



Emergency
ManagementBC

GROUND SEARCH AND RESCUE (GSAR) SAFETY PROGRAM GUIDE

Emergency Management BC
Ministry of Public Safety Solicitor General
August 2019

Ground Search and Rescue Safety Program Guide

Revision History

Rev	Section	Description of Change	Effective Date
0	Initial release of revised document		September 2012
1	Chapter 5, Injury/ Incident Reporting and Investigation	Clarification of terminology and how injuries and incidents must be reported and investigated.	April 2014
2	Complete review and update of SAR Safety Program Guide	The complete guide was reviewed and updated as required. While the general layout remains the same, numerous changes were made to grammar, style and formatting to enhance readability. Major changes to content are noted below.	August 2019
2a	Definitions	All definitions updated. New definitions added for “BCSARA”, “GSAR Response”, “Requesting Agencies”, “Risk”.	August 2019
2b	Commonly Used Acronyms	Acronyms no longer in use removed; new acronyms added (e.g. CDFL); outdated acronyms updated to newer format (e.g. BCAS becomes BCEHS).	August 2019
2c	Section 1, Safety Program Guide Revisions	Frequency of revisions and updates changed from annually to biannually, or more often if required.	August 2019
2d	Section 2, Component 1 – Key Responsibilities - EMBC	Clarifies EMBC responsibilities regarding provision of workers compensation benefits; GSAR volunteers are not defined as workers under the Workers Compensation Act; EMBC representative acts as co-chair of GSAR Joint Volunteer Health and Safety Committee.	August 2019
2e	Section 2, Component 1 – Key Responsibilities – BCSARA	Clarifies BCSARA member acts as co-chair of GSAR Joint Volunteer Health and Safety Committee.	August 2019
2f	Section 2, Component 1 – Key Responsibilities – GSAR groups	Emphasizes GSAR group must comply with GSAR Safety Program; recommends establishing Group Safety Committee.	August 2019

2g	Section 2, Component 1 – Key Responsibilities – Group Safety Committee	New content. Describes purpose and role of Group Safety Committee in maintaining GSAR safety.	August 2019
2h	Section 2, Component 1 – Key Responsibilities – GSAR Leaders	Emphasizes responsibility of GSAR leaders to ensure GSAR Safety Program is adhered to; responsibility to investigate and report NEAR MISSES and/or INCIDENTS WITH LOSS/INJURY.	August 2019
2i	Section 2, Component 1 – Key Responsibilities – GSAR volunteers	Emphasizes responsibility of GSAR volunteers to follow safe practices; refusal of unsafe work; must report NEAR MISSES and INCIDENTS WITH LOSS/INJURY to GSAR leader; must inform GSAR leader if unable to perform assigned tasks.	August 2019
2j	Section 2, Component 1 – Key Responsibilities – Convergent volunteers	Clarifies convergent volunteers are under GSAR Command when signed in to a task.	August 2019
2k	Section 2, Component 2 – Risk Assessments	Describes and differentiates between static and dynamic risk assessment; details factors to be considered in dynamic risk assessment; identifies RAdEMS as preferred risk assessment tool; created link to POG 1.06 (Risk Assessment).	August 2019
2l	Section 2, Component 3 – Written Procedures	Describes differences between provincial and local OG's; precedence of POG's over local OG's; regular review of OG's by members. Link created to POG's on EMBC website.	August 2019
2m	Section 2, Component 4 – Education and Training	Emphasizes OG's should be incorporated into regular training; advises that Sample Volunteer Orientation Checklist available at Appendix E.	August 2019
2n	Section 2, Component 5 – Injury/Incident Reporting and Investigation	Timeliness of reporting emphasized, and link created to relevant POG. Paper-based NEAR MISS/INCIDENT reporting eliminated; DMS reporting is the current standard. More detail provided re: Incident Investigation.	August 2019
2o	Section 2, Component 6 – Medical Response/First Aid	Emphasizes all injuries must be reported; first aid services must be available to SAR volunteers; first aid records to be retained; link created to WorkSafeBC Form 7.	August 2019
2p	Section 2, Component 7 - Inspections	Expanded descriptions of facility, vehicle and equipment inspections.	August 2019

2q	Section 2, Component 8 - Records	Added new documents to list of "Records to be Maintained". Document retention period defined.	August 2019
2r	Section 2, Component 9 – Society Business Meetings	Minor revisions in wording and layout. No significant change to content.	August 2019
2s	Section 2, Component 10 – Safety Program Review	Paragraphs describing Operational Briefings and Business Meetings re-written. Added new content on Periodic Safety Program Review.	August 2019
2t	Section 2, Component 11.1 – Prevention of Musculoskeletal Injury (MSI)	Extensively re-written. Elements of an effective MSI prevention program are described. Link updated to WorkSafeBC MSI publication.	August 2019
2u	Section 2, Component 11.2 – Exposure to Hazardous Materials or Biohazardous Substances	Minor revisions in wording and layout. No significant change to content.	August 2019
2v	Section 2, Component 11.3 – Prevention of Violence to Volunteers	Extensive changes to layout and content. New section added describing measures/actions to prevent violence to volunteers.	August 2019
2w	Section 2, Component 11.4 – Heat or Cold Injury	Retitled "Heat and Cold Stress" to "Heat or Cold Injury". Minor revisions in wording and layout. No significant change to content. Updated resources.	August 2019
2x	Section 2, Component 11.5 – Personal Protective Equipment	Extensive changes to layout and content. New section added describing considerations re: proper use of PPE. Link created to POG 1.03 (PPE).	August 2019
2y	Section 2, Component 11.6 – Dangerous Atmospheres/ Confined Space/Cave Rescue	Retitled "Dangerous Atmospheres/Confined Space" to "Dangerous Atmospheres/Confined Space/Cave Rescue". Extensive content changes: caves defined; cave rescue defined; GSAR volunteers NOT to enter caves nor any confined spaces; list of potential confined spaces expanded; link created to POG 3.07 (Cave Rescue); link created to Mine Rescue site.	August 2019
2z	Section 3, Emotional Care for GSAR Volunteers	Retitled "Worker Care" to "Emotional Care for GSAR Volunteers". Extensive new content: descriptions of emotional injury; cumulative trauma; CISM program; how to access to CISM program.	August 2019
2aa	Section 4, Appendices	Table of Contents for Appendices revised and renumbered.	August 2019

2ab	Appendix B – Risk Assessments	Extensive changes to content. Appendix divided into Dynamic and Static risk assessment sections: all of the Dynamic risk assessment content is new. New introduction to All of Static risk assessment rewritten: Introduction - all new content. Step 1 – increased detail given. Step 2 – detailed rationale provided. Step 3 – rewritten; risk reduction principles moved to Step 4. Step 4 – rewritten to describe design and implementation of a risk reduction plan. Step 5 – minor changes in wording.	August 2019
2ac	Appendix D – GSAR Safety Practice and Culture	Retitled “SAR Safety Culture” to “GSAR Safety Practice and Culture”. Minor revisions in wording and layout. No significant change to content.	August 2019
2ad	Appendix E – Sample Volunteer Safety Orientation Checklist	Old Appendix E (Written Procedures) deleted as the material is covered elsewhere. Minor content changes to old Appendix F (Volunteer Orientation Checklist), which was moved to new Appendix E and retitled to “Sample Volunteer Safety Orientation Checklist”.	August 2019
2ae	Appendix F – Incident/NEAR MISS Reporting with the DMS (D4H)	New content. Describes the DMS and use of the Health & Safety Module for recording and reporting NEAR MISSES and INCIDENTS WITH LOSS/INJURY.	August 2019
2af	Appendix G – Incident/NEAR MISS Investigation Guide	Old Appendix G (Sample Accident/Incident Investigation Form) deleted as it is superseded by the DMS Health & Safety Module. Old Appendix H (Incident Investigation Guide) retitled to “Appendix G – Incident/NEAR MISS Investigation Guide”, and extensive changes made to content: Introduction – new content provides greater detail. Step 1 – rewritten; more detail given. Step 2 - more detail given. Step 3 – rewritten; more detail given. Step 4 - rewritten; more detail given. Step 5 - rewritten; more detail given. New content regarding when to submit report to EMBC and/or the Joint Health & Safety Committee.	August 2019
2ag	Appendix H – GSAR Inspection and Vehicle Checklists	Old Appendix I (SAR Inspection and Vehicle Checklists) retitled to “Appendix H – GSAR Inspection and Vehicle Checklists”. Minor changes to layout; no content changes.	August 2019
2ah	Appendix I – Records to be Maintained	Appendix J (Records to be Maintained) retitled as Appendix I. Major changes to content: “Types of Records” condensed and modified to be more	August 2019

		relevant to GSAR; “Record Requirements” revised to provide greater clarity to GSAR groups; retention period defined as 7 years.	
2ai	Appendix J – Heat and Cold Stress	Appendix K retitled to Appendix J. Major changes to content: new heat stress/heat injury introductory paragraphs; Heat Stress table modified to improve ease of use and ensure medical accuracy; links to heat stress/heat injury resources created; cold stress/hypothermia introductory paragraphs condensed and revised; Signs and Symptoms of hypothermia condensed into table format for ease of use; detailed paragraphs discuss approach to hypothermia treatment; frostbite information revised and greater detail provided; Preventing Cold Stress/Cold Injury revised to provide greater detail and more relevant to GSAR groups; links to cold stress/hypothermia resources created.	August 2019
2aj	Appendix K – Worker Care	Appendix L retitled to Appendix K. Content revised and condensed to be more user-friendly, medically accurate and more relevant to GSAR volunteers. New content added describing when, and how, to seek additional help from the BCSARA CISM team or outside professionals.	August 2019
2ak	Appendix L – BCSARA Online “Safety Hub”	All new content. Describes creation of the SAR Safety Hub, the online resources available there, and that it is available to all GSAR volunteers. Created hyperlink to online Safety Hub.	August 2019
2al	“Safety Hub”	Changed all references of “Safety Hub” to “GSAR Safety Program Area” to reflect the change on BCSARA	October 2019

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Revision Team -

Jim McAllister, BCSARA Director at Large

Brian Lamond, North Peace Search and Rescue; Co-Chair SAR Volunteer Joint Health & Safety Committee

Rod Mudie, Campbell River Search and Rescue

Lisa Roddick, Golden Search and Rescue

Andrew Morrison, Search and Rescue Specialist, EMBC

Ian Cunnings, Senior Regional Manager, EMBC; Co-Chair SAR Volunteer Joint Health & Safety Committee

Rick Laing, Emergency Management Technician, EMBC

Ian MacDonald, SAR Safety Support Consultant, Ian MacDonald & Associates

Definitions

BCSARA – British Columbia Search and Rescue Association is the organization representing GSAR groups in British Columbia. Its Board consists of stakeholders from all the agencies responsible for GSAR in BC.

Convergent Volunteer - an individual who offers their service and/or expertise during a recognized Public Safety Lifeline activity. They are signed in to the task, but are not a current, registered Public Safety Lifeline volunteer.

GSAR Group - is an organization or group recognized by Emergency Management BC (EMBC) and the BC Search and Rescue Association (BCSARA), which performs a search and rescue function on ground and inland waters in the Province of B.C. The GSAR group may or may not be a registered society in the Province of BC.

GSAR Leader - any person with direction or control over GSAR volunteers or other persons while preparing for or responding to a GSAR incident. This term includes, but is not limited to, Training Officers, Safety Officers, Team Leaders (Ground Search, Rope Rescue, etc.), SAR Managers, SAR Commanders and GSAR Incident management positions.

GSAR Response – The combined activities involved in searching for, rescuing or recovering any person(s) who become lost, stranded, injured or deceased while on ground and inland waters.

GSAR Volunteer - an individual, having completed the required training and certifications, and staying current with this training, registered by EMBC as a Ground Search and Rescue volunteer donating time and talents without salary or compensation other than for allowable out-of-pocket expenses associated with the volunteer activity.

Hazard - a situation or occurrence with potential for harm to persons, property, or the environment; a thing or condition that may expose a person to a risk of injury or occupational disease.

Incident - includes an accident or other occurrence that resulted in, or had the potential to result in, significant damage to property or an injury or occupational disease.

Provincial Operating Guidelines – are written procedures for volunteers to safely carry out assigned tasks and are provided where hazards are common to all areas.

Requesting Agencies – Government organizations that are approved by EMBC under Search and Rescue Policy 2.12 to request GSAR volunteers respond to an incident within the organization’s area of responsibility.

Risk – the possibility of loss, injury or other adverse circumstance. This Guide is primarily concerned about the identification, evaluation and mitigation of risk to GSAR volunteers.

Commonly Used Acronyms in GSAR

BCCR	British Columbia Cave Rescue
ASE	Air Service Emergency
BCEHS	British Columbia Emergency Health Services (formerly BCAS)
BCEMS	British Columbia Emergency Management System
BCSARA	British Columbia Search and Rescue Association
CAA	Canadian Avalanche Association
CASARA	Civil Air Search and Rescue Association
CDFL	Class D Helicopter Rescue (Fixed Line CDFL) or Helicopter Hoist/Winch Rescue (HWR)
CIS	Critical Incident Stress
CISM	Critical Incident Stress Management
DMS	Data Management System
ECC	Emergency Coordination Centre
EMBC	Emergency Management British Columbia
ESS	Emergency Support Services
FD	Fire Department
GSAR	Ground Search and Rescue
GSTL	Ground Search Team Leader
HAZMAT	Hazardous Materials
IRT	Initial Response Team
JIBC	Justice Institute of British Columbia
JRCC	Joint Rescue Coordination Centre
MIT	Member in Training
MOU	Memorandum of Understanding
OAR	Organized Avalanche Response
OG	Operating Guideline
ORV	Off-Road Vehicle
PEP	Provincial Emergency Program (now EMBC)
PFD	Personal Flotation Device
PPE	Personal Protective Equipment
PSLV	Public Safety Lifeline Volunteer
RADeMS	Response Assessment Decision Making Support
RR	Rope Rescue
SAR	Search and Rescue
SAREX	Search and Rescue Exercise
SARM	Search and Rescue Manager or Management
SME	Subject Matter Expert
SOG/POG	Standard/Provincial Operating Guideline
SRT	Swiftwater Rescue Technician

SECTION 1 – Purpose, Scope and General Requirements

The purpose of the Provincial Ground Search and Rescue Safety Program (GSAR Safety Program) is to provide for the safety of all GSAR volunteers, including convergent volunteers, and contribute to the safety of other persons on scene.

This GSAR Safety Program Guide (the “Guide”) has been developed to help GSAR groups meet the mandatory requirements of EMBC PSLV Safety Policy (2.06), which is available at the EMBC website.

This Guide is intended for GSAR leaders and for those with overall responsibility for ensuring safety of GSAR personnel during all SAR operations, including training, exercise and response.

The GSAR Safety Program Guide supports the safety of GSAR volunteers while participating in EMBC-authorized activities. As such, the Guide helps achieve the first response goal of the British Columbia Emergency Management System (BCEMS):

“Provide for the Safety and Health of All Responders.”

Safety Program Components

There are 11 Safety Program Components in this Guide. These components assist GSAR groups to implement a structured program to protect the health and safety of GSAR volunteers during training, exercise and response.

The components provide a comprehensive framework to enable GSAR leaders and volunteers to make good safety decisions both in and out of the field. However, the components do not replace the need to use relevant knowledge, training, experience and common sense during GSAR operations.

