



**APPALACHIAN
SEARCH AND RESCUE
CONFERENCE**

OPERATIONAL GUIDANCE MANUAL

Operational Guidance Manual of the Appalachian Search and Rescue Conference

Version 1.3

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I. The ASRC

A. INTRODUCTION

The Operational Guidance Manual (OGM) is a revision of all previous Operations Manuals for the Appalachian Search and Rescue Conference (ASRC, Conference). This OGM documents the procedures and best practices of the ASRC for when Groups (member teams, Conference Corps, and Conference Cadre) respond to requests from authorities having jurisdiction¹ (AHJs). Portions of this OGM sets forth procedures that are to be followed as closely as possible. Due to the nature of requests from AHJs, portions of these procedures may be adjusted by a Group from time to time to satisfy the request. This OGM replaces any and all parts of previous versions of the ASRC Operations Manual and draft portions thereof.

Search and rescue (SAR) is an interdisciplinary field. SAR professionals and volunteers possess broad knowledge that they apply to attempt to resolve a missing or lost person incident. They are experts in their own right. That makes SAR personnel consultants to AHJs who request their services. Groups are a consultancy in their own right. Consultants are professionals who operate with professionalism to a standard of care. The Conference is a professional organization for SAR consultancies (i.e., volunteer SAR teams) that delineates that standard of care through consensus decision making and sharing a common operating picture. This OGM provides such guidance toward that standard of care and describes how the Conference operates and delivers its services related to missions.

B. ASSOCIATED DOCUMENTS

The OGM builds on current versions of ASRC organizational documents including:

1. Articles of Incorporation and By-Laws;
2. Strategic Plan;
3. Administrative Manual;

¹ Also sometimes referred to as responsible authorities. However the National Incident Management System (NIMS) uses AHJ. From the [NIMS Guideline for the National Qualification System](#): AHJ is the NIMS term for entities that have the authority and responsibility to develop, implement, maintain, and oversee the qualification, certification, and credentialing process within their organization or jurisdiction. AHJs include state, tribal, or Federal Government departments and agencies, training commissions, NGOs [non governmental organizations], or companies, as well as local organizations, such as police, fire, public health, or public works departments.

4. ASRC Training Standards; and
5. Federal Communications Commission Radio Licenses assigned to the organization.

C. CAPABILITIES OF THE GROUPS

Each Group of the ASRC brings its own unique set of skills, members, and philosophies to the Conference. The common core skill set among all the Groups is the ground-based SAR skills that are set in the conference Training Standards (i.e., Field IV, III, II, and I). These skills are ubiquitous throughout the conference such that members of each Group are trained in these fundamental skills. The standardized performance expectations for this basic knowledge are found in the conference Training Standards. Each Group has adopted as part of their own training program the standards set forth in this manual.

1. SPECIALIZATIONS

Each Group also contributes their own set of specializations. Some of these specializations may include:

- cave rescue;
 - wilderness medicine;
 - canine search resources;
 - search management and incident command specialists;
 - disaster response training and resources,
 - equestrian resources;
 - data, information, and communications system specialists;
 - law-enforcement and local government liaisons;
 - vertical access;
 - swift water rescue; and
 - search and recovery specialists.
- Groups with specializations provide their own equipment and standards (which are in addition to standards promulgated by the conference) to conduct these

specialized operations.

D. CAPABILITIES OF THE CONFERENCE

Membership to the conference affords each Group several advantages including:

1. access to a unified set of training standards adapted to the Conference operating environment;
2. relationships and regular dialogue with Groups, which, when leveraged during an incident, offers a seamless integration into that incident;
3. immediate and remote assistance with search management;
4. a culture of innovation, research, and desire to advance the state-of-the-practice of SAR;
5. access to experienced and world-class experts doing cutting edge research in search and rescue;
6. best-practice recommendations from Groups of experienced and world-class experts within the conference, including this Section 5 of this document;
7. insurance products that take advantage of bulk rates to provide operational liability and other coverage; and
8. multi-agency coordination of all Groups during searches for critical missing subjects and high profile searches at the request of AHJs.
9. The conference is as strong as each Group. Groups of the conference benefit from the unique nature of each Group.

E. REVIEW AND REVISION PROCEDURES

This document will be reviewed bi-annually by the Conference Operations Officer (COO). The effectiveness and usability of the policies and procedures described herein will be reviewed. Current practices will be reviewed against what is described in the text and appendices of the current version of the OGM. The Conference Operations Officer (COO) is responsible for completing the review in coordination with the Operations Officers of the Groups. Changes to the text (i.e., body of the document, not including the appendices) of this OGM will be proposed at a Board of Directors (BOD) meeting for approval. Changes will be communicated using a redline version of the document. Once approved, only those changes will be applied

and a new version of the document, to supersede the prior version, will be reissued to all Group Operations Officers and to the BOD.

Appendices, if any, will be reviewed at least annually. Updates to appendices of this OGM can be made by the COO. Those updates will be communicated to Group Operations Officers upon completion and in writing. Updates to the appendices, if any, will be communicated to the BOD during the second and fourth quarter BOD meetings.

F. DOCUMENT ORGANIZATION

The remainder of this document is organized as follows:

1. a detailed explanation of the organization of the conference is presented in Section 2;
2. a description of how the Groups and the conference responds to requests for service is provided in Section 3;
3. guidance to Groups for best operational practices is provided in Section 4; and
4. Group accreditation procedures are provided in Section 5.

Supporting materials and documents can be found on the ASRC website.

II. Organization of the Conference

A. INTRODUCTION

The Conference is structured to provide support to the Groups and facilitate regular interaction between the Groups. The organization relies on the Groups to be mature and independent organizations in their own right who seek the advantages afforded by membership to the Conference. The Conference is structured to provide equal representation from each Group to the organization and has organizational officers who guide the direction of the Conference and drive it forward by producing documentation, guidance, and other products for the benefit of the Groups or the volunteer SAR community.

B. CONFERENCE OFFICERS AND LEADERSHIP OF THE GROUPS

Conference officers lead the Groups to realize the mission, vision, and core values of the conference's Strategic Plan. Conference leadership contributes to the overall direction and activities of the organization in tandem with Groups' requests and input. Conference officers are resources for the leaders of each Group to consult on a variety of issues as Conference officers generally have significant experience and expertise.

C. RELATIONSHIP OF THE CONFERENCE WITH OUTSIDE ORGANIZATIONS

Groups of the ASRC strive to set the example for other SAR teams they interact with. They do this by achieving a high level of performance during a mission, conducting valuable routine training, interacting at a sophisticated level with AHJs, and maintaining professional demeanor at all times. Everything that a member or Group does is in an effort to advance the goal of SAR - to find the missing person fast.

On behalf of the Groups, the Conference may occasionally reach out to other organizations which may offer a beneficial relationship to the Groups. These organizations may offer products, services, or expertise that may be of benefit to the Groups. Conference officers may be able to leverage the size of the membership body, previous successes or the uniqueness of the organization to attract outside organizations to bring their goods and services to the Groups.

Conference officers may also engage other SAR teams to explore the possibility for that team to join the Conference. These SAR teams may be of strategic value such as expanding the conference area of influence or

incorporating a specialized resource. Any team that wishes to join the conference shall follow the procedures outlined in the Administrative Manual. Growth of the Conference is important to its overall mission and survivability. Each Group has a responsibility to help the Conference grow.

D. RELATIONSHIP BETWEEN GROUPS

Membership in the Conference constitutes a mutual aid agreement/memorandum of understanding (MOU) amongst the Groups.

This OGM by and large provides the details of that MOU including how Groups interact with each other to request their services. Other ASRC documents provide details such as common training and administrative practices. The Groups may develop their own documentation between themselves; however it is a best practice for ASRC documents to remain the first priority.

E. RELATIONSHIP BETWEEN THE CONFERENCE AND RESPONSIBLE AUTHORITIES

In several places, the ASRC Strategic Plan (Plan) describes the ASRC as an organization that provides multi-agency coordination across the Groups. Our core values assert that we "work in close cooperation and coordination with responsible authorities before, during, and after missions." The Plan also recognizes a client environment that implies the Conference is best positioned to emphasize its delivery of multi-agency coordination, before, during, and after missions.

1. CLIENT ENVIRONMENT

Additionally, agencies across our client environment have typically adopted the National Incident Management System (NIMS). Most obviously, searches now are conducted using the Incident Command System to organize field activities. NIMS also describes multi-agency coordination during incidents, emphasizing prioritization of resources, requesting resources from multiple agencies, and ensuring common operations upon arrival at an incident. According to NIMS, multi-agency coordination consists of "personnel, procedures, protocols, business practices, and communications integrated into a common system." Consistent with NIMS, then, ASRC organization and governance, business practices, and common training standards provide the foundations of multi-agency coordination.

