode of transport, including road, rail, marine, and air. When responding to an incident involving a vehicle, vessel, or aircraft the following must be considered:

- When requested to respond, enquire as to the presence of dangerous goods;
- Watch for placards and labelling identifying specific materials being transported, which is required by Federal Transportation of Dangerous Goods Regulations;
- Do not rely on the presence of placards as dangerous goods may be present in small quantities, placards are not visible, or hazardous materials present that are not considered dangerous goods;
- If there are any indications of fumes or smoke leave the area immediately, even non-dangerous goods can emit toxic fumes when burning;
- The presence of any type of fuel and batteries requires extreme caution to ensure ignition sources are extinguished and Personal Protective Clothing and Equipment is worn appropriate to potential exposure.

During a Civil Emergency or other GSAR response, caution is required due to potential hazardous materials being present:
• During a flood sewage may be spilled, contaminating houses and large areas. Contact with sewage is to be avoided;

• Fuel storage tanks may float or spill during a flood, creating a fire/explosion hazard, as well as fumes and corrosive hazard;

• Fumes from stored chemicals in both industrial and residential buildings may be toxic or create a fire/explosion hazard;

• Clandestine drug materials can potentially be encountered in any urban or rural environment.

Risk assessment of GSAR groups’ areas is to include hazards known to be present. For example in areas with gas and oil exploration/production there are hazards such as Hydrogen Sulphide (H2S) that require specific precautions.

Should GSAR leaders and volunteers have any concerns over the presence of Hazardous Materials during a response, the requesting agency is to be notified and an assessment by qualified experts be conducted prior to GSAR volunteers entering the area.

Hazmat response and expertise can be accessed through the Emergency Coordination Centre (ECC), who will contact the appropriate response agency and notify the proper authorities.

REFERENCE:
Canadian Transport Emergency Centre (CANUTEC) Emergency Response Guidebook.

Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment

Provincial Operating Guideline 1.05 Team Evacuation

Provincial Operating Guideline 1.06 Risk Assessment

Provincial Operating Guideline 3.11 Civil Emergency
PURPOSE: To enhance GSAR volunteer safety through ensuring effective communication of potential hazards, and the tracking of any concerns to assist in improving the SAR Safety Program.

GUIDELINE: Safety will be part of a briefing provided to GSAR volunteers by GSAR leaders prior to deployment, the debriefing of GSAR volunteers following completion of team assignments, and during the review at the end of a GSAR response.

PROCEDURE: During a briefing of GSAR volunteers being deployed, the GSAR leader and or manager will provide:

- Any specific hazards identified during the risk assessment;
- Protocols to advise of any safety concerns, threats, or need to evacuate;
- Communication frequencies and emergency protocols;
- Reminder of safety priorities.

When debriefing GSAR volunteers returning from team assignments the following will be discussed and reported to the GSAR leader and or manager (if not reported as a threat already):

- Any hazards identified, e.g. signs of bears or cougars in area or dangerous terrain;
- Any safety concerns over assignment;
- Recommendations for further team assignments.

During a review (informal or formal) all GSAR volunteers and other agency personnel involved will be asked if there was any safety concerns or best practices identified. Any safety related items will be discussed and recommendations forwarded to EMBC.

REFERENCE: SAR Review Process
EMBC Policy 2.06 Public Safety Lifeline Volunteer Safety
Provincial Operating Guideline 1.04 Safety Officer
Provincial Operating Guideline 1.06 Risk Assessment
PURPOSE: To ensure the health and safety of GSAR volunteers when responding to, or participation during, search and rescue activities.

GUIDELINE: SAR volunteers may receive callouts at all times of the day and night, and those callouts may extend beyond the normal workday. The volunteer may be exposed to requests that go beyond their ability to operate in a safe environment. Some of the influences that may affect the members are:

- Stimulation from external influences:
  - Alcohol
  - Cannabis
  - Prescription drugs
  - Illegal drugs
  - Exhaustion
  - Sleep deprivation

- Stimulation as a result of the task assignment:
  - Physiological effects of one or more facets of the task assignment:
    - Negative outcome of the task
    - Self-questioning of actions taken during assignment

It is the responsibility of all GSAR volunteers to understand the demands that may be put on them both from personal reasons and the demands as a GSAR volunteers. GSAR leaders need to understand and recognize the signs and symptoms of the stress put on their members from both external and internal influences, and the resources that are available for their members.

GSAR volunteers may choose to respond to calls for search and rescue in a condition that may put themselves and others at risk through pre-existing conditions. The GSAR group will need to identify these conditions and develop guidelines to assist GSAR leaders in dealing with them on an individual basis. The GSAR leaders’ involvement in the
training of the GSAR volunteers will allow them to become familiar with the normal characteristics of the GSAR volunteer and allow them to more readily identify when the GSAR volunteer is exhibiting abnormal or unexpected behaviours at a task assignment.

The GSAR leader also needs to recognize when the actions at a task or the conditions surrounding the task may affect the SAR volunteer.

As part of the SAR Management overview the management team during their Incident Action Plan development need to determine if the task will go into the second operational period. If indications are that it will, the SAR Management team should request mutual aid from neighbouring departments as soon as possible.

PROCEDURE:

While the recognition of when the conditions while on task may affect the ability of the GSAR volunteer to continue, or to determine if the GSAR volunteer is able to safely return to base or home is the responsibility of all GSAR volunteers involved in the task, the final decision of actions to protect the GSAR volunteer rest with the GSAR leader.

During the onsite task debrief the Team Leader/SAR Manager should, as part of the debrief, review the actions and assignments during the task to determine if there are any issues present at the time. This may give them an indication if there are any underlying issues with any of the GSAR volunteers involved in the task. This may be as simple as asking on the wellbeing of the involved GSAR volunteers. If it is apparent that the GSAR volunteers have been exposed to stress, it may be appropriate to have a Critical Incident Stress Management (CISM), session held. The SAR Manager should arrange for this through the Emergency Coordination Centre (ECC). The costs of the session are covered by EMBC as part of the active task.

If the task has come at the end of the day, and the GSAR volunteer has not had time to receive adequate rest, or the callout has been done in the early part of the day where the GSAR volunteer has had their rest disturbed, they may not have had adequate time for adequate rest, the GSAR leader may determine that a chance exists that the GSAR volunteer may be put at risk in the return trip to base or home. A number of options are available to ensure the safe return of GSAR volunteers from the field:
• Use a minimum of two GSAR members per vehicle (leaving one or more vehicles on site and having them brought back by a Towing service is an acceptable task expense).

• Have fresh volunteers dispatched to site to have vehicles driven back to base.

• If the task has been conducted at a distance from the SAR base or the GSAR volunteers’ home, andlodgings are available, it may be advantageous to book rooms for the GSAR volunteers to allow appropriate rest before returning home (again this is an acceptable expense, with EMBC Regional Manager Approval).

The other consideration by the GSAR leader is to ensure that there are adequate breaks provided for the GSAR volunteer while on task. This includes providing adequate time for rest periods and an adequate area for the GSAR volunteer to relax (this should include an area away from the active GSAR Command, which will allow for minimum distractions, and an area where they can recover – shade in the summer, warming area in the winter, dry area when raining, etc.).

These breaks should also allow the GSAR volunteer to hydrate and get appropriate nourishment. The Team Leader/SAR Manager should ensure that the volunteer has adequate resources available to them to provide for adequate recharge. If the resources are not available, then they should be acquired and made available to the GSAR volunteers (This is an acceptable reimbursable claim allowed under the task).

REFERENCE:

SAR Safety Program Guide – Appendix L
Provincial Operating Guideline 1.02 Critical Incident Stress Management
Provincial Operating Guideline 1.04 Safety Officer
Provincial Operating Guideline 1.09 Alcohol and Drugs
Provincial Operating Guideline 1.14 Safety Briefings/Debriefings
BCSARA Critical Incident Stress Management Program
PURPOSE: To ensure the safe and efficient response of all GSAR volunteers by vehicle during emergency and non-emergency operations.

GUIDELINE: The driver of any vehicle bears full responsibility for adherence to this guideline and the BC Motor Vehicle Act and Regulations.

PROCEDURE: GSAR volunteers, while responding in a personal or other non-emergency vehicle are not provided any special privileges and as such will adhere to all statutes as outlined in the BC Motor Vehicle Act and Regulations.

GSAR volunteers should travel in the minimum number of vehicles required from an assembly point to the incident scene.

Vehicles used during a response, such as in a search along a roadway, are to be operated according to the BC Motor Vehicle Act and Regulation. Activities such as transporting people in the box of a pickup or on an external part are not legal.

It is the responsibility of the driver to ensure seatbelts are utilized by all passengers prior to moving and while the vehicle is in motion.

The responsibility of the driver during a response will be to operate the vehicle safely. The operation of a radio or device is to be delegated to a crew member. If there is no other passenger, the driver will operate the radio or device only if it can be done safely.

Before backing up the driver should ensure they are guided by another GSAR volunteer using recognized hand signals. This guide will be safely positioned at the rear of the vehicle on the driver side whenever possible. The driver will sound the horn indicating before backing up.

The driver of a vehicle is responsible to ensure that the vehicle is in a state of readiness. This includes ensuring that equipment is in place and stored safely and all doors are closed and secured before a response.

The GSAR leaders, upon arrival at an emergency scene, will evaluate the need for other vehicles to continue to respond or not. Whenever possible, other responding vehicles not needed at the scene shall be advised of a status change and redirected as required.
When approaching an emergency scene the driver will watch for vehicles approaching from other directions. The driver will be on the alert for civilians, and other emergency personnel who may inadvertently step in front of the approaching vehicle.

**Operation of Emergency Vehicles**

Under specific conditions GSAR volunteers, with the appropriate approvals and licences as required by the Dec 7, 2011 Ministry of Transportation and Infrastructure (MOTI) Policy Directive and the Motor Vehicle Act and Regulations may operate an emergency vehicle.

The driver of an emergency vehicle may exercise the privileges granted in Section 122 of the Motor Vehicle Act of BC. The driver must take into account factors such as:

- The nature, use and condition of the highway;
- The amount of traffic;
- Visibility; and
- Pedestrians.

The driver of any emergency vehicle responding to an incident will continually assess whether utilizing Section 122(4) of the BC Motor Vehicle Act poses an inordinate risk to other members within the vehicle and to that of the general public.

Only members who have the necessary licenses and endorsements for the vehicle being operated, as required by the BC Motor Vehicle Act, and who are accepted by the organization, shall be permitted to drive, except when under supervision of a trainer for the purpose of driver training.

Warning devices and emergency lights will be operated in compliance with the Motor Vehicle Act and Regulations. Emergency vehicles will respond on an emergency basis only when all warning devices are in continuous operation (emergency lights and siren).

Each organization must ensure that all operating permits for emergency lights and sirens are obtained and current.
The driver will maintain a speed consistent with the safe operation of the vehicle under prevailing conditions. If conditions permit, the maximum speed limit may be exceeded, in accordance with Section 122 the BC Motor Vehicle Act.

Driving in the oncoming traffic lane is dangerous and should be avoided whenever possible. If it is necessary to drive in the oncoming traffic lane, extreme caution will be exercised, and a safe operating speed maintained.

Intersections are dangerous areas to approach during an emergency response. The following precautions shall be observed by all responding vehicle operators:

- When a responding vehicle must approach an intersection in the oncoming traffic lane, the driver will come to a complete stop until other traffic in the intersection has yielded.
- When approaching a controlled intersection with a stop sign or red light, the driver will come to a complete stop until all other traffic in the intersection has yielded.
- The driver will use good judgement with respect to proceeding through an intersection; however, the maximum allowable speed through any intersection will be the posted speed limit.

Passing other emergency vehicles is dangerous. If passing is necessary, radio communications will be made, if possible, with the driver of the other vehicle prior to passing.

The driver of the emergency vehicle will ensure that a trip inspection is conducted on the vehicle and record maintained.

REFERENCE:
- BC Motor Vehicle Act and Regulations
- Dec 7, 2011 Ministry of Transportation and Infrastructure (MOTI) Policy Directive
- EMBC 2.05 Red Flashing Light and Siren Permits
- Provincial Operating Guideline 1.06 Risk Assessment
PURPOSE: To increase GSAR volunteer safety when participating in training, response or practice involving the operation of, or transportation by Off Road Vehicles (ORVs).

GUIDELINE: GSAR groups and GSAR leaders and or managers will ensure that GSAR volunteers are competent in the use of, and provided with, appropriate protective equipment before participating in any activities involving the operation of, or transport by, ORVs during training, response or practice.

For the purposes of this Operational Guideline ORVs include:

- All-terrain vehicle (ATV), a vehicle that runs on 4 or more wheels or is self-propelled by means of 2 or more endless belts driven in contact with the ground, and has a seat designed for the driver to sit astride and normally has handlebars for steering purposes.

- Utility Task Vehicles (UTV), a vehicle that runs on 4 or more wheels or is self-propelled by means of 2 or more endless belts driven in contact with the ground, and has a seat designed for the driver to sit on and normally has a steering wheel or steering levers for steering purposes.

- Snowmobile, a vehicle that is designed to travel on snow or ice, has one or more steering skis, is self-propelled by means of one or more endless belts driven in contact with the ground, and has a seat designed for the driver to sit astride.

- Motorcycle, a vehicle that runs on 2 or 3 wheels and is designed to have the driver ride astride the vehicle and normally has handlebars for steering purposes.

- Tracked vehicles (Snocats, etc.), are self-propelled by means of 2 or more endless belts driven in contact with the ground and usually equipped with an enclosed cab and used for transportation in snow or wet terrain.

- Bicycle, a human powered, pedal driven, single track vehicle with two wheels attached to a frame, one behind the other.
GSAR volunteers shall not use three wheel motorcycles (ATC, trikes)

PROCEDURE: GSAR groups and GSAR leader and or managers will ensure that GSAR volunteers are competent* in the use of the specific type of ORV that they will be expected to operate or be transported in/on before any activity which may require use or operation or transported in/on the specific ORV

*For purposes of this Operating Guideline, competence may be gained through training, education or experience (or a combination thereof).

• A GSAR group may use a commercially available training course for basic operation of the specific ORV

• The GSAR group may develop a skills checklist that each authorized member would be evaluated against prior to operating any group ORVs.

• The skills checklist may also be used when the members personal ORV may be used on task or training.

All GSAR volunteers who are required to operate, or be transported in/on an ORV will be provided with proper procedures for:

• safe operation,

• procedures to be used in response to potential emergencies that may arise as a result of the use of the ORV:
  • mechanical failure,
  • hypothermia and frostbite, and
  • terrain issues (water and topography).

The ORV and all equipment carried are to be checked before placing into use to ensure they are being used in the manner for which they are intended and:

• the ORV is in good mechanical condition (belts, spark plugs, etc.);
• all required maintenance spares are in place;
• that an adequate supply of fuel is available.

All GSAR volunteers that operate, or are transported on, motorcycles, snowmobiles or ATVs will:

• wear an approved helmet under Section 22 of the British Columbia Off-Road Vehicle Regulations (motorcycle style) and approved eye protection (or in the case of a bicycle, an approved helmet under the BC Motor Vehicle Act, Bicycle Safety Helmet Standards Regulation);
• wear clothing suitable for the environmental conditions, and
• wear suitable gloves and clothing which covers the ankles and legs and the arms to the wrist when necessary to protect against anticipated hazards.

All GSAR volunteers that operate, or are transported in/on other ORVs will:

• wear a helmet (motorcycle style, climbing or other) that is secured and eye protection;
• wear clothing suitable for the environmental conditions,

All UTV’s must have adequate roll-over protection in place to protect all occupants, and all occupants must wear approved restraint devices (seat belts or personal restraints) and helmets.

Those GSAR teams that choose to use a UTV for patient transport shall have a written guideline for operation of the UTV while in patient transport mode (speed, side hill travel, patient and attendant securement etc.).

Riding on the exterior or in the box of an ORV is forbidden, unless on a seat or device designed for that purpose by the supplier/manufacturer.