Additional information relevant to GSAR safety may be found in EMBC Policies, EMBC GSAR Provincial Operating Guidelines (POG), GSAR group response plans, operations manuals, JIBC course manuals, GSAR group training manuals, and/or job task descriptions.

Safety Program Guide Revisions

This guide will be reviewed and updated approximately every 24 months, or as needed, by the GSAR Volunteer Joint Health and Safety Committee (the GSAR Joint H & S Committee). Revisions will reflect changing operational requirements, lessons learned from past experiences and incorporation of evidence-based advances in GSAR safety. The content of this guide will strive to reflect current best-practices, based on sound safety management, the experience of GSAR volunteers and the advice of subject matter experts from within B.C., Canada and internationally.

The primary goal of the GSAR Safety Program is ensuring volunteer safety. The GSAR Safety Program Guide provides a framework for GSAR groups to implement minimum safety program requirements and assist GSAR volunteers in making safe decisions. Every GSAR group should review its safety program to ensure group policies and practices are consistent with this guide.

In the event a GSAR group finds it necessary to deviate from this guide to achieve a desired safety outcome, it is requested this be communicated to the GSAR Volunteer Joint Health and Safety Committee for possible inclusion in future revisions.

Both this guide and the GSAR Provincial Operating Guidelines include a list of revisions, detailing the nature and the date of all revisions.

How to Use this Guide

The contents of this Guide provide a starting point to assist GSAR leaders in establishing safe operational procedures and training programs and developing safe work practices for their volunteers. This Guide can be customized to meet the needs of all local GSAR operations.

We suggest reviewing the GSAR Safety Program Guide content, and conducting a Safety Audit, as outlined here:

Step 1 – Review the GSAR Safety Program Quick Assessment Checklist in **Appendix A**.

Does your existing GSAR safety program and procedures align with the suggested safety program content in this guide?

Step 2 – If yes, no further work is required.

Step 3 – If no, update/add missing content to your safety program/procedures using the suggested Component content, checklists and other tools in the appendices.

Implementing a Safety Program at the group level is a large undertaking if one is starting from scratch. Most GSAR groups have some of the elements of a safety program in place already, and this guide can be used to augment an existing safety program.

It is recommended that all GSAR groups establish a Safety Committee, under the leadership of a senior member. SAR safety is too important to leave in the hands of just one person.

SECTION 2 – Safety Program Components

The following 11 components should be common to all GSAR groups' safety programs, although they may be individualized based on unique working environment(s), terrain and operational requirements.

Component 1 – Key Responsibilities

All GSAR groups are responsible for familiarizing themselves with the Provincial Ground Search and Rescue Safety Program Guide, Provincial Policies, GSAR Provincial Operating Guidelines (POG) and respective organization operational guidelines.

GSAR groups are responsible for understanding each component, how they relate to each other, and how they fit into the GSAR training, exercise and search operations framework. Each GSAR group, where necessary, is encouraged to seek clarification of the safety program from the GSAR Joint Health and Safety Committee (hs@bcsara.com), BCSARA Regional Director or local EMBC Regional Manager.

There are a number of stakeholders in the British Columbia GSAR system. All stakeholders have responsibilities for maintaining the health and safety of volunteers. The key stakeholder responsibilities are described here:

Emergency Management BC (EMBC)

The agency representing the Province of BC; it is responsible for providing support to GSAR volunteers, local authorities, and agencies involved in emergency management and response.

EMBC supports all reasonable and practical steps to ensure the safety of volunteers by:

- Providing Workers Compensation benefits (administered by WorkSafeBC), under agreement with the Government of Canada. It is very important for GSAR leaders and volunteers to understand that GSAR volunteers are **not** “workers” as defined in the Workers Compensation Act and are not subject to WorkSafeBC rules and regulations. GSAR volunteers must follow the safety provisions of EMBC Policy 2.06, the GSAR Provincial Operating Guidelines and this Ground Search and Rescue Safety Program Guide.

- Facilitating the processing of claims by GSAR volunteers for Workers Compensation benefits, and tracking injury trends to aid in designing prevention programs.
- Developing, implementing and maintaining policies and programs for the prevention of work-related injuries and illness to GSAR volunteers.
- Providing support and guidance to GSAR groups on the implementation and effective management of safety programs and practices, including training and development.
- Providing tools to assist GSAR groups and volunteers in maintaining required records of training, exercising, and response.
- Participates in, and provides leadership along with BCSARA, to the GSAR Volunteer Joint Health and Safety Committee.

British Columbia Search and Rescue Association (BCSARA)

The organization representing registered GSAR groups and GSAR volunteers in BC, including provision of advocacy and advice on behalf of GSAR volunteers to the Government of BC.

BCSARA will support all reasonable and practical steps to ensure the safety of GSAR volunteers by:

- Assisting in the development and provision of health and safety programs for GSAR groups and GSAR volunteers.
- Gathering input from GSAR leaders, the GSAR volunteer community and SME's regarding health and safety policies and guidelines, and providing advice to EMBC based on such input.
- Participating in Provincial and Federal level initiatives to provide enhanced health and safety support for GSAR groups and volunteers.
- Making available additional, competitively-priced accidental death and disability insurance coverage for purchase by GSAR groups.
- Participating in the GSAR Volunteer Joint Health and Safety Committee.

Requesting Agencies

Requesting agencies have the primary mandate to respond to specific types of public safety incidents and are approved to request the assistance of GSAR volunteers.

Requesting agencies will support all reasonable and practical steps to ensure the safety of GSAR volunteers by:

- Providing information on known or suspected hazards related to an incident when requesting volunteer GSAR assistance.
- Participating in the resolution of safety related issues that arise during incidents for which they are the lead response agency.

- Assisting in the implementation and support of the GSAR Volunteer Health and Safety Program as a minimum contribution to GSAR safety.
- Assuming primary responsibility for GSAR volunteer safety as part of their emergency management structure when utilizing GSAR volunteers in non-GSAR related roles, e.g. evacuation operations, sandbagging, flood monitoring, etc.

GSAR Groups

GSAR groups are volunteer organizations that are recognized by EMBC and BCSARA, whose members perform a Search and Rescue function on ground and inland waters in the Province of BC.

GSAR groups will take all reasonable and practical steps to ensure the safety of their volunteers by:

- Participating in the development, implementation, and maintenance of a GSAR group safety program appropriate to training, preparing for and responding to an active GSAR task; it is recommended this responsibility be delegated to the Group Safety Committee, as will be detailed in this document. At a minimum, a GSAR group safety program must meet or exceed all provisions of the GSAR Safety Program Guide and the GSAR Provincial Operating Guidelines.
- Maintaining records for all GSAR volunteers, detailing participation in GSAR training and exercises.
- Maintaining records detailing all positions filled by volunteers during GSAR responses.
- Providing volunteers with information on safety policies, training and programs.
- Ensuring volunteers have the relevant training and skills to perform assigned activities safely.
- Ensuring safety is a standing item on the agendas of the GSAR group's business meetings, with discussions and follow-up actions recorded.
- Ensuring regular inspection of group buildings, facilities, locations and vehicles, and correcting unsafe conditions.
- Ensuring regular inspection and maintenance of all search and/or rescue equipment used by, or available for use by, GSAR volunteers during training, exercises and responses.
- Providing EMBC personnel access, upon request, to relevant safety records, including records of training, exercise, and response, inspection records, first aid records and group safety minutes.
- Ensuring a volunteer, or committee, takes overall ownership for the group's safety program; many GSAR groups have created a Group Safety Committee, and delegated responsibility for GSAR health and safety to this committee.

Group Safety Committee

It is recommended all GSAR groups establish a Group Safety Committee to ensure necessary actions are taken in a timely manner. The Group Safety Committee assumes a leadership role in promoting a positive safety culture; it ensures all Components of the GSAR Safety Program are implemented and followed.

Every GSAR group and GSAR volunteer must adhere to the provisions described in the GSAR Safety Program Guide and the Provincial GSAR Operating Guidelines. Although all members of a GSAR group, including leaders, volunteers and MIT's, have safety responsibilities, it is the Group Safety Committee which takes overall ownership of the group's safety program.

The scope of the GSAR Safety Program may be daunting at first, but taking a team-based approach can make workloads manageable; establishing a Group Safety Committee can help promote the teamwork necessary to fully implement the Program.

GSAR Leaders

Any person with responsibility for direction and control of GSAR volunteers and other persons while preparing for, or responding to, GSAR incidents. This term includes, but is not limited to; Training Officers, Team Leaders (Ground Search, Rope Rescue, Swiftwater, etc.), SAR Manager, SAR Commander, GSAR Safety Officer and SAR Incident Section Chiefs.

GSAR leaders will take all reasonable and practicable steps to ensure the safety of volunteers by:

- Implementing and following safe SAR practices, and ensuring all volunteers attend required training courses.
- Assigning volunteers to activities that are consistent with their knowledge, skills, and ability.
- Removing any volunteer from activities if the GSAR leader has concerns as to the volunteer's ability to perform their duties safely.
- Ensuring appropriate emergency medical services are available to volunteers during training and response.
- Ensuring risk assessments are conducted, and proper steps are taken to control identified risks, including use of an approved risk assessment tool, such as RADeMS.
- Reporting and investigating significant NEAR MISSES, INCIDENTS WITH LOSS and INCIDENTS WITH INJURY, as described in Component 5 of this guide.
- Instructing and coaching volunteers regarding safe work procedures during training, exercising and response.
- Ensuring only authorized, trained volunteers operate equipment where specific training is required for its safe operation.
- Ensuring necessary personal protective equipment (PPE) is available and used as required, including regular inspection and maintenance.
- Ensuring the safe handling, storage and disposal of hazardous materials.
- Ensuring contaminated equipment is properly decontaminated or disposed of.
- Cooperating with other agencies and first responder groups in dealing with safety issues. During a multi-agency response, it is the responsibility of GSAR leaders to ensure GSAR volunteers, including convergent volunteers, follow, at a minimum, all provisions of the GSAR Safety Program.

GSAR Volunteers

Individuals, including GSAR leaders, registered by EMBC for the purpose of preparing for and responding to a search and rescue emergency. The term includes convergent volunteers when they are signed-in to assist with a specific GSAR response.

GSAR volunteers must take reasonable care to protect their safety and the safety of others by:

- Participating in training and orientation activities required to safely undertake assigned activities.
- Providing records of completed training and certification to GSAR leaders and/or EMBC staff upon request.
- Following safe practices and procedures when training, exercising and responding. If unclear on whether a given procedure is safe, seeking clarification from the GSAR leader.
- Using all required equipment, clothing and PPE intended to protect the volunteer.
- Advising their GSAR leader if they believe their assigned activities cannot be performed safely or are beyond the scope of their training.
- Immediately reporting all unsafe situations, hazards and conditions, including NEAR MISSES and INCIDENTS WITH LOSS or INJURY, to their GSAR leader.
- Stopping unsafe work or activities which they observe during any training or operational task.
- Cooperating with GSAR leaders, responding agency representatives and fellow volunteers on safety related matters to ensure as safe a response as possible.
- Not engaging in any improper activity or behavior that might create or constitute a hazard to them or to any other person.
- Ensuring the volunteer's ability to respond is not impaired by alcohol, drugs, fatigue, or other causes, and informing their GSAR leader promptly if the volunteer is unable to do so safely.

Convergent Volunteers

An individual who offers their service and/or expertise during a recognized GSAR response, and is signed in to the task, but is not currently registered with EMBC as a PSLV. A convergent volunteer is considered a GSAR volunteer and is under GSAR Command.

Convergent volunteers must adhere to the same safety-based roles and responsibilities listed for EMBC-registered GSAR volunteers.

Component 2 – Risk Assessments

Risk assessment is a process which identifies hazards, considers the risk these hazards pose and determines necessary actions to prevent injury or illness. Once hazards have been identified, mitigation strategies can be implemented to eliminate or reduce risks to GSAR volunteers.

Conducting a Risk Assessment

For GSAR activities, the need for risk assessments arises in two main ways:

1. A general program risk assessment identifies hazards associated with usual, day to day GSAR operations, including buildings, vehicles, locations, etc. Risks tend to be relatively **static**.
2. An ‘On-scene’ Risk Assessment is conducted whenever a GSAR group arrives at the scene of an exercise, training or operational task. As per POG 1.06 Risk Assessment, a risk assessment **must** be performed for any activity where members go into the field, including training, exercise or response. Since hazards in the field may arise or change rapidly, on-scene risk assessments tend to be **dynamic**.

Who should conduct and/or be involved in a Risk Assessment?

Risk assessments should be conducted by GSAR leaders or volunteers who are:

- Experienced and competent in the activities being assessed.
- Qualified, through a combination of training and experience, to undertake the risk assessment.
- SME’s may be required in some circumstances (e.g. Conservation Officer for dangerous animals).

General program Risk Assessment

While there are many approaches to conducting risk assessments, there are key steps that are common to all. **Appendix B – Risk Assessments** describes a step-by-step risk assessment and risk management approach which can be utilized in multiple situations, such as SAR buildings, facilities, locations, etc.

In addition to Appendix B, general risk assessment information may be available from other emergency response organizations or Health and Safety professionals within your community.

On-scene Risk Assessments

All GSAR incidents are different in some way, whether location, environment or severity: the possible variables are infinite. Multiple hazards can compound each other to increase risks to GSAR responders; this may not always be apparent at the outset of a response. Thus, an effective on-scene risk management

strategy must always be dynamic: it must accommodate the changing conditions and circumstances which often occur during GSAR operations.

The SAR Manager begins the dynamic risk assessment process even before arriving on-scene, considering factors such as:

- Number and profile of subjects
- Type of assistance requested (search; recovery; medical rescue; etc.)
- Location of incident, including any known site-specific hazards
- Current and forecast weather conditions
- Anticipated equipment requirements, including PPE for responders
- Availability of GSAR personnel, including specialized resources if required (RR; SRT; etc.)
- Condition of access and egress routes for historic response areas, including areas of safety
- Any special transportation requirements (helicopters, boats, ORV's, etc.)

Rescue scenes are often remote from the GSAR command post. On-scene risk assessment should be conducted by an experienced and competent GSAR leader, to identify potential hazards such as:

- risk from falling objects, including tree snags, rock falls, etc.
- fall risk for responders, including crevasses, cornices, cliffs, river banks, etc.
- caves or confined space conditions
- avalanche terrain/conditions
- wildlife or other animal threats
- chemicals or other hazmat concerns, including smoke from fires
- lakes, rivers, swiftwater

RADeMS: a dynamic Risk Assessment tool

RADeMS (Response Assessment Decision Making Support), is a structured risk assessment tool developed in BC for field use by GSAR volunteers. It is easy to use and takes an "All Hazards" approach to risk assessment. RADeMS is available free to all GSAR volunteers on the BCSARA web site or at: <http://www.bcsara.com/RADeMS/>; and <http://host.iibc.ca/gsar/>

SAR Managers and Leaders must utilize RADeMS to assist in risk assessment before allowing members to go into the field, as detailed in POG 1.06 Risk Assessment.

When moving through terrain or other environments, GSAR leaders should update RADeMS whenever conditions change significantly. If a repeat risk assessment determines GSAR volunteers will be exposed to undue risk which cannot be reduced to an acceptable level, then the response should be halted until the risk is within acceptable parameters and/or appropriate mitigations are instituted.