These principles, in turn, guide development of our OGM, establishing the doctrine underpinning the ASRC’s common core capabilities and coordination protocols. In particular, this OGM describes in subsequent sections mechanisms for resource requests, resource coordination and accountability, and guidance to establish a framework for interoperability, especially with regard to communication capabilities.

F. ROLE OF THE CONFERENCE OPERATIONS OFFICER

1. ROLE

The COO is the primary leader to set the culture and values which guide Group’s responses to requests for services from an AHJ. The COO provides a forum for Group operations officers to interact, discuss issues, and seek advice. The COO encourages good discussion between the Group’s operations officers, connect Groups to each other, and stay up-to-date on the capabilities offered by each Group. The COO also monitors State and local issues facing Groups, including operational requirements, political climate, and responsible authority needs. The COO identified opportunities for the ASRC to assist Groups to overcome these challenges. The COO may want to monitor emerging trends in missions requests to help identify new challenges facing Groups. The COO may also want to monitor new technology, training opportunities, and operational techniques that conference Groups may want to take advantage of. In essence, the COO conducts continual market research to identify emerging operational and training needs.

During times when the Conference is acting as a multi-agency coordination (MAC) center, the COO is the primary point of contact for dispatch and coordination of Conference activities. The COO may at times, appoint or request a delegate for this duty. Conference dispatch procedures are described in Section 5 of this OGM.

2. QUALIFICATIONS

A desirable candidate is someone who:

- has served in a similar position in their Group or other SAR organization
- is a seasoned SAR volunteer or otherwise brings desirable skills to the Conference
- understands the political climate surrounding the SAR community in the areas that the Conference has

Groups

- is easily reached to provide advice to Groups and their operations officers
- has dispatched their Group members before and has experience with dispatching
- understand the role of the Conference Corps consistent with the policies outlined in the Administrative Manual and can assist Groups in contacting a Corps, if needed

If the Conference does not have a COO, then the role and duties described herein fall to the Chair of the Board of Directors. It is a best practice for the ASRC to keep the COO position filled.

III. Health and Safety

A. COMMITMENT

Protecting the health and safety of the personnel of each Group during travel, training, mission response, and other Group or Conference activities is a core value of the Conference. Health and safety is the first consideration when Groups are conducting their business. The Conference works to create a culture of safety and the example is set by the leadership of the Conference, Groups, and Group members. This section provides prescriptive requirements and best-practices for Groups.

Health and safety affects the quality of services we deliver to the lost person and the AHJ. It affects the experiences and careers members of our Groups undertake when they volunteer. It affects third parties such as our members' friends and families.

Membership in the Conference is a commitment by each Group, with help from the Conference, to maintain a best-in-class health and safety program. A health and safety program leverages rules when it is appropriate combined with behavior-based safety as the primary means to ensure safe operations. At their request, the Conference assists our Groups in developing their own health and safety programs using this section as a guide.

B. INTRODUCTION

SAR activities are inherently dangerous and expose volunteers to risks additional to those they incur daily through the course of their lives. The Conference, the Groups, and the individual members adopt the mantra "Everyone goes home." Searcher and rescuer safety are a priority to be put before the mission, the subject, and the AHJ.

This section provides minimum Conference requirements of and general guidance to Groups to manage the health and safety risks inherent to SAR training and operations. It is this deliberate management that allows our volunteers to perform the services they seek to provide to the lost or missing subject at the highest level they can.

C. DEFINITIONS

Health - references the physical well-being and mental welfare of personnel, including being free of injury and illness.

Safety - is the behaviors and practices that protect personnel and others from harm.

D. OCCUPATIONAL SAFETY AND HEALTH REGULATORY REQUIREMENTS

The statutes and requirements of the Occupational Safety and Health Administration does not apply to volunteer organizations, because volunteer organizations do not have employees. This is documented in an interpretation [letter](#) by OSHA.

The nearest applicable OSHA regulations are those for general industry found in 29 CFR 1910. Some states have state plans with additional requirements and enforcement. Maryland and Virginia have OSHA-approved state plans.

[Maryland](#) The state plan incorporates all of OSHA's regulations and adds additional requirements for specific industries or tasks. Maryland's state plan applies to employers and employees - which volunteer organizations do not meet the definition of.

Virginia The state plan incorporates most of OSHA's regulations and includes additional requirements for specific industries or tasks. Virginia's state plan applies to employers and employees - which volunteer organizations do not meet the definition of.

Volunteers are not public employees.

While not enforceable, the regulations and guidance documents provided by Federal and State agencies are good references for the Conference and Groups to use when developing their own health and safety program.

Other Federal, State and local regulations related to the practice of medicine are addressed by the Conference medical committee (see Section V.C.3) and must be followed as applicable.

In the interpretation letter referenced above, it is a best practices that Groups consider that EPA regulations pertaining to "emergency responses involving hazardous substances" do apply to volunteers as provided for in 40 CFR 311. Groups may consider providing an awareness level of training for hazardous substances and avoidance as a strategy to comply.

E. STOP WORK AUTHORITY

1. REQUIREMENTS

All Group members (i.e., each member of the Conference) have Stop Work Authority (SWA). This authority is extended during any Group or Conference activity (e.g., training, mission response, community service events, meetings) and to all persons participating in that activity. It is a best practice to remind members of SWA at the start of each activity.

A person may invoke SWA if he or she observes an unsafe condition, act, or is requested to perform a duty without proper training, personal protective equipment (PPE), or resources.

It is a best practice to extend SWA to anyone who is working on a task. SWA does not apply to ASRC Groups only, but everyone who is participating in a task. ASRC Groups may set the example by reminding of SWA prior to initiating work on a task.

2. USE

SWA shall be invoked in good faith. Good faith means honest, fair, and sincere intention. The concerns raised shall be remedied in good faith between the stakeholders of the situation before work resumes. If the concerns cannot be remedied then they shall be escalated to the next higher authority in the incident command structure. Work will not resume until the SWA concerns are remedied.

F. RISK ASSESSMENT/EVALUATION

1. INTRODUCTION

The Conference and each Group has a tolerance for risk that organization is willing to accept. Risk is evaluated over the spectrum of operations and activities that the organization participates in. It is a best practice to evaluate the risk to an organization that for each of the activities it participates in - including trainings, missions, meetings, and community service events. It is a best practice for an organization to establish mitigating practices and procedures to reduce risk. This section provides brief guidance to evaluate risk using widely accepted techniques the Conference considers best practices.

2. EVALUATION OVERVIEW

Risk can be evaluated quantitatively or subjectively. Risk is commonly quantified with currency. For instance, the insurance market allows a person or organization to sell risk the risk they face to a third party - insurance carrier - for a premium. Subjective evaluation relies on personal or group experience to project what would happen, the likelihood, and its consequences (i.e., very close to the definition of situational awareness). This section focuses on subjective evaluation. Much of the discussion in this section is used as part of Task Hazard Analysis (see Section III.F). But we treat risk evaluation separately because holistic risk is evaluated by an organization - through its officers and BOD - continually as it conducts its business. Task Hazard Analysis is the final check, a

just-in-time tool, for those conducting discrete tasks of the business.

3. DEFINITION OF RISK

Risk is commonly defined as the product of the probability of an unwanted outcome and the perceived severity of that outcome. [MIL-STD-822e Section 4.3.3](#) is a military standard used as a model by many public and private organizations to assess risk. That model is shown below:

RISK ASSESSMENT MATRIX				
SEVERITY \ PROBABILITY	Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
Frequent (A)	High	High	Serious	Medium
Probable (B)	High	High	Serious	Medium
Occasional (C)	High	Serious	Medium	Low
Remote (D)	Serious	Medium	Medium	Low
Improbable (E)	Medium	Medium	Medium	Low
Eliminated (F)	Eliminated			

Probability is evaluated by the likelihood that an unwanted outcome (it's called a mishap in the military standard) would occur. Typically some scale is used, for example: impossible, unlikely, equal chances, better than average, or expected. Severity is an estimate of the magnitude of the unwanted outcome.