Transportation in a trailer (unless specifically designed and authorized by the supplier/manufacturer), is prohibited for GSAR volunteers.
All ORVs will be operated in accordance with the B.C. Off-Road Vehicle Act and Regulations and considering GSAR volunteer safety first.

GSAR volunteers operating or being transported in/on ORVs in mountainous terrain in winter, must comply with the requirements of Provincial Operating Guideline 3.08 Winter Response

REFERENCE: Canada Safety Council ATV Training

B.C. Off-Road Vehicle Regulation

B.C. Motor Vehicle Act Bicycle Safety Helmet Standards Regulation

WorkSafe B.C List of approved helmet standards

Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment

Provincial Operating Guideline 3.08 Winter Response
PURPOSE: To increase GSAR volunteer safety when participating in training, response or practice involving the operational use of, or transportation by helicopters.

GUIDELINE: GSAR leaders will ensure that GSAR volunteers are trained in the use of and provided pre-flight briefings and, provided with appropriate equipment before participating in any activities involving the operation of or transport by helicopters during training, response or practice.

PROCEDURE: Training in the use of the specific type of helicopter selected will be provided before a GSAR volunteer participates in any activity which may include the use of that model of helicopter.

Training will include:

- proper procedures for safe operation,
- orientation on the helicopter by the pilot, and
- the procedures to follow in the event of emergencies on or around the helicopter and launching and landing zone area.

Communication between ground and air shall be established at all times during the operation of the helicopter, using one ground contact person.

The individual assigned the air operations role shall be designated as the person to supervise the non-flight (the pilot will retain the control of all flight operations), safety around the helicopter.

Safe work procedures include:

- No smoking within 20 metres of the helicopter;
- Unless assigned specific responsibilities by the air operation person - remain at least 20 metres away from the helicopter;
- Exercise extreme caution when working around the helicopter especially when helicopter engine is running;
- Leave and approach the helicopter from the front - with caution;
- At all times, keep eyes and head forward and maintain eye contact with the pilot;
• Avoid rear and tail sections of helicopter at all times;
• **Never** walk under tail section of helicopter;
• **Do not** extend any equipment vertically into rotor blades – such as backboards, skis, ski poles stretchers, etc.;
• Carry all equipment parallel to ground within 20 metres of helicopter;
• **Do not** slam a helicopter door, gently close and latch it;
• Pilots are the authorities concerning all helicopter flight operations; if you have questions, ask them;
• **Never**, under any circumstances, throw any loose material such as pack contents, clothing, paper, etc. around the helicopter - whether it is running or not;
• The landing area should be cleared of debris and, where necessary, wet down;
• Protect your eyes as well as your equipment when helicopter is landing and taking off;
• Plot plans and maps will be prepared to locate landing area, intended flight paths, designated emergency landing sites, and location;
• The pilot in command will have final approval as to aerial traverse and hovering positions of the aircraft.

**REFERENCE:**

Canadian Aviation Regulation

EMBC Policy 2.11 Search and Rescue Helicopter Usage
### General Hand Signals

<table>
<thead>
<tr>
<th>Hand Signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Mayday&quot;</td>
<td>Wave arms frantically from your side to over your head.</td>
</tr>
<tr>
<td>&quot;All is well&quot;</td>
<td>Thumb up</td>
</tr>
<tr>
<td>&quot;Not ready – fly another circuit&quot;</td>
<td>As the helicopter is approaching, one arm above your head, swing your arm in a wide circle</td>
</tr>
<tr>
<td>&quot;Wind direction&quot;</td>
<td>With back to the wind, outstretch arms like a windsock pointing downwind. Point to helispot if possible.</td>
</tr>
<tr>
<td>&quot;Shut down the helicopter&quot;</td>
<td>Hand and arm making a cutting motion in front of your neck.</td>
</tr>
</tbody>
</table>
PURPOSE: To provide for GSAR volunteer safety when participating in training, response or practice involving the operation of, or transportation by powered or unpowered watercraft.

GUIDELINE: BC GSAR groups and GSAR leaders will ensure that GSAR volunteers are trained in the use of and provided with appropriate equipment prior to participating in any activities involving the use of watercraft.

Definitions

- Watercraft - includes ships, boats, canoes, kayaks, rafts, barges, hovercraft, amphibious vehicles, catamarans, paddleboards, Personal Watercraft (e.g. Jet Skis) and any other vehicle or vessel used on water.
- Operator - any person in control of a watercraft.
- Crewmember - any person(s), other than the Operator, with assigned duties associated with either the operation of a watercraft, or a Flatwater/Swiftwater SAR response from a watercraft.
- Passenger - any person on a watercraft that is not an operator or crewmember including subjects, GSAR volunteers, and other personnel being transported.

RESPONSIBILITIES: Motorized Watercraft

Motorized watercraft less than or equal to 8 meters in length and operated less than 2 nautical miles from shore (sheltered waters) are considered “small commercial vessels” per Transport Canada for the purpose of volunteer SAR, and therefore must be registered, insured, equipped and maintained per standards as defined by Transport Canada. Operators of small commercial vessels are required to possess a Pleasure Craft Operator Card and have completed Basic First Aid training.

If the motorized vessel is longer than 8 meters, operated farther than 2 nautical miles from shore, or carries more than 6 passengers (excluding Operator or Crew), the Operator must possess a “Small Vessel Operator Proficiency Certificate (SVOP)” certificate.

The Operator must be trained in the operation of the type of watercraft being used and: 
• Under direction of SAR Management or Team Leader is responsible for the operation of the watercraft, and is in overall command of the watercraft, crew, and passengers at all times while on the water.

• Possess and carry a Pleasure Craft Operators Certificate (PCOC) or Small Vessel Operator Proficiency (SVOP) Certificate during watercraft operations.

• For operation during a swiftwater rescue or on swiftwater, the operator will be trained at the Swiftwater Operation Level as a minimum or be accompanied by a Swiftwater Technician.

All crewmembers will be trained in the use of and legal requirements for the specific type of watercraft employed. Passengers will be under the direction of a Swiftwater Technician when the watercraft is operated in a swiftwater environment.

A pre-departure checklist will be performed prior to launch. This checklist should incorporate all factors that could affect the operation of the watercraft and the safety of its crew (see Manufacturers recommendations or Transport Canada’s Pre-departure checklist).

Unpowered Watercraft

Operators and crewmembers of unpowered watercraft will be trained and experienced in the use of the type of watercraft utilized.

Operators and crewmembers of unpowered watercraft used for swiftwater rescue or on swiftwater will possess swiftwater certification at the Technician Level or higher and be under the direction of a Swiftwater Rescue Team Leader. The operator of an unpowered watercraft on swiftwater will be trained appropriate to the type of watercraft; such as the British Columbia River Outfitters Association (BCROA) River Guide or SAR specific qualification. Crewmembers will be under the direction of the operator.

PROCEDURE: All watercraft shall be operated in accordance with applicable rules and regulations and considering safety first. The rated capacity of any watercraft is not to be exceeded. The number of crewmembers should be kept to the minimum required for the task, and with consideration to space for passengers on return.
All watercraft operators, crewmembers, and passengers will wear appropriate PPE, including Personal Flotation Devices, during all watercraft operations.

**Competency**

All operators of watercraft must demonstrate competency with the craft, through education, training and experience, in the environment in which it will be operated.

**TOWING:**

On the water towing of a disabled watercraft is only to be undertaken at the discretion of the operator, if it is unsafe to leave it where it is located, and then only to the nearest safe place. No person shall be on board the disabled watercraft while being towed.

**REFERENCE:**

SVCP Detailed Compliance Report and Guidance Notes TP15111

EMBC Policy 2.06 Public Safety Lifeline Volunteer Safety

Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment

Provincial Operating Guideline 1.06 Risk Assessment

Provincial Operating Guideline 3.03 Swiftwater Rescue

Checklists and maintenance for boating – Transport Canada
PURPOSE: To provide GSAR personnel with the required knowledge in planning safe work procedures while engaged in or in the proximity of chainsaw bucking operations.

DEFINITION: Bucker is a worker who cuts up trees on the ground.
Faller is a worker who manually falls trees larger than 6 inches in diameter.
GSAR members who are not certified fallers will not fall trees.

GUIDELINE: GSAR groups and GSAR leaders will ensure that GSAR volunteers are familiarized in the use of, and provided with, appropriate equipment before participating in any activities involving the operation of chainsaws during training, response or practice.
Chainsaw bucking training will include, as a minimum, demonstration of the following competencies;

- Personal Protective Equipment (PPE) Competency
  - Identify hazards that PPE mitigates
  - Identify PPE used to minimize specific chainsaw injuries

- Handtools and Equipment
  - Identify the chainsaw working tools and equipment used by Buckers
  - Identify hazards and solutions to minimize hazards
  - Identify three (3) categories of injuries associated with using chainsaw tools

- Chainsaw Safe Use Operations
  - Chainsaw Maintenance
  - Starting a chainsaw
  - Refueling a chainsaw

- Identify and Understand Safe Bucking Operations
  - Safe working conditions
Recognizing Danger trees

Chainsaw kickbacks

Limbing

Bucking

Bucking procedures

Basic bucking cuts

Windthrow

Terrain and ground debris

PROCEDURE:  
Training in the use of the chainsaw will be provided before a GSAR volunteer participates in any activity which may require its use or operation.

A recognized, commercially available training course for basic operation may be used, or the GSAR group may develop a skills checklist that each authorized member would be evaluated to prior to operating any group chainsaw.

All GSAR volunteers that operate chainsaws will wear approved Personal Protective Equipment specific to chainsaw use.

Each GSAR volunteer that operates a chainsaw will have a means of communication with the search base.

Every GSAR volunteer that operates a chainsaw shall work with a safety spotter.

PERSONAL PROTECTIVE EQUIPMENT:  
Hard hat

Approved eye and face safety gear

Hearing Protection Devices

Hand Protection (Gloves)

Protective Pants or full-length chaps
Safety footwear
High Visibility apparel
Whistle
First Aid kit and pressure dressing

REFERENCE:
- BC Wildfire Service Fallers and Buckers work procedures
- WorkSafe B.C List of approved personal protective equipment
- Provincial Operating Guideline 1.03 Personal Protective Clothing
- Provincial Operating Guideline 1.06 Risk Assessment
- Provincial Operating Guideline 1.08 Emergency Communications
- Provincial Operating Guideline 1.10 Training Standards
PURPOSE: To ensure the safety of GSAR volunteers when participating in Ground Search and Rescue (GSAR) training, response or practice involving the search for lost persons, and/or the care and transportation of subjects.

GUIDELINE: GSAR groups and GSAR leaders will ensure that GSAR volunteers are trained, and provided with appropriate equipment, before participating in any Ground Search and Rescue (GSAR) activity.

All Operational Guidelines (OGs) within the GSAR Safety Program are applicable to aspects of GSAR. OGs such as Personal Protective Equipment (PPE) provide specific information to be referenced, while specialized rescue OGs such as for Mountain Rescue define activities that are not to be undertaken without additional training and equipment.

PROCEDURE: GSAR volunteers engaged in GSAR activities outside a command post, camp, vehicle, or building environment will wear long pants, long/short sleeve top, eye protection, and footwear with adequate protection and traction. They will also wear or carry other clothing suitable for climatic conditions likely to be encountered.

All GSAR volunteers while participating in GSAR activities outside a camp, command post, vehicle, or building environment will wear clothing which includes distinctive reflective markings, and/or a reflective vest, which is visible. See Personal Protective Equipment OG for acceptable retro-reflective standards.

Before undertaking any GSAR activity GSAR volunteers will be provided with a briefing on potential hazards within their assigned area by a GSAR leader and or manager.

All vehicles, watercraft, and aircraft used to transport GSAR volunteers will be operated in accordance with applicable rules and regulations and considering safety first. GSAR volunteers will follow instructions of vehicle, watercraft, and aircraft operators at all times.

Each GSAR volunteer will have an emergency whistle (pea-less) attached to an article of clothing, or otherwise readily available, and carry a headlamp suitable for lighting the way ahead and signalling in darkness.
GSAR volunteers conducting a search in residential areas (rural or urban) are to wear clothing or other visible articles that readily identifies them as part of the search operation.

When operating as a Search Team at least one volunteer will carry Emergency Communications equipment. Other team members must remain within voice contact range or carry alternative communications capable of reaching team members with emergency communications. Wherever possible it is recommended that each field team member carries a piece of communications equipment that is capable of communicating with the command post.

GSAR response may require extended time away from command posts or other resources. Additional clothing, food, water, and protection from the weather suitable for at least 24hrs are to be carried.

REFERENCE: EMBC Ground Search and Rescue Training Manual
Public Safety Lifeline Volunteer Safety Policy
Search and Rescue Safety Program Guide
Search and Rescue Provincial Operating Guidelines
PURPOSE: To provide for GSAR volunteer safety while participating in training, practice or response requiring the use of ropes and associated apparatus in search, rescue or recovery operations. To allow safe access through challenging terrain during an operation and/or to provide safe access to and/or transport of trapped or injured persons.

GUIDELINE: GSAR groups and GSAR leaders will ensure that GSAR volunteers are appropriately trained and equipped according to current procedures outlined in the EMBC Search and Rescue Rope Rescue Manuals.

DEFINITIONS: Control Zone - the area that extends at least two metres back from the cliff edge due to the fall hazard and requires anyone working within that area to be connected to a safety rope.

Dual Capability Two Tensioned Rope System (DCTTRS) - A two rope system in which the load is shared roughly equally between the ropes and each rope is both capable and competent as a main system and a belay (backup).

High Angle Rescue: A rope rescue on a slope of generally more than 70 degrees or one that contains drops of greater than 2 metres (cliffs, buildings, vertical drops) conducted from the top-down where:

a) The rescue personnel have their weight supported by the rope system

b) The weight of the stretcher is supported solely by the rope or ropes

c) There is usually one stretcher attendant, but a second attendant may be used if conditions warrant.

Safe Zone - the area where rescuers can safely move un-roped (this area excludes the Control Zone).

Slope Rescue: Term broadly covering rope rescue on a range of slopes up to 70º and subdivided by key transition angles at which a change in the number of attendants is often warranted. See Tech 1 Manual for full definition.

Working Zone - the area where rope systems are set up and operated.
BC GSAR Group and Rope Rescue Individual and Team Response Capability Levels –

Rope Rescue Awareness: Completion of the on-line Rope Rescue Awareness course. Prerequisite course for Rope Rescue Technician 1.

Rope Rescue Technician 1 (RRT1): A person who has completed BC GSAR Rope Rescue Technician 1 training and who has demonstrated proficiency in the requisite skills and knowledge.

- **Transition:** An existing Rope Rescue Team Member or Rope Rescue Team Leader who successfully demonstrates competency and understanding of the DCTTRS through a formally structured transition training workshop will be recognized as having equivalency to Rope Rescue Technician 2 competencies, within the scope of their training.

Rope Rescue Technician 2 (RRT2): A person who has completed BC SAR Rope Rescue Technician 2 training and who has demonstrated proficiency in the requisite skills and knowledge.

- **Transition:** An existing Rope Rescue Team Member or Rope Rescue Team Leader who successfully demonstrates competency and understanding of the DCTTRS through a formally structured transition training workshop will be recognized as having equivalency to Rope Rescue Technician 2 competencies, within the scope of their training.

Rope Rescue Team Leader (RRTL): A RRTL will have successfully completed the RRTL Assessment (please see note below) and the PSLV Leadership course:

**Or:**

- **Transition:** Existing RRTL must have successfully completed the formally structured DCTTRS transition training workshop, or a Rope Rescue Technician 2 Fundamentals course with Chapters 3.1, 3.3, and 3.4 to maintain their RRTL status.

*(Please note: EMBC is assessing options for the assessment of RRTL and updates will be provided as they become available.)*
PROCEDURE:

**Training:** Any BC GSAR volunteer conducting/leading technical rope rescue training, practice, or response will have received appropriate recognized training. GSAR volunteers are not to engage in any activities, enter higher risk environments, or use any equipment in which they are not trained or competent; except under supervision of a qualified team leader or instructor during training.