Component 3 – Written Procedures

Program Components – Written Procedures (Operational Guidelines)

GSAR leaders will ensure there are appropriate written procedures, also called operational guidelines (OG's), to assist volunteers to carry out assigned tasks safely. These include any operation or activity that could create a hazard to volunteers if proper procedures are not followed; this includes operation of GSAR vehicles, rescue equipment or tools, dangerous environments, etc.

GSAR Provincial Operational Guidelines (POG's) have been developed by the GSAR Volunteer Joint Health and Safety Committee to address hazards which are common to all regions of the province and to most GSAR operations. Additional OG's may be developed by individual GSAR groups (or on a regional basis) to address specific or unique hazards. In the case of conflict between local OG's and Provincial OG's, Provincial OG's will be considered the minimum acceptable standard.

Up to date POG's may be accessed through the EMBC website at:

https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/volunteers/sar_safety_program_operating_guidelines.pdf

A copy of the POG's are also provided within the BCSARA Field Guide app for reference.

Local OG's, which address site, activity or incident-specific hazards, should include:

- Identification of the hazard and its risk to volunteers.
- Steps required to carry out assigned activities safely.
- Necessary protective measures to help mitigate risk.

Operating Guidelines should be developed with input from experienced GSAR volunteers and/or relevant SME's. OG's should be reviewed regularly or whenever a significant change to a site, activity or operation occurs.

OG's should be reviewed with all volunteers prior to undertaking GSAR activities in the field, whether during training or operational response.

Written procedures should be reviewed by any volunteer after an extended absence (greater than 1 year) from GSAR activities, and before that volunteer is reassigned to active field duty.

See also: **Appendix D – GSAR Safety Practice & Culture**

Component 4 – Education and Training

To prevent accidents, injuries and property loss, it is vital to provide GSAR volunteers with appropriate training and safety education. GSAR leaders will ensure all new volunteers receive orientation on safety policies and safe work procedures/practices.

GSAR leaders must ensure all volunteers who are being assigned duties for the first time have been adequately trained, including ensuring each volunteer knows and understands safe procedures and practices for their duties.

Each volunteer must be able to demonstrate they can perform the duties assigned to them in a safe and proficient manner, consistent with current POG's, including awareness of potential hazards. Review of relevant POG's should always be incorporated into GSAR training.

Ongoing training and exercises should include periodic evaluation of volunteers' knowledge, skills and abilities. Competency in any GSAR discipline can only be gained through proper training and repeated opportunities to practice skills in a controlled, safe environment.

Training for new volunteers, including safety education, should address the following:

- Orientation to the GSAR group's safety program, including Volunteer Care information.
- Verification of any pre-existing training and qualifications.
- Discipline-specific training through approved GSAR courses offered by JIBC or other providers.
- Additional hands-on training to supplement GSAR courses, including hazard recognition.
- Exercises to consolidate learning.
- Periodic evaluation of knowledge, skill and abilities, with follow up of any deficiencies.

A suggested orientation checklist for new GSAR volunteers is available at **Appendix E – Sample Volunteer Orientation Checklist**.

Component 5 – Injury/Incident Reporting and Investigation

GSAR leaders need to ensure all NEAR MISSES, INCIDENTS WITH LOSS and INCIDENTS WITH INJURY, regardless of whether they occur during GSAR training, exercise or response, are investigated and reported quickly. This is important for a number of reasons:

- For volunteer and public safety, to ensure any imminently unsafe conditions are corrected.
- Quick response ensures that any injured volunteers receive first aid or further medical treatment.
- Workers Compensation wage loss coverage.

WORKERS COMPENSATION COVERAGE

GSAR volunteers, including convergent volunteers during operational responses, are automatically eligible for Workers Compensation benefits, including wage loss coverage, **as long as they are signed-in to the authorized event**. See EMBC policy 5.07 Workers Compensation Coverage.

It is very important that volunteers sign-in to all GSAR activities, including training, operational tasks, and maintenance of GSAR readiness. All GSAR groups are issued annually with a Training Task number; injuries sustained during approved training events are eligible for workers compensation coverage.

TYPES OF REPORTABLE INCIDENTS

NEAR MISS

Incidents where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury easily could have occurred.

GSAR groups must investigate, and keep a record of, all such incidents and provide records as required, although reporting to EMBC is not mandatory.

Incidents where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, **significant** damage and/or **serious** injury easily could have occurred, must be reported to EMBC/ECC.

INCIDENT WITH LOSS

Incidents where property is damaged, but no personal injury is sustained, but where, given a slight shift in time or position, injury easily could have occurred:

GSAR groups must investigate, and keep a record of, all such incidents and provide records as required, although reporting to EMBC is not mandatory. In the case of minor damage to a vehicle (e.g. "fender bender"), which the GSAR group is not claiming on its insurance, the incident must still be investigated and a record kept. Any vehicle damage which requires an insurance claim should be reported to EMBC.

Incidents of **significant** property damage, where no personal injury is sustained, but where, given a slight shift in time or position, **serious** injury easily could have occurred, must be reported to EMBC/ECC.

INCIDENT WITH INJURY

Incidents where personal injury is sustained that requires First Aid, with or without damage to property.

If the injury requires medical attention beyond the level of care provided by a first aid attendant, regardless of whether the injured member actually seeks a higher level of medical care, it must be reported as soon as possible to EMBC/ECC.

First Aid Only Injuries

Injuries not requiring any further medical treatment or time loss need not be reported to EMBC but should be recorded by the First Aid attendant and filed as part of the SAR member's record and noted in the Task or Training report.

Prompt Reporting of Injuries

Failure to report injuries promptly has resulted in instances of delayed, or denied, wage loss benefits to GSAR volunteers. Any injury sustained during GSAR training, exercise or response should be reported as soon as possible to the SAR leader, regardless of how minor the injury might appear.

SARM's should be aware that **EMBC Policy 5.07** Workers Compensation Coverage provides detailed procedures for timely submission of all necessary forms and documents. This will help ensure timelines are met and that an injured volunteer is not denied wage loss coverage.

Data Management System: record and report incidents

All GSAR groups in B.C. have access to the D4H data management system (DMS). The DMS allows authorized users to enter all data required to record and report an INCIDENT or NEAR MISS, including relevant attachments such as diagrams, witness statements, photos, etc. All completed incident report forms are retained securely in the group's D4H account.

At this time, the DMS does not support online submission of incident reports. Thus, if an incident is serious enough to warrant submission to EMBC, the responsible GSAR leader must email the DMS incident report, as an attachment, to the EMBC Regional Manager or the ECC. Help is available online.

Unless instructed otherwise by the ECC or Regional Manager, all reportable INCIDENTS and NEAR MISSES should be entered on the GSAR group's DMS and a hard copy provided to ECC. Minor damage to a vehicle (e.g. "fender bender"), which the GSAR group is not claiming on its insurance, must still be investigated and a record kept in the group's D4H account.

See also **Appendix F** for additional information.

Serious Injury or Death

A **serious injury** is any injury that can reasonably be expected at the time of the occurrence, or subsequently, to endanger life or cause prolonged/permanent disability.

A **serious injury or death** must be reported immediately to the EMBC ECC at **1-800-663-3456**. EMBC will notify WorkSafeBC, the appropriate Regional Duty Manager and provide support.

If **serious injury or death** of a volunteer has occurred, or if a NEAR MISS could have resulted in serious injury or death, a more extensive investigation and report is required. **Appendix G** describes a comprehensive approach to the investigation of serious incidents.

Serious injury to a GSAR volunteer will likely result in significant emotional distress for fellow GSAR members. GSAR leaders should be aware of this and make CISM services available to volunteers, as per POG 1.02 **CISM**. In the event of a serious injury, GSAR leaders should consider activating CISM as soon as possible; CISM can be accessed through the EMBC Regional Manager or ECC.

EMBC Policies:

<https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/emergency-management-bc/policies>

INCIDENT INVESTIGATIONS

What Must be Investigated

The responsible SAR Manager must ensure an investigation is completed following any significant NEAR MISS, INCIDENT WITH LOSS/INJURY or DEATH, as described above in “Types of Reportable Incidents”. The investigation should begin as soon as possible after the SARM becomes aware of the incident. Any investigation report must be in writing.

Conduct of Investigations

Upon being informed of a serious INCIDENT WITH LOSS or INJURY, the SARM must immediately ensure injured volunteers receive necessary medical care, and risk from any persisting hazards is mitigated. These are the first priorities and must precede any investigation.

An investigation will entail an investigator (GSAR leader or other designated person) interviewing the injured GSAR volunteer and any witnesses to the incident. In addition to witness statements, the investigator should take photographs of the incident scene, prepare diagrams or sketches, and retain any equipment which may have contributed to the incident. Interviews may be recorded, but should be transcribed, and signed by the interviewee, as soon as possible.

Utilizing the data, the investigator should attempt to determine the underlying cause of the incident, whether any unsafe conditions or actions contributed to the incident and recommend corrective steps.

Resources for Investigations

Appendix G – Incident Investigation Guide - If **serious injury or death** of a volunteer has occurred, or if a NEAR MISS could have resulted in serious injury/death, a more in-depth investigation is required. If the incident occurred during a response, the investigation is to be conducted in conjunction with the agency of jurisdiction, as well as an EMBC representative. There may also be legislation requiring involvement of police, coroner, WorkSafeBC, etc. Copies of investigation reports must be submitted to the EMBC regional office. **Appendix G** provides a detailed approach to incident investigation.

GSAR groups must maintain records of all incidents, including NEAR MISSES, INCIDENTS WITH LOSS/INJURY, illness, or death; Investigation reports may be retained in the GSAR group’s DMS. In the case of illness, any known or suspected exposure to toxic products or contagious diseases should be identified and recorded.

See also: **EMBC Policy 5.07 Workers Compensation Coverage**

https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/policies/507_workers_compensation_coverage_policy_jan_2019.pdf

Component 6 – Medical Response/First Aid

Keeping in mind the first response goal of the BCEMS (“*Provide for the Safety and Health of All Responders*”), every GSAR group needs to ensure appropriate medical response/first aid services are available on site for every EMBC authorized response or training event. Every GSAR leader shall advise volunteers how and where to obtain first aid treatment at the event.

Treatment and transportation of any injured volunteer is of primary importance. In most cases, the same first aid services and casualty transportation arrangements established for the GSAR incident or event will be utilized in the event of injury to a GSAR volunteer.

Any GSAR volunteer who is injured is required to report this immediately to their GSAR leader. If the volunteer has not done so but seeks first aid, the First Aid attendant must report the injury to the SARM; First Aid Only injuries do not need to be reported to EMBC but must be recorded. Any serious injury which results in either a visit to a physician, attendance by BCEHS, or time loss from work must be reported to EMBC, and the SARM must complete and submit WorkSafeBC Form 7 (Employer’s Report of Injury or Occupational Disease) to EMBC.

Every GSAR group must keep a record of all first aid treatments provided to volunteers, typically a first aid report completed by the designated First Aid attendant. First aid records are confidential and protected under the Privacy Act and must be maintained in a secure manner by the GSAR group; they must not be disclosed except to communicate during the transfer of care to other health care providers or where required by an investigation or authorized regulatory body.

Appendix I provides retention requirements for First Aid Records.

See also: **WorkSafeBC Form 7**

https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/policies/worksafebc_form_7_-_employers_report_of_injury_or_occupational_disease.pdf

See also: **WorkSafeBC Form First Aid Record (55B23)**

<https://www.worksafebc.com/en/resources/health-safety/forms/first-aid-record-external-form-55b23?lang=en>

Component 7 – Inspections

Inspections are aimed at identifying unsafe conditions or hazards at facilities or sites where equipment is stored or GSAR activities take place, with the goal of eliminating or controlling them before an incident or injury occurs.

Inspections must be conducted by appropriately qualified persons, usually GSAR leaders or members of the GSAR group’s Safety Committee (“Safety Committee Members”). It is often recommended to conduct inspections as often as committee meetings. Do not conduct an inspection immediately before a committee meeting but try to separate inspections and meetings by at least one week. This time allows for small items to be fixed and gives the committee an opportunity to focus on issues requiring further action.

Inspections should include all of the following:

- The building or other structure being used by the GSAR group and its volunteers.
- Immediate surroundings where volunteers may work or pass through.
- Rescue tools and GSAR equipment of all kinds.
- Vehicles of all kinds, including Incident Command Posts, response vehicles, boats, ORV’s, etc.
- Sites where storage, training or other GSAR activities take place.

Hazard Rating System

It is recommended the “A, B, C” hazard-rating method, or equivalent, be used to rate any deficiencies or hazards observed during safety inspections. Highlighting the severity of hazards assists GSAR leaders to prioritize corrective action, and reduces the likelihood of GSAR volunteers being exposed to damaged, defective or dangerous equipment:

“A” = CRITICAL

- Serious problems or with a high probability of occurring. *(Activity to be discontinued until hazard is corrected).*

“B” = URGENT

- Less serious problems or a moderate probability of occurring. *(As a rule, the period for correction should never exceed 2 weeks).*

“C” = IMPORTANT

- Smaller problems, with a low probability of occurring. *(As a rule, the period for correction should not exceed 4 weeks).*

Facility/Locations

Proper orientation to the GSAR facility and training locations must be given to all new GSAR volunteers as part of their general orientation.

In addition to periodic, planned inspections, GSAR leaders or Safety Committee Members should conduct informal inspections as they tour GSAR facilities or locations, or when giving instructions to volunteers using these facilities. Informal inspections should also be conducted by any GSAR volunteer when using a facility, vehicle or piece of equipment: all GSAR volunteers have a responsibility for safety.

Inspections of wilderness areas used by the GSAR team for training or while on operational tasks will be done as part of the risk assessment review identified in Components 2 (**Risk Assessments**).

Given the infinite possibility of hazards in wilderness settings, risk assessment during training or operational tasks is usually conducted by the onsite Safety Officer, as opposed to Safety Committee Members, although there is no reason a Safety Committee Member may not act as Safety Officer on a task. The roles and responsibilities of the Safety Officer are described in **POG 1.04 Safety Officer**, which may be found at:

https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/volunteers/sar_safety_program_operating_guidelines.pdf

Vehicle and Equipment Inspections

There should be regular, scheduled inspections of all vehicles, equipment and tools which the GSAR group owns or controls; see POG 2.01 Vehicle Response Safety.

Inspections of vehicles and equipment will be conducted at intervals, and in a manner, according to the manufacturer's recommendations. Usually, the designated operator of the equipment will perform the inspection, although other GSAR volunteers may be tasked with this responsibility.

In addition to regular periodic inspections, the following should also be conducted:

Post-Use Inspections

- After each use, the GSAR leader will assign GSAR volunteer(s) to inspect all vehicles and equipment which were used as part of the training or operational task and return these to response-ready condition. The GSAR volunteer will complete a Post Use inspection report for the particular vehicle or equipment that was inspected.
- The Post Use report will be submitted to the responsible GSAR leader, who will ensure any deficiencies or issues are corrected as soon as possible. It is recommended that inspection reports utilize a Hazard Rating System, such as outlined above, to flag any unsafe conditions.

- In the event an “A” level problem is detected, the GSAR leader should be informed immediately and the vehicle/equipment taken out of service until repair or replacement can be completed.
- Once all deficiencies have been corrected and the vehicle or equipment is ready for operation, the completed inspection report must be submitted to the designated person for retention.