The idea is to estimate the impact the outcome would have were it to occur. You might rate severity as minor if operations could continue - such as if someone were to be temporarily stuck in a boggy area during a search. You might rate severity as unacceptable if it causes operations to stop and focus on a new incident - such as the death of a searcher. These two factors - probability and severity - are evaluated together to make a determination of risk. You might rate the severity of an unwanted outcome from an activity as unacceptable, but the probability as impossible. Combined, that risk would be considered acceptable and the activity would proceed as planned. Another example would be a severity rating as mild and probability as equal chances. In this case, the activity would not proceed without putting mitigating practices and procedures into place to reduce either the severity, probability, or both. Risk is mitigated by taking action to drive down the severity or probability rating. Additional risk assessment and evaluation methods are discussed in the remainder of this section.

Another component of the risk definition, favored by the National Park Service for its employees, is to incorporate exposure into the evaluation. Where exposure considers the population and assets that would be

affected by the unwanted outcome. This approach is called SPE for Severity, Probability and Exposure.

Using this approach you would separately consider the population or asset that faces the risk. You may consider sensitive populations (e.g., schools, child care, elderly, those with medical conditions - including the subject, or vulnerable adults), a population grouped geographically (e.g., downwind of a chemical release plume), trained or untrained personnel engaged in a response, or special populations/stakeholders (e.g., churches or other community groups). Outcomes populations typically face include illness, injury, or death, but you may also want to consider political, economic, or societal outcomes.

Assets are physical objects that may be lost or damaged. These can range from large assets such as infrastructure to small such as personal or Group gear. Generally, members or Groups provide gear to effect the mission and if it is damaged in the process it is likely not a consideration because a life was saved. But consider that gear has to make it to the end of the rescue, not just through one component of the operation. This is thinking big picture or holistically. You may choose to use that equipment differently. Assets may also be of historical or cultural significance as commonly found in the parks of the Appalachian region. Or they may be park infrastructure - trails, bridges, guard rails - that affect visitor experience.

4. UNWANTED OUTCOMES

A note about the phrase unwanted outcome. This is discussed more in the Task Hazard Analysis subsection (see Section III.F), but is clarified here first. The unwanted outcome is not the hazard itself - a finger injury is an unwanted outcome, but not the hazard, the item or circumstances that caused the injury is the hazard. The unwanted outcome we are thinking about here is more often than not, an injury, illness, death, dismemberment, accident or similar result. There may also be financial, schedule, or operational unwanted outcomes.

5. EVALUATION METHODS

A good place to start is identifying the risk-free alternative to the activity you are evaluating. If doing that alternative satisfies the objectives of your activity then it is a best practice to choose that alternative. For instance, an organization may decide to hold a web-based meeting instead of an in person meeting to avoid asking many folks to drive long hours to attend. The ASRC traditionally does this by choosing to hold one web-based meeting a year for all attendees and, where feasible, provide a teleconference or web-based option for those who

cannot travel. The business of the meeting still happens and for one instance the Conference has avoided travel altogether. There are other desirable secondary benefits to telecommuting for a meeting. But this comes at the lost of other benefits to in-person meetings, and for this, we compromise as substituting one of four meetings this way. A better example might be when a field team leader refuses to take ill-prepared emergent untrained volunteers on a task. He or she will still take other well-prepared volunteers to accomplish the task, but those wearing flip-flops will not be permitted to participate. This decision by the field team leader is a more favorable alternative than to having to closely manage those with improper footwear and risk injury.

If the risk-free alternative will not satisfy the objectives of the activity then the risk is evaluated using the organization's chosen method.

There are additional risk evaluation practices that Groups may choose to use including:

- Operational Risk Management Analysis - this is a cyclical model used by government agencies to continually evaluate and manage risk. The Naval Post Graduate school has a very good explanation. The National Park Service also uses this system as an alternative to SPE in their Risk Calculator App.
- "What-if" - is a simple method to identify risks by asking a series of "what if" questions. The key to this method is to keep your questions focused, simple, and realistic. This is the simplest risk evaluation method.
- Checklists - is a method built on previous experiences resulting in unwanted outcomes. Many industries use checklists as risk-management measures most notably airlines and health care. Checklists preserve information that you may otherwise forget or overlook at the moment you need it. Checklists are also used in operational practices such as equipment inspections (a form of risk management) or to initiate a search (operational risk management to make sure you are doing all the things you were trained to do). The definitive text on checklists is Atul Gawande's *The Checklist Manifesto* (ISBN 0805091742).
- Hazard and Operability study: This system of risk assessment is most appropriate for operations that are process oriented - such as wastewater treatment systems - and typically include an engineering evaluation. The HAZOP study can result in safety improvements intrinsic to the design of a system. SAR organizations will not typically have need for

a HAZOP study, but a version of it might be done through training on standardized systems used in rescue such as rope or patient packaging systems.

- Failure mode and effects analysis: this is another assessment method that is best suited to processes involving equipment, such as chemical manufacturing. SAR organizations might use this system to evaluate the robustness of their communications systems if they are providing a turn-key solution during incidents.
- Fault tree analysis: This assessment method starts with the unwanted outcome identified. A prescribed method is used to evaluate the breadth of ways the unwanted outcome could occur from the SAR organizations policies and procedures. This assessment method requires training to do correctly. It is not anticipated that many SAR organizations would use this method on a routine basis, if at all.

Mitigating practices are needed for any alternative other than the risk-free alternative. Mentioned earlier, mitigating practices drive down the risk-evaluation factors (e.g., probability, severity, exposure) until the risk is tolerable to the organization. The remainder of the Section III describes the principal mitigating practices that Groups use. Mitigating practices are implemented via rules, operating practices and procedures, or a comprehensive health and safety program. The ASRC assists Groups in developing health and safety program at their request.

G. TASK HAZARD ANALYSIS

Task Hazard Analysis is a best practice to be performed by Groups and Group members prior to conducting a training evolution, a search or a rescue task (during a mission response). The analysis is done in advance for training evolutions and used to inform the design of the training evolution. It is a best practice to update Task Hazard Analyses when conditions change - including the addition of new participants (e.g., two teams form one new team at the direction of base during a mission). This may require that performance of the task is paused so all involved be performed.

The Conference does not prescribe a method to perform a Task Hazard Analysis. The chosen method and granularity reflect the complications and/or complexity of the task to be performed. Groups may consider documenting their analyses for future reference and as training aids.

1. COMPONENTS

Task Hazard Analyses have the following common components:

2. Identification of discrete actions to be performed to complete the task. For example, using a knife to cut debris away from the leg of a trapped canine. Another example placing flagging tape on trees in a line to mark the right side of a search line.
3. Identification of the hazards associated with each discrete action. A hazard is the condition presenting the potential for an unwanted outcome. A condition may be a feature of an object or the orientation of persons to objects or environments. Hazards are not outcomes. For example, the sharp edge of a knife is the hazard. Being cut is the outcome. Another example, small twigs on trees is the hazard. Or specifically the proximity of an eye to a small twig, and maybe it is also dark out. Being poked in the eye by a twig is an outcome. This distinction is key to identifying the best way to mitigate the hazard.
4. Evaluation of the likelihood and severity of an unwanted outcome from each hazard. This step is important to prioritize which hazards to implement mitigating practices. This step is assessing the risk of each hazard and contributes to the general risk assessment of the task.
5. Identification and implementation of mitigating practices based on anticipated why and how hazards result in unwanted outcomes. For example, loss of control of the knife or lack of situational awareness. Mitigating practices are the procedures and protective equipment put in place to mitigate the hazard. For example, using a knife to cut in a direction that is away from the user, the canine, or other people. Another example, the use of eye protection while in the woods (especially a night) to prevent twigs poking the eyes. Common mitigating practices are:
 - a. The use of PPE including helmet, gloves, clothing appropriate for the environment and task, eye protection, high visibility clothing (e.g., safety vests), sturdy boots, knee and elbow pads
 - b. Standardized communication practices such and call and response associated with vertical and semi-technical rescue work

- c. Improved situational awareness through careful review of terrain, forecast weather conditions, previously identified hazardous terrain features, full understanding of the task to be performed, and other means
- d. Good leadership and good followership
- e. Appointing a safety officer during certain high-risk tasks that require detached observations to improve participant safety

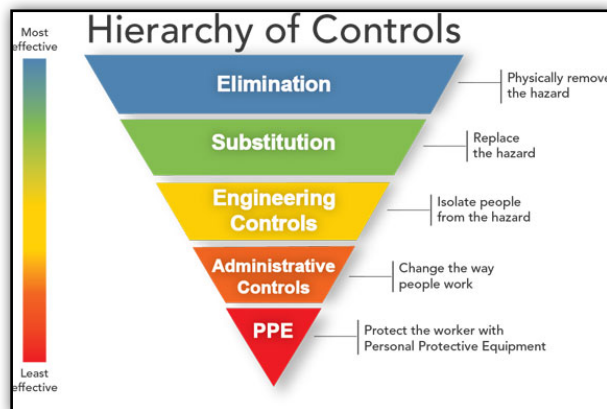
Performing a Task Hazard Analysis should not substantially delay the performance of a task, especially in emergency situations. In many cases the analysis will be performed by leaders and more experienced personnel “on-the-fly” as a situation develops. They will lead other team members by enforcing mitigating practices.