**Leadership:** GSAR groups and GSAR leaders will ensure that qualified and trained GSAR Leaders are assigned as follows:

**Control Zone Operations:** To operate within the “Control Zone”, a BC GSAR volunteer will be led by a Rope Rescue Team Leader. A Rope Rescue Technician 1 is qualified to operate up to the edge. Those who operate over the edge must be either a Rope Rescue Technician 2, who has completed the Rope Rescue Technician 2 Foundations course and evaluation; or a Rope Rescue Team Member who has successfully completed the transition training as on Page 2.

- **Transition:** Until the transition to the DCTTRS technique and training structure is complete, existing qualified Rope Rescue Team Members may perform technical functions within the Control Zone.

**Working Zone Operations:** To perform technical rope rescue functions within the “Working Zone”, a BC GSAR volunteer will be qualified as a Rope Rescue Technician 1. Non-technical functions within the Working Zone may only be performed by BC GSAR personnel who have completed BC SAR Rope Rescue Awareness training.

- **Transition:** Until the transition training to the DCTTRS technique and training structure is complete, existing qualified Rope Rescue Team Members may perform technical functions to the level of the scope of their training within the Working Zone.

**Continuing Competency:** To maintain qualification as a Rope Rescue Team Leader, Rope Rescue Technician 2, or Rope Rescue Technician 1, an individual must have recorded with their team 20 hours per year of rope rescue practice or operations.

**Record Keeping:** GSAR groups and GSAR leaders will ensure proper records are kept of GSAR volunteer’s training, operational experience
and annual practice in rope rescue (this requires at least 20 hours of
logged rope rescue practice in any year for all Rope Rescue Team
Members and Rope Rescue Team Leaders), and of maintenance of
appliances/apparatus.

**Equipment:** All hardware and software used for rope rescue tasks will
meet the standards and testing as set out in the EMBC Search and
Rescue Rope Rescue Manual and in all manufacturer’s instructions and
recommendations.

A use log will be kept for all ropes used for rope rescue and ropes will be
taken out of service when they reach the retirement age specified by the
manufacturer.

All hardware and software will be inspected by a qualified rope rescue
technician after every use to ensure that it is still fit for service.

- All rope or soft goods that have been subjected to a shock load
  or any item that has obvious damage, or if its integrity is at all in
  question, will be immediately removed from service and tagged
  for inspection.

- Any equipment removed from service may only be put back into
  service if it has been inspected by a qualified person and
determined to fully meet all operational strength and integrity
  requirements as set out in the EMBC Search and Rescue Rope
  Rescue Manual and in all manufacturer’s instructions and
  recommendations.

Any equipment removed from service will be destroyed immediately or
reserved for non-life-safety purposes if, upon inspection by a qualified
person, it has been determined that it does not meet all strength and
integrity requirements as set out in the EMBC Search and Rescue Rope
Rescue Manuals and in all manufacturer’s instructions and
recommendations.
BC Rope Rescue Qualifications for Individual GSAR Volunteers

Competencies (specific skillsets) for these individual qualifications are outlined in the BC SAR Rope Rescue Course Competency Matrix (see 3.02a)

- BC Search and Rescue Rope Awareness
- BC Search and Rescue Rope Technician 1
- BC Search and Rescue Rope Technician 2
  - Chapter 3.1, Ascending and Descending
  - Chapter 3.2, High Directional Rigging and Use of Winches (currently in development)
  - Chapter 3.3, Stretcher Handling Techniques
  - Chapter 3.4, Pick-off Techniques
  - Chapter 3.5, Highlines and Guiding Lines (currently in development)
- BC Search and Rescue Rope Rescue Team Leader

REFERENCE: EMBC Search and Rescue Rope Rescue Manuals:

- EMBC Rope Rescue Awareness
- EMBC Rope Rescue Technician 1
- EMBC Rope Rescue Technician 2

BC SAR Wildland Rope Rescue Competency Matrix
PURPOSE: To ensure safety and consistent standards for BC Search and Rescue Rope Rescue training.

GUIDELINE: GSAR groups, GSAR leaders, and BC Search and Rescue Rope Rescue training providers will ensure that GSAR volunteers are appropriately trained according to current procedures outlined in the EMBC Search and Rescue Rope Rescue Manual.

DEFINITIONS:

**BC Search and Rescue Rope Rescue Course** – One of the following formally structured training events:

- DCTTRS transition training
- Rope Rescue Awareness
- Rope Rescue Technician 1 (RRT1) Training and Evaluation
- Rope Rescue Technician (RRT2) Chapters 3.1, 3.2, 3.3, 3.4, 3.5 – Training and Evaluation (Chapters 3.2 and 3.5 are not currently included in Rope Rescue Technician 2 Fundamentals)

**In-house training** – Training within a GSAR Group with volunteer instruction provided by RRTLs and others, within the scope of their training.

PROCEDURE: BC Search and Rescue Rope Rescue training must be approved by EMBC and a task number issued in order to be eligible for Workers Compensation and other coverages.

In addition to formal rope rescue courses, rope rescue training may also be provided in-house within GSAR groups by Rope Rescue Team Leaders within the scope of their training.

Participation in a RRT1 training course is not required in order to attend a RRT1 evaluation course provided that the GSAR group is confident the candidate has received sufficient in-house training to assure successful completion of the evaluation process. Candidates not meeting the requirements of the evaluation will not be successful in becoming a Rope Rescue Technician 1, you will be required to take the formal Rope Rescue Technician 1 course in its entirety.
# BC SAR Wildland Rope Rescue Competency Matrix

January 10, 2017

Note: "Competency" includes both knowledge and skill, as applicable.

## ROPE RESCUE AWARENESS

### Minimum Duration of Course: Online

<table>
<thead>
<tr>
<th>Chapter 1.1 – Rope Rescue in BC</th>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain SAR Rope Rescue training in British Columbia</td>
<td>Structure of training - levels, role of teaching aids (manuals, visual aids, etc.)</td>
<td>Expectations/ Vision Statement</td>
<td>Rope Rescue training structure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expectations/ Vision Statement</td>
<td>Rope Rescue structure &amp; command</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 1.2 – BC SAR Rope Rescue Governing Principles</th>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain the BC SAR Rope Rescue governing principles</td>
<td>Define and explain the five governing principles for BC SAR Rope Rescue</td>
<td>1. Top down;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Dual Capability Two Tensioned Rope System (DCTTRS);</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Force limiting 6-12 kN range;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Equipment designed for the purpose, within the manufacturer’s specifications, and tested;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Minimum system &amp; component breaking strength of 20kN.</td>
<td></td>
</tr>
<tr>
<td>Chapter 1.3 – Rescue Response Overview</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Competency</strong></td>
<td><strong>Knowledge</strong></td>
<td><strong>Skills/Techniques</strong></td>
<td></td>
</tr>
<tr>
<td>Risk assessment/hazard assessment – objective &amp; subjective hazards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety, efficiency, simplicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical point (“weakest link”)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Necessity for effective communications (p.11-3&amp;4), pre-arranged backup communications (verbal, radio, whistle signals, hand signals, rope tugs, etc.); radio protocols, separate channel for off-site communications, etc.; “no-duff” rule for real situations during training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiate between technical rope rescue (2 ropes) and rope assist (1 rope)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiate between high angle and slope rescue. This also directly relates to the number of people allowed on the system along with the best system of rigging for the angle.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rescue site layout – safe areas, working zone, control zone, gear cache, cordon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rescue team roles (RRTL, “Control”, safety officer, first responder, Descent Control Device operators, stretcher attendant, stretcher bearers, edge, brake, belay, haul)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rescue organization – site approach, initial organization, planning, briefing, system set-up, rescue, tear-down, debrief/review</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terrain assessment – angle/steepness, rock fall zone, line of sight, fall line, change of directions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competency</td>
<td>Knowledge</td>
<td>Skills/Techniques</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>Understanding of team and personal equipment used in BC SAR Rope Rescue</td>
<td>Rationale for SAR RR default equipment selection</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equipment standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rope – construction, low stretch/static, high stretch/dynamic.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rope care – 10 guidelines: dirt, UV radiation, drying, friction, kinks, inspection, washing &amp; storage, replacement, rope log</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accessory cord – Prusiks and the required rope properties. Proper handling and care. i.e. wash before cutting. Only use floppy cord. Discard if the rope becomes stiff.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Webbing – nylon &amp; Dyneema</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carabiners – types, composition, locking mechanisms, improper loading</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tri-links, maillons</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pulleys – construction, types, size</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rigging plates &amp; rings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Personal descent control devices - in-line devices (ATCs, etc.), personal brake racks, Scarabs, figure-8, bobbin types, slotted belay/rappel devices;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multi-person descent control devices – rescue brake racks (types, threading), Scarabs, MPDs, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hardware cleaning and maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Edge protection – edge rollers, edge pads, tubes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competency</td>
<td>Knowledge</td>
<td>Skills/Techniques</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Understanding of the elements, phases and roles in a rope rescue scenario</td>
<td>Understanding of rope team communications</td>
<td>Rationale for clear, standard terminology and protocols</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steps in scenario development (RRTL) – equipment planning; IRT; site assessment &amp; planning; briefing; system set-up; final check; edge transition; subject access; reporting; packaging; evacuation; de-rigging; debriefing/review</td>
<td></td>
</tr>
<tr>
<td>Set-up and use of Personal Protective Equipment</td>
<td>Understanding of appropriate Personal Protective Equipment (PPE)</td>
<td>Integrating seat &amp; chest harnesses</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal Protective Equipment – helmets, gloves, safety glasses, rescuer harnesses, subject harnesses</td>
<td></td>
</tr>
</tbody>
</table>
# ROPE RESCUE TECHNICIAN 1

**Prerequisite:** Rope Rescue Awareness

**Minimum Duration of Course:** 24 hours

**Minimum Duration of Evaluation:** 20 hours

## Chapter 2.1 – Introduction to Rope Rescue

<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>General knowledge of Awareness Section material</td>
<td>General understanding of Rope Rescue Awareness knowledge</td>
<td></td>
</tr>
<tr>
<td>BC SAR Rope Rescue principles &amp; guidelines</td>
<td>Know and describe the 5 BC SAR Rope Rescue Principles &amp; guidelines</td>
<td></td>
</tr>
<tr>
<td>Describe the elements of rope rescue</td>
<td>Describe rope rescue structure and command</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Describe the role of planning, briefing and debriefing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Command structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steps in scenario development – equipment planning; IRT; site assessment &amp; planning; briefing; system set-up; final check; subject access; reporting; packaging; evacuation; de-rigging; debriefing/review</td>
<td></td>
</tr>
</tbody>
</table>

## Chapter 2.2 – Knots, Bends & Hitches

<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handling and storage of rope &amp; webbing</td>
<td>Understanding of issues around rope use, care and storage</td>
<td>Rope inspection, stacking, coiling, bagging, birdnesting</td>
</tr>
<tr>
<td>Ability to tie “default” BC SAR knots, bends, and</td>
<td>Ability to:</td>
<td></td>
</tr>
</tbody>
</table>
hitches, given ropes and webbing, so that the knots are dressed, recognizable, and backed up as required.

- Explain terminology - Knot, bend, hitch, bight, standing part, running end, loop, tail, dressing knots or bends;
- Explain dressing & loss of strength with ties in rope or webbing
- Recognize and explain purpose of various default ties listed below:

<table>
<thead>
<tr>
<th>Ties</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-of-line knot</td>
<td>Fig 8</td>
</tr>
<tr>
<td>End-of-line loop</td>
<td>Fig 8 on bight&lt;br&gt;Bowline with double overhand backup</td>
</tr>
<tr>
<td>Midline loop</td>
<td>Alpine butterfly</td>
</tr>
<tr>
<td>Securing rope around desired objects</td>
<td>Fig 8 follow-through&lt;br&gt;Long tailed bowline&lt;br&gt;Clove hitch&lt;br&gt;Round turn &amp; 2 half-hitches</td>
</tr>
<tr>
<td>Joining rope ends together</td>
<td>Flat overhand bend&lt;br&gt;Double overhand bend (double fisherman’s bend)&lt;br&gt;Fig 8 bend</td>
</tr>
<tr>
<td>Joining webbing ends together</td>
<td>Flat overhand bend&lt;br&gt;Overhand follow-through bend (ring bend/water knot/tape knot)</td>
</tr>
<tr>
<td>Finishing (backup) knots</td>
<td>Overhand&lt;br&gt;Double overhand</td>
</tr>
<tr>
<td>Hitches</td>
<td>Prusik hitch&lt;br&gt;Prusik-on-itself / Purcell Prusik</td>
</tr>
<tr>
<td>Blocking knot</td>
<td>SAR blocking knot &amp; overhand backup&lt;br&gt;Slippery half hitch &amp; overhand backup</td>
</tr>
<tr>
<td>Load release hitches</td>
<td>Italian hitch&lt;br&gt;Double Italian hitch&lt;br&gt;Radium Release hitch</td>
</tr>
<tr>
<td>Competency</td>
<td>Knowledge</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Block &amp; tackle (jigger)</td>
<td>3:1</td>
</tr>
<tr>
<td>Able to identify and perform appropriate harness systems and attachments</td>
<td></td>
</tr>
<tr>
<td>Chapter 2.3 - The Mechanics (Physics) of Rope Rescue</td>
<td></td>
</tr>
<tr>
<td>Competency</td>
<td>Knowledge</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Calculate the potential forces within a rope rescue system</td>
<td>Define mass, force, energy, and how static force is calculated</td>
</tr>
<tr>
<td></td>
<td>Estimate the static force of rescue loads</td>
</tr>
<tr>
<td></td>
<td>Describe how force can increase (or decrease) with changes in angles</td>
</tr>
<tr>
<td></td>
<td>Estimate the highest potential force on a rescue system</td>
</tr>
<tr>
<td></td>
<td>Determine whether a rescue system will remain functional in light of the highest potential forces</td>
</tr>
<tr>
<td></td>
<td>Calculate fall factors</td>
</tr>
<tr>
<td>Chapter 2.4 – Anchor Systems</td>
<td></td>
</tr>
<tr>
<td>Competency</td>
<td>Knowledge</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Ability to select and use safe anchors and anchor systems, anchor extensions and pre-tensioned back-ties</td>
<td>Ability to explain the principles for anchor systems; basic forces and vectors applying to anchors and anchor legs</td>
</tr>
<tr>
<td></td>
<td>Ability to explain differences between redundant and shared anchor systems</td>
</tr>
<tr>
<td></td>
<td>Ability to explain natural anchor selection and considerations for use</td>
</tr>
<tr>
<td></td>
<td>Ability to explain considerations and strengths for each, use of MAPs, carabiner positioning (direction of gates, spines</td>
</tr>
</tbody>
</table>
### SAR Safety Program

#### Wildland Rope Rescue Training

| Ability to describe rationale for using anchor extensions and number of strands | Multi-strand anchor extensions |
| Ability to explain rationale for using pre-tensioned front-ties | Demonstrate setup of pre-tensioned front-ties |
| Ability to explain rationale for pre-tensioned back-ties and force vectors involved | Set up pre-tensioned back-tie for a high redirect |

| Artificial anchors | considerations for use |

---

### Chapter 2.5 – Communication

<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate standard methods of communication</td>
<td>Describe clear, standard terminology and communication protocols for lowering and raising, including edge transitions</td>
<td>Use verbal rescue &amp; whistle signals proficiently</td>
</tr>
</tbody>
</table>
### Chapter 2.6 - Dual Capability Two Tensioned Rope Systems

#### Competency

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate understanding of Dual Capability Two Tensioned Rope Systems</td>
<td>Define the concept of capable and competent</td>
</tr>
<tr>
<td>Describe the benefits of dual capability</td>
<td></td>
</tr>
</tbody>
</table>

#### 1. Overview

- Ability to explain overview considerations around lowers and to set up and operate fail-safe DCTTRS lowers with selected capable (strong) & competent (effective) techniques and equipment