Pre-Use Inspections

- It is the responsibility of every GSAR volunteer to do a safety inspection prior to operating any vehicle or equipment, and to ensure no out of service equipment (“A” level hazard) is used.
- Inspections will also be undertaken on any vehicle, tool or equipment that has not been used for an extended period of time (this will have to be determined on a case-by-case basis by the GSAR group, based on the type of equipment, history of the specific item, etc.).
- Pre-use inspection should be undertaken on any vehicle or equipment which has recently undergone significant repair, modification or upgrade to ensure its safety and serviceability.

See **Appendix H** for sample Facility and Vehicle Pre-Use Inspection checklists.

Downloadable inspection checklists are also available at the **Safety Area on the BCSARA website**.

Completed inspection reports/checklists which have identified “B” or “C” level problems must be submitted to the responsible GSAR leader to ensure any required follow-up or repair is completed.

Any hazard or unsafe condition found during inspections will be rectified as soon as is possible. Volunteer safety must always be assured: if an unsafe (“A” level) condition cannot be immediately rectified, the vehicle or equipment must be taken out of service until repair or replacement is completed.

Only properly qualified persons are permitted to correct a condition that constitutes an immediate threat to volunteer safety and every possible effort must be made to control the hazard while this is being done.

A designated member is responsible for the retention of all Inspection Reports, as per **Appendix I**; this person is usually a member of the group’s Safety Committee.

Component 8 – Records

GSAR groups must maintain complete and accurate safety records, including training and exercise records, as described below. Safety records document compliance with the GSAR Safety Program, which is detailed in 3 core documents: the Public Safety Lifeline Volunteer Safety Policy; the Provincial GSAR Operating Guidelines; and this guide (the GSAR Safety Program Guide).

Records may be a useful source of planning data for revising group OG's, training, inspection protocols, etc.; they may be used during program evaluations to monitor effectiveness of, and compliance with, the GSAR Safety Program. Also, safety records may be useful to GSAR groups, BCSARA and EMBC to identify trends, unusual conditions, and problem areas.

Records to be maintained include:

- Training and exercise records, including Risk Assessments
- Competency of equipment/vehicle operators – training courses or experience
- INCIDENT and NEAR MISS reports
- Equipment inspection reports
- Facility/location inspection reports
- Vehicle inspection and maintenance records
- First Aid treatment records
- Minutes of SARM or Board of Directors meetings – safety must be an agenda item
- Minutes of Safety Committee meetings

It is a requirement of the GSAR Safety Program that all safety records must be retained for a minimum period of 7 years from the date of creation of an individual record. (In the case of minutes of Directors meetings, Section 20 of the BC Societies Act requires they be retained for a period of 10 years.)

Safety records shall be made available to EMBC or BCSARA upon request.

Additional information on records is provided in **Appendix I**.

Component 9 – Society Business Meetings

The topic of Safety will be on the agenda of all GSAR administrative meetings. This includes regular group or society business meetings, safety Committee meetings, and regional meetings.

Business meetings should review the following items, which may impact the group's safety program, and determine any necessary course of action:

- NEAR MISS/INCIDENT reports.
- Results of inspection reports, investigations and related follow-up action reports.
- First aid reports (summary only; no release of members' confidential medical information).
- Education, exercise and training reports.
- Any information from training, exercises or operational tasks that may affect the future safety of GSAR volunteers.
- Planned operational changes that may affect safety.

GSAR leaders must implement safety recommendations relevant to their area of responsibility, and ensure GSAR volunteers understand and follow them.

Safety issues which may be of concern to the broader GSAR community, or impact all GSAR volunteers in the province, should be communicated to EMBC or the GSAR Volunteer Joint Health and Safety Committee, including any recommendations for action.

Component 10 – Safety Program Review

Ensuring the effectiveness of a group’s safety program is an ongoing process. There are a number of ways of achieving this:

Operational briefings – before a field team is dispatched, a team briefing must be given; this should include a safety briefing and discussion of the RAdEMS assessment, including any specific hazards or risks. Although field team briefings are not a “program review”, they are an opportunity to reiterate key elements of a group’s safety program. Likewise, post-assignment debriefings are an opportunity to identify any unsafe conditions or actions and develop corrective strategies.

Group management or business meetings – most GSAR groups hold these meetings monthly or bimonthly. Safety should be a standing item at business meetings and the group’s Safety Chair should provide a report. This is an excellent venue to review the functioning of the group’s safety program and to address any emerging safety issues. (See also Component 9 above).

Periodic safety program reviews – a GSAR group should ensure safety program content and effectiveness is reviewed regularly (every 2-3 years). Program reviews should, ideally, involve as many GSAR group members as possible and lead to a close examination of the group’s safety program. A suggested format for a safety review follows:

- Leadership for the review should be provided by the GSAR Group Safety Committee members. Groups should resist the temptation to have the review conducted by the same GSAR leaders who frequently lead training or operational tasks. An operational focus may not be the best lens to identify potentially unsafe practices or procedures; use a fresh set of eyes.
- Establish smaller review teams, each one with the responsibility for examining a given facet of the GSAR group’s safety program; each review team should keep written records of its findings.
- Using the checklist in Appendix A, examine the group’s success in following the 11 Components of the GSAR Safety Program. Some Components require more time to review than others (e.g. review of safety records); keep this in mind when assigning duties to the review teams.
- Based on the review teams’ findings, use a simplified Gap Analysis to answer 3 questions:
 - Where should our safety program be today? (the 11 Components tell you this)
 - Where is our safety program actually at today? (your review tells you this)
 - How are we going to bridge the gap between ideal and actual? (do some planning)
- Planning is required to bridge the gap between the group’s current safety program and the ideal safety program. The process of identifying, planning and implementing new safety measures may take some time, and should be under the leadership of the Safety Chair and the Safety Committee members.

There are many benefits to undertaking a formal safety review, although it may take time and effort to do so. Support and advice are available from the GSAR Volunteer Joint Health and Safety Committee.

Component 11 – Other Program Components

11.1 Prevention of Musculoskeletal Injury (MSI)

Musculoskeletal (MSK) injury, or MSI, is common when excessive or unusual force is placed on the body's musculoskeletal system (the MSK system is all of the bones, joints, muscles, ligaments, etc. which allow the body to move properly). Statistics gathered by EMBC reveal MSI is by far the most likely type of injury to be suffered by GSAR volunteers.

GSAR volunteers regularly encounter conditions which may lead to MSI. Heavy loads, unusual forces, repetitive motions, fatigue and hazardous environments all contribute to the risk of MSI; unfortunately, some of these risk factors may be unavoidable during GSAR operations.

To minimize the risk of MSI, GSAR groups are encouraged to take a systematic and proactive approach to preventing these injuries. An effective MSI prevention program should include:

1. Understanding of what an MSI is, how they are caused, and common signs/symptoms (see below for additional information).
2. Examining MSI hazards in relation to GSAR operations, including training and response. Look at activities and environments which may increase the risk of MSI, and mitigate these if possible. For example, MSI risk during a long stretcher carry may be reduced by using a stretcher-wheel.
3. Identifying personal risk factors in GSAR volunteers, and mitigating whenever possible. Lack of physical fitness, fatigue and previous injury all increase the likelihood of new or repeat MSI. GSAR leaders will often have knowledge of which volunteers are at-risk, and may be able to offer modified duties to offset the risk. For example, faced with a very unfit volunteer it may be safer to assign duties at the Command Post rather than physically challenging field duties.
4. Ensuring GSAR volunteers and leaders are trained in safe practices to prevent or minimize MSI's from occurring. For example, practice "back-friendly" procedures for handling stretcher evacuations: while stretcher evacuations are inevitable, MSI's can be prevented.
5. Educating GSAR volunteers and leaders about the importance of physical and mental fitness. GSAR activities are often physically and emotionally stressful, and these stresses can lead to MSI's. Ensuring members are physically fit is perhaps the single most important risk reduction.

Effective MSI prevention can best be accomplished by using proper equipment for the task, ensuring safe work practices are in place (clear procedures and guidelines), and ensuring safe work practices are being taught and practiced during training and exercises.

Additional Information:

WorkSafeBC has an excellent resource, which is also downloadable from the BCSARA online GSAR Safety Program Area: Understanding the Risks of Musculoskeletal Injury (MSI).

http://www.worksafebc.com/publications/health_and_safety/by_topic/assets/pdf/msi_workers.pdf

11.2 Exposure to Hazardous Materials or Biohazardous Substances

Although HAZMAT response is not a function of GSAR volunteers, a variety of hazardous materials, including biohazards, may be encountered during GSAR responses. GSAR volunteers and leaders must be aware of the risks and hazards which toxic substances or biohazards may pose.

A number of POG's deal with protection from hazardous substances (see POG 1.13 Hazmat Awareness), but GSAR groups are encouraged to undertake additional education and training to reduce risks to volunteers. GSAR volunteers are reminded that the safety and health of all responders is the highest response priority in any incident, including responses which may result in exposure to toxic substances.

An effective program for managing potential exposure to hazardous materials should include:

- Understanding Workplace Hazardous Material Incident System (WHMIS) requirements; this includes identification of any such materials present in GSAR facilities or vehicles.
- Procedures to recognize and evaluate any hazardous materials which may be present at an incident site during a response:
 - Identify any potentially hazardous substances or materials at or near the incident site.
 - A risk assessment must be undertaken in the early phases of any response; the RADeMS tool is recommended. See POG 1.06.
 - As part of the risk assessment, GSAR leaders must always evaluate the risk for volunteers to be exposed to chemical, biologic or other hazardous materials, if present.
- Methods used to isolate and shield GSAR volunteers from potential hazardous exposure in order to conduct operations safely and effectively:
 - Avoiding exposure to hazardous materials in the first place is the preferred prevention strategy; this is often not possible during operational responses.
- Procedures and equipment used to protect GSAR volunteers from the effects of hazardous materials/substances, including biohazards:
 - Procedures and limitations of protection when using PPE (e.g. air purifying respirators for smoke).
 - Procedures and equipment for prevention of exposure to bio-hazardous materials, including blood-borne pathogens (e.g. universal precautions).
 - Procedures for obtaining medical care in the event of an exposure.¹
 - Procedures for decontamination.
- Plans to work with other first responders (Fire Dept., Police, Coroner, etc.). Other agencies,

¹ People with exposures should be seen in an Emergency department within 2 hours - http://cfenet.ubc.ca/sites/default/files/uploads/publications/centredocs/pep_guidelines_final_may_2017.pdf

especially FD's, may have significant expertise in HAZMAT protection and decontamination; GSAR leaders are encouraged to explore these resources and develop pre-plans.

11.3 Prevention of Violence to Volunteers

The primary role of the GSAR volunteer is to provide assistance to subjects, their families and friends during GSAR operations. In the case of subjects, this usually entails search, rescue or recovery, while the services offered to family/friends may assume a more emotionally supportive role.

Most often, both subjects and family/friends are grateful for the services offered by GSAR volunteers. However, in a small number of instances, volunteers may experience aggressive or confrontational reactions from those they are attempting to help. Rather than gratitude, GSAR volunteers and leaders may be subject to anger, hostility, suspicion, personal insults, etc. In extreme cases these may lead to threats or actual physical violence.

Almost all hostile reactions are driven by fear. With respect to a subject, fear may be an appropriate response, depending on their situation. In the case of family/friends, there is often fear the subject may not be found alive, is suffering, etc. Their fear may be intensified by fatigue, miscommunication with GSAR leaders, pre-existing mental illness, use of alcohol or other drugs, etc.

Prevention of violence to volunteers is the desired outcome. Preventive measures may include:

- Ensure the Requesting agency is engaged with the family.
- Requesting agencies often have specialized resources (e.g. RCMP Victim Services) which can be activated to help support emotionally stressed family/friends.
- Deal with subject, family and friends calmly, compassionately and honestly. They are often in a heightened state of anxiety, and injecting your own stress into the situation will not help. If you think you may be unable to communicate calmly, enlist the help of another team member.
- Act professionally at all times. Family or friends of a subject may be upset by what they perceive as callous or uncaring behavior by responders.
- CISM volunteers may be on-scene and may be able to assist in supporting family/friends. See **Section 3** of this Guide; the CISM Team can be activated by calling the **ECC: 1-800-663-3456**
- If emotions have escalated so much that there is an increased risk of violence, request on-scene police presence. (The police are often the Requesting Agency and may be on-scene already.)
- GSAR leaders must never task GSAR volunteers to search for or rescue an armed or potentially violent subject. This must be left to the police; consult the EMBC Regional Manager if necessary regarding appropriate tasking.

11.4 Heat or Cold Injury

GSAR volunteers are asked to respond in any type of weather, in any season, and conditions can run the gamut from freezing cold to sweltering heat. Both subjects and responders are at risk of heat or cold injury, depending on the season and environmental conditions.

Heat injury occurs when the body's core temperature becomes too high, while hypothermia occurs if the core temperature becomes too low. **Appendix J** discusses these conditions in greater detail.

Heat-related injury prevention

When the ambient temperature is high, GSAR volunteers should use shielding to provide shade (tent, tarp, hat, etc.), wear appropriate clothing, take adequate hydration and frequent rest breaks.

Excessive loss of fluids by sweating is a major contributor to heat illness, but thirst may not be a reliable indicator of the body's need for fluids. As much as 1.5 liter/hr. of sweat may be lost during heavy exertion in hot weather. Responders must drink plenty of liquids before, during, and after exertion in hot environments. A general guide is to drink 250 ml. of fluids every 15 to 20 minutes; if water is not readily available on the trail it will need to be carried by volunteers. Frequent rest breaks are an important way to minimize heat stress: physical exertion generates a large amount of heat; resting allows heat to dissipate. Clothing should be light and loose fitting, and a wide-brimmed hat should be worn (unless a helmet is required).

Cold-related injury prevention

Prolonged cold exposure may result in decreased body temperature, leading to hypothermia. Hypothermia may occur in any season, the biggest contributors being inadequate insulation and wet clothes. Wet clothing (whether from sweat, rain or immersion) loses much of its insulating value; cotton should never be worn as it loses nearly 100% of its insulation value when wet. Proper layering of synthetic clothing, removing wet layers, staying out of the wind, frequent rest breaks and regular snacks (to provide the body with fuel) are the mainstays of hypothermia prevention.

Exposure to extremely cold conditions may result in frostbite of hands, feet or face, even in the absence of hypothermia; high wind-chill values increase the likelihood of frostbite. Proper insulation is the primary prevention, and responders should check each other for signs of frostbite.

Appendix J (Heat and Cold Stress): describes key symptoms, treatment and prevention of cold and heat-related injury. All GSAR volunteers should learn to recognize the symptoms of these conditions, and be prepared to assist fellow responders as well as subjects.

Additional Information:

WorkSafeBC has two helpful publications, "[Hypothermia: Surviving the Cold](#)" and "[Preventing Heat Stress at Work](#)". Both of these are also downloadable from the BCSARA online GSAR Safety Program Area.

"Baby It's Cold Outside" (www.bicorescue.com) is an excellent online hypothermia training resource aimed specifically at GSAR volunteers.

11.5 Personal Protective Equipment

GSAR volunteers are often exposed to hazardous environments, whether during response, training or exercise. Hazardous environments are unavoidable, and a common way to mitigate risk is through the use of Personal Protective Equipment (PPE).

POG 1.03 requires appropriate PPE to be utilized in all operational responses, training or exercise; any GSAR volunteer who responds to an incident or training without appropriate PPE will be limited to duties for which they have suitable protective gear, or will not be allowed to take part in the activity, to be determined by the GSAR leader.