A best practice is to build Task Hazard Analysis into standard operating procedures and practices. Both as a standard action to do the analysis during implementing the standard operating procedure and as mitigating actions while executing the procedure (e.g., persons performing rope work must wear gloves).

H. HIERARCHY OF CONTROLS

1. DESCRIPTION

Controls are established to address the hazards and risks identified. Controls are the things you do to mitigate the hazards and reduce risks if you can't find a way to do the no risk option discussed earlier. The National Institute for Occupational Safety and Health, a research division of the Centers for Disease Control, establishes a hierarchy of controls¹ shown below:



The preference is to eliminate the risk altogether by not engaging in the task or activity that creates the risk. Barring this, another way is found to carry out the work.

¹ <https://www.cdc.gov/niosh/topics/hierarchy/default.html>

This is why unmanned vehicles are so popular, because they enable substituting a machine for a person. In addition to other advantages. These types of controls are really hard for a Group to use while engaged in missions or trainings. So we must go further down the list to more pragmatic but less effective methods.

2. TYPES OF CONTROLS FOR SAR

Generally controls are classified as administrative or engineering. Engineering controls are physical things that include the way equipment and gear is designed and used or how a rescue operation is organized in the field. Administrative controls are those policies and practices that the organization establishes to address hazards and risks. Personal protective equipment (PPE) is the least protective because its use means that a person is being directly exposed to the hazard. Making its proper use all that more imperative.

Control types are often combined to improve their effectiveness. For instances certain PPE might be specified for exposure to a certain hazardous material and is paired with an administrative control to limit the time a person is exposed to that hazard. In SAR we wear gloves (PPE) to protect our hands while carrying a litter, but then also exchange people during a litter carry. Many people will view the exchange of people on the litter team as spreading the burden of the work out, which is true. But primarily its an administrative control for risks of musculoskeletal injuries and exhaustion. There's a lot of things happening during a litter carry that we do to protect SAR personnel as well as the patient.

The nature of SAR work forces us into primarily using administrative controls and PPE. The remainder of this Section discusses a variety of administrative controls that the Conference requires or views as best practices for Groups to implement as part of their own Health and Safety program.

1. BUDDY SYSTEM

The use of the buddy system is a best practice. The buddy system is a common tactic to mitigate risk to individuals by prohibiting anyone from working alone at tasks performed during missions and training.

1. REFERENCES

Teamwork is pervasive throughout the SAR community. It is a core concept of how we organize, motivate, and carry ourselves. ASRC Groups are teams. Buddies, pairs, partners are the smallest unit of a team. A single person is not a team. Many organizations have policies to use the buddy system. Famous among them are the United States Navy SEALs. Trainees are indoctrinated

into the Buddy System by being assigned a Swim Buddy from the start of their training. There are many good references in print and online about what a Swim Buddy is and why they use it. Safety, teamwork, motivation are among the reasons. The United States Occupational Safety and Health Administration requires the use of the buddy system in its hazardous waste worker regulations. The concept is defined in 49 CFR 1910.120(a)(3) and requirement is provided in 49 CFR 1910.120(d)(3) and 49 CFR 1910.120(q)(3)(v) - where it is discussed as part of the incident command system.

2. BENEFITS

The benefits of the buddy system include:

- A built-in contingency plan were to one of the pair to be injured or otherwise requiring assistance. This is a form of accountability or practicing the dogma of being your “brother’s keeper”
- Redundancy, “two heads are better than one,” buddies provide capacity to double check they are carrying out their task in a safe and correct manner (either during training or missions or some other Group activity).
- Motivation and mental health monitoring system. Buddies encourage each other, constantly challenge themselves to carry out their tasks to the best possible quality. They provide opportunities to commiserate together, have a shared experience, and provide real-time peer-to-peer support, even if neither is formally trained to do so.
- Buddies are not a leaderless unit. Often one of the pair will be a stronger leader than the other. But together they lead each other. And together they have a built-in decision making capacity that is a consensus of two. Consensus decision making is a hallmark of the ASRC and the buddy system carries this tradition down to the operational level.

3. USE

It is a best practice to use the buddy system during missions so that individuals do not carry out field tasks alone during a mission. Positions in base or the command structure are filled by a single person, but they require interaction and communication with others, so those tasks have a version of the Buddy System built in. It is a best practice for tasks in the field, those away from base, and in the search area be carried out by two or more people. The initial arrival of folks to the

search scene is the time when the Buddy System is most vulnerable to not being followed. It is very tempting for an experienced SAR responder to carry out a hasty task that seems relatively low risk - searching a trail or some established linear feature, running a trailing dog as soon as possible upon arrival, etc. It is a best practice to avoid these types of decisions and default to using the Buddy System. There are likely other more valuable tasks that person can do so when more resources arrive, things are ready to go.

It is a best practice for Group members engaged in trainings to also use the Buddy System. Including those associated with planning teams during exercises. It is a best practice for at least two people to be engaged in any single task during a training evolution. Those role playing as subject should also be paired with a buddy. This is typically done by an “angel” - someone whose function is to monitor the safety of the role player while others are training on medical and rescue techniques using the role player. There is also typically a safety officer whose function is to monitor the safety of the participants in the evolution (the Health and Safety Officer role is discussed in detail later in this chapter).

J. TRAINING

The nature of SAR training inherently includes values of safety. It is a best practice for Groups to emphasize personal safety to each of their members as often as possible during training periods. Personal safety is practiced through the use of PPE, written and practiced operating procedures and guidance, and the experience of the individual and his or her teammates. Creating a culture of safety during training periods will carry over to mission response. This includes the use of safety briefings before training evolutions (more on safety briefings in Section K Mission Response). Groups will train their membership on the necessary PPE and safe practices that is needed to respond to their missions and participate in their trainings. The Training Standards set the minimum training requirements for Group members, including topics related to health and safety.

K. MISSION RESPONSE

1. WHEN THE GROUP IS CALLED OUT

Groups are encouraged to evaluate each mission and their potential response from a perspective of safety and risk to Group members and the Group itself. This is typically done by senior personnel of the Group (e.g., operations officer, president, chief). Evaluations of risk may include who is responsible for incident command, the types of tasks that may be assigned to the Group,

the distance the incident is from the Group’s primary response area and required PPE to be worn during the mission response. If the Group feels that safety of its members may be compromised without due cause or the Group incurs undue risk then they may address the concern with the AHJ, decline the task, or decline the mission.

2. AHJ CONSIDERATIONS

It is a best practice that Groups do not assume that the AHJ is communicating safety considerations or risks when requesting services for a mission. Risks inherent to a mission include the travel requirements to and from the mission, the environmental setting of the mission, climatic factors, subject type, the reason for searching, and the Group’s own capabilities. It is a best practice for Groups to turn down a request for services when the risk to the safety and well-being of their Group members is exceeded by that Group’s tolerance for risk.

Groups use their own methods to evaluate risk. The risk profile of each mission and training evolution is different. Suggested practices for risk evaluation are presented in subsection F of this Section.

3. MISSION BEST PRACTICES

It is a best practice for search management teams, in particular the Operations Sections or those preparing Task Assignment Forms, to provide field teams with a safety message for: (i) the overall operation applicable to that operational period, and (ii) known hazards of each task.

It is a best practice for field team leaders to include safety topics such as specific hazards associated with the scope of work, and hazard mitigations and controls as part of the briefing to their field team before engaging in the task. Field team briefings may be aided by the use of SARGAR, which is an established method that essentially prompts for the use of stop work authority. SARGAR (GAR meaning Green, Amber, Red) is implemented by giving each field team member the opportunity to assess their own personal risk for a task and requires them to address Amber or Red ratings before the task is carried out. The field team leader, or possibly other team members, will identify additional controls to mitigate the hazards until all member rate hazards and controls Green or Amber (meaning proceed with caution). Additional information on SARGAR is provided in the [AppSAR Leadership Chapter](#).