#### 2. Lowering

- Ability to explain overview considerations for lowers:
  - Differences between the dedicated load/dedicated belay (DMDB) rope system and dual capability two tensioned rope systems (DCTTRS) (In a 2-rope DMDB system, one rope always bears all the load while the other is a dedicated belay rope that is loaded only in event of failure of the load rope. In a DCTTRS, each of the two ropes is set up to perform both load and belay functions and the load can be shared between them in any desired proportion.)
  - Alignment perpendicular to edge
  - Allow adequate working room
  - Two rope operating stations closely aligned

### Describe clear, standard terminology and communication protocols for rappelling and ascending

### Use verbal & whistle rescue signals proficiently

### Describe the use of radios in rope rescue

### Ability to describe the designated uniform verbal, sound & visual communications associated with a lower (roll call, whistle signals, rope tugs, visual signals)

### Demonstrate uniform communications
### Ability to compare attributes of different Descent Control Devices; distinction between purpose-built, engineered devices (MPD, etc.) and improvised systems (Scarab & Prusik)

- Demonstrate effective rope tailing

### Ability to explain rationale for rope tailing, stance, expected grip (<1 kN), and monitoring role

- Demonstrate DCTTRS lowering systems:
  - Italian hitch with Prusik – single
  - Double Italian hitch with Prusik – 2-person

### Familiarity with options for DCTTRS lowers:

### Ability to explain use of Italian hitches with Prusiks as fail-safe lowering options for single or two-person loads

- DCDs with self-braking Prusik with rope tailing

### Ability to explain recommended/preferred fail-safe “component” options for lowering 1 and 2-person loads

### Ability to explain recommended/preferred fail-safe purpose-designed device options for lowering 1 and 2-person loads

### Ability to explain DCTTRS knot pass methods on lowering with component and purpose-designed systems

### Ability to explain redirection options for edges and changing fall lines on lowers and raises

- Fixed redirects
- Releasable redirects

### 3. Raising Systems

### Ability to:

- Describe safety considerations in raising systems
- Describe the principles and applications of mechanical advantage systems
- Build selected simple, compound and complex pulley systems
- Efficiently pass knots while raising

### Ability to explain overview considerations:

- Allow adequate working room
- Alignment perpendicular to edge
- Two-rope operating stations closely aligned
- Smooth movement (hand over hand or walking “caterpillar”)
- Lower MA with more haulers most efficient
- Choice of in-line or attached system
- Guideline of 18
- Implications of sideways redirection on force vectors
<table>
<thead>
<tr>
<th>SAR Safety Program</th>
<th>O.G.# 3.02a</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wildland Rope Rescue Training</strong></td>
<td><strong>Issued: Jan 2021</strong></td>
</tr>
</tbody>
</table>

| o Awareness of danger zones where redirects are used | Use of purpose-built mechanical device for change of direction/progress capture (MPD or equivalent) |
| o Mechanical advantage | |
| o Friction | |
| o Edge protection | |
| **Ability to explain the elements of a haul system:** | |
| o Haul Prusik | |
| o Progress Capture Device – Prusik, mechanical device (MPD, etc.) | |
| Attached and in-line systems | |
| **Ability to explain pulley systems** | Demonstrate: |
| o Definitions and characteristics of Simple, Compound & Complex systems | 1:1 – direct haul or counterweight |
| o The “T-method” of calculating mechanical advantage and distribution of forces | 2:1 – dropped loop |
| o Characteristics of simple versus complex systems; | 3:1 simple |
| | 5:1 simple |
| **Distinguish between in-line and attached pulley systems** | Demonstrate an attached 3:1 pulley system with progress capture in correct place. |
| **Ability to explain DCTTRS knot pass methods on raising with component and purpose-designed systems** | Efficiently pass knots while raising using Two Tensioned and Alternately Tensioned methods |

### 4. Conversions: Lower to Raise and Raise to Lower

<table>
<thead>
<tr>
<th>Convert a lower to a raise</th>
<th>Ability to pre-plan anchors and steps required for conversion from a lower to a raise</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ability to explain the recommended/preferred process for DCTTRS changeovers from lower to raise on tensioned rope(s), including communications</strong></td>
<td>Changeover, lower to raise</td>
</tr>
<tr>
<td>o Two tensioned system</td>
<td></td>
</tr>
<tr>
<td>o Alternately tensioned system</td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td></td>
</tr>
<tr>
<td><strong>Ability to explain the recommended/preferred process for changeover from raise to lower on tensioned rope(s), including communications</strong></td>
<td>Changeover raise to lower</td>
</tr>
<tr>
<td>o Load/belay system</td>
<td></td>
</tr>
<tr>
<td>o Twin-tensioned system</td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td></td>
</tr>
</tbody>
</table>
## Chapter 2.7 Edge Management

### Competency

**Proficiency in the role of an Edge Person**

- **Knowledge**
  - Ability to:
    - Describe roles of Edge Person (p.2-9, p.7-12, p.9-11): observation, communication, edge protection & other roles inside Control Zone, assisting with stretcher edge transitions
    - Explain considerations around length of edge line, how to set length and distinction between fall restraint and belay situations
    - Explain rationale for edge person setting up and taking down own line. (Pull in all lines before disconnecting them from their anchors.)
    - Describe acceptable types of edge protection

- **Skills/Techniques**
  - Demonstrate proficiently:
    - Appropriate anchor system (substantial anchor, secure attachment accommodating changes of loading direction, simple wrapped sling recommended)
    - Appropriate attachment of edge line and Prusik to harness
    - Appropriate length of edge line
    - Communications functions of Edge Person position
    - Placement and securement of edge protection
    - Assistance with stretcher handling in Control Zone and in edge transition (use of taglines, etc.)

### Use of a high or lateral directional

- **Ability to:**
  - Assess forces when using a natural anchor point to create a lateral or high directional

- **Demonstrate proficiently:**
  - Lateral directional construction using a natural anchor point
  - High directional construction using a natural anchor point,
  - Use of a spanned anchor as a high directional,

## Chapter 2.8 – Stretcher and Attendant Rigging

### Competency

**Ability to describe litter models and accessories available for rope rescue**

- **Knowledge**
  - Ability to describe:
    - The characteristics of the range of stretchers in BC SAR rope rescue use:
      - Wire baskets (Stokes Litters)
      - Polyethylene baskets (Ferno 71)
      - Fiberglass & metal baskets (Cascade)
      - One-piece and two-piece models
        - Note that 2-piece models may not require full threading of the rail for head attachment

- **Skills/Techniques**
  - Full rail wrap with 11mm rope on 2-piece stretchers only if required by manufacturer’s specifications
### Familiarity with horizontal stretcher rigging

<table>
<thead>
<tr>
<th>Situations to refer to manufacturer’s specifications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Flexible plastic (SKED, Petzl NEST)</td>
</tr>
<tr>
<td>- Types of spinal immobilization devices:</td>
</tr>
<tr>
<td>- Hard collar</td>
</tr>
<tr>
<td>- Vacuum mattress</td>
</tr>
<tr>
<td>- Backboard</td>
</tr>
<tr>
<td>- Clamshell</td>
</tr>
<tr>
<td>- KED</td>
</tr>
</tbody>
</table>

Face shields

<table>
<thead>
<tr>
<th>Types of spinal immobilization devices:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Hard collar</td>
</tr>
<tr>
<td>- Vacuum mattress</td>
</tr>
<tr>
<td>- Backboard</td>
</tr>
<tr>
<td>- Clamshell</td>
</tr>
<tr>
<td>- KED</td>
</tr>
</tbody>
</table>

**Face shields**

### Considerations around stretcher bridles

- Commercial and pre-tied rope bridles
- Improvised (tied rope or webbing) stretcher bridles
- Use and setup of the MAP ring with long-tailed bowlines
- Use and setup of long tail bowlines as alternative to MAP ring
- Use and setup of the tri-link with butterfly knots as a MAP
- Considerations for the stretcher attendant

<table>
<thead>
<tr>
<th>Set up bridle, attendant primary and secondary for horizontal stretcher position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up bridle, attendant primary and secondary for subject secondary for horizontal stretcher position</td>
</tr>
<tr>
<td>Use of long-tailed bowlines as secondary lines for attendant and subject</td>
</tr>
</tbody>
</table>

**Attendant attachment options:**

- 11mm line and Prusik(s)
- Purcell Prusik
- Pick-off strap
- Jigger

### Considerations around use of specialized techniques:

- Pre-rig of taglines to help direct stretcher over edges, etc.
- Rigging for use of stretcher helper (separate line)

**Use of a second attendant – requirement for stronger components**

<table>
<thead>
<tr>
<th>Rig and use taglines and stronger components for use of a second attendant</th>
</tr>
</thead>
</table>

### Proficiency in attendant and subject attachments for vertical, horizontal and slope stretcher rigging

<table>
<thead>
<tr>
<th>Demonstrate proficiently:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Rigging requirements for special stretcher handling (high angle)</td>
</tr>
</tbody>
</table>

### Chapter 2.9 – Subject Packaging and Securement

<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
</table>
### Proficiency in subject packaging and securement

**Explain considerations around subject packaging and securement**
- Medical
- Communication with subject
- Detailed aspects of packaging

**Considerations around subject securement**

**Demonstrate proficiently the preferred techniques for:**
- Improvised pelvic harness or subject attachment to backboard
- Securement of head and shoulders to prevent shifting
- Securement of feet to prevent shifting
- Default use of diamond lashing in absence of other final securement system on stretcher

---

### Chapter 2.10 – Slope Rescue

<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficiency in</td>
<td>Describe techniques to operate safely and proficiently on slopes ranging from low angle to steep angle</td>
<td>Demonstrate familiarity with options for number of attendants depending on steepness and footing on slopes</td>
</tr>
</tbody>
</table>

**Ability to describe:**
- Differences between rope assisted low angle stretcher evacuations (<20°), moderate slope operations (20°-45°) and steep slope operations (45°-70°) and considerations of each
- Forces on slopes and their implications for rigging
- Terrain assessment and fall line aspects
- Considerations around –
  - Traversing slopes
  - Number of attendants
  - Attendant carrying techniques
  - Using a transverse stretcher arrangement
  - Attendant attachments (load and belay)

Stretcher attachment – Bridle, no need for full rail wrap on newer 2-piece stretchers

**Demonstrate proficiently:**
- Setting up a slope rig for a stretcher, with secondary line to stretcher rail and subject and primary and secondary attachments for 3 attendants

**Describe forces encountered during a slope rescue**

**Demonstrate proficiently:**
- Rope Assisted Evacuation techniques
- Moderate slope techniques
- Steep slope techniques (transverse stretcher, etc.)
Considerations around setup and operation of a rope assisted stretcher evacuation - kit equipment, lower and raise
Counterbalance use and limitations
Considerations around setup and operation of low to high angle stretcher evacuations
Efficiently rigging for multi-pitch lowers

Demonstrate proficiently:
- Operation of a low angle rope assisted stretcher evacuation (simple lower & 1:1 or counterbalance raise)

<table>
<thead>
<tr>
<th>SAFETY</th>
<th>Safety procedures</th>
<th>Situational awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>“Fresh eyes”</td>
</tr>
</tbody>
</table>
## ROPE RESCUE TECHNICIAN 2

**Prerequisite: Rope Rescue Technician 1**

**Minimum Duration of Course (all 5 Chapters):** 40 hours  
**Minimum Duration of Evaluation (all 5 Chapters):** 32 hours

<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technician 1 Review</td>
<td>Review of Technician 1 knowledge and skills proficiency</td>
<td></td>
</tr>
</tbody>
</table>

### Chapter 3.1 - Rappelling & Ascending

**Minimum Duration of Course:** 4 hours  
**Minimum Duration of Evaluation:** 1 hour

<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficiency in descending techniques</td>
<td>Ability to:</td>
<td>Demonstrate proficiently:</td>
</tr>
<tr>
<td></td>
<td>o Describe communications when descending (voice, signal, etc.)</td>
<td>o Rigging and deploying the rope – bag, butterfly coil, braided ring</td>
</tr>
<tr>
<td></td>
<td>o Describe Descent Control Devices (DCDs) for rappelling and their appropriateness to BC SAR rope rescue</td>
<td>o Setup of efficient rappelling system</td>
</tr>
<tr>
<td></td>
<td>o Explain rationale for BC SAR descending guidelines (in-line devices, smooth descents, no “Aussie” rappels, Italian hitch for emergency only)</td>
<td>o Use of a conditional self-belay (Prusik, helical hitch, etc.)</td>
</tr>
<tr>
<td></td>
<td>o Describe considerations around descending system setup: anchors, belays, rope length, throwing, bagging rope, safety checks (ABCDE), essential to have ascending gear</td>
<td>o Appropriate descending technique for vertical and sloping terrain</td>
</tr>
<tr>
<td></td>
<td>o Explain considerations in safe descending technique: harness attachments, personal safety, edge transition, speed, risk of pendulums, conditional self-belay options,</td>
<td>o Tying off the DCD</td>
</tr>
<tr>
<td></td>
<td>o Explain factors involved in harness-induced pathology – symptoms, causes, responses</td>
<td>o Change-over to ascent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Appropriate communication techniques</td>
</tr>
</tbody>
</table>
### SAR Safety Program

**Wildland Rope Rescue Training**

---

**O.G.# 3.02a**

*Issued: Jan 2021  Rev:*

<table>
<thead>
<tr>
<th>Proficiency in Prusik ascending techniques</th>
<th>Ability to:</th>
<th>Demonstrate proficiently:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o Describe communications when ascending (voice, signal, etc.) [Note, replace “Rope” on p.11-9 with “Up on [colour]”]</td>
<td>o Setup of an efficient Prusik ascending system (Purcell system or Texas system) Appropriate ascending technique for vertical and sloping terrain.</td>
</tr>
<tr>
<td></td>
<td>o Describe the two default Prusik sling systems (2 or 3 sling Prusik &amp; Texas Prusik). Explain how to tune systems (harnesses, cord lengths, etc.) for personal efficiency</td>
<td>o Changeover to descent</td>
</tr>
<tr>
<td></td>
<td>o Explain considerations in safe ascending technique: efficient system to minimize effort, safety “umbilical” to harness on foot sling; edge transition techniques</td>
<td>o Appropriate communication techniques</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enhanced ascending/descending</th>
<th>Knowledge of various systems. Describe prevalent mechanical ascending systems (“Frog”, Texas and “Jumar” styles)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o Ascending with improvised cordalette systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Setup of an efficient mechanical system (“Frog”, “Jumar”, Texas system, Ropewalker)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 3.2 – Artificial Anchors, High Directional Rigging &amp; Winches</th>
<th>Minimum Duration of Course: 8 hours</th>
<th>Minimum Duration of Evaluation: 4 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>This chapter is not included in Rope Rescue Tech 2 Fundamentals</td>
<td>This chapter is not included in Rope Rescue Tech 2 Fundamentals</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Competency</strong></th>
<th><strong>Knowledge</strong></th>
<th><strong>Skills/Techniques</strong></th>
</tr>
</thead>
</table>
| Use of artificial anchors | Knowledge of how, when, and where to place bolts  
Knowledge of when and how to use deadman and picket anchors. | Demonstrate correct placing of bolts and construction of redundant anchor systems  
Demonstrate setup of picket anchor systems and demonstrate or describe use of deadman anchors in snow |

| Use advanced rigging techniques | Ability to:  
o Assess forces when using a natural anchor point, A-frame or tripod to create a high directional | Demonstrate proficiently:  
o High directional construction using a tripod  
o High directional using a spanned anchor,  
o A-frame or tripod |

| A-Frames and Tripods | In-line (sideways) | Ability to demonstrate proficiently:  
o Setup and operation of improvised A-frames and tripods |
### Winches

<table>
<thead>
<tr>
<th>Ability to:</th>
<th>Setup and operation of commercial A-frames and tripods</th>
</tr>
</thead>
<tbody>
<tr>
<td>List the issues and describe appropriate use of a winch</td>
<td></td>
</tr>
<tr>
<td>Use of winches in raising</td>
<td></td>
</tr>
<tr>
<td>Use only winches designed for rescue work – no vehicle winches</td>
<td></td>
</tr>
<tr>
<td>Characteristics of hand winches – operator fatigue disadvantage</td>
<td></td>
</tr>
<tr>
<td>Characteristics of power winches – weight disadvantages</td>
<td></td>
</tr>
</tbody>
</table>

Necessity to use separate belay rope on load and to be able to default to manual pulley system.