The following points should be considered with respect to PPE:

- GSAR volunteers must be trained and proficient in activities which require specialized PPE (e.g. swiftwater PPE; chainsaw PPE; etc.).
- PPE is designed with a specific purpose in mind. Always use a product which was designed for the activity in which you are engaged (e.g. construction hard hats are not designed for use in rope rescue operations and should not be used for this purpose).
- Not all PPE is certified or requires certification but, if you are using a certified product, ensure it is being utilized in accordance with manufacturer's instructions (e.g. some CDFL harnesses are Transport Canada certified for air rescue operations, but are not approved for rope rescue or swiftwater operations).
- Different PPE may be required by day or by night. Clothing which is highly visible by day may be much less distinguishable at night unless there are reflective strips.
- PPE should be inspected regularly and, if damaged, taken out of service. Inspections and any corrective actions must be recorded.
- Any PPE which has been exposed to hazardous substances, including biohazards, must be taken out of service until it has been decontaminated. It is recommended that each GSAR group establish appropriate decontamination procedures in advance.
- Always follow the manufacturer's recommendations for use, cleaning, inspection, maintenance and retirement from service; abide by any manufacturer's expiry dates. Some PPE must be retired at a specified date regardless of whether it has been damaged or not.

Further information on PPE can be found in **POG 1.03 – (Personal Protective Clothing and Equipment)**, which may be found at:

https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/volunteers/sar_safety_program_operating_guidelines.pdf

11.6 Dangerous Atmospheres/Confined Space/Cave Rescue

Confined Space Rescue is not an activity supported by EMBC, as per EMBC PSLV Safety Policy (2.06).

<https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/emergency-management-bc/policies>

GSAR volunteers will **not** enter any location, structure or space defined as a confined space, or where it may be dangerous to breathe the air. Should any concerns over air quality exist, or there is a need to enter a confined space, volunteers must request the assistance of trained personnel to assess the safety of the location, and respond with appropriate equipment and training; in most cases local FD's will have the training and equipment (e.g. self-contained breathing apparatus) to undertake confined space search or rescue.

Examples of potential confined space hazards to GSAR volunteers:

- Buildings that house pumping or testing equipment
- Root cellars or wells
- Vessels or tanks
- Farm silos
- Abandoned mines
- Areas or buildings with indications of chemical storage

WorkSafeBC has a number of publications discussing confined spaces and associated hazards; GSAR groups should be aware of confined spaces only to the extent they can identify and avoid them.

Mine rescue in BC is coordinated through the Ministry of Energy and Mines. More information can be found at:

<https://www2.gov.bc.ca/gov/content/industry/mineral-exploration-mining/health-safety/emergency-preparedness>

Cave rescue is, however, supported by EMBC through an MOU with BC Cave Rescue (BCCR), where caves are defined as “naturally formed underground voids extending beyond daylight”. SAR activities in caves are the sole responsibility of BCCR; BCCR may be activated through the ECC.

As per P.O.G. 3.07, “EMBC 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.”

Further information on Cave Rescue can be found in **POG 3.07 – Cave Rescue**, which may be found at:

https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/volunteers/sar_safety_program_operating_guidelines.pdf

SECTION 3 – Emotional Care for GSAR Volunteers

Much of this Guide is directed towards protecting GSAR volunteers from physical risks during GSAR activities. Experience has shown the demands of GSAR work can also take an emotional toll on volunteers and, in some cases, result in emotional stress injury. Like physical injury, awareness of the causes and good preventive measures help reduce the risk of emotional stress injury.

GSAR volunteers are routinely exposed to situations which are emotionally stressful. Body recoveries, severely injured subjects, or distraught relatives are difficult for anyone to handle. Added to this is the stress of being away from family, friends and work for prolonged periods. Some of these stressors may combine in ways which lead to emotional injury.

And it's not just stress from a single event. The effects of past stressors sometimes only make themselves known weeks, months or even years later. Thus, an emotional injury may occur as a result of a single profound stress, or it may be related to many past stressors. Regardless of the cause, it is important for GSAR volunteers to know that emotional stress, and stress injuries, are common among all types of first responders and that help is available.

BCSARA has developed a comprehensive Critical Incident Stress Management (CISM) program to support GSAR groups and volunteers to deal with the emotional stress which is often a part of providing GSAR services.

The BCSARA CISM program is peer-driven, and every CISM team member is a qualified GSAR volunteer who knows the dangers, stresses and issues facing other GSAR volunteers. CISM support is available 24/7 to any GSAR group, volunteer or family member; self-referrals from individuals are not only accepted, they are encouraged.

CISM members provide a variety of supports and, when more formal care is needed, arrange referrals. Some of the CISM interventions include:

- One-on-one support, in person or via phone.
- On or near-scene support and interventions.
- Group defusing.
- Group debriefing.
- Crisis Management Briefings.

Resources:

Appendix K – Worker Care Guide (adapted from the Public Health Agency of Canada)

CISM team activation:

To activate the CISM team, call 1-800-663-3456

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Appendix A – Safety Program Quick Assessment

Safety Program Guide Component	Assessment of Existing Safety Program			
	Component Content Complete	Requires Minor Edits/Additions	Needs Substantial Review/Edits	Not in Place – Needs to be Added
Responsibilities Established and Communicated				
Risk Assessments Completed				
Safe Work Practices in Place				
Safety Education and Training Content in Place and Training is Undertaken where Required				
Incident Reporting and Investigation Procedures in Place				
First Aid/Medical Response Services for Volunteers in Place				
Regular Inspections Undertaken				
Safety Records Maintained				
Safety on Agenda of Team Meetings				
Safety Program Reviewed				
Other Components in Place based on need (e.g. MSI Injury Prevention, etc.)				
Assessment Completed by:				
Date:				

Appendix B – Risk Assessments

EFFECTIVE RISK ASSESSMENT AND RISK MANAGEMENT

Introduction

GSAR activities frequently expose GSAR volunteers to hazards which carry significant risk of bodily harm. Fortunately, the risks associated with these hazards can often be reduced to an acceptable level through the application of sound risk assessment and mitigation strategies.

This appendix is divided into two sections. The first describes an approach to dynamic risk assessment for use in the field, while the second provides a methodical approach to risk management which can be used in all GSAR workplaces, including wilderness locations.

Dynamic Risk Assessment in the Field

GSAR members in the field, whether for training or for operational response, often face dynamic and rapidly changing hazards. Weather conditions, terrain factors and a host of other variables can change quickly, and in ways which drastically alter the risk profile. In order to evaluate risk in a constantly changing environment, responders must engage in real-time risk assessment whenever the environment changes. Fortunately, a tool exists to help GSAR volunteers quickly assess these risks.

BCSARA sponsored development of a risk assessment tool known as RADeMS (Response Assessment and Decision Making Support). This tool is portable, simple to use and powerful. RADeMS was developed specifically for use by GSAR field teams, and all GSAR volunteers should know how to use it.

RADeMS can be printed, or downloaded free of charge onto a portable device for field use (tablet, smartphone, etc.). More information on RADeMS, as well as instructions for its use and brief training exercises may be found at:

<http://www.bcsara.com/RADeMS/>; and

<http://host.jibc.ca/gsar/>

The process of Dynamic Risk Assessment in the Field is discussed more fully in Component 2 of this Guide. However, like so many other GSAR skills, competence only comes through training and subsequent practice. All GSAR volunteers are encouraged to become proficient in the use of RADeMS through the online training exercises and by using RADeMS during GSAR training, exercise and response.

Risk Assessment and Risk Management for GSAR Workplaces

This section provides a practical, step-by-step program to identify and manage risks associated with workplace hazards. **(For the purposes of Appendix B, “workplace” refers to any GSAR building, facility, command post, etc. which is used by GSAR volunteers.** It also includes outdoor or wilderness locations which are used regularly, whether for GSAR training or response. **“Work” refers to the usual activities undertaken by GSAR volunteers in the course of GSAR response, training and preparedness; it does not refer to paid work done for an employer.)**

Effective risk management begins with understanding the workplace and the activities which occur there, identifying hazards, assessing the risks and taking action to mitigate them; in most cases, risk can be eliminated or reduced in simple, cost effective ways. Where problems are more complex, the 5-Step Program helps to prioritize, plan and implement solutions which make sense.

Who participates in Risk Assessment? Ideally, it should involve all team members, under the leadership of those ultimately responsible for the group’s safety program: the Chair and members of the Safety Committee. Engaging as many GSAR members, especially Specialty Team leaders (CDFL, Rope Rescue, Swiftwater, GSTL, and technical leaders etc.), as possible in the process reduces workload and helps foster a more robust GSAR safety culture.

The 5 Step Program:

- 1 Identify Hazards and Collect Information
- 2 Determine Who May be Harmed and How
- 3 Assess the Risks
- 4 Eliminate or Reduce Risks
- 5 Document and Monitor Your Risk Management Program

STEP 1

Identify Hazards and Collect Information

A hazard is anything with the potential to cause harm. In GSAR, we work around hazards all the time, but GSAR volunteers are rarely harmed due to precautionary or protective measures. However, we still need to know what and where the hazards are, and who may be harmed.

Here are some tips to help you identify possible hazards:

- **Walk around** the workplace and look at what might be expected to cause harm.
- **Get input from other GSAR volunteers.** They may have observed hazards you have not.
- **Check manufacturers' instructions** for equipment, machines, chemicals, etc.; these may be very useful to help identify, and avoid, hazards associated with the equipment.
- **Review incident reports and first aid records.** Less obvious hazards may be identified.
- **Talk to others.** What is the experience of other GSAR groups? Have they dealt with situations you have not yet faced?

What information should be collected?

To assess risks at the workplace you need to know:

- Where is the workplace located? Location is relevant to hazard identification: while hazards inside a GSAR building may be relatively predictable, this may not be the case for an outdoor training area.
- What equipment, materials, vehicles, etc. are used or stored there?
- What tasks or activities take place there?
- What hazards have already been identified?
- What are the potential consequences of existing hazards?
- What protective measures have been implemented?
- Have any accidents/incidents been associated with a given workplace?
- Are there any specific legal requirements or regulations governing the use of a particular workplace, vehicle, etc.?

Where can this information be obtained?

Relevant background information can be obtained from:

- Technical data and standards for equipment, vehicles, machinery, etc.
- Manufacturers' instruction manuals describe the safe use of their products. Training manuals describe best-practices, as well as hazards, for many GSAR activities (e.g. rope rescue).
- NEAR MISS reports, INCIDENT reports, inspection records for vehicles, equipment, etc. may all help identify previously unrecognized hazards.
- Manufacturer's data details the proper use and storage of chemicals. The following are some common GSAR "chemicals": gasoline, bear spray, flares, oxygen canisters, lubricants, cleaners, etc. Some require special storage; some may damage other equipment, such as ropes.
- Legal requirements may govern the use, storage, maintenance, etc. of specific equipment (e.g. firearms).
- Technical reference materials from professional bodies, such as the Association of Canadian Mountain Guides or the CAA, may inform safe work practices.

Information can also be obtained by:

- Observing workplaces (e.g. GSAR hall, training areas, frequent response locations, etc.).
- Observing activities performed at a given workplace during response and/or training.
- Seeking input from GSAR volunteers regarding potential hazards.
- Assessing the effect of external factors (e.g. weather conditions) on hazards.

Consider hazards which may affect individual GSAR volunteers differently:

- Exposure to hazardous materials, including biohazards.
- Environmental conditions (heat or cold stress).
- Noise exposure (helicopters, loud vehicles, chainsaws, generators, etc.).
- Musculoskeletal injuries ("slips, trips and falls").
- Violence to GSAR volunteers.
- Risk of psychological or emotional injury.

STEP 2

Determine Who May be Harmed and How

For every hazard, identify those at risk of being harmed. In addition to GSAR members, other responders, bystanders and subjects must be considered. They may lack specific knowledge, training or equipment to protect themselves; it is a GSAR responsibility to ensure their safety in or around workplaces, including wilderness response scenes.

Identify unique operational or training roles and how a GSAR volunteer in that role may be harmed. The hazards and risks inherent in a given role, even during the same activity, may vary widely; for example, during a high-angle rescue scenario, an edge-person and a belayer face very different risks, each requiring a specific risk mitigation strategy.

Individual, member-specific factors such as fatigue, physical fitness, medical conditions, etc. may create different risk profiles, even when two members are assigned identical duties. Consider individual risk factors when making risk assessments.

Given the large number of GSAR “roles”, identifying risks/hazards associated with each role should ideally be done by a SME within the group; for example, there is no point having someone unfamiliar with swiftwater rescue trying to do a SWR risk assessment.

Often, a checklist is the best way to collect and analyze information for this step. See **Appendix C** for a sample risk assessment checklist.

STEP 3

Assess the Risks

Use a matrix to estimate the risk associated with a hazard

For each identified hazard on your checklist, use this matrix to determine if risk is **low, medium, or high**, taking into account the **probability** of an occurrence, and the **severity** of any resulting injury.

		<i>Severity</i>		
		Slight Harm	Moderate Harm	High Harm
<i>Probability</i>	Highly improbable (low)	<i>Very Low Risk- no action necessary</i>	<i>Very Low risk- monitor</i>	<i>High risk- undertake efforts to reduce the risk</i>
	Probable (medium)	<i>Very Low Risk- no action necessary</i>	<i>Medium risk- review and implement preventive actions- within established time frame</i>	<i>Very High risk- unacceptable- Stop work until risk reduced or eliminated</i>
	Very Probable (high)	<i>Low Risk- monitor; look at ways to control- simple preventive steps</i>	<i>High risk- eliminate/minimize risk immediately</i>	<i>Very High risk- unacceptable- Stop work until risk reduced or eliminated</i>

Probability

- **Highly improbable:** unlikely to occur the entire time a volunteer is performing this activity.
- **Probable:** may occur a few times while a volunteer is performing this activity.
- **Very probable:** may occur frequently or repeatedly while performing this activity.

Severity

- **Slight Harm:** accidents or exposures not causing prolonged or serious injury (e.g. small lacerations, eye irritations, minor musculoskeletal injury, etc.).
- **Moderate Harm:** accidents, illnesses and exposures causing moderate, or prolonged or periodically recurring injury/illness (e.g. lacerations requiring sutures, simple fractures, second-degree burns on a limited body surface, significant sprain/strain, etc.).
- **High Harm:** accidents, illnesses and exposures causing grave injury, permanent disability or death (e.g., amputations, loss of sight, fractures leading to disability, second- or third-degree burns on a large body surface, hepatitis B infection, etc.).

Determine if risks are acceptable or unacceptable

The following is a suggested approach:

- A high, or very high, risk is **unacceptable**.
- A medium risk **may** be acceptable, but steps must be taken to lower the risk.
- A low, or very low, risk is generally acceptable.

Note: if legal requirements are not complied with, **NO** level of risk is acceptable! (e.g. Motor Vehicle Act Regulations require a helmet to be worn at all times when driving an ORV, even in low risk situations.)

The higher the risk, the higher the priority to eliminate or minimize the risk. If risk is **very high** (unacceptable), actions to reduce risk need to be taken **immediately**.

If risk is **medium**, and assessed as acceptable, actions to further reduce the risk should be planned and implemented within a specified period of time.

If the risk is **low**, and assessed as acceptable, ensure it remains at an acceptable level through ongoing monitoring.