L. REPORTING

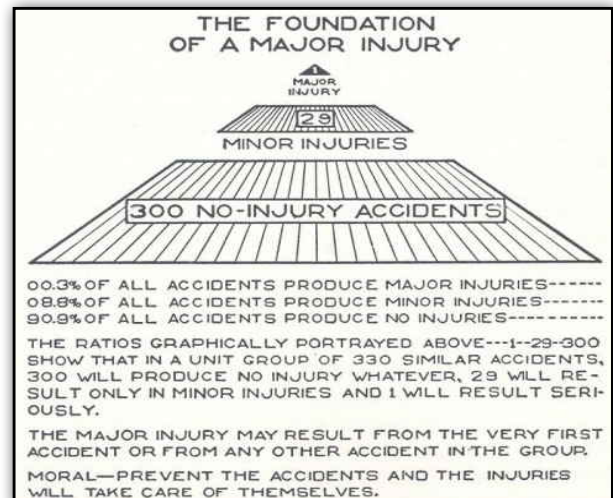
1. PURPOSE

Incident and near-miss reports collect information that the Conference uses to understand and communicate the risks team members and Groups are facing as they conduct their work (e.g., training evolutions and missions). Reporting is necessary to conduct investigations into losses. A loss is a death, injury, property damage, time away from the Group (for the purposes of recovery) or ceasing to participate in a Group (due to an injury or property damage). Many times releases to the environment (i.e., pollution) are also considered a loss, but this is not a typical or major concern of SAR operations and SAR organizations do not typically have to mitigate for such risks (exceptions may include air or off road vehicle operations).

2. NEAR MISSES

It is important for the Conference to capture near misses, because these are routinely under reported in any organization. Reporting of any health and safety metrics is mostly nonexistent in the volunteer search and rescue community. The closest possible data collection effort being through the Mountain Rescue Association. That covers a breadth of activities beyond what the Conference offers and is a national organization. Therefore the Conference has developed its own reporting system discussed in this Section.

Much work has been done to explore the frequency of the types of incidents resulting in losses. William Heinrich was a safety engineer who is known for his accident triangle - illustrating that a small fraction of unplanned occurrences (he called them accidents in 1941) resulted in a major injury. His original triangle is shown below:



This important work is the foundation of safety science focusing on preventing unplanned occurrences. It has led to the development of behavior-based safety systems. The triangle above was expanded by Frank Bird in the 1960s and the 1980s based on additional research and illustrates why collecting near-miss data is so important. The expanded triangle or pyramid is shown on the next page.



By expanding out the bottom two lifts of the pyramid, Bird illustrated that for every near-miss there is some unknown number of unsafe acts. These are generally unremarkable and many times you don't even know they have occurred. For instance, a searcher walking into the woods at night without safety glasses on, until he or she remembers a short distance in and puts them on. Generally unsafe acts go unrecognized meaning our teammates are doing an unknown number of actions that in retrospect in themselves would be found to be unsafe, but end up inconsequential. It is this foundation of unsafe acts that give rise to near-misses and losses.

Near-misses are unplanned occurrences that nearly (i.e., almost) result in a loss. One journal article¹ defines it as: "A near-miss occurs when an event (such as a hurricane or terrorist attack) has some non-trivial probability of ending in disaster (loss of life, property damage), but the negative outcome is avoided largely by chance (e.g., at the last minute, the storm dissipates or the bomb fails to detonate)." This is a well crafted definition, note the inclusion of chance. Some might call it luck or serendipity. Many times when a near-miss occurs, we almost immediately recognize that luck or chance seemingly played a role in why the event didn't result in a loss. Anyone that drives lives with near-misses almost

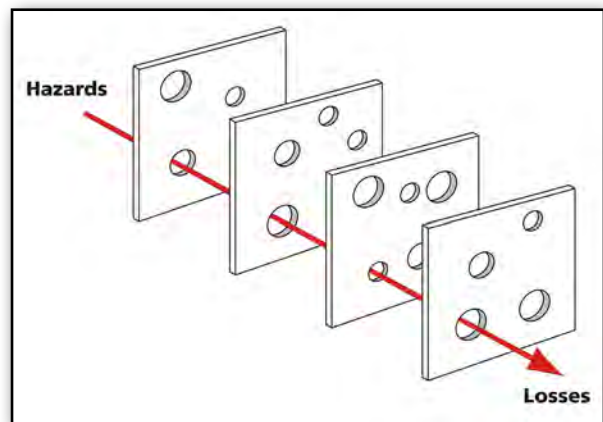
¹ Dillon, R.L., Tinsley, C.H. Near-miss events, risk messages, and decision making. *Environ Syst Decis* 36, 34–44 (2016). <https://doi.org/10.1007/s10669-015-9578-x>

daily.

3. THE ROLE OF CONTROLS

James Reason, a psychologist, in the United Kingdom has built a career on studying human error. His swiss-cheese model is perhaps the best cognitive tool we have to illustrate the concept of near-miss. This was described in an article² published by The BMJ in 2000 discussing human error models.

Imagine several slices of swiss cheese standing up and aligned so that the slices are behind one another. Each slice represents a safety control. One slice could represent the overall Health and Safety Program, another slice is for the risk analysis, one for standard operating procedures. Maybe a slice is for personal protective equipment and another is for the buddy system. But since each safety control is imperfect, they have holes in them, like slices of Swiss cheese. If the holes line up when the cheese slices are aligned (so you could see all the way through them), then a loss occurs. A near-miss occurs when the holes line up in all the slices except for the last one. It was that one last control that prevented the loss. The figure³ below illustrates the model:



Identifying near-misses is dependent on a person's risk tolerance and expectations of safety. Both can vary widely among the members of a Group and personally based on the person's own experiences and responsibilities. This and any number of cognitive biases present real trouble in a consistent interpretation of what a near-miss is. In turn, this translates to problems reporting near-misses.

Groups and their members are encouraged to report near misses when they feel the lesson learned is valuable

² https://www.ncbi.nlm.nih.gov/pmc/articles/PMC117770/#_sec5title

³ Image available from https://commons.wikimedia.org/wiki/File:Swiss_cheese_model_of_accident_causation.png

to the Conference. If unsure whether an occurrence is a near-miss or not, then report it as a near-miss. Contact the Conference Risk Management officer, the COO or the Chair to discuss appropriateness of reporting.

4. FILING A REPORT WITH THE ASRC

It is a best practice that Groups encourage incident and near miss reporting in a no-fault manner. No-fault investigations is a best practice that improves the frequency and quality of reports. The purpose of investigations (see next section of this Chapter) are conducted with the expressed purpose to glean and communicate lessons from it. The investigation is not to identify and lay blame to an individual for the occurrence of the incident. This is regardless of whether culpability is readily apparent. Rather the Conference is interested in communicating root causes and lessons learned.

Investigations by outside parties, chiefly by law enforcement or insurance adjusters, are not subject to Conference policy and have their own procedures.

The ASRC maintains a [reporting system](#) for use by the Groups and Conference members. This is a [web form](#) that includes a number of questions requiring a narrative response. The best practice is for the incident or near-miss to be reported by the person who was subject to the occurrence, not an observer (exceptions are warranted if the timeliness of the report is going to be affected (i.e., someone is injured and in the hospital). Take Sgt. Joe Friday's advice and give just the facts. Give only the information you know to be true, and no interpretations of what others were thinking or why you think someone took an action or not. You'll also be asked to provide a suggestion on how to prevent a similar occurrence or what you think are lessons learned. This is a valuable starting point for those reviewing the information and who will come up with recommended actions. Often the person reporting the incident will provide a practical answer while those investigating are more focused on policies and procedures.

A note on anonymity: It is a best practice to maintain anonymity of individuals involved in an incident. The standard way to do this is to replace a person's name with 'EE' (for employee) in reports.