### Chapter 3.3 - Stretcher Handling Techniques

**Prerequisite:** Tech 2 Module 1 (Chapter 3.1)

**Minimum Duration of Course:** 8 hours

**Minimum Duration of Evaluation:** 4 hours

#### Competency

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficiency in high angle stretcher handling</td>
<td></td>
</tr>
</tbody>
</table>

**Ability to:**

- Describe techniques for edge transition
  - High redirects wherever possible
  - Adjusting length of outboard legs of bridle during transition
  - Rigging of tilt lift (*currently not included in Fundamentals*)
  - “Pike & pivot” system (*currently not included in Fundamentals*)
  - Attendant “through the bridle”
  - Discuss considerations of stretcher handling:
    - Using a tag line
    - Negotiating overhangs
    - Use of a second attendant or helper

**Demonstrate proficiently:**

- Adjusting length of outboard legs of bridle during edge transition
- Setup and execution of a tilt-lift (*currently not included in Fundamentals*)
- Setup and operation of “pike & pivot” edge transition (*currently not included in Fundamentals*)
- Use of the “through the bridle” edge transition
- Set-up and use of a tag line
- Negotiating overhangs on lower and raise

### Chapter 3.4 – Pick-Off Techniques

**Minimum Duration of Course:**

**Minimum Duration of Evaluation:** 4 hours
### Competency: Proficiency in pick-off techniques

**Knowledge**
- Ability to:
  - Describe situations appropriate to use of pick-off techniques
  - Describe sequence of steps for a lowering pick-off using a MAP ring (or doubled large locking carabiners) or inter-tied long-tailed bowlines
  - Describe options for transferring subject weight to rescue system (block & tackle, pick-off strap, counterweight device, raise of load rope by vectoring or pulley system) and considerations for each.
  - Note that MPD provides for very quick conversion from lower to raise
  - Describe recommended attendant and subject attachments
  - Describe options for subject harnesses (improvised sit harness, commercial diaper seats)
  - Describe options for subject positioning (to the side, over the shoulder, stretcher style, between rescuer’s legs and considerations for each.
  - Describe considerations around using a Scarab rappel pick-off and the steps in the process.
  - Describe the load attachment points and subject positioning options in a rappel pick-off
  - Describe team based pick-offs
  - Describe the setup and operation of a Panorama Pick-off
  - Describe the setup and operation of a stretcher tilt-lift (loading a stretcher on a wall)

**Skills/Techniques**
- Demonstrate proficiently:
  - Setup and operation of a block & tackle (jigger) or counterweight device and transfer of subject’s weight to load line.
  - Fitting a subject with an improvised harness
  - Fitting a subject with a commercial diaper seat
  - The 4 subject positions recommended for movement after pick-off
  - A rappel pickoff
  - Setup and operation of a Panorama Pick-off, in coordination with a belayer
  - Managing a subject on a lower or raise pick-off
  - Rigging a stretcher for a tilt-lift
  - Managing a stretcher tilt-lift loading and raise or lower

---

**Chapter 3.5 – Highlines and Guiding Lines (Aerial Ropeways)**

**Minimum Duration of Course:** 16 hours

**Minimum Duration of Evaluation:** 8 hours

*This chapter is not included in Rope Rescue Tech 2 Fundamentals*
<table>
<thead>
<tr>
<th>Competency</th>
<th>Knowledge</th>
<th>Skills/Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highlines</strong></td>
<td>Ability to:</td>
<td>Ability to demonstrate and/or direct with proficiency the setup and operation of:</td>
</tr>
<tr>
<td></td>
<td>o Describe typical situations where highlines would be used.</td>
<td>o A basic Kootenay highline</td>
</tr>
<tr>
<td></td>
<td>o Describe the differences between a horizontal and a steep angle highline system.</td>
<td>o The stretcher rigging methods for highlines</td>
</tr>
<tr>
<td></td>
<td>o Describe the elements of a highline system</td>
<td>o A Kootenay highline with an English or Norwegian reeve</td>
</tr>
<tr>
<td></td>
<td>o Describe the differences in rigging highlines with Prusiks or with MPDs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Describe the hazards associated with highlines.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Describe the method of tensioning a highline and possible consequences of over tightening.</td>
<td></td>
</tr>
<tr>
<td><strong>Guiding Lines</strong></td>
<td>Ability to:</td>
<td>Ability to demonstrate proficient setup and operation of guiding lines</td>
</tr>
<tr>
<td></td>
<td>o Describe the use of guiding lines</td>
<td></td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>Safety procedures</td>
<td>Situational awareness</td>
</tr>
<tr>
<td></td>
<td>“Fresh eyes”</td>
<td></td>
</tr>
</tbody>
</table>
PURPOSE: To provide for GSAR Volunteer safety when participating in training, practice, or response involving search, rescue or recovery operations in the swiftwater environment (beside, on, or in moving water where there is a risk of being swept downstream) or within the floodwater environment.

GUIDELINE: Swiftwater: any water moving at a speed in excess of 2 km/h (0.5 m/sec).

GSAR Volunteers may encounter streams during ground search and rescue operations that may be flowing in excess of 2 km/h which can be easily crossed, or banks searched, without additional training beyond swiftwater awareness if the stream is less than knee deep and the risk is low (see Swiftwater Operation Risk in the Response Assessment and Decision Making Support (RADeMs) Reference Guide for low risk definition).

Floodwater: water that overflows and inundates an area.

For “Swiftwater Team Capabilities” and “Individual Qualification Levels” outlined in this document the term “Swiftwater” includes “Floodwater”.

PROCEDURE: BC GSAR Group and Swiftwater Team Response Capability Levels

- Swiftwater Awareness
- Swiftwater Operations
- Swiftwater Technician
- Swiftwater Technician Advanced

These group/team levels of response capability are based on the National Fire Protection Association standards (NFPA 1670) with refinements made for use in the Province of B.C. A Swiftwater Team maybe part of one GSAR Group or may be a regional Swiftwater Team made up of members from a number of GSAR Groups

GSAR Leaders will ensure that GSAR Groups (for awareness level) and Swiftwater Teams (for higher levels) will meet all the requirements for the capability level of their Group or Team as outlined below and in the “Procedures” section of this document.
DEFINITIONS:

**Hot Zone** – in swiftwater

**Warm Zone** – the area beside swiftwater where there is a chance that if a person were to accidently/unintentionally slip or fall they could enter the water. Defined a number of ways as it is dependent on the terrain (e.g. 5 m back from water’s edge, 3 m from high water mark). Can extend a considerable distance back from the water’s edge if it is slippery or steep terrain.

**Cold Zone** – the area back from the swiftwater’s edge where there is no chance of a person entering swiftwater if they were to accidently/unintentionally slip or fall.

**Response Capability Levels**

**Swiftwater Awareness GSAR Group Capability**

This is the minimum capability level for all GSAR Groups in BC to ensure that search and rescue operations are conducted safely as swiftwater occurs in all areas of BC.

GSAR Groups at this level are not considered a swiftwater rescue team and are generally only qualified in the cold zone. They may be able to operate in the warm zone if accompanied by higher trained swiftwater personnel and the risk is assessed as low (see Swiftwater Operation Risk in the RADeMs Reference Guide for low risk definition).

Requirements to Maintain Awareness Level Capability

- Training for Individual Members
  - GSAR
  - BC Swiftwater Awareness Course -online repeated every 3 years, if substantial swiftwater exists in response area it is recommended supplementing the on-line course with a presentation by a Swiftwater Rescue Technician or completion of an in-person Swiftwater Awareness course
  - Hazard Identification/Risk Assessment/Safety Procedures
  - As per training and Standard Operating Guidelines (SOGs – see Procedures Section), volunteers should be able to
recognize the general hazards associated with water incidents and mitigate the hazards by avoidance

- **Equipment**
  - Searching in the cold zone requires GSAR equipment.

- **Fitness of members**
  - Appropriate for searching in the cold zone.

### Swiftwater Operations Team Capability

Swiftwater Operations Teams are capable of:

- conducting shore-based, non-water entry searches and rescues within the warm zone under direction of a Swiftwater Rescue Team Leader (SRTL) or if a SRTL is not available a GSTL with technical support from a Swiftwater Rescue Technician,

- searching from a watercraft in swiftwater that does not require the searcher to purposely enter the water providing that all conditions in the Watercraft POG are met (this is as a crew member, watercraft operators require additional specific training – see Watercraft POG),

- providing support to Technician level rescuers during search and rescues;

- providing SAR Managers with situational awareness concerning searching near swiftwater,

- providing a member to fill the safety officer role for shore-based non-water entry searches and rescues.

### Requirements to Maintain Operations Level Capability

- **Training for Individual Members**
  - GSAR
  - BC Swiftwater Rescue Operations course (must be current)

- **Practice**
At least 6 hours per year in the swiftwater environment utilizing the skills outlined in the BC Swiftwater Course Competency Matrix (includes task hours, as well 50% of the practice hours can be with approval of the GSAR Group, training/practicing done for raft/kayak/fishing guiding within the swiftwater environment).

- Hazard Identification/Risk Assessment/Safety Procedures
  - As per training and SOGs (see Procedures Section)
  - Volunteers should be able to recognize the general hazards associated with non-water entry search and/or rescue and the procedures necessary to mitigate those hazards.

- Equipment
  - Volunteers will be equipped with, trained in the use of and wear when operating in the warm zone a non-inflating PFD designed for swiftwater rescue, swiftwater helmet, pea-less whistle, swiftwater rescue knife and secondary cutting tool, throw bag, and other appropriate personal protective clothing and equipment.

- Fitness
  - Appropriate for conducting shore based searching and or rescues.
  - Sufficient to survival swim in anticipated swiftwater environment.

**Swiftwater Technician Team Capability**

Swiftwater Technician Teams are capable of:

- performing water entry searches, rescues and recoveries commensurate with experience under direction of an SRTL. Until an SRTL course is developed and available the responding Swiftwater Rescue Team will appoint the team leader based on training, skill and experience. The Team Leader will, at minimum, be a Swiftwater Technician, ideally a Swiftwater Technician Advanced and preferably with leadership training such as GSTL or
RRTL) or completion of a course at the Swiftwater Technician Advanced Level which includes a Leadership Component.

- supervising and performing watercraft-based search and rescue operations providing that all conditions in the Watercraft POG are met (this is as a crew member - watercraft operators require additional specific training – see Watercraft POG),

- Supervising and performing basic swiftwater rope rescue techniques such as tensioned diagonals for transport (ziplines),

- conducting incident risk assessments,

- assisting GSAR Manager as technical specialist to develop rescue plan or revise Incident Action Plan,

- provide a member to fill the role of safety officer for water entry searches, rescues and recoveries,

- assisting Swiftwater Technician Advanced Level.

**Requirements to Maintain Technician Level Capability**

- Training for Individual Members
  - GSAR
  - BC Swiftwater Rescue Technician Course (must be current)

- Practice
  - At least 20 hours per year in the swiftwater environment utilizing the skills outlined in the BC Swiftwater Course Competency Matrix (includes task hours, as well 50% of the practice hours can be with approval of the GSAR Group, training/practicing done for raft/kayak/fishing guiding within the swiftwater environment).

- Hazard Identification/Risk Assessment/Safety Procedures
  - As per training and SOGs (see Procedures Section)
 Volunteers should be able to recognize the general hazards associated with in water search and/or rescues and the procedures necessary to mitigate those hazards.

- **Equipment**
  - Operations level equipment plus swiftwater specific equipment for conducting water entry searches and/or rescues (e.g. drysuit or wetsuit) based on the swiftwater team and their response area.

- **Fitness**
  - Appropriate for conducting water entry searches and/or rescues.
  - Sufficient to rescue swim in anticipated swiftwater environment.

**Swiftwater Technician Advanced Team Capability**

Swiftwater Technician Advanced Teams are capable of:

- Supervising and performing water entry searches and rescues under more technical conditions and/or utilizing specialized techniques relevant to the swiftwater team’s response area. For example
  - High risk searches and rescues (see Swiftwater Operation Risk in the RADeMs Reference Guide for definition of high risk),
  - low head dams,
  - water bound vehicles,
  - overturned boats,
  - difficult access or egress,
  - water bound aircraft,
  - water bound kiteboards, paragliders,
  - ice over swiftwater,
o technical rope rescue techniques specific to the swiftwater environment such as highline with boat on a tether or Kootenay highline.

Swiftwater Rescue Technician Advanced level teams will have knowledge of all these more technical rescues and specific skills in some of them depending on what is required in their response area. Swiftwater Rescue Technician Advanced level teams will be able to assess their limitations for more technical conditions and only utilize those skills for which they have trained and practiced.

Requirements to Maintain Technician Advanced Level Capability

- Training for Individual Members
  - GSAR
  - For Technician Advanced Teams conducting technical Rope Rescue in the swiftwater environment at least one member of the Technician Advanced team is a Rope Rescue Team Leader.
  - BC Swiftwater Rescue Technician Advanced course (must be current)

- Practice
  - At least 20 hours per year in the swiftwater environment utilizing the skills outlined in the BC Swiftwater Course Competency Matrix (includes task hours, as well 50% of the practice hours can be, with approval of the GSAR Group, training/practicing done for raft/kayak/fishing guiding within the swiftwater environment)

- Hazard Identification/Risk Assessment/Safety procedures
  - As per training and SOGs (see Procedures Section)
  - Volunteers should be able to recognize the hazards associated with more technical in water search and/or rescues and the procedures necessary to mitigate those hazards.

- Equipment
Technician Level equipment plus rescue equipment for specific technical rescues appropriate to the swiftwater teams response area and training.

- Fitness
  - Appropriate for conducting water entry searches and/or rescues.
  - Sufficient to rescue swim in anticipated swiftwater environment.

**BC Qualifications for Individual SAR Volunteers**

Competencies (specific skill-sets) for these individual qualifications are outlined in BC Swiftwater Course Competency Matrix and recognized courses are listed in the BC Swiftwater Recognized Course Table.

- **BC Swiftwater Awareness**
- **BC Swiftwater Rescue Operations**
- **BC Swiftwater Rescue Technician**
- **BC Swiftwater Rescue Technician Advanced**
- **BC Swiftwater Rescue Team Leader**

GSAR volunteers are not to engage in any activities, enter higher risk environments, or use any equipment that they are not trained and competent in; except under supervision of an instructor during training.

**Rope Rescue and Swiftwater Rescue**

Specific rope techniques for each swiftwater qualification level are outlined in the individual qualification competency matrix (e.g. throw bags, tensioned diagonals, high lines with a boat on a tether).

If access or egress to the swiftwater site, either for searching or rescue, requires vertical lowering and raising systems beyond a hand line (hand lines are only for terrain where a fall will not cause serious injury) then specific rope rescue training beyond the training levels outlined in this document (e.g. Rope Rescue Team Member and Rope Rescue Team Leader) is required to establish and operate the rope system.
Watercraft Usage in Swiftwater

The operation of watercraft\(^2\) on swiftwater or floodwaters introduces an increased risk to personnel and requires specialized skills and experience not covered within the swiftwater rescue training levels outlined in this document. See Watercraft POG. BC GSAR Swiftwater Teams that employ watercraft\(^1\) as part of their swiftwater search and rescue program shall implement procedures for the following:

- Identifying the types of watercraft available to the team.
- Identifying the capabilities and the limitations of those watercraft.
- Identifying conditions and circumstances that can require the Swiftwater Team to operate these watercraft and any hazards or challenges specific to those conditions.
- Providing swiftwater watercraft crew member and operator training to those team members who are BC Swiftwater Rescue - Operations (or higher) using widely accepted or recognized curricula that includes hands-on, boat based training in swiftwater. It is recommended that these team members have experience as a recreational or professional river user. If a motorized watercraft operator is not trained at B.C. Swiftwater Rescue – Operations (or higher) level they will be briefed and under direction of a B.C. Swiftwater Rescue – Technician (or higher).
- Identifying members of the Swiftwater Team who are qualified to operate watercraft at swiftwater search and rescue incidents.
- Conducting risk assessments, at every deployment, by the qualified Watercraft Operator which includes evaluating the potential crew members for appropriate training and experience before inclusion as crew.