STEP 4

Eliminate or Reduce Risks

Design a plan to eliminate or reduce risks

Everything which can reasonably be done to protect GSAR volunteers from harm must be considered. This may require eliminating hazards, avoiding hazards or controlling risk by other means.

When developing risk reduction strategies apply the following principles, preferably in this order:

- 1. Eliminate or Substitute** – make an activity safer, even before it begins. If possible, eliminate hazards creating undue risk to GSAR volunteers. If a hazard cannot be eliminated, consider substituting safer alternatives.
- 2. Engineering Controls** – Sometimes a hazard cannot be eliminated but it may be possible to improve the response environment. For example, scene lights and headlamps can reduce risk of slips/trips/falls during night operations.
- 3. Administrative Controls** – organize work to reduce exposure to a hazard; develop written SOP's specific for your group's needs; provide appropriate education and training to help reduce risk.
- 4. Personal Protective Equipment (PPE)** – If the above controls cannot eliminate or reduce the hazard entirely, personal protective equipment must be utilized. PPE is not a substitute for elimination, substitution, engineering or administrative controls; these approaches should always be attempted first. However, PPE in combination with another control may provide acceptable risk reduction.

Develop an Action Plan

An action plan is a detailed list of risk reduction initiatives, ranked according to priority, with completion dates and the person(s) responsible for ensuring each initiative is completed. Use the **Risk Assessment Work Sheet** (Appendix C), or equivalent, to record your risk assessment and future risk reduction plans.

A good risk reduction plan should address the following points:

- Individuals who may be at risk have been identified and consulted.
- All significant hazards were identified and a proper risk assessment for each was completed.
- Hazards are ranked according to severity, and specific, reasonable risk reduction strategies have been proposed; any residual risk is low.
- All members of the GSAR group were given the opportunity to participate in the development and implementation of the risk reduction plan.

Prioritize Your Efforts

Often, there are numerous safety improvements which can be made; these may run the gamut from easy to complex, inexpensive to costly. Which are the highest priority?

Hazards identified in Step 3 as **“high risk”** should be dealt with first, followed by medium risk and finally low risk; make an action plan to deal with the most important safety risks first. Resist the temptation to go after easily completed, but low value, action items.

Fully implementing your plan may require an extended period of time, and interim measures may be needed in the meantime, but the highest priority safety concerns should always be tackled first.

Projects which are costly or complex may require more than one budget cycle to complete. However, if a project addresses a high priority safety issue, develop concrete plans to begin to deal with it.

Step 5

Document and Monitor Your Risk Management Program

Regularly monitor your risk assessments, risk reduction plans and action items to ensure they are on track.

Few workplaces stay the same, and this is especially true of the natural environment which is, after all, the primary GSAR “workplace”. Many hazards are seasonal, or weather related, and these must be re-evaluated regularly. New equipment or procedures may modify risk profiles, which may in turn require changes in your plans; it makes sense to review your risk management measures on an ongoing basis.

Periodically, review your risk assessments and action plans. Have there been identifiable changes in hazards? Have GSAR volunteers reported safety concerns or problems? Are there any lessons from accidents or NEAR MISSES? What have you learned from other GSAR groups?

If unanticipated hazards develop, do not wait for the next formal review. Immediately re-examine risk assessments and risk reduction plans and, if necessary, amend them. (For example, if weather conditions lead to cornice formation above a winter access route, immediate mitigations may be necessary. The important point is to recognize this new hazard, undertake a new risk assessment and develop an action plan.)

Keep a record of all risk reduction plans, including hazard identification, risk assessment, action plans, member(s) responsible for implementing the plans, and what has been completed. While the Group Safety Committee may delegate tasks to other GSAR volunteers, the Safety Committee is ultimately responsible for ensuring risk reduction plans are implemented and monitored.

The **Sample Risk Assessment Worksheet (Appendix C)** is a good tool to help guide a GSAR group’s risk assessment and reduction activities.

Appendix C – Sample Risk Assessment Worksheet

GSAR group Name: _____ Facility or Site Location: _____ Date: _____ Assessment Completed by: _____				
Hazard Number	Hazard Description	Existing Preventive Measures, if any	Risk Assessment (probability/severity)	Action Plan to Reduce Risk & Member Responsible

Appendix D – GSAR Safety Practice and Culture

Stop, Talk, and Decide

- All GSAR volunteers are responsible for their own safety and the safety of personnel working with them.
- All GSAR volunteers are responsible for continuously identifying unsafe conditions/actions and are required to report such conditions to GSAR leaders.
- If it looks unsafe, feels unsafe or seems unsafe, **DO NOT DO IT!** Communicate it Up, Down and Across the chain of command. You have the right to refuse unsafe work.
- Any GSAR volunteer is expected to say **NO** to unsafe practices or conditions.
- GSAR leaders are responsible for accepting, and appropriately acting upon, all safety-related information to make the response safer.
- Communication of safety-related information within each GSAR field team is critical – and it must be Two-Way.
- GSAR leaders must continually keep all personnel working for them well informed of altered conditions, new hazards and changing risk assessments.
- GSAR leaders **WILL** model exemplary safety behavior and **WILL NOT** allow unsafe practices by volunteers under their leadership.
- Safety assessment is continuous and must be part of **ALL** ongoing decision-making, particularly amongst field teams, where conditions can change rapidly and unpredictably.

Appendix E – Sample Volunteer Safety Orientation Checklist

Use this checklist when training new volunteers on the GSAR Safety Program.

Orientation Topics Covered?	Yes	No
Health and safety responsibilities	<input type="checkbox"/>	<input type="checkbox"/>
Health and safety program	<input type="checkbox"/>	<input type="checkbox"/>
First aid qualifications required	<input type="checkbox"/>	<input type="checkbox"/>
How to get first aid and report injuries	<input type="checkbox"/>	<input type="checkbox"/>
How to report unsafe conditions	<input type="checkbox"/>	<input type="checkbox"/>
Right to refuse unsafe assignments	<input type="checkbox"/>	<input type="checkbox"/>
Use of personal protective equipment	<input type="checkbox"/>	<input type="checkbox"/>
Isolated volunteer communication policies and procedures	<input type="checkbox"/>	<input type="checkbox"/>
Pre-assignment planning requirements	<input type="checkbox"/>	<input type="checkbox"/>
Post-assignment and incident reporting requirements	<input type="checkbox"/>	<input type="checkbox"/>
Emergency response and evacuation protocols	<input type="checkbox"/>	<input type="checkbox"/>
Instructional progression requirements	<input type="checkbox"/>	<input type="checkbox"/>
Record keeping (records of tasks & training, F.A. treatment, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Written GSAR procedures (POG's, and group-specific SOG's)	<input type="checkbox"/>	<input type="checkbox"/>
Other topics covered (list them in an attachment)	<input type="checkbox"/>	<input type="checkbox"/>

Appendix F – Incident/NEAR MISS Reporting With the DMS (D4H)

In 2017, BCSARA selected D4H Technologies as prime contractor to deploy a customized GSAR Data Management System (DMS). DMS supports online management of most GSAR administrative functions, including attendance management, task reporting, equipment inventory and tracking, safety incident reporting, etc.

DMS went live in 2018, although the Health and Safety Module was not operationalized until spring, 2019. At this time, access to the DMS is available to all registered GSAR groups in BC.

The DMS Health and Safety Module is now fully functional and allows GSAR groups to enter and retain, online, all health and safety occurrences, including INCIDENTS WITH INJURY (or LOSS) and NEAR MISSES. All GSAR groups are now asked to enter Health and Safety incident reports into their DMS Health and Safety Modules (found under the “Intelligence” tab near the top of the screen).

Access to the Health and Safety Module is limited to certain individuals, and each GSAR group will need to decide which members are given reporting authority (usually SARM’s, Safety Committee members, etc.).

Using the Health and Safety Module is intuitive, and it is easy to enter INCIDENT reports. There is however, one point which is worth emphasizing: while the Health and Safety Module will generate, and save, a team’s report, **it does NOT electronically submit a copy of the report to EMBC or WorkSafeBC. This must be done separately, as described below.**

For those INCIDENTS which require reporting (fatalities, time-loss injuries, major equipment damage, etc.), a GSAR group must ensure a copy of their report is transmitted to their EMBC Regional Manager as soon as possible. The Health and Safety Module allows creation of a pdf copy of the INCIDENT report, and it is recommended GSAR groups submit a pdf copy to EMBC via email; alternatively, the INCIDENT report can be printed and the printed copy sent to EMBC via fax.

Timelines for reporting on-duty injuries are short; in order to ensure injured GSAR volunteers remain eligible for workers compensation benefits, it is strongly recommended the procedure described above be used to ensure rapid reporting.

Appendix G – INCIDENT/NEAR MISS Investigation Guide

Health and Safety Report

Did this occur on Activity: No Yes – activities:

.....
.....

Location:

Date: Time:.....

Category: Fatality Illness Incident with Injuries Incident with Loss Incident with Loss and Injuries Near Miss

Severity: Fatality Minor First Aid only Nil Damage (Loss) Medical Treatment Severe Injuries

What happened:

.....
.....
.....

Cause:

.....
.....
.....

Reporting

Was the incident reported to EMBC? Yes No N/A

If YES, what date/time was the incident reported to EMBC?

Was a WorkSafe BC Form 7 completed? Yes No N/A

If YES, what date was the Form 7 submitted?

Safe Work Practices

Were safe work practices established and available? Yes No N/A

If NO, what action is required?

.....
.....

Were the safe work practices adequate? Yes No N/A

If NO, what action is required?
.....
.....

Were the safe work practices applied to training? Yes No N/A

If NO. what action is required?
.....
.....

Approvals

Report compiled by:

Contact phone number of person who compiled the report:

E-mail of person who compiled the report:.....

Position of person who compiled the report:.....

Completed report sent to:

Report approved by (if applicable):.....

Contact phone number of person who approved the report:.....

E-mail of person who approved the report:

Position of person who approved the report:

Corrective Measures

Measures:
.....
.....
.....
.....
.....

Note*: The above information will still need to be entered in to D4H and submitted to EMBC

Main objectives of an Investigation

1. What was the cause of the INCIDENT?
2. What factors contributed to the INCIDENT?
3. What needs be done to prevent a reoccurrence (or minimize the likelihood of one)?

As per Component 5 of the GSAR Safety Program, significant NEAR MISSES, and all INCIDENTS WITH INJURY or property loss, must be formally investigated. While the steps taken in any investigation are similar, the level of detail will depend on the nature and severity of the incident.

A relatively minor INCIDENT or NEAR MISS can be investigated and concluded very quickly. Incidents involving injury or property loss must be reported to EMBC and will require a more detailed investigation.

For serious incidents, additional investigative and technical expertise may be required, but the basic flow of any investigation normally includes these steps:

- Ensure the scene is safe and that immediate first aid has been given to any person injured in the incident.
- If not already done so, report the INCIDENT or dangerous NEAR MISS to the field Team Leader, GSAR Safety Officer, SAR Manager and EMBC.
- Secure the scene.
- Study the scene.
- Interview witnesses.
- Investigate the physical evidence.
- Review the facts/findings and prepare a report and recommendations.

Main Steps in an Investigation

The following procedures may be simplified in the case of a minor INCIDENT or NEAR MISS, but the principles remain the same.

1. Secure the scene and report the INCIDENT or dangerous occurrence

Things the GSAR leader on-site (e.g. GSTL, RRTL, etc.) should do include:

- Assess and stabilize the situation. The SARM may be some distance from the incident and will need to consult on-scene GSAR personnel when making decisions.
- The top priority is to ensure the scene is safe for other GSAR volunteers and investigators.
- Once scene safety is assured, provide first aid treatment and arrange immediate evacuation of any injured persons.
- Make certain the scene is secure, and evidence is protected, until an investigation starts. If possible, leave broken or damaged equipment in place.
- Ensure the names and contact information of any injured GSAR volunteer and all witnesses are obtained. Witnesses include other GSAR volunteers, subjects, bystanders, other responders, etc.
- Determine who will lead the accident/incident investigation. This may be the GSAR leader for a NEAR MISS/MINOR INCIDENT, but additional expertise such as SME's, police, coroner, EMBC staff, etc. may be required depending on the severity of the incident.

2. Study the scene

The assigned investigator needs to:

- Examine everything involved in or related to the incident. Carefully go over the scene and note the physical evidence, including any damage to gear or equipment.
- Record the precise location of the accident/incident; GPS coordinates should be used, if possible. Note the lighting, visibility, time of day and weather/avalanche conditions. Take photographs, videos, measurements; make drawings or diagrams of the scene.
- Label and log each diagram, drawing and photo; a brief explanation of what each one shows will be useful later. A narrated video can be very useful in explaining a scene.
- Prepare a list of witnesses and, based on a preliminary analysis, a list of questions to ask.
- Consider and consult with EMBC on who may be able to provide expert advice on technical issues, if required. This may include Health and Safety professionals, technical SME's, other Provincial representatives, etc.

3. Interview witnesses

Accurate interview records will be needed to reconstruct what happened and why. If the police or other Provincial representatives have already interviewed witnesses, further statements may not be needed; if there is no police or other Provincial representatives' involvement, then your interviews will be vital:

- Everyone who can provide information about the incident should be contacted. This may include SME's or technical experts who were not actually at the scene.
- Interview witnesses separately, in private and, when possible, while memories are still fresh. Be considerate of their emotional state, particularly if someone has been killed or seriously injured. If needed, and available, use CISM members to support volunteers.
- Use open-ended questions ("Please tell me what happened.") rather than questions which lead to a Yes/No answer. Avoid interrupting during witness statements. Let the witness explain events in their own words and ask clarifying questions later if necessary.
- Remember the key points to be covered in any interview: Who; What; When; Where; How and, if possible, Why.
- Use photographs and drawings to help witnesses recall events.
- If possible, have witnesses visit the scene and show you what they saw. Witnesses may have seen events from different perspectives and their statements may disagree.

At the end of every interview:

- Ask each witness to review his or her statement to ensure accuracy and completeness, and have them sign their statement.
- Clear up anything you do not understand.
- For witnesses who are not registered GSAR volunteers, obtain full contact information.
- Thank each witness for his or her cooperation.

4. Investigate the physical evidence

- Study the damage done to equipment, gear, vehicles, etc. Determine what the physical evidence indicates happened and, if possible, why.
- Look at the incident environment in detail. Consider visibility, noise, weather conditions, and exposure to hazardous surroundings (e.g. swiftwater, cliffs, cornices, crevasses, etc.).
- Compare what happened with the requirements of applicable standards and safe work procedures (POG's, group SOG's, etc.). If procedures were not followed, find out why.

- Review training records. Were volunteers trained, and equipped, to be doing what they were doing at the time of the incident?

5. Review the facts/findings and prepare a report and recommendations

- Review all of the data available to you. In the case of a minor INCIDENT or NEAR MISS it may be limited to the Accident/Incident Investigation Report on DMS (**see Appendix F**); for an INCIDENT with significant INJURY/LOSS, there may be considerably more to review.
- Identify any unsafe procedures, acts, omissions or environmental conditions that contributed to the incident.
- Considering all of the data available to you, do your best to determine the underlying cause(s). Do not affix blame to individuals; describe what happened and the events leading up to it.
- Recommend corrective/preventive actions to help prevent future reoccurrence.