M. ROOT CAUSE ANALYSIS

1. INVESTIGATIONS

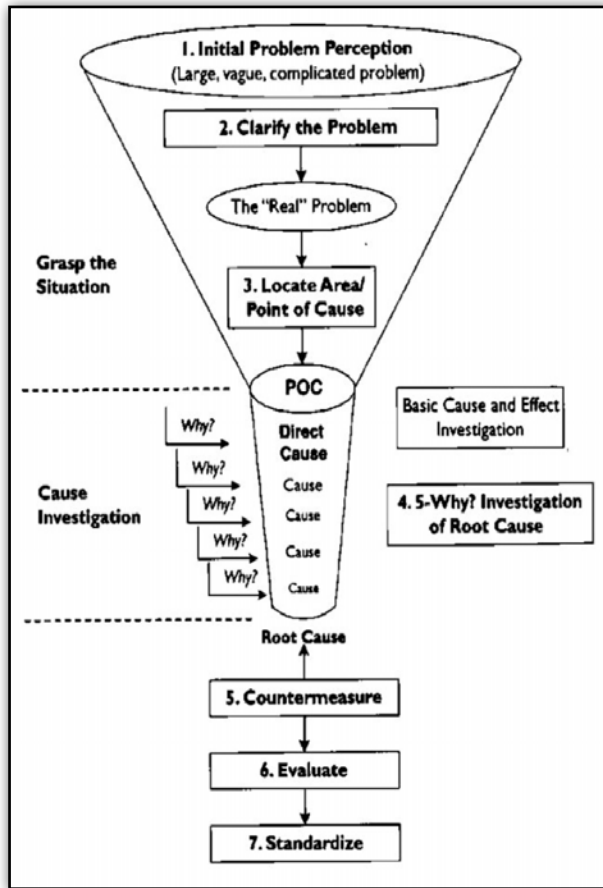
An investigation is initiated once a report is made. Investigations are not for disciplinary purposes. Disciplinary investigations are different and covered in the Administration Manual. They are no-fault investigations, meaning that the goal of the investigation

is to understand the root cause of the incident, not to lay blame or identify culprits. Investigations are root cause analyses to understand the situation well enough to report lessons learned back to the Conference, and potentially the SAR community. The analysis can be performed by the Conference, as it is the data collecting body or by the Group, who may benefit the most from the investigation. At the Conference level, the risk management committee or others as appointed by the Chair perform the analysis.

2. METHODS

There are many methods to perform a root cause analysis, but the Conference recommends using with the 5 Whys method. This is a series of successive questions that aim to uncover the underlying cause of the near-miss or incident. The questions help get past identifying contributing factors that may on the surface seem to be the root cause but are not. Rather by understanding some of the events leading up to the incident, the 5 Whys drill down to the root cause. Implementing changes at the root cause is the most effective at preventing a recurrence of the near-miss or incident. The private sector has a rich history of investigating and understanding root causes, not just in safety performance, but evaluating the spectrum of unwanted outcomes related to productivity and inefficiency. Notable among businesses is Toyota for its method of implementing change and finding new more efficient ways of performing. The figure below is from Liker¹ (2004) and presents a complete description of problem solving and where root cause analyses fit into the process:

¹ Liker, J. (2004). The Toyota Way. 14 Management Principles from the World's greatest Manufacturer. McGraw@Hill.



Ideally, root cause analyses are conducted by someone who has experience doing so. It is best practice that a the identified root cause is a consensus agreement of a committee working together. The Conference has a strong tradition in consensus decision making. The committee should be small enough so they are productive and deliver their findings in a timely manner.

Findings are likely to be brief and simple. They are not be worded to cast blame. It is a best practice to accompany finding with recommendations for improvements or mitigation strategies. Typically findings are communicated via a health and safety “alert” - a one-page document or email that is distributed to the Group members that describes the incident, findings, and changes to the Group health and safety program.

A note on anonymity: like reporting, it is a best practice to keep individuals involved anonymous in any communications to the Group membership. This helps prevent rumors from circulating within the organization. The standard way to do this is to replace a person’s name with ‘EE’ (for employee).

N. GROUP DISPATCH REQUIREMENTS

1. BACKGROUND

Accountability for individual members of each Group is a critical safety issue which the Conference requires each Group to address during each mission using a dispatching system. Group dispatch requirements and the Groups strict practice of using them rose out of the only line-of-duty death (LODD) experienced by the Conference. Read the story about Lisa Hannon in the In Memory section of the Conference website. The LODD was a shock to the SAR community and she is remembered through a very prestigious award given out by the Virginia Search and Rescue Council. She is also remembered every time Group’s use their dispatch system.

2. REQUIREMENTS

Each Group will maintain a dispatching system to account for each member who responds to a call-out or mission. The dispatching system will include the minimum following capabilities:

- Standard times during a call-out when an individual Group member must contact their organization, or vice versa, to account for their location and/or status;
- Account for the location and/or status of each Group member during the entire mission response including travel to and from the mission;
- Document the communication with each Group member including the date and time that Group member was contacted and a response received;
- A method which the Group stays informed of any changes in mission status and can communicate the change in mission status to each member engaged in the response;
- A method by which each Group member can be contacted during the mission response; and
- Procedures which train members of the Group on the use of the dispatch system and appointed members on the operation of the dispatch system.
- Groups use thier own documentation systems to meet these requirements.

3. DISPATCH EMERGENCIES

If a member who is under the watch of the Group dispatcher experiences an emergency, then that member should alert the dispatcher if possible. The dispatcher is there to assist the member with obtaining resources to respond to their condition. That might be calling 911 for the member, alerting other teammates, calling the member's emergency contact, or calling some other resource (e.g., a tow truck) to help.

Occasionally members fail to notify the dispatcher when he or she arrives back to their destination after a mission. Dispatchers normally know how long it should take to get from the mission back to the member's home. This is highly problematic, because the dispatcher does not know if there's been an accident or just a failure to notify. It is unknown if the system worked or not as intended. The dispatcher should try to contact the member first to verify that he or she has made it to their destination. Failing that the dispatcher is likely to notify the emergency contact and Group leadership that they cannot account for the person. Then, depending on the situation, the dispatcher may try to contact emergency services or hospitals to search for the person. They may ask for another member to travel the same route to look for the person.

This is why there is onus on both the dispatcher and the member to fully participate in the system. The member must take responsibility and care to contact the dispatch during each step. The dispatcher must be available to receive contacts and provide assistance when needed.

O. STRESS MANAGEMENT

1. SOURCES OF STRESS

Stress is experienced by all those who volunteer in SAR. Managing stress is a responsibility of the Group, their leaders, and its members. SAR volunteers experience increased stress as a result of their participation in a Group. Stress from SAR is in addition to that members incur through the normal course of their non-SAR lives, most typically from work and family matters. Stress is cumulative. Sources of stress in SAR can be from both internal Group issues and those related to missions or trainings. Compounding factors can include time of day, level of preparedness, mission parameters (e.g., search for a child vs. search for a Status 3 subject), and a host of other influences.

It is a best practice for Groups to recognize that all the factors contributing to each member's stress is unknown and participating in SAR can exacerbate reactions to stress. Not managed, reactions can have unwanted outcomes on the execution of mission tasks,

training evolutions, or travel. This section provides further guidance to Groups to help manage their members' stress.

2. CRITICAL INCIDENT STRESS

A critical incident is any sudden or unexpected event that has an emotional impact sufficient to overwhelm the usual effective coping skills of an individual or group and causes significant psychological distress.

Critical incident stress management (CISM) is the practice of recognizing and assisting those experiencing a crisis as early as possible. CISM was developed in Baltimore, Maryland by Jeffery Mitchell, Ph.D. and George Everly, Ph.D. Dr. Mitchell's brother was a firefighter for Baltimore City and recognized there was a lack of stress management for the fire department and treatment for The International Critical Incident Stress Foundation is based in Ellicott City, Maryland. Groups may consider trainings in psychological first aid and assisting individuals in crisis (peer-to-peer support).

Stressors leading to critical incident stress in SAR may be related to mission parameters (e.g., a subject similar to a member's family situation like young children or elderly adults), teammates getting injured, seeing and working with an injured or deceased subject, search setting (e.g., drawing a relationship with debris in a search with home situations), shift length or problems encountered working in base, or any number of unknown causes. Additional examples can include:

- serious injury or death of an emergency services worker in line of duty
- serious injury or death of a bystander from an emergency services operation
- multiple deaths or serious injuries
- serious injury or death of a child or infant
- any situation that attracts an unusual amount of attention from the media
- any loss of life after extraordinary and prolonged search and rescue efforts
- any situation that is charged with emotion and that causes an emotional response that is beyond normal coping mechanisms of emergency services worker

An individual experiences critical incident stress when they are unable to separate facts of the incident from emotions. It is a normal response to abnormal

events and circumstances. This is not the same as post-traumatic stress disorder.

3. STRESS REACTIONS

Everyone reacts to stress differently, and should not be discouraged from their normal reactions or coping mechanisms. It is a best practice to not discourage the use of normal coping mechanisms. However, folks should monitor that those mechanisms don't become exacerbated, which is a sign that they may need more professional help. For example a member might play video games as a normal relaxation technique but if his or her play becomes prolonged and disruptive this is a sign that additional help may be warranted.

Critical incident stress may result in the following.