Floodwater Response

Responding in floodwaters brings additional hazards to the GSAR volunteer which may include contamination hazards in the water and

\(^2\) Watercraft includes ships, boats, canoes, kayaks, rafts, barges, hovercraft, amphibious vehicles, catamarans, paddleboards, Personal Watercraft (e.g. Jet skis), and any other vehicle or vessel used on water
physical hazards concealed by the floodwaters. The BC Swiftwater Awareness course covers floodwater hazard identification, personal protective equipment and the potential need for decontamination procedures.

Where appropriate, GSAR Swiftwater Teams that respond to floodwater search and rescue incidents shall implement procedures for the following:

- Recognizing the unique hazards associated with floodwater operations.
- Identifying potential sources of floodwater contamination.
- Identifying and operating watercraft appropriate for use in the floodwater environment (see Watercraft POG).
- Providing appropriate personal protective equipment to all searchers and rescuers expected to operate in a floodwater environment.
- Implementing decontamination procedures for personnel.
- Planning for regional floodwater response requires additional training beyond the training outlined in this OG.

PROCEDURE: This section outlines some general procedures for SAR Groups or Swiftwater Teams to operate at their capability level in addition to the specific requirements outlined above.

The Standard Operating Guidelines (SOGs) that should be used to guide the response of teams and individuals:

- GSAR Provincial Operating Guidelines
- GSAR Group Pre-plan
- GSAR Manual
- Swiftwater Training Materials for the qualification level
- RADeMs Reference Guide
The response documentation that should be created during response by the GSAR Manager and/or Swiftwater Rescue Team Leader:

- Incident Action Plan including Team Assignments
- Size of Team
- Sufficient numbers to safely conduct the search and/or rescue task.

Swiftwater Rescue training courses must be approved by EMBC in order to be eligible for WorkSafe B.C. and other coverages. GSAR Groups considering Swiftwater Rescue Training courses should review the BC Swiftwater Approved Course Table.

Rescuer and GSAR group swiftwater rescue equipment will be designed for use in swiftwater and maintained according to the manufacturer’s recommendations, and approved training course material. Swiftwater teams are to only use techniques and equipment in a swiftwater environment that they have trained in the use of by an approved training provider.

REFERENCE:

- NFPA 1670
- NFPA 1006
- BC Swiftwater Course Competency Matrix
- BC Swiftwater Approved Course Table
- GSAR
- SAR Management
- Watercraft Operational Guidelines
- Civil Emergency Operating Guideline
- Hazmat Awareness Operating Guidelines
- Personal Protective Clothing and Equipment Operational Guidelines
- Response Assessment and Decision Making Support (RADeMs)
- Reference Guide
### BC Swiftwater Qualifications Competency Matrix February 2015

Each successively higher qualification includes all the competencies from the lower qualifications.

<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>BC Swiftwater – Awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define swiftwater and floodwater</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe swiftwater rescue philosophy</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Define the absolutes of swiftwater rescue</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outline rescuer safety (priority matrix and rescue verses recovery)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SAR Safety Program

**Swiftwater Rescue**

**O.G.# 3.03a**


<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>Describe personal evaluation (evaluating your own personal readiness to respond including skill level, fitness and mindset)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swiftwater Hydrology – Identify moving water conditions, characteristics, and features</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify swiftwater hazards</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe swiftwater hazard avoidance</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outline flood fundamentals (hazards, personal protective gear, hazard avoidance and the need for decontamination procedures)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe swiftwater medical considerations</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe swiftwater personal protective equipment</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outline site safety considerations</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe response guidelines (ICS and Incident Management)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outline river search operations</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SAR Safety Program

**Swiftwater Rescue**

**O.G.# 3.03a**


<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>Describe communication strategies around swiftwater</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** An Overview of the Response Assessment and Decision Making Support Guide will be a separate online awareness course.

### BC Swiftwater Rescue – Operations

- **Swiftwater Hydrology** – at swiftwater sites assess moving water conditions, characteristics, features and hazards
  - ✓
- **Develop a pre-event site survey for an existing water hazard utilizing all available data, projections and site inspection**
  - ✓
- **Be able to self-rescue from swiftwater**
  - ✓
## SAR Safety Program

### Swiftwater Rescue

<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
</tbody>
</table>

### Knowledge or Skill

<table>
<thead>
<tr>
<th>Knowledge or Skill</th>
<th>K</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select water rescue personal protective equipment, given a water rescue assignment</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Inspect and maintain swiftwater personal protective equipment</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Utilize swiftwater personal protective equipment</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Demonstrate survival swimming in anticipated swiftwater environment.</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Escape from a simulated life-threatening entrapment situation, given water rescue personal protective equipment</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Conduct a shoreline search beside swiftwater (in the warm zone).</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Perform a non-entry (shore-based) rescue in the swiftwater environment</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
## SAR Safety Program

**Swiftwater Rescue**

**O.G.# 3.03a**


### Competency

<table>
<thead>
<tr>
<th></th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
</tbody>
</table>

### Knowledge or Skill

<table>
<thead>
<tr>
<th>Knowledge or Skill</th>
<th>K</th>
<th>S</th>
<th>K</th>
<th>S</th>
<th>K</th>
<th>S</th>
<th>K</th>
<th>S</th>
<th>K</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement action plan for a shore-based rescue of a single or multiple waterbound subjects.</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deploy and receive a water rescue reach device</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deploy and receive a throwbag in swiftwater</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outline considerations in organizing and managing a swiftwater search or rescue incident</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size up the swiftwater incident.</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implement site control</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilize ICS</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the needed support resources</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competency</td>
<td>BC Swiftwater Awareness</td>
<td>BC Swiftwater Rescue Operations (all awareness competencies apply)</td>
<td>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</td>
<td>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</td>
<td>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe incident action plan/rescue plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manage incident hazards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe resource management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe considerations and steps to terminate a swiftwater operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrate the ability to conduct shallow water crossings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assist a BC Swiftwater Rescue Technician</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SAR Safety Program

<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimum Duration of Course</strong></td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Knowledge or Skill</strong></td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td><strong>Tie knots, bends, and hitches</strong>, given ropes and webbing, so that the knots are dressed, recognizable, and backed up as required.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) End-of-line loop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Midline loop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Securing rope around desired objects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Joining rope or webbing ends together</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Gripping rope</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Construct a single-point anchor system</strong></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inspect and maintain swiftwater rescue equipment</strong></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assess personal ability to respond to a swiftwater search or rescue at the operations level (skill level, fitness, mindset, etc.)</strong></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

103
## SAR Safety Program

**Swiftwater Rescue**

<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>Demonstrate survival swimming in anticipated swiftwater environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform an entry rescue in the anticipated swiftwater environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform a swimming surface water rescue both tethered and untethered in swiftwater appropriate to training and experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrate defensive tactics in the water rescue environment, given a waterbound subject in a stressed or panicked Situation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrate escaping more complex entrapments such as foot entrapment, equipment entrapment and wood entrapment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competency</td>
<td>BC Swiftwater Awareness</td>
<td>BC Swiftwater Rescue Operations (all awareness competencies apply)</td>
<td>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</td>
<td>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</td>
<td>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------</td>
<td>------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>Construct, operation, and supervise of tensioned diagonals for transport (ziplines)</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe the medical consideration required when rescuing a waterbound subject such as spinal immobilization and hypothermia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assess personal ability to respond to a swiftwater rescue at the technician level (skill level, fitness, mindset, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BC Swiftwater Rescue – Technician Advanced**

- Demonstrate survival swimming in anticipated swiftwater environment | ✔ |
- Perform specialized technical swiftwater rescues appropriate to student’s response area. General knowledge of all scenarios and skill performance, in swiftwater environment, for at least two different | ✔ |
<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>scenerios is required. Technical conditions or specialized techniques include:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Risk Searches and Rescues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Low Head Dams</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Water Bound Vehicles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Overturned Boats</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Difficult Access or Egress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>✓</strong></td>
</tr>
<tr>
<td>Water Bound Aircraft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>✓</strong></td>
</tr>
</tbody>
</table>
# Swiftwater Rescue

**Competency**

<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Minimum Duration of Course</th>
<th>Online</th>
<th>2 days</th>
<th>3 days</th>
<th>Additional 3 days</th>
<th>TBD</th>
</tr>
</thead>
</table>

- **Knowledge or Skill**
  - Water Bound Kiteboards, Paragliders
  - Ice over Swiftwater
  - Highline with Boat on a tether
  - Kootenay Highline
  - Assess personal ability to respond to a swiftwater rescue at the Technician Advanced level (skill level, fitness, mindset, etc.)

**BC Rescue - Team Leader (To be Further Developed)**

Describe the roles and responsibilities of a Swiftwater Rescuer Team Leader

- **K**
- **S**
- ✔
<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>Identify and demonstrate effective leadership and supervision skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>required by a rescue team leader including:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Team/Organizational Dynamics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Describe and demonstrate ability to plan, prepare, execute and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>complete post-mission procedures for a swiftwater search and/or</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rescue assignment, including:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Competency</td>
<td>BC Swiftwater Awareness</td>
<td>BC Swiftwater Rescue Operations (all awareness competencies apply)</td>
<td>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</td>
<td>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</td>
<td>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
<tr>
<td>Knowledge or Skill</td>
<td>K</td>
<td>S</td>
<td>K</td>
<td>S</td>
<td>K</td>
</tr>
<tr>
<td>Briefing - SMEAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Decision Making</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Resource Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Debriefing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Describe and demonstrate safe work practices during a swiftwater team search and/or rescue assignment including conducting capability assessments.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
<tr>
<td>Identify, assess and manage risk in a swiftwater team search and/or rescue assignment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✅</td>
</tr>
</tbody>
</table>
## SAR Safety Program

### Swiftwater Rescue

**O.G.# 3.03a**

<table>
<thead>
<tr>
<th>Competency</th>
<th>BC Swiftwater Awareness</th>
<th>BC Swiftwater Rescue Operations (all awareness competencies apply)</th>
<th>BC Swiftwater Rescue Technician (all Operations Level competencies apply)</th>
<th>BC Swiftwater Rescue Advanced Technician (all Technician Level competencies apply)</th>
<th>BC Rescue Team Leader (at minimum needs to be Swiftwater Rescue Technician)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Duration of Course</td>
<td>Online</td>
<td>2 days</td>
<td>3 days</td>
<td>Additional 3 days</td>
<td>TBD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Knowledge or Skill</th>
<th>K</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe critical incident stress management and demonstrate ability to manage stress effectively during a swiftwater search and/or rescue assignment</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Demonstrate the ability to maintain appropriate documentation during a swiftwater search and/or rescue assignment</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Recognized Swiftwater Courses in British Columbia
Swiftwater Courses that Meet the BC Qualification Levels for Search and Rescue Volunteers

The following courses are recognized as including the competencies listed within the BC Swiftwater Qualifications Competency Matrix as of January 2015. SAR volunteers receiving certification in a listed course will be deemed to be qualified at the applicable level as described in the Swiftwater Provincial Operating Guideline.

The listed courses may include additional competencies and pre-requisites, and/or differences in delivery methodology; the choice of course and provider remains with the Search and Rescue Group, Swiftwater Team, and/or SAR volunteers. Some course providers may offer to tailor courses specific to SAR and local conditions; this is acceptable if the Competencies listed in the Matrix are covered as a minimum.

Course providers are responsible for their own insurance, instructor certification process, and course quality.

<table>
<thead>
<tr>
<th>BC Qualification Level</th>
<th>Recognized Courses (Courses that Meet the Qualification Levels Competencies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.C. Swiftwater Awareness</td>
<td>Swiftwater/Flood Rescue Awareness – eLearning (This is the minimum requirement for all SAR volunteers; it is recommended supplementing with presentation by a Swiftwater Rescue Technician or completion of an in-person Swiftwater Awareness course if substantial swiftwater exists in response area)</td>
</tr>
</tbody>
</table>
| B.C. Swiftwater Rescue - Operations | Rescue Canada  
– Swiftwater Safety Rescue Technician Level 2  
Raven Rescue  
- Swiftwater Operations  
Dive Rescue International  
- DRI Level 1 |
<table>
<thead>
<tr>
<th>BC Qualification Level</th>
<th>Recognized Courses (Courses that Meet the Qualification Levels Competencies)</th>
</tr>
</thead>
</table>
| **B.C. Swiftwater Rescue - Technician** | Dynamic Rescue Systems  
- Technical Water Rescue - Water Operations Level 1 |
| **B.C. Swiftwater Rescue - Technician Advanced** | Rescue Canada  
- Swiftwater Safety Rescue Technician Level 3  
- Swiftwater Specialist Level 2  
Raven Rescue  
- Swiftwater Rescue Technician (SRT 1)  
Dive Rescue International  
- DRI Level 1  
Dynamic Rescue Systems  
- Technical Water Rescue – Water Operations Level 1 |
| **B.C. Swiftwater Rescue – Team Leader** | The Team Leader will, at minimum, be a Swiftwater Technician, ideally a Swiftwater Technician Advanced and preferably with leadership training such as GSTL or RRTL, or completion of a course at the Swiftwater Technician Advanced Level which includes a Leadership Component. |
Contact information for recognized course providers

Dive Rescue International
Website: www.diverescueintl.com
Phone: Dave Jephson 250-615-7451
Email: djephson@diverescueintl.com

Dynamic Rescue Systems
Website: www.dynamicrescue.com
Phone: 604-522-0228 (local)
Phone: 1-888-965-5228 (toll free)
Email: training@dynamicrescue.com

Raven Rescue
Website: www.ravenrescue.com
Phone: 800-880-0287 (toll free)
Phone: 250-847-2427 (local)
Email: info@ravenrescue.com

Rescue Canada
Website: www.rescuecanada.ca
Phone: 1-800-663-8931
Registration/Booking: Sylvia@rescuecanada.ca
Course Content/Inquiries/Questions: adaml@rescuecanada.ca
PURPOSE: To ensure GSAR volunteer safety while participating in a response, training, or practice requiring specialized techniques and associated apparatus to respond safely to flat ice related emergencies.

GUIDELINE: GSAR groups and GSAR leaders will ensure that GSAR volunteers are trained in the use of, and provided with, appropriate equipment before participating in any activity that involves access onto flat ice.

For the purposes of this Operational Guideline, Flat Ice includes:

- Ice that has formed on large still bodies of water (lakes, ponds reservoirs, etc.).
- Ice that has formed on bodies of large slow moving water (.5 M/sec).

PROCEDURE: Training will be provided to all GSAR volunteers that are required to approach or to gain access to the surface of flat ice to gain access to a subject who is unable to provide self-rescue from the flat ice emergency. Training will be provided by a commercially recognized available training course for basic flat ice rescue operation.

All GSAR volunteers that access the flat ice surface will be equipped with:

- An approved PFD c/w an attached pea-less whistle
- Thermal protection (a combination of insulation and dry suits/wetsuits)
- Approved head bump protection
- Footwear suitable of providing stable footing
- A lifeline c/w chest harness and rope that is tended by GSAR volunteers.

A standby Flat Ice Rescuer that is equipped and capable to initiate rescue without undo delay

All GSAR volunteers that enter the “warm Zone” (within 3 metres of the edge of the flat ice edge), will be equipped with:
• An approved PFD c/w an attached pea-less whistle
• Approved head bump protection

A successful flat ice rescue is based on a recognized and logical process inherent in any rescue operation. This process includes five basic steps:

• Evaluate scene conditions
• Evaluate subject's condition
• Assess manpower and equipment
• Develop operational plan
• Ongoing evaluation of rescue process

REFERENCE:
WorkSafe B.C List of approved helmet standards
NFPA 1952 Standard on Surface Water Operations Protective Clothing and Equipment
Transport Canada approved personal flotation devices
Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment
PURPOSE: To ensure GSAR volunteers understand current policy on Underwater Recovery/Rescue

GUIDELINE: GSAR volunteers are not to engage in Underwater Recovery/Rescue response, other than providing surface support functions if requested by Police Dive Team members. GSAR volunteers providing surface support will operate according to operational guidelines for Watercraft Operations and Swiftwater Rescue.