The GSAR group must keep a copy of the Incident Investigation Report in their DMS. For significant INCIDENTS involving INJURY/PROPERTY LOSS, a copy of the report must be sent to the EMBC Regional Manager by email or fax (see Appendix F).

For incidents which may be of concern to the broader GSAR community, a copy of the report should be sent to the GSAR Volunteer Joint Health and Safety Committee. If necessary, the Committee will issue a SAR Safety Advisory or Alert.

WORK SAFE BC **First Aid Record**

This record must be kept by the employer for three (3) years. This form must be kept at the employer's workplace. Do **NOT** submit to WorkSafeBC.

		Sequence number
Name	Occupation	
Date of injury or illness (yyyy-mm-dd)	Time of injury or illness (hh:mm) <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	
Initial reporting date and time (yyyy-mm-dd) (hh:mm) <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Follow-up report date and time (yyyy-mm-dd) (hh:mm) <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	
Initial report sequence number	Subsequent report sequence number(s)	

Description of how the injury, exposure, or illness occurred (What happened?)

Description of the nature of the injury, exposure, or illness (What you see — signs and symptoms)

Description of the treatment given (What did you do?)

Name of witnesses

1.	2.
----	----

Arrangement made relating to the worker (return to work/medical aid/ambulance/follow-up)

Provided worker handout <input type="checkbox"/> Yes <input type="checkbox"/> No	Alternate duty options were discussed <input type="checkbox"/> Yes <input type="checkbox"/> No	A form to assist in return to work and follow-up was sent with the worker to medical aid <input type="checkbox"/> Yes <input type="checkbox"/> No
First aid attendant's name (please print)		First aid attendant's signature
Patient's signature		

Form Downloadable at:

<https://www.worksafebc.com/en/resources/health-safety/forms/first-aid-record-external-form-55b23?lang=en>

Appendix H – Inspection and Vehicle Checklists

To customize inspection checklists for your own GSAR group, delete or add as required. Customizable checklists may also be found in the GSAR Safety Area in the Members Area on the BCSARA website.

Inspection Headings

Building:		Inspector(s):
Room Number (s):		Date Inspected:
Inspection Cycle (monthly, weekly, etc.):		Safety Committee Chair:
1. Administrative	8. Storage	15. Noise
2. Personal Safety	9. Electrical Safety	16. Personal Protective Equipment
3. First Aid	10. Office Workstations	17. Hazardous Waste Disposal
4. Floors/Walkways/Aisles	11. General Emergency Preparedness	
5. Stairs	12. Hazardous Material Emergency Preparedness and Equipment.	
6. Walls	13. Hazardous Material Handling and Storage	
7. Lighting	14. Tools and Equipment	

The “Yes” box can be ticked if an inspected item is acceptable. If your response during the inspection of any item is “No”, indicate the hazard rating:

A = Critical, **B** = Urgent, **C** = Important

If an item is not applicable to your GSAR group, write “N/A”

	Yes	No
1. Administrative		
Have all volunteers received safety orientation and are they aware of the Safety Committee members for the GSAR group?		
Are volunteers aware of procedures for incident reporting and investigations?		
Are incident report forms available and used for every incident or NEAR MISS?		
Are safety inspections done, deficiencies addressed, and records reported and maintained?		
Other?		
2. Personal Safety		
Are entry and egress routes well lit?		
Do volunteers know how to report personal safety concerns?		
Other?		
3. First Aid		
Do volunteers know how to summon first aid?		
Do volunteers know where to access first aid?		
Is the emergency telephone number (911 or other) on all phones?		
Other?		
4. Floors/Walkways/Aisles		
Are aisles and doorways clear of materials or equipment?		
Are carpets or tiles in good condition, free of loose or lifting carpeting or tile?		
Are floors clean, dry and free of oil or grease?		
5. Stairs		
Are stair handrails in good condition?		
Are stairwells clear of materials and equipment?		
Are stairs provided with anti-slip treads?		

	Yes	No
6. Walls		
Are signs and fixtures securely fastened to the wall?		
Other?		
7. Lighting		
Is task lighting provided in areas of low light or high glare?		
Are windows covered with blinds, drapes, or other means of controlling light?		
Other?		
8. Storage		
Are supplies and materials stored properly on shelves?		
Does your storage layout minimize the need to lift heavy items?		
Are trolleys or dollies available to move heavy items?		
Are racks and shelves properly installed and in good condition?		
Other?		
9. Electrical		
Are electrical cords in good repair?		
Is there clear access to electrical panels and switches?		
Are electrical cords secured?		
Are plugs, sockets, and switches in good condition?		
Are power bars used?		
If used, are extension cords heavy duty (min. 14 gauge) and servicing only one appliance or fixture?		
Is electrical equipment grounded?		
Are cord guards provided if cords are crossing an aisle or passageway?		
Other?		

	Yes	No
10. Office Workstations		
Are chairs and desks in good condition?		
Are chairs properly adjusted and provide adequate back support?		
Proper castors (carpet or urethane castors)?		
Are computer workstations, including monitors, keyboards and mice properly set up to minimize strain injuries (ergonomics)?		
Other?		
11. General Emergency Preparedness		
Do you have an emergency response plan for your area?		
Are volunteers aware of what number to call for emergencies, reporting conditions requiring servicing and recharging of fire extinguishers?		
Are volunteers aware of the locations of fire emergency plaques, and knowledgeable about the information on the plaques (egress routes, pull stations and extinguisher location, assembly points etc.)?		
Are pull stations clearly visible? Not obstructed?		
Are fire extinguishers inspected and are volunteers trained in their use?		
Have you identified and reported areas where the fire alarm is not audible?		
Is access and egress safe for workers, and visitors?		
Are emergency exit signs working?		
Is there adequate emergency lighting?		
Will space heaters shut off automatically if tipped over?		
Other?		
12. Hazardous Material Emergency Response and Equipment		
Is appropriate hazard warning signage with emergency contact names posted on entry door?		
Are eyewashes available, accessible, and functional?		
Is the eyewash fountain tested monthly?		

	Yes	No
Are safety showers available, accessible, and functional?		
Are volunteers trained in proper spill clean-up procedures and incident reporting?		
Do volunteers have access to a spill kit at all times and does the kit contain appropriate spill cleanup materials?		
Other?		
13. Hazardous Materials Handling and Storage		
Are handcarts available for moving large gas cylinders?		
Are volunteers trained in handling of hazardous materials (WHMIS)?		
Are all containers containing chemicals properly labeled (WHMIS)?		
Are current SDS (Safety Data Sheets) available for each hazardous material in the building?		
Is an inventory of all hazardous materials maintained?		
Is appropriate personal protective equipment worn when required?		
Are all gas cylinders properly supported and stored?		
Is storage of hazardous chemicals kept to a minimum?		
Are large containers containing hazardous chemicals stored on shelves below eye level?		
Are flammable materials stored in flammable storage cabinets?		
Other?		
14. Tools and Equipment		
Are lockout procedures in place and followed?		
Are guards and safety devices on equipment operational?		
Are electric-powered tools grounded or double insulated?		
Is the load rating on the equipment sufficient for the work performed?		
Are operator and service manuals available for the equipment?		
Are emergency stop buttons operational?		

	Yes	No
Other?		
15. Noise		
Is hearing protection provided to all GSAR volunteers in the group?		
Are Hazardous noise areas identified and marked?		
Other?		
16. Personal Protective Equipment (PPE)		
Is the appropriate PPE (safety glasses, gloves, respirators, etc.) available and used when required?		
Are volunteers trained in the safe use of PPE?		
Other?		
17. Hazardous Waste disposal		
Are appropriately designated waste containers used for sharps, biohazards, etc.?		
Are volunteers trained in proper waste disposal procedures?		
Are waste containers clearly labeled with content?		
Other?		

DAILY VEHICLE PRE-TRIP INSPECTION REPORT

Customizable “Pre-Trip Driver’s Checklist” and “Monthly Inspection Report” can be downloaded from the GSAR Safety Area in the Members Area of the BCSARA website.

Driver _____ Date _____

Approaching the Vehicle:

- Exterior Vehicle Damage
- Leaks Underneath Vehicle
- Mirrors/Windshield Clean

Check Cab and Engine Compartment:

Cab:

- Check fuel level
- Horn
- Windshield Wipers
- Warning Lights and Buzzers
- Defroster/Heater
- Doors, Locks, Windows
- Seats and Floor
- Seat Belts
- Emergency Equipment (First Aid Kit, Fire Extinguisher, Reflective Triangles, etc.)

Check Fluid Levels

- Oil
- Coolant
- Power Steering
- Transmission
- Brake Fluid
- Windshield Washer Fluid

Walk Around:

- Turn Signals
- Auxiliary and Clearance Lights
- Headlights
- Exhaust
- Wheels, Tires and Lug Nuts (ensure spare tire on-board)

Comments:

Appendix I – Records to be Maintained

Unless otherwise indicated, records must be retained for a period of 7 years from the date of creation of an individual record.

Type of Records	Record Requirements
Risk assessments	A risk assessment should be performed, and records kept, for all GSAR facilities, locations and frequent response areas; they should also be conducted for any high-risk activity the group engages in (e.g. helicopter or SWR rescue).
Facility or Location Inspection Reports	Facilities, including GSAR halls, should be inspected monthly. RADeMS should be completed each time a wilderness location is used for training or exercise.
INCIDENT/NEAR MISS Investigation Reports	All INCIDENTS and, any significant NEAR MISSES, must be investigated and a record kept. All INCIDENTS WITH SERIOUS INJURY must be reported to EMBC.
Management Committee or Board of Directors meetings	Safety should be a standing agenda item; include report of the Safety Committee in the minutes. <u>BOD minutes must be retained for 10 years.</u>
First aid treatment records	A first aid record of any treatment received by a volunteer will be placed in that volunteers' file, no matter how minor the injury. A record should be kept of any volunteer who is exposed to toxic or biohazardous material, or potentially toxic material, during the course of training, exercise or response.
GSAR equipment inspection, testing & maintenance records	Records of use, instruction manuals, standards, inspections, tests, etc. required for the safe operation of GSAR equipment. Frequency of inspections and testing should follow manufacturer's recommendations.
Inventory of hazardous substances - SDS	An inventory should be maintained identifying all hazardous substances, including products covered by WHMIS legislation. (e.g. fuels; bear spray; flares; paints; solvents; compressed gases; etc.)
Response, Training and Exercise Records	Records of all responses, training and exercises undertaken by the GSAR group, including Risk Assessment for each session. RADeMS risk assessment tool should be utilized before entering the field for any response or training.
Vehicle inspection and maintenance records	Records of use, instruction manuals, inspections, log of repairs, tests, etc. for all GSAR vehicles, including trucks, boats, ORV's, etc. Frequency of inspections, and maintenance as per manufacturer's recommendations.
Safety Committee minutes	The group's Safety Committee should meet regularly, every 1-3 months, and minutes recorded.
Competency of equipment operators	Records of instruction, training and evaluation of competence of all operators of GSAR vehicles and equipment, including records of certification by outside agencies or instructors. Volunteers should maintain their own individual logs documenting experience using vehicles/equipment.

Appendix J – Heat and Cold Stress

Heat Stress

GSAR volunteers are regularly exposed to warm or hot environments during GSAR activities. Despite plenty of mountainous terrain, permanent snowfields and glaciers, much of BC becomes very hot in summer.

Prolonged or intense GSAR work in warm or hot weather (e.g. wildfire response) may lead to heat stress on the body, which may in turn result in a variety of heat injuries.

Heat stress may affect GSAR members and subjects alike. GSAR volunteers must be prepared to recognize and deal with heat injury in both responders and subjects; awareness and prevention are key.

Heat Injuries

Body heat is generated primarily from muscular activity. Heat injuries, or thermal injuries, occur when the body's production of heat occurs faster than its ability to lose, or dissipate, heat. This mismatch between heat production and heat loss may lead to an increase in the body's core temperature.

A variety of factors contribute to increased core temperature, including high ambient air temperature, excessive insulation (clothing), increased heat generation due to exertion, presence of certain medical conditions (e.g. thyroid disorders, medications, etc.), dehydration due to inadequate fluid intake, poor physical conditioning, etc.

Heat injuries may be classified as mild, moderate or severe. The following table details the causes, recognition, prevention and treatment of heat injuries:

	Cause	Symptoms	Treatment	Prevention
Heat Rash (Mild heat injury)	Hot humid environment; plugged sweat glands.	Red bumpy rash with itching, especially chest, abdomen, arms.	Change into dry clothes and avoid hot environments. Rinse skin with cool water.	Wash regularly to keep skin clean. Avoid oily skin products. Wear light, loose fitting clothing.
Sunburn (Mild heat injury)	Prolonged exposure of unprotected skin to the sun.	Red, painful, blistering or peeling skin.	If the skin blisters, seek medical aid. Protect burned skin with sunscreen (avoid topical anesthetics), keep skin covered until healed and work in the shade.	Try to stay in shade; wear a hat; cover bare skin with clothing; apply sunscreen with SPF of at least 15. People with fair skin should be especially cautious.
Heat Cramps (Mild heat injury)	Heavy sweating results in excessive loss of salt from the body, which cannot be replaced just by drinking water.	Painful cramps in arms, legs, or abdomen that occur at work or later at home. Heat cramps must be treated because they may be the precursor of other, more dangerous heat-induced illnesses.	Move to a cool, shady area; loosen clothing and drink cool salted water (1 tsp. salt/ 4 liters of water), salt-containing beverage (e.g. tomato juice; V8 juice) or fluid replacement beverage (e.g. Gatorade); avoid alcohol. If cramps are severe or do not go away, seek medical aid.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Rest in the shade. Volunteers should monitor each other to help detect symptoms of heat exhaustion or heat stroke. Good physical fitness reduces likelihood of heat-related illness.
Fainting (a.k.a. Heat syncope) (Moderate heat injury)	Excessive fluid loss; inadequate fluid intake.	Sudden fainting after several hours of exertion; faint should be transient & return to normal level of consciousness should be rapid; cool moist skin; profuse sweating; weak pulse.	ALWAYS USE YOUR ABC's IF SUDDEN LOSS OF CONSCIOUSNESS. Move to a cool area; remove excess clothing; remain lying down; if conscious, may have sips of cool water/juice. Fainting may also be due to pre-existing illnesses or a sign of heat exhaustion.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Rest in the shade. Volunteers should monitor each other to help detect symptoms of heat exhaustion or heat stroke. Good physical fitness reduces likelihood of heat-related illness.