- Acute stress reactions are common, and result in psychological and physical illness, but are limited to a few weeks and tend to resolve.
- Acute stress reactions may sometimes progress to delayed stress reactions or full-blown post-traumatic stress disorder in about 5-10% of cases.¹
- It is thought that prior education about the signs and symptoms of acute stress reactions may help prevent progression to delayed stress reactions or post-traumatic stress disorder.

4. TRAINING

It is a best practice for Groups to provide at least awareness level training to all members so they understand exposure factors and basic management techniques. Groups may also consider having a few members formally trained in peer-to-peer critical incident stress debriefing (CISD) techniques to provide a higher level of support. There is much evidence that CISD in a group setting is not effective and potentially harmful. Group debriefings are not endorsed by the ASRC (see the Medical Advisory Committee's stress management white paper). CISM training provides a tool-kit of techniques that can be used for short term help to have members return to normal functioning as quickly as possible. CISD is a perishable skill that requires specific training and practice.

5. MANAGEMENT BEST PRACTICES

ASRC Groups should adopt best practices for detecting and managing psychological stress, specifically:

- offer anonymous screening for acute stress reactions

after psychologically stressful incidents,

- provide information for members to access psychological screening, and if necessary psychological intervention,
- do not schedule, or allow external organizations to schedule, Critical Incident Stress Debriefing or similar group psychological debriefings for Group members after a psychologically critical incident, and
- adopt policies strongly recommending that Group members do not participate in Critical Incident Stress Debriefing or similar post-incident group psychological debriefings when scheduled by other agencies after a joint operation, and
- not prohibit informal and unstructured group discussions among willing Group members after stressful operations.

The following standard practices are encouraged:

- That Groups hold formal operational debriefings after large, complex or stressful operations.
- That Groups establish relationships with local provider(s) of services for psychological stress and develop a mechanism for rapid referrals of individual members experiencing problems to providers of psychological counseling. Training in CISM/CISD does not impact the provider's ability to provide quality individual services.
- That Groups develop an internal mechanisms for referrals of Group members with concerns for individual counselling (i.e., make accepting concerns a formal responsibility of a Group member or officer).

Part of stress management is a follow-up process with members who may have experienced distress. It is a best practice for check-ins from peers to be part of a Group's practice to evaluate members for latent manifestations of distress once they return to their non-SAR life.

It is best to rotate Groups and members involved in high intensity or extended operations. It is a best practice that rotations do not end participation, but rather ramp down levels of intensity or involvement. Rotating from a position of authority to ending participation altogether can be very stressful. It is a best practice to rotate someone from that position to something of lower responsibility but still participating in the mission. Phase members out of positions of responsibility if possible. If not possible, then considering substituting

a peer-to-peer debrief by someone CISM trained at the incident location.

Principals and techniques learned through CISM training are not a substitute for professional psychological help. Rather, it is a tool to help identify early on those who may need more intense help and connect him or her to professional resources.

P. FATIGUE MANAGEMENT AND EXTENDED OPERATIONS

1. BACKGROUND

Fatigue goes hand and hand with SAR operations. Rarely are we called out after being well rested, getting our gear in order, and shedding our stress from the work week. Despite our best efforts to encourage AHJs to call us out as soon as possible, the call comes in at the end of the day, for a location requiring a long drive. Then after our participation we return on that long drive and have to decide do we go home or sleep in the car at work (or under the desk) in anticipation for the next day? Every member of our Groups think through these scenarios to make their personal mission go/no go decision. It's part of their personal risk assessment. As volunteers, the decision is theirs. And typically belief in the services we provide, the desire to help, the benefits of their presence outweigh those risks and they go. A decision not to participate, based on fatigue, is use of SWA and is respected. Our Groups must help their members manage fatigue. That's what we learned from Lisa Hannon (see Section 3.M).

2. DESCRIPTION OF FATIGUE

The primary reference for fatigue management strategies is Robert Koester's *Fatigue: Sleep Management During Disasters and Sustained Operations*. Another major reference is the National Institutes for Health publication *Understanding Sleep*. There is also an OSHA [landing page](#) for preventing worker fatigue. Not surprisingly, the US military has performed extensive research on sleep deprivation, extended operations, fatigue, and countermeasures to maintain performance.

Its clear that fatigue degrades productivity, quality, and increases likelihood of making mistakes that lead to near misses, injuries or worse. The US Navy has a good guidance manual that succinctly discusses fatigue, effects on performance, and mitigation methods. Types of fatigue are shown in the figure below.

TYPES OF FATIGUE

Working definitions which provide a starting point in the operational setting:

ACUTE

- produced by physical exertion or sleep loss
- alleviated by a single rest or sleep period

CHRONIC

- depression or "chronic fatigue syndrome"
- a medical or psychological problem

OPERATIONAL

- attributed to physiological as well as psychological factors
- sleep loss and circadian desynchronization are prime culprits
- the type of fatigue produce by continuous operations
- most commonly seen after 3-4 days of heavy tasking
- not relieved by a single sleep period

3. FATIGUE MANAGEMENT PRACTICES

A few best practices for Groups to manage fatigue are summarized below:

- Train members on personal fatigue management by first helping them evaluate their personal rhythms ([Owl](#) vs. [Lark](#)). These types have implications for peak performance and sleep cycles.
- Develop sleep/work cycles in Group's operating procedures and train leaders how to adjust schedules to mission parameters. A common rule is a 2:1 work/sleep cycle. The US Forest Service has some good guidance on developing such a policy.
- Train staff on the safety and benefit of naps. It is a best practice to include ideal periods for naps, immediate effects after waking from a nap, and when naps become counterproductive.
- Establish expectations that members will not accept field tasks or drive if they are too tired. Train members to assess their sleepiness using one of the established evaluation methods. The Stanford Sleepiness scale is reproduced below. It is an instantaneous assessment of sleepiness, but it might be the easiest of assessments for a Group to deploy at a training,

mission, or through dispatch. A score of 3 or more indicates inadequate alertness (i.e., too sleepy to perform tasks or drive) and some sleep is required.

An Introspective Measure of Sleepiness The Stanford Sleepiness Scale (SSS)	
Degree of Sleepiness	Scale Rating
Feeling active, vital, alert, or wide awake	1
Functioning at high levels, but not at peak; able to concentrate	2
Awake, but relaxed; responsive but not fully alert	3
Somewhat foggy, let down	4
Foggy; losing interest in remaining awake; slowed down	5
Sleepy, woozy, fighting sleep; prefer to lie down	6
No longer fighting sleep, sleep onset soon; having dream-like thoughts	7
Asleep	X

4. CONSIDERATIONS FOR EXTENDED OPERATIONS

Extended SAR operations (i.e., those lasting days), also referred to as sustained operations in other literature, require additional logistical considerations. Typically extended operations also mean large-scale (i.e., lots of people) operations. It is a best practice for a Group to recommended and arrange fulfilling these considerations with the AHJ. Timing is important as there can be longer lead-times. As an incident expands, the Incident Command not only has to effect the search but also manage a workforce. Increase in scope means an increase in personnel as well. Front-loading a incident command team with more personnel prior to scaling up the search with more searchers and expecting longer durations is a best practice. Groups can assist in resourcing these assets but normally do not have authority to make purchases. Authority to purchase on behalf of an AHJ, should be verified in writing prior to doing so.

Additional logistical considerations for extended operations include:

- Accommodations for resting and sleeping that are away from the operational area and many not necessarily be the same as staging.
- Restroom and handwashing stations provided throughout the incident command, staging, and rest areas.

- Hot meals preferred over cold meals, quality food preferred over junk food.
- Planning sections in extended operations perform at a different tempo than operations sections. During large-scale and
- CISM trained personnel who are dedicated to that function and on hand for incident command staff and searchers as needed.
- Medical assessments for personnel after completing tasks and/or prior to demobilizing (signing out) from the incident scene. This is also a good way for the incident command to systematically screen for sleepiness and manage fatigue. It is a best practice to assessed the incident command staff at regular intervals - such as at the end of a shift or operational period.

The Conference has a Search Manager Cadre built as an internal consultancy to support Groups in these types of missions. Some of the Conference’s most valuable experience is with large-scale and extended duration missions. Although these missions are rare, the Conference has the most experience of any volunteer SAR group in the mid-Appalachian region. During these types of missions, the Conference also acts as a multi-agency coordination center (see Section IV.C and IV.D).

Q. HEALTH AND SAFETY OFFICER

1. ROLE OF THE HSO

The Conference strongly recommends each Group have a Health and Safety Officer (HSO) or equivalent who is responsible for implementing their health and safety program. The role of the HSO is best served as someone who does not already have a leadership role in the Group. The HSO reports directly to the Group’s top executive officer and not roll up to another person where a conflict of interest may exist. This structure maintains the independence of the HSO to voice safety concerns directly to Group leadership and demonstrates the Group’s commitment to health and safety. The position must be apolitical; but can be appointed or elected based on what works best for the Group.