PROCEDURE: GSAR groups and GSAR leaders will ensure GSAR volunteers do not engage in Underwater Recovery/Rescue responses other than surface support when requested by Police Dive Team members. GSAR leaders will ensure GSAR volunteers providing surface support functions are trained and equipped as required under Watercraft Operations and Swiftwater Rescue guidelines.

REFERENCE: EMBC 2.06 Public Safety Lifeline Volunteer Safety
EMBC 2.12 Search and Rescue
Provincial Operating Guidelines 2.05 Watercraft Operations
Provincial Operating Guidelines 3.03 Swiftwater Rescue
PURPOSE: To ensure GSAR volunteer safety while participating in a mountain rescue response, training, or practice defined as being in 4th class or steeper terrain, or glaciated/snowfields, or at high altitude. Lead climbing and ice climbing is also considered Mountain Rescue.

Top down rope rescue where the anchor station is in 3rd class terrain while the subject is in 4th class or higher terrain is not considered mountain rescue.

Class 4 terrain is defined as having steep sections requiring the use of both hands and feet to climb up or down, where a rope may be utilized, and un-roped falls could be fatal.

Class 3 terrain is defined as requiring some scrambling with the occasional use of hands to assist and where falls could cause severe injury but are usually not fatal. A rope is generally not used in 3rd class terrain.

High Altitude is defined for the purposes of mountain rescue in BC as above 10,000 feet.

GUIDELINE: GSAR groups and GSAR leaders will ensure that GSAR volunteers are trained and equipped according to current standards outlined in the EMBC Mountain Rescue Training Program Manuals before permitting their involvement in mountain rescue.

Mountain Rescuers with the appropriate experience and training are to operate within the parameters stated within the EMBC Mountain Rescue Training Program Manuals according to the level (MR1, MR2, MR3).

PROCEDURE: GSAR groups and GSAR leaders will ensure proper records are kept of GSAR volunteer’s:

- Training;
- operational experience;
- annual practice in Mountain Rescue, and;
- maintenance of apparatus.
GSAR volunteers and apparatus not meeting the standards within the noted training materials will not be utilized, or participate, in Mountain Rescue functions.

REFERENCE:  
JIBC Emergency Management Division SAR Training
EMBC Mountain Rescue Training Program Manual
EMBC 2.06 Public Safety Lifeline Volunteer Safety
PURPOSE: This operational guideline is necessary to ensure that all SAR activities involving caves (defined as naturally formed underground voids extending beyond daylight) are carried out by personnel who are familiar with and prepared for cave environments and hazards and are competent in the specialized techniques of caving and cave rescue.

GUIDELINE: Consistent with a 1992 MOU among the RCMP, PEP, BCAS and BC Cave Rescue (BCCR), BCCR is to be the lead agency in cave SAR operations and will provide personnel trained in first aid and cave SAR, as well as rescue equipment unique to cave rescue.

EMBC Ground Search and Rescue groups will not conduct cave rescue operations. They can however support BCCR operations with surface support but will not enter the cave environment as defined above.

PROCEDURE: Activation of BC Cave Rescue is by BCEHS, RCMP, or police authority having jurisdiction contacting EMBC ECC at 1-800-663-3456. In the event of a local GSAR group being initially activated, SAR Manager will request BCCR activation through EMBC. EMBC staff will contact BCCR using established callout procedures.

EMBC Ground Search and Rescue members who are also BC Cave Rescue members must sign out of the assigned EMBC Search and Rescue Task Registration and sign in under the EMBC assigned BC Cave Rescue Task Registration before taking part in, or initiating any cave rescue procedures.

In the event the rescue turns in to a body recovery, the Coroner’s Office will have jurisdiction.

REFERENCE: 1992 BCCR/PEP/RCMP/BCAS MOU
EMBC Volunteer Policy 2.06
EMBC Body Recovery Policy 2.09
EMBC Search and Rescue Policy 2.12
Provincial Operating Guideline 3.14 Recovery of Human Remains
PURPOSE: To provide for GSAR Volunteer safety when participating in training, practice or response to an incident within, or travelling through, avalanche terrain.

GUIDELINE: Avalanche terrain includes all terrain that can be impacted by an avalanche; the start zone, track and run-out zones. This may include areas that are not "typical" for avalanches such as cut banks, in trees, and even on flat terrain. There are many examples of such terrain e.g. when a large avalanche comes down one side of a valley and continues uphill on the other side.

While response to an incident where GSAR volunteers may be travelling through potential avalanche terrain or where people are involved in an avalanche, the safety of all responders is paramount. In many cases there are several risks within avalanche terrain and further large avalanches on or close by the same path may occur. An assessment by an Avalanche Safety Officer is required before anyone enters the area.

GSAR groups and GSAR leaders will ensure that GSAR volunteers are trained and equipped with appropriate equipment to operate safely when responding to an avalanche incident or travelling through avalanche terrain.

PROCEDURE: At a minimum, GSAR volunteers responding within areas of potential avalanche terrain will be trained at either the JIBC Organized Avalanche Response (OAR) Course, Avalanche Skills Training level 1 (AST 1), Avalanche Skills for SAR (JIBC).

As a minimum, each team member is required to carry the following equipment:

- Avalanche Shovel
- Avalanche Transceiver (457 kHz standard, modern multi-antennae digital transceivers recommended)
- Avalanche Probe
- Appropriate clothing that provides protection from sun, wind, rain, and snow.
<table>
<thead>
<tr>
<th>SAR Safety Program</th>
<th>O.G.# 3.08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter Response</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Issued: Sept 2012</td>
</tr>
</tbody>
</table>

- Protective eyewear (sunglasses or goggles) appropriate to the conditions.
- Sufficient food and water for trip and a short-term emergency situation.

In addition to the above, the Safety Officer will carry a means of alerting all personnel of the need to immediately evacuate the avalanche area.

For requirements on avalanche assessment and response, refer to the EMBC PSLV Avalanche Safety Plan and the EMBC Winter Response Policy.

GSAR groups that have avalanche terrain in their area of response are to establish an Avalanche Pre-plan to ensure GSAR volunteers and agencies involved are aware of the correct safety protocols prior to responding to an incident. The pre-plan should be reviewed at the start of each avalanche season.

REFERENCE:
- EMBC PSLV Avalanche Safety Plan 2019
- Organized Avalanche Response Training Manual
- EMBC Policy 2.08 GSAR Winter Response
- Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment
- Provincial Operating Guideline 1.05 Team Evacuation
- Provincial Operating Guideline 1.06 Risk Assessment
- Provincial Operating Guideline 1.10 Training Standards
PURPOSE: To increase GSAR Volunteer safety when participating in training, response or practice involving the operation of the Class ‘D’ Fixed Line Human External Cargo (CDFL).

GUIDELINE: GSAR Leaders will ensure that GSAR Volunteers are trained in accordance with the air carrier that they are working with.

For the purposes of this Operational Guideline CDFL (Class ‘D’ Fixed Line Human External Cargo), will be the term used throughout.

PROCEDURE: CDFL (on hook) training will be provided in accordance with the air operators CDFL training program. Off hook training will be provided by a qualified ground training instructor in accordance with EMBC policies and SAR operating guidelines.

The CDFL assembly inspection must comply with the air carriers’ requirements and the requirements of the equipment supplemental type certificate (STC). The CDFL assembly must be inspected in accordance with TC Regulations and the manufactures specifications.

The air carrier that is selected to supply the helicopter service must be approved by Transport Canada, have helicopters and pilots in place to perform the required service. The air carrier must also have a Memorandum of Understanding with the group that provides personnel for the CDFL deployment.

All CDFL operations will be operated in accordance with applicable Transport Canada rules and regulations and considering GSAR volunteer safety first.

Any equipment used in a CDFL operation that is attached to the aircraft must comply with TC regulations. This includes the personal carrying device.

All rescuers will wear clothing and footwear that is practical to the task. In cold environments, thermal protection must be part of the overall rescue plan. In addition, each member of the CDFL crew will wear:

- A UIAA/CE climbing helmet or approved flight helmet.
• Appropriate eye protection. This maybe integral to a flight helmet, protective eyewear or separate goggles;
• Hearing protection, headsets or earmuffs or plugs;
• Rescuers must have radio communication with aircraft with hand signals recognised by the air carrier as a backup.

REFERENCE:
Canada Aviation Regulation
Commercial Air Service Standards
Transport Canada Commercial and Business Aviation Guidelines
EMBC 2.06 Public Safety Lifeline Volunteer Safety
EMBC 2.10 Class ‘D’ Helicopter Rescue
EMBC 2.11 Search and Rescue Helicopter Usage
EMBC 2.12 Search and Rescue
Helicopter Industry General Operating Guidelines
PURPOSE: To increase GSAR volunteer safety when participating in training, response or practice involving the application of helicopter hover exit/entry operations.

GUIDELINE: GSAR leaders will ensure that GSAR volunteers are trained in the proper techniques to safely implement the procedures required to safely exit/enter a helicopter while it is in the hover mode above the ground.

PROCEDURE: Formalized training will be done for GSAR volunteers prior to the practical application of hover exit/entry from a helicopter during training, response or practice. Only those GSAR volunteers trained will be allowed to perform the hover exit/entry operation.

The GSAR leaders and or the pilot will provide a briefing outlining the sequence of events prior to take off and then immediately prior to actual deplaning by on board GSAR volunteers.

All volunteers will wear hearing protection while the helicopter is in operation (this may be the headsets from the helicopter, if provided, or secondary hearing protection, earmuffs or plugs), it is also recommended that all personnel involved wear proper eye protection.

All volunteers in the helicopter will remain in their seat with proper restraint on at all times until instructed to deplane by the GSAR leader and or manager in charge of the operation. When instructed they will remove the restraining device, reconnect it behind them and move into position to the open or removed door.

When deplaning, all personnel will gently transfer their weight from the helicopter to the ground, avoid sudden movements, and not jump off the helicopter.

Once deplaned, do not go uphill; move slowly to the front of the helicopter and wait for all remaining personnel to deplane.

The helicopter pilot will be the final say in all operations involving the helicopter operation.

In a hover entry operation, radio communication must be made with the helicopter pilot prior to the entry procedures commencing. All volunteers will assemble at the designated hover entry location, (the group should
be as close as possible to the pick-up area to avoid extended hover time by the helicopter). The GSAR leader and or manager will provide a briefing for all members (and if a subject will be part of the pickup, a “buddy” will be assigned to them.

All loose clothing and gear must be secured before arrival of the helicopter.

Once the helicopter is in place, and eye contact is made with the pilot and a positive signal from the pilot, the entry procedure may commence. Volunteers will load one at a time, again transferring their weight gently from the ground to the helicopter; do not use sudden movements and do not jump to the helicopter.

Once in the helicopter, GSAR volunteers will move to their designated seat and have their restraint put on until the completion of the flight. All personal gear is to be securely stored.

REFERENCE: Canadian Aviation Regulations

EMBC 2.11 Helicopter Usage

EMBC 2.12 Search and Rescue

Helicopter Operations Training Program (HOTP)

Helicopter Industry General Operational Guidelines

B.C. Ministry of Forests Hover Exit Training Plan
PURPOSE: To ensure GSAR volunteer safety when participating in training, response or practice in non-traditional GSAR roles in support of local government response to events such as interface fires, floods and earthquakes.

GUIDELINE: It is recognized that GSAR volunteers may be requested by local governments to assist in roles including but not limited to: evacuations, support roles in Emergency Operation Centres (EOCs) or Incident Command Posts (ICPs), providing communications etc.

GSAR groups and GSAR leaders will ensure GSAR volunteers are appropriately trained and equipped in the specific task and role before practicing or participating in functions related to civil emergency.

During a civil emergency the local government maintains overall responsibility for the response and for the safety of all personnel including GSAR volunteers.

An incident related to an emergency response, such as swiftwater rescue, is considered a GSAR response and the roles and responsibilities outlined in the SAR Safety Guide and appropriate Operational Guidelines will be followed.

GSAR volunteer’s assistance to local governments is supported by EMBC under a Task Number in the same manner as in a SAR response.

PROCEDURE: GSAR leaders are to ensure that when reporting to a local government EOC/ICP that confirmation of overall responsibility for safety is confirmed before GSAR volunteers engage in response activities.

GSAR volunteers are not to participate in any function that they are not adequately trained or equipped to perform. If requested to perform such a function the request will be declined and referred to the GSAR leaders and/or to the EMBC Regional Office.

GSAR volunteers assisting in evacuations are to be briefed on roles and responsibilities outlined in the RCMP Evacuation Protocols.

Should emergency evacuation of a GSAR team be required, the guidelines established for team evacuation will be followed.
GSAR volunteers providing traffic control functions are to follow the Traffic Control Operational Guidelines.

When sandbagging along moving water, the guidelines established for swiftwater rescue, including wearing PFDs, will be followed.

A Safety Officer must be present at all civil emergency responses; if one is not present then the EOC/ICP is to be contacted. A Safety Officer may be a GSAR volunteer with the appropriate training, however this must be agreed to by the Local Government.

GSAR volunteers are not to respond to incidents where Hazardous Materials are known or suspected to be present. If there are any concerns about HazMat being present all GSAR personnel are to be removed from the area until experts verify the area is safe.

GSAR volunteers are not to respond to incidents where it is suspected that criminal activities are involved, unless confirmation is received from the police authority that the area is safe.

Firefighting or other activities within an active fire zone are not to be undertaken.

GSAR volunteers are not to engage in crane or structural high angle rescue activities.

REFERENCE:  
RCMP ‘E’ Division Evacuation Protocols
NFPA 1670
Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment
Provincial Operating Guideline 1.04 Safety Officer
Provincial Operating Guideline 1.05 Team Evacuation
Provincial Operating Guideline 1.07 Traffic Control
Provincial Operating Guideline 1.13 Hazmat Awareness
EMBC Policy 2.06 Public Safety Lifeline Volunteer Safety
PURPOSE: To provide for the safety of GSAR volunteers when participating in training, response or practice involving the use of dogs in the search for lost persons.

GUIDELINE: GSAR groups and SAR leaders will ensure that GSAR dog handlers and their dogs are trained and appropriately equipped according to the Ground Search and Rescue OG and this OG before permitting the use of dogs in any aspect of a search. Dog and handler are required to revalidate annually.

PROCEDURE: GSAR dog handlers and their dogs, engaged in avalanche dog search activities will be validated within the Canadian Avalanche Rescue Dog Association (CARDA) recognized by the RCMP and Emergency Management BC.

GSAR dog handlers and their dogs, engaged in ground search activities, will be an active member of a recognized BC Search and Rescue group and be validated as a Civilian Search Dog team by the RCMP and recognized by Emergency Management BC.

Only currently validated search dogs and handlers are to be utilized, or to be within the operational area, during a SAR operation.

Dog handlers are to advise GSAR volunteers and other personnel in the area not to approach their dogs unless given specific approval. Dog handlers will maintain control of their dogs at all times.

REFERENCE: EMBC Ground Search and Rescue Training Manual

CARDA Validation Regulations

RCMP Civilian Search Dog Training Program

EMBC Policy 2.08 Ground Search and Rescue (GSAR) Winter Response

EMBC 2.12 Search and Rescue
PURPOSE: To provide for the safety of GSAR volunteers when participating in training, response or practice involving the use of horses as a method of transportation in a GSAR response.

GUIDELINE: GSAR groups and GSAR leaders will ensure that GSAR volunteers are trained, and appropriately equipped according to the Ground Search and Rescue OG and this OG before permitting the use of horses in any aspect of a search.

PROCEDURE: GSAR volunteers utilizing horses during a GSAR response will be a member of a GSAR group. Prior approval from EMBC must be obtained before utilizing convergent volunteers engaged in equine activities.