<p>Heat Exhaustion (Moderate heat injury)</p>	<p>Excessive fluid loss, along with inadequate salt & water intake. Body's thermal regulating system begins to decompensate.</p>	<p>Profuse sweating; moist skin; body temperature may be normal, or mildly elevated (37°C-40°C); weak, rapid pulse; normal or low blood pressure; fatigue, weakness, dizziness, nausea & vomiting may all occur; very thirsty; may be confused.</p>	<p>GET MEDICAL AID. Heat exhaustion may lead to heat stroke, which can be lethal. A volunteer with heat exhaustion needs to be evacuated. Move into a cool shaded area; loosen or remove excess clothing; provide cool water/juice to drink; spray with cool water & fan to increase heat loss by evaporation.</p>	<p>Reduce activity levels and/or heat exposure. Drink fluids regularly. Rest in the shade. Volunteers should monitor each other to help detect symptoms of heat exhaustion or heat stroke. Good physical fitness reduces likelihood of heat-related illness.</p>
<p>Heat Stroke (Severe heat injury)</p>	<p>Body's thermal regulating system decompensates due to rapid increase in body temp. & inability to cool; loss of normal regulation causes sweating to stop. Heat stroke may develop suddenly or may be progressive from heat exhaustion.</p>	<p>Body temperature elevated (>40°C). Person is confused, weak, irritable, dizzy; may be decreased level consciousness, coma or seizures; skin is usually hot & dry but may be sweaty. Weak, rapid pulse; low blood pressure, rapid respirations.</p>	<p>HEAT STROKE CAN BE LETHAL. CALL AMBULANCE IF FEASIBLE; IF SUBJECT IS IN THE BACKCOUNTRY, ARRANGE IMMEDIATE EVACUATION; BE PREPARED TO DO CPR IF NECESSARY. Move into shade; remove all clothing, spray with cool water & fan; if available, apply ice/cold packs to scalp, armpits, groin areas. Offer sips of cool water only if person is conscious.</p>	<p>Reduce activity levels and/or heat exposure. Drink fluids regularly. Rest in the shade. Volunteers should monitor each other to help detect symptoms of heat exhaustion or heat stroke. Good physical fitness reduces likelihood of heat-related illness.</p>

Resources

“Preventing Heat Stress at Work” – WorkSafeBC – 2007 (available free from their website)

“Management of Heatstroke and Heat Exhaustion” – American Family Physician – 2005 Available free at: <https://www.aafp.org/afp/2005/0601/p2133.html>

“Wilderness Medical Society Practice Guidelines for the Prevention and Treatment of Heat-Related Illness: 2014 Update”: [https://www.wemjournal.org/article/S1080-6032\(14\)00270-1/pdf](https://www.wemjournal.org/article/S1080-6032(14)00270-1/pdf)

Cold Stress

GSAR volunteers are regularly exposed to cold environments during GSAR activities; in winter, extreme temperatures can lead to cold stress and a variety of cold injuries. However, mountainous terrain and cold bodies of water mean cold stress and hypothermia can occur in any season. Cold stress affects GSAR members as well as subjects; awareness is key to preventing serious cold injury.

Hypothermia

Hypothermia occurs when the body's core temperature cools below its normal range. Cooling takes place when heat loss is greater than the body's ability to produce heat. Important contributing factors include lack of proper insulation, wet clothing, wind chill, inadequate intake of food, extremes of age (very young; elderly) and certain medical conditions (e.g. diabetes, thyroid disorders, etc.).

Hypothermia, regardless of its cause, can be classified as mild, moderate or severe. Severe hypothermia is a medical emergency as it can lead to death. GSAR volunteers must be prepared to recognize and deal with hypothermia in both subjects and responders:

Severity of Hypothermia	►	Mild Hypothermia	Moderate Hypothermia	Severe Hypothermia
Core Body Temperature (normal range 36.5-37.5°C.)	►	32.0 – 35.0°C.	28.0 – 32.0°C.	< 28.0°C.
Muscular Activity	►	Intense uncontrolled shivering. May still be able to walk around and follow commands. Difficulty with fine movements.	Shivering is decreased or absent to muscular rigidity. Movements become jerky or erratic.	Muscular rigidity worsens. Not moving to command or spontaneously. Few reflexes. May appear dead.
Level of Consciousness (= LOC)	►	Impaired judgement. May show sluggish thought and have difficulty speaking, but can still follow commands.	Subject has decreased LOC, varying from irrational to stuporous. Difficult or unable to follow commands. Amnesia may occur.	Is unconscious and does not respond to commands or stimuli, such as shaking. May appear dead.
Vital Signs (HR = heart rate; BP = blood pressure; RR = respiratory rate)	►	Except for core temperature, vital signs are preserved. May have mild elevations in HR, BP and RR as the body uses energy to try to warm itself.	HR, BP and RR all begin to decrease as body runs out of energy, but they are all detectable. Pulse may become irregular due to heart arrhythmias.	Vital signs may be minimal or absent. Subject may not have any detectable HR, BP or RR. May appear dead.

Who is at risk of hypothermia?

Anyone working in a cold environment may be at risk for hypothermia, however the very old, the very young and persons with certain medical conditions are at particular risk. People with diabetes, thyroid disease, heart disease are at higher risk, as are people who are taking some medications. If you are unsure if a medication places you at increased risk, consult your physician.

Treating hypothermia

Once the ABC's of first aid have been addressed, you must stop the cooling process and begin rewarming. Rewarming is essential regardless of whether it is mild, moderate or severe hypothermia.

Stop the cooling process:

- Remove cold or wet clothes, especially any cotton clothes. Put person into pre-warmed clothes or sleeping bag.
- Use ground insulation to stop conductive heat loss into the cold ground or snow (e.g. use a Thermarest or Ensolite foam).
- Hat/touque is very important: the scalp is a major site of heat loss when left exposed.
- Create shelter to decrease convective heat loss/wind chill. Use a tent, tarp, Megamid, etc. to shield subject from the wind.

Rewarm:

- **Rewarming is critical.** If you do not start rewarming in the field, subject will continue to cool and possibly worsen to a more serious stage of hypothermia (mild → moderate → severe → death).
- Do not delay rewarming to take the person's temperature. Make your hypothermia assessment based on the findings in the table (i.e. muscular activity; level of consciousness; vital signs).
- Use whatever supplies you have available to begin rewarming: chemical heat packs, warm water bottles, portable charcoal heaters, forced air heaters, etc. (Be careful of heat sources causing burns if the person has decreased level of consciousness!)
- Warm, sweet fluids are okay as long as subject can protect their own airway.

Evacuate:

- All hypothermic persons require evacuation. A GSAR volunteer with even mild hypothermia will not be able to continue field duties and requires evacuation.
- For severe hypothermia, handle all subjects very gently. Rough handling/jostling may be enough to trigger potentially fatal heart arrhythmias. If vital signs are absent, CPR will need to be continued until subject can be evacuated to a hospital.

Frostbite

Frostbite is a thermal injury which occurs when the skin actually freezes. Like burns, frostbite can be classified as 1st, 2nd or 3rd degree, depending on the depth of freezing. In severe cases, all layers of the skin freeze, as does surrounding tissue; amputation of the frostbitten area may be required. While frostbite usually occurs when air temperatures are -1°C or lower, wind chill may result in frostbite

occurring in above-freezing temperatures. Frostbite typically affects the extremities, particularly the feet, hands, nose and ears as the blood supply to these areas is more vulnerable in cold weather.

Signs and symptoms:

- Cold, tingling, stinging, or aching feeling in the frostbitten area, followed by numbness.
- Skin colour turns red/purple, then white or very pale and, finally, grey. Skin is cold to the touch and feels firm; it may feel hard to the touch if deeper tissues (e.g. fat layer) are also frozen.
- Blisters will form in severe cases (2nd and 3rd degree); they may be blood-filled.

Treatment:

- Call for First Aid/Medical Assistance.
- Ensure the person is NOT hypothermic (hypothermia is a major risk factor for frostbite).
- Do not rub the frostbitten area. Protect with sterile bandages and soft, warm clothing.
- If help is delayed, consider thawing the affected body part in warm, not hot, water. Only do this if there is no risk of refreezing. **Do NOT allow frostbitten skin to refreeze**; this will increase tissue destruction and increase the likelihood of amputation.
- Evacuate. While a case of 1st degree frostbite may be handled in a warm building or vehicle, 2nd degree or 3rd degree frostbite requires medical attention. Since it may be difficult to distinguish the severity in the field, any person developing frostbite during a GSAR operation should probably be evacuated.

Preventing Cold Stress/Cold Injury

GSAR volunteers cannot avoid responding during cold weather. Thus, planning for activities in cold weather is the most important defense.

Wearing appropriate clothing and being aware of how your body is reacting to the cold help to prevent cold stress. Being physically fit and avoiding alcohol and smoking can also help to minimize the risk.

Protective Clothing

- Wearing proper clothing is the most important way to avoid cold stress. Wear at least three layers of clothing:
 - An outer, windproof/waterproof layer to break the wind and allow some ventilation (e.g. Gore-Tex®, DryVent; etc.). This layer helps reduce the chance of wind chill, and keeps out rain/snow.

- Insulating layer(s) of down, wool or synthetic insulation. This layer insulates by trapping air, and functions best when dry. Down is an excellent insulator but loses much of its value when wet; wool is better when wet. The best choices are synthetics (e.g. Primaloft; Polartec; etc.) which are light, warm and retain significant insulation value even when wet.
- An inner, or base, layer of merino wool or synthetic fibres (e.g. polyester; polypropylene; etc.) for comfort, ventilation and wicking of perspiration away from the skin. With heavy activity the base layer may need to be changed several times, so carry extras.
- Wear a hat. Significant amounts of body heat are lost when the head is left exposed.
- Wear insulated boots. Protect the hands with insulated gloves or mitts.
- Layer-up (add clothes) or layer-down (remove clothes) depending on activity levels and weather conditions. Keep extra dry clothing available in case clothing becomes wet.
- Do not wear excessively tight clothing. Looser clothing allows better ventilation.

Activity in Cold Weather

- Drink plenty of liquids, avoiding caffeine and alcohol. It is easy to become dehydrated working in cold weather. Ensure intake of carbohydrate-containing foods (provides fuel for the furnace!).
- Do not use nicotine: it causes constriction of blood vessels and increases risk of frostbite.
- Pace yourself. Try to maintain a steady, sustainable pace, and take frequent rest breaks if you are doing heavy work (e.g. stretcher carry; digging in avalanche deposits; etc.). Layer-up if you become chilled; layer-down if you are too hot.
- Take rest breaks out of the cold and wind, if possible. Set up a tent or tarp if you will be in one location for a prolonged period. Use a stove or fire to ensure warm drinks will be available.
- Buddy System: work together in teams and keep an eye on each other, particularly to detect early signs of frostbite on noses/ears.

Resources

“Baby It’s Cold Outside” – This website was developed specifically for GSAR responders and is highly recommended: <https://bicorescue.com/>

Physicians, nurses or paramedics may want to have a look at this highly detailed B.C. Clinical Practice Guideline: https://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc-guidelines/bc_hypothermia_cpg.pdf

WorkSafeBC has many publications addressing the recognition and prevention of hypothermia, although none are aimed specifically at GSAR responders.

“Wilderness Medical Society Practice Guidelines for the Prevention and Treatment of Frostbite”: [https://www.wemjournal.org/article/S1080-6032\(14\)00280-4/pdf](https://www.wemjournal.org/article/S1080-6032(14)00280-4/pdf)

Appendix K – Worker Care

Worker Care Guide

Responding to Stressful Events

Self-Care for Caregivers

GSAR volunteers frequently encounter critical situations which are emotionally stressful. Injured or deceased subjects, distraught relatives, lost persons who are never found, suicides and incidents involving children are but a few of the scenarios which may be emotionally stressful. Physical stresses (long hours, lack of sleep, physical exertion, etc.) may compound the situation.

Often, GSAR volunteers exposed to traumatic stressors are able to process these without assistance. However, sometimes traumatic stressors may overwhelm normal coping mechanisms, leading to a traumatic, or critical incident, stress response.

Critical incident stress responses occur frequently following emotionally stressful events. They are a reflection a volunteer has experienced a situation which has overwhelmed normal emotional defenses.

Symptoms of Critical Incident Stress (CIS) vary widely between volunteers, even when they have been part of the same incident, and may include:

- Feeling overwhelmed, burned out, helpless, extremely sad/sorrowful
- Fear, paranoia, denial, anxiety, terror
- Anger, rage, confusion, frustration
- Sleep disturbance (difficulty falling or staying asleep)
- Difficulty concentrating, problems with memory
- Flashbacks to the event or mental images of the trauma
- Depressed mood, loss of appetite, loss of libido, lack of energy, thoughts of self-harm
- Social isolation, especially from family, friends and other GSAR volunteers
- Absenteeism from work, GSAR events or other commitments
- Use of increased amounts of alcohol or other mood-altering drugs

It is normal for some of these feelings to be experienced by many first responders. If you are experiencing any of these, there are a number of things which may help you to cope:

- **Talk about how you are feeling.** Find people that you trust and have confidence in, and let them hear you. Talking helps to begin to make sense of an overwhelming experience. Talking is often the best remedy.
- **Go for a walk.** Physical exercise helps wonderfully to clear the mind. Go for a walk or a run, go to the gym, have a swim, play a game with your kids.
- **Try to maintain your routines.** Go to work, attend your GSAR events, and stick to your normal routine.
- **Eat sensibly.** Avoid excessive use of caffeine and alcohol. Drink plenty of water. Do not use alcohol or drugs to change how you are feeling.
- **Spend time with family and friends.** Talk to them. Have conversations and take an interest in their lives. Listen to them if they become concerned with your health and well-being.
- **Get some rest.** If you have trouble sleeping, get up and do something relaxing or enjoyable. Prolonged difficulty sleeping may mean you need to access professional care.
- **Know and respect your limits.** If you feel exhausted and need time off, take it. Respect your commitment to take regularly scheduled time off.
- **Help support others.** Helping others with their feelings around a critical incident may help you realize you are not alone, and that others are having similar reactions.

It may take several days, or even a few weeks, for you to start feeling normal again. As long as you can see progress toward the way you normally feel, you are likely on the right track.

When to Seek Additional Help

If the feelings you are experiencing become prolonged, intensify or lead to isolation, these may be indicators your CIS response is not getting better, or is worsening. Fortunately, there are resources available to help you deal with your response.

The BCSARA CISM Program provides peer support through a number of critical incident stress management interventions, including on-scene critical incident interventions. These interventions include defusing's, debriefings, follow-up and referrals. All BCSARA CISM members are themselves experienced GSAR volunteers who have received special training to support other members who have been affected by critical incidents.

Alternatively, you may wish to speak to a professional, such as a psychologist, family doctor, psychiatrist, social worker, nurse or leader in your faith community.

How to Activate BCSARA CISM support

Any GSAR volunteer or leader may request individual or group CISM support by calling the EMBC ECC; they will contact the CISM Team, who will respond to you directly:

Call 1-800-663-3456

Appendix L – BCSARA Online “GSAR Safety Program Area”

In 2017 the GSAR volunteer Joint Health & Safety Committee created the GSAR Safety Area (a.k.a. “GSAR Safety Program Area”) in the Member’s Area on the BCSARA website; the GSAR Safety Program Area may be accessed by **all** registered GSAR volunteers in BC. If you do not currently have access to the Member’s Area, create an account by clicking “Member’s Area” on the BCSARA home page, and then choosing “Click Here to Create an Account”.

The GSAR Safety Program Area is designed as a one-stop portal for a range of information supporting the GSAR Safety Program, including:

- Current and past issues of the SAR Safety Newsletter
- Current and past SAR Safety Alerts, Advisories and Seasonal Safety Reminders
- Downloadable templates for use by GSAR group Safety Committees (e.g. Vehicle Inspection Report forms, etc.)
- Links to safety resources, including the BCSARA app and the RADeMS app
- Accident/Incident reporting resources, including an option to report a safety incident or NEAR MISS anonymously
- A GSAR Safety discussion forum, open to all registered GSAR volunteers
- Links to important partner agencies, including EMBC and the JIBC
- Minutes of all past meetings of the GSAR Joint Health & Safety Committee

The GSAR Safety Program Area can be accessed at:

<https://members.bcsara.com/member-area/areas/sar-safety-program/>