In addition to completing Ground SAR Training, GSAR volunteers involved in MSAR must adequately demonstrate competency within a validation process which includes at least:

- Ability to navigate in all terrain, and awareness of unsafe areas,
- Physical fitness suitable for riding over long periods of time,
- Confidence in their horses to safely negotiate obstacles
- Experience in riding at all times of day, and all types of weather,
- Ability to setup camp for self and horse,
Horses used in MSAR must demonstrate within a certification process:

- Ability to stand quietly while being held or tied and load safely,
- Physical condition suitable for extended riding in the terrain likely to be encountered,
- Ability to work with other riders and horses, without showing aggression and able to work independently of other horses,
- Ability to remain in control in a busy environment, such as a search camp and around equipment such as ATVs.

GSAR volunteers and their horses involved in MSAR will practice safe riding and searching on an ongoing basis, their skills and abilities will be recertified at least every 2 years,

GSAR volunteers engaged in MSAR, in addition to Personal Protective Clothing and Equipment listed in the Ground SAR OG, will wear a helmet which is approved by the manufacturer for horse riding. Eye protection will be worn if riding in bush or treed areas.

Horse handlers will advise GSAR volunteers and other personnel to stay away from their horses unless specifically given approval.

REFERENCE: EMBC Ground Search and Rescue Training Manual

Provincial Operating Guideline 1.03 Personal Protective Clothing and Equipment
PURPOSE: To ensure the health and safety of GSAR volunteers when they are requested to assist in the recovery of human remains.

GUIDELINE: GSAR volunteers may receive requests to assist in the recovery of human remains. This is an eligible activity within policy if:

- Specialized training and equipment is required to access and/or transport the remains
- The request is from the Coroner, or the Police acting on behalf of the Coroner

Although the recovery of human remains is an eligible activity, there is no requirement for GSAR organizations or individual GSAR volunteers to engage in the recovery. It is recognized that involvement may cause higher levels of stress and health concerns for some people. GSAR volunteers should not feel obligated to participate. Agencies are to provide as much information as possible on the incident and scene to assist in the determination of involvement.

GSAR volunteers may also be requested to protect human remains until the site can be accessed by other agencies for investigative purposes, such as following an aircraft crash. While this may be appropriate initially, the requesting agency should be informed that this is not a Ground SAR responsibility and to make other arrangements as soon as possible.

PROCEDURE: The risk of disease transmission during the recovery of human remains is similar to when administering first aid to a live subject. Contact with blood and any body fluids should be avoided by wearing proper protective clothing and equipment including:

- Eye protection; safety glasses with side guards, goggles, or face shield
- Mask; surgical grade or higher
- Gloves; medical grade gloves, heavy weight gloves such as Ansell 92-600 disposable nitrile gloves are recommended, or other heavy weight gloves can be worn over medical gloves.
In most recoveries, except in cases of advanced decomposition, wearing of protective suits is not necessary; however, GSAR volunteers may choose to wear one for any recovery. Suits, such as Tyvek coveralls, prevent transfer of blood and bodily fluids onto personal clothing and skin. Protective suits should only be worn during the actual recovery. They are waterproof and virtually airtight: prolonged use and physical exertion when wearing one can cause hyperthermia. Exposure can be further limited by having only 2 responders place the remains into a body bag with vinyl liner, which once sealed protects other responders.

Care must be taken when handling contaminated clothing and equipment, whether to be cleaned with appropriate disinfectant or to be disposed of. Contaminated materials should be placed into a heavy plastic bag/container; local hospitals can be contacted to arrange for disposal as a biohazard if the clothing or equipment might leak fluid.

Personnel involved in the recovery must wash, with a non-abrasive soap or sanitizer, any areas of their body that may have been contacted with blood or bodily fluid. Eyes, nose, and mouth should be flushed for 15 minutes with water if contacted by blood or bodily fluid.

Any incident where a GSAR volunteer may have had contact with blood or body fluid on an area of their body with broken skin or around their eyes, nose, or mouth is to be reported.

A Critical Incident Stress Management (CISM) session is to be offered to GSAR volunteers who participated in the recovery; attendance is to be encouraged.

GSAR volunteers are encouraged to get vaccinated for Hepatitis B: costs are covered within EMBC policy.

REFERENCE:  
EMBC Policy 1.04 Hepatitis B Prevention/Post Exposure Follow-up  
EMBC Policy 2.09 Body Recovery  
EMBC Policy 2.12 Search and Rescue  
Provincial Operating Guideline 1.02 Critical Incident Stress Management
OSHA Fact Sheet, Health and Safety Recommendations for Workers Who Handle Human Remains
PURPOSE: To provide GSAR personnel with the required knowledge to safely respond to a floodwater incident.

GUIDELINE: Local Authorities have overall responsibility for civil emergency (includes flooding) response and for the safety of all personnel. GSAR groups and GSAR leaders will ensure that GSAR volunteers are aware of the possible hazards and contaminants as well as familiarized in the use of, and provided with, appropriate equipment before participating in any activities involving floodwater response.

Floodwaters should be assumed to contain sewage, and may include household chemicals and cleaning solutions, petroleum products, industrial chemicals, pesticides, and flammable liquids. Responders need to be always evaluating the potential contamination present in the water. Workers must also be aware of dangers from physical hazards such as obstacles covered by flood waters (storm debris, depressions, drainage openings, and ground erosion), floating objects such as logs and other debris, and from displaced animals in flood affected areas.

PROCEDURE: As attached Flood Water Response Guide

REFERENCE: Provincial Operating Guideline 1.01 Exposure to Disease
Provincial Operating Guideline 1.03 PPE
Provincial Operating Guideline 1.13 HazMat Awareness
Provincial Operating Guideline 3.11 Civil Emergency
Provincial Operating Guideline 3.03 Swiftwater Rescue
PPE and First Responder Protection

Local Authorities have overall responsibility for civil emergency (includes flooding) response and for the safety of all personnel. The following information is provided for responders to recognize the hazards and means to mitigate the risks.

No SAR volunteer shall enter a swiftwater warm or hot zone without required training, as detailed in POG 3.03.

Responders involved in flood response should try to prevent direct skin contact with flood waters either through avoidance or through the use of appropriate Personal Protective Equipment (PPE) and clothing. The selection of PPE will be dependent on-site specific conditions, hazards, and tasks;

- Electrically insulated, watertight boots with safety shank, toe, and insole. Hip waders may be appropriate to help prevent contact with flood waters. However, hip waders shall not be used in swiftwater situations. For swiftwater flood rescue, other footwear would be appropriate taking into consideration the hazards that may be present in the water;
- In some instances, the protective gear (garment, boots and gloves) may need to be impervious to contaminated flood or other site-specific chemical, physical, or biological hazards;
- Heavy, waterproof, cut-resistant work gloves. For contaminated water containing certain chemicals, butyl rubber gloves are recommended (although dishwashing gloves can be used if nothing else is available). Other types of protective gloves may be required if handling identified hazardous material;
- Goggles, safety glasses with side shields or full-face shields. Sun/glare-protective lenses may be needed in some work settings;
- Protective head cover. Wear a Canadian Standards Association (CSA) rated hardhat (or an American National Standards Institute (ANSI) rated hardhat) if there is any danger of falling debris or electrical hazards. When working in swiftwater warm or hot zone, an approved swiftwater helmet must be worn.
- Hearing protection (if you cannot hold a conversation in a normal speaking voice with a person who is standing at arm’s length [approximately 1 m] hearing protection should be used).
- Approved PFD must be worn when working in swiftwater warm or hot zones, as per POG 3.03 (see POG 3.03 for definitions of swiftwater cool/warm/hot zones).

Note: Additional PPE, respiratory protection, or clothing may be required when specific exposure hazards are identified or expected.
PPE and First Responder Decontamination

- Select a method of decontamination that is effective for the likely contaminant, the PPE material(s), and the type or level of PPE being worn. For most substances that may be in flood waters in BC, washing with soap and rinsing with water will be effective. For additional cleaning a bleach and water solution can be used. For some materials (e.g., dusts and particulates), consider vacuuming first and then washing and rinsing PPE.

- Start by having first responders clean their footwear in foot baths (plastic tubs that are easy to step into can be used as shuffle pits), so as to limit cross contamination from soil movement from flooded to non-flooded areas. If any of the mud is heavily contaminated it will need to be neutralized and contained. Shuffle pits with 2-3 inches of a bleach (sodium hypochlorite) solution (1 part 6% bleach and 9 parts water) will be beneficial. Shuffle pits may be available through your local fire department or from BCAS.

- Decontaminate and remove all PPE. Start with the PPE that is most contaminated and work towards the equipment that is the least contaminated. Do not remove respiratory protection, if worn, until all outer garments are decontaminated and removed.

- Decontamination may be completed in stages, which may require a large decontamination area. If this is the case, the area should be covered with plastic sheeting or another waterproof barrier to reduce the amount of cross-contamination from foot traffic, wash/rinse splash and other decontamination steps.

- Once PPE is decontaminated and removed, wash areas covered by PPE. For example, if only hand protection was used, then washing and rinsing the hands would be sufficient. If the individual was fully covered in dermal and respiratory protection, then the individual would need to shower.

- Whenever possible, clean and decontaminate reusable PPE. Heavily contaminated garments or PPE may not be able to be cleaned properly and will need to be disposed of properly.

- Many local Fire Departments have specific HazMat capabilities and may be able to provide decontamination services to SAR responders. This should be organized through the responsible Local Authority.
Basic Safety and Sanitation

The following work practices provide for basic health safety and sanitation. These practices minimize exposure to health hazards and contaminants during most activities.

- Wash hands with soap and potable water (preferably warm water) before eating, drinking, smoking, or using the restroom. When washing, scrub hands, arms and under fingernails for at least 20 seconds (sing happy birthday), rinse with water and dry with a single use paper towel. If potable water is not available, use hand sanitizer or commercial sanitizing wipes.

- Drink plenty of water and take frequent rest breaks to avoid overexertion. Drink water only from sources proven to be safe for drinking.

- The use of insect repellent, sun block and lip balm may also be required for some work environments.

- Provide prompt first aid for cuts and scrapes. Antibiotic resistant bacteria can result in severe injury and illness. Wash and sanitize cuts and scrapes without delay and report the injury to your supervisor. Ensure proper paperwork (WorkSafe BC forms 7 & 7a) is completed as even minor wounds can become infected in these environs. Bandage/cover cuts and scrapes and keep them from coming in contact with polluted or contaminated floodwaters. Seek medical help at the first sign of infection. If you have a pre-existing wound it is advised that you not expose it to contaminated water.

- Wearing protective gloves and washing hands is also very important after handling any animals (pets/livestock).

- Establish and maintain evacuation routes and an alerting system to notify individuals in case an evacuation becomes necessary. Ensure adequate radio communications are in place.

- Ensure that first aid supplies and services, and medical care are readily available.

- Do not consume food or beverages that were exposed to floodwaters, or perishables that may have spoiled. Additionally, do not eat, drink, or smoke in areas containing debris, floodwaters, or sludge.

- Minimize the creation or disturbance of dust and work upwind of dusty activities when possible.
Handling and Transporting of Flood Water Contaminated Subjects

- The first responders who are handling a floodwater contaminated subject should have the appropriate PPE for the suspected contaminant.

- If the subject is suspected of being in contaminated floodwaters, then ideally the subject would be decontaminated before being transported to avoid contamination of first responder and transport vehicle. In most cases the decontamination would be accomplished by removing the subject’s contaminated clothing and washing the subject with soap and water. The subject could then be put in a Tyvek suit for transport.

- If decontaminating the subject is not possible, then putting the subject in a Tyvek suit before transport can prevent contamination of the transport vehicle.
PURPOSE: To provide GSAR Volunteer safety while participating in training, exercise or response involving search, rescue or recovery operations near tidal water.

GUIDELINE: GSAR Groups and GSAR Leaders shall ensure GSAR Volunteers are aware of risks and hazards of the area they will be operating in. GSAR Volunteers will also have appropriate PPE for the terrain of the task or operation. GSAR Volunteers will have completed Swiftwater Awareness and be considered current. It is recommended that GSAR Volunteers complete the Parks Canada CoastSmart awareness online training.

GSAR Volunteers operating under this OG shall have reviewed within the last 12 months what to do if they end up in a rip current.

For the purpose of this OG, operations near tidal waters will include:

- Operations below the high tide line
- Operations above the high tide line if a fall could result in an individual falling below the high tide line
- Operations where a wave (within expected size for operations) could reach members

This OG is superseded in case of operations near swiftwater where the Swiftwater OG# 3.03 shall take precedence.

This OG is to be used in concert with the SAR Safety Program and other related OGs.

PROCEDURE: GSAR Leaders shall ensure RADeMS assessments are completed as conditions change.

GSAR Leaders shall consider as part of hazard assessment:

- Terrain such as rocks, uneven, slippery surfaces, firmness of surfaces
- Moving logs
- Floating debris
• Beach flooding and terrain traps at high tide
• Rip currents in case of a fall into water
• Submerged sandbars
• Rocks, islands or headlands
• Awareness of surge channels in task area
• Weather, both current and previous 24 hours
• Expected wave height and swell
• Tides
• Risk of hypo or hyperthermia
• Wildlife
• Possibility of encountering small caves, arches, marine geyser (blowhole), etc. and the risks associated on them and water’s interaction with them.

GSAR Leaders will have a safety plan, including evacuation routes in case of earthquake or tsunami warning, in place for each operational area.

PFDs
• GSAR Volunteers shall wear a PFD appropriate to the risk identified for specific operations, after consideration of all hazards.
• PFDs shall have an emergency whistle (pea-less) and a cutting device attached. If operations are expected to continue in or near darkness, GSAR Volunteers shall have a waterproof strobe or other light signalling device which is attached to the PFD. Strong consideration should be given to carrying a secondary light source attached to the PFD, especially in rough
<table>
<thead>
<tr>
<th>SAR Safety Program</th>
<th>O.G.# 3.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tidal Water Shoreline Operations</td>
<td>Issued: Jan 2021</td>
</tr>
<tr>
<td>Rev:</td>
<td></td>
</tr>
</tbody>
</table>

- Terrain or active water areas if the task may continue into darkness.
- Use of inflatable PFDs is not recommended and may only be considered for operations on flat sandy or pebble beaches.

**Thermal protection**

The choice of type of thermal protection (Wet suit, Dry suit or other) will need to be determined for each task, giving due consideration of the possibility of thermal injury.

- Selection of appropriate PPE for use by GSAR Volunteers is dependent on several factors including:
  - Terrain of task – pebble beach vs rocky vs debris strewn with large rocks
  - Temperature
  - Wind
  - Risk associated with waves expected during operation period

**Helmet**

Use of a helmet or other bump protection is dependent on:

- Terrain
- Risk of slips, trips, and falls
- Overhead risks such as falling rock, branches, etc.

**Footwear**

GSAR Volunteers shall wear footwear appropriate for the terrain. At minimum, footwear will have an enclosed foot and appropriate tread (sandals, beach shoes, etc. are not acceptable PPE).

Addition PPE may also include the use of traction aides in some terrain. Care must be taken when these are used that they are
appropriate for the terrain as some types can increase traction in some terrain while decreasing it in others.

Other PPE will be used as required, including but not limited to, eye protection as a control for wind, blowing sand or debris.

Radio communication must always be maintained.

During operations or training, the GSAR Leader will have someone monitoring in case of a tsunami warning through monitoring of local radio or web-based notifications from EMBC.

Consideration shall be taken around requirement to post a watch in each task area for unexpected large waves (also known as Surge or Sneaker waves).

Every GSAR Volunteer deployed in tidal water operations covered by this OG shall carry a throwbag and cutting tool and be trained in their use.

Consideration should be given to having boat support in the water offshore of the area of operations or training in case a rescue is required.

REFERENCE:

Provincial Operating Guideline #1.03 Personal Protective Equipment
Provincial Operating Guideline #1.05 Team Evacuation
Provincial Operating Guideline #1.06 Risk Assessment
Provincial Operating Guideline #1.08 Emergency Communications
Provincial Operating Guideline #1.15 Fit for Service
Provincial Operating Guideline #3.02 Swiftwater Rescue
Pacific Rim National Park Reserve website
West Coast Trail 2018 Hiker Preparation guide
CoastSmart.ca website
EmergencyInfoBC.gov.bc.ca Tsunami website