Some Groups may not have the ability to appoint someone to this position, in this case, these duties are likely fulfilled by the Group operations officer and/or training officer. In these cases it is a best practice that the job function switches to maintain a level of independence - for example during training evolutions the

operations officer is the HSO. During missions, the training officer is the HSO.

2. JOB DESCRIPTION

Groups may define their own job description for the HSO based on their unique needs. The following are suggested components of that job description:

- Creates and/or maintains the Group health and safety program
- Review and updates the health and safety program annually or more frequently as needed based on changes in the Group’s scope of services, requests from AHJs, updated training and operating and past experience
- Create or maintain a list of PPE that the Group requires each member to possess and utilize when engaged in missions and training evolutions
- Identify and deliver training related to the Group’s health and safety program and proper use and care of PPE
- Collect and track safety-related data including near-misses, incidents, man-hours at training and man-hours at missions, incident rates, and other metrics as the Group requires
- Coordinate Group near-miss and incident reporting using the ASRC web-based system
- Lead Group investigations into health and safety near-misses and incidents to identify root-causes
- Develop and distribute safety alerts to the members to quickly communicate root causes of near-misses and incidents or other safety-related information
- Assists Group leadership in planning efforts related to training and community events to identify and mitigate safety risks
- Assists Group leadership in evaluating health and safety risks associated with requests for service from AHJs prior to dispatching members
- Serves as safety officer during training evolutions and community events, or appoints an alternate
- Serves as safety officer during missions as part of incident command or just for the Group as

appropriate

- Provides regular reports to the Group leadership on health and safety performance, implementation of and updates to the health and safety program, and other information as required

3. QUALIFICATIONS

Qualifications for the HSO position for volunteer Groups are likely to be similar to those for other key leadership positions. It is a best practice to require some level of experience and training. Expertise, experience and qualifications from outside of the Group are desirable, such as a certification from the Board of Certified Safety Professionals.

R. CANINE POLICY

1. POLICY

It is the policy of the Conference that any canine that is attending a Conference event (as defined in the Administration Manual) will be leashed or crated/ confined when not on an assigned field task or training activity. Canine handlers will have physical control over their canines(s) at all times, unless verbal control is traditional to the activity (i.e., field tasks). In the event that these standards are not upheld, the offending parties may be directed to leave the Conference event.

2. FAILURE TO ABIDE

Failure to abide by Conference policies, including without limitation, a direction to leave a Conference event, may result in disciplinary action. In the event that a dispute is made in regards to an incident, this dispute will follow the process set forth in the ASRC Administration Manual.

IV. Response to Request for Service

A. INTRODUCTION

AHJs who are charged with locating the missing person and effecting the rescue will turn to the Groups for assistance. Our Groups offer knowledge, skills, and abilities which supplement the capabilities of the AHJ. SAR Groups may have agreements such as an MOU that establishes methods of contact and expectations when an AHJ contacts that Group. In effect, SAR Groups act as consultants for the AHJ. SAR Groups normally have strict policies against self-deployment and will act only after an AHJ directly requests their service. Groups of the conference do not respond to requests for services from the general public, a request must come from a government organization. The remainder of this section describes the various methods by which services of Groups may be requested by an AHJ.

B. DIRECT REQUEST OF A GROUP

Each Group must develop their own relationship with the AHJs in their operational area. Operational areas of the Groups are defined by that Group. The ASRC does not assign operational areas. Note that operational areas can and will overlap. When a responsible authority contacts a Group, that Group may choose to respond based on any number of risk factors that leadership of the Group weighs, some of which may be outlined in Section III.

Upon responding to a request, the Group shall notify the ASRC of its intent to respond using the procedures described in on the website. Doing so initiates insurance coverage provided by the Conference and provides the Conference leadership with situational awareness of the state of conference Groups. Each Group shall respond to a request per their own operating guidelines but at a minimum have a dispatch system in place for their membership prior to sending members en route to the mission. Accountability of each member is part of conducting a safe response to a mission. Dispatch systems may be of that Group's own design but meet the requirements provided in Section III.N.

Groups do not respond to requests for service from the family of a subject. The Group recommends that request is routed through an AHJ.

C. DIRECT REQUEST OF CONFERENCE

1. AHJ REQUESTS THE CONFERENCE

An AHJ may choose to request the services of a subset or all of the Groups of the ASRC. In that case, the conference acts as a MAC center for that AHJ. If an AHJ contacts the Conference directly and requests the services of two or less Groups, then the Conference will refer the AHJ directly to those Groups for response by providing contact information to the AHJ or contacting those Groups directly, or both. If an AHJ directly requests the entire ASRC or at least three Groups, then the ASRC will initiate Conference dispatching systems.

2. DECLINING A REQUEST

The COO/CAO, in consultation with another officer of the Conference may turn down the request. However, the COO/CAO will always refer the AHJ to the closest Group for further consideration.

3. CONFERENCE DISPATCH

Requests from the AHJ will first be routed to the COO or his designee (Conference Alert Officer [CAO]), who at that time may directly contact the AHJ for further information. The COO/CAO will choose a Group whose operational area is closest to the mission to act as the point of contact for the Conference at the mission incident command post. That Group will name the person who Conference dispatch will communicate with, preferably a senior member. The COO will open Conference dispatch using the procedures described on the website.

Each Group shall respond to the Conference callout per their own operating guidelines. They shall have a dispatch system in place for their membership prior to sending members en route to the mission. The Conference does not dispatch individual members of Groups.

Circumstances of the request may be unusual or beyond the capabilities of the Conference. As such, the COO/CAO may contact the Chair or another officer of the conference to discuss potential options to respond to the AHJ. The COO/CAO will act to satisfy the AHJ's request to the extent possible, including contacting non-Conference SAR teams who the Conference has a relationship with.

D. GROUPS INITIATING A CONFERENCE-WIDE REQUEST

1. INITIATING

A Group may receive a request from the AHJ to engage additional Groups in a mission. It is a best practice that the Group ask directly if the AHJ understands the risks of engaging additional Conference Groups, namely extended transportation times for personnel. Then the Group contacts the Conference to initiate the coordination of additional Groups from the conference.

2. CONTACTING THE CONFERENCE

The Group will act as the point of contact for the conference for the duration of that mission. Contacting the Conference may be done so through (in order): (i) contacting the COO, (ii) contacting any of the other Conference officers, or (iii) opening Conference dispatch. If neither the COO nor any of the other Conference officers are available, then the Group opens dispatch directly using the procedures described on the website. Note that it is preferable for a Conference officer to first be notified so that the risks are understood at the leadership level prior to engaging additional Groups and opening dispatch.

E. RESPONSE BY PERSONNEL FROM GROUPS

Personnel from Groups of the ASRC always respond as personnel of their Group. Personnel shall not register with the mission under the ASRC. Groups who permit personnel to hold membership in more than one SAR organization shall have in-place policies and procedures, including dispatching procedures, to guide personnel as to which Group they are representing at that time.

F. RESPONSE BY REMOTE SUPPORT CORPS

1. INTEGRATING WITH THE AHJ

An AHJ may request remote support for a mission to assist in planning, data analysis, mapping, and other services. Remote support is an important service that a Group has access to through the Conference and can offer to an AHJ when engaged in a mission. Remote support through the Conference shall not be initiated without a request from the AHJ. When requested, the AHJ must be made aware that personnel from other Groups who may not be present at the mission will be providing remote support services via the ASRC

Remote Support Corps (RSC). If remote support services are provided fully by Groups who have already been requested by the AHJ, then additional permission is not necessary. An additional request from the AHJ is required only when personnel who would provide remote support services are members of a Group that has not yet been requested by the AHJ. Requests for remote support can be made by any Group engaged in a mission through the COO/CAO, ASRC dispatch (if open), or by directly contacting personnel of the RSC via their published procedures. The RSC shall have their own policies and procedures for responding to a request for services.

RSC personnel from Groups not requested by the AHJ for the mission shall notify their Group of their intent to provide remote support services or make prior arrangements for their participation in the RSC. The Conference encourages each Group to support the RSC by making their personnel available to participate in trainings and missions.

2. NOTIFICATION AND MOBILIZATION

The RSC has its own procedures to operate beyond those described in this section. The Notification and Mobilization Procedure provides specific directions to request the RSC. Those are summarized below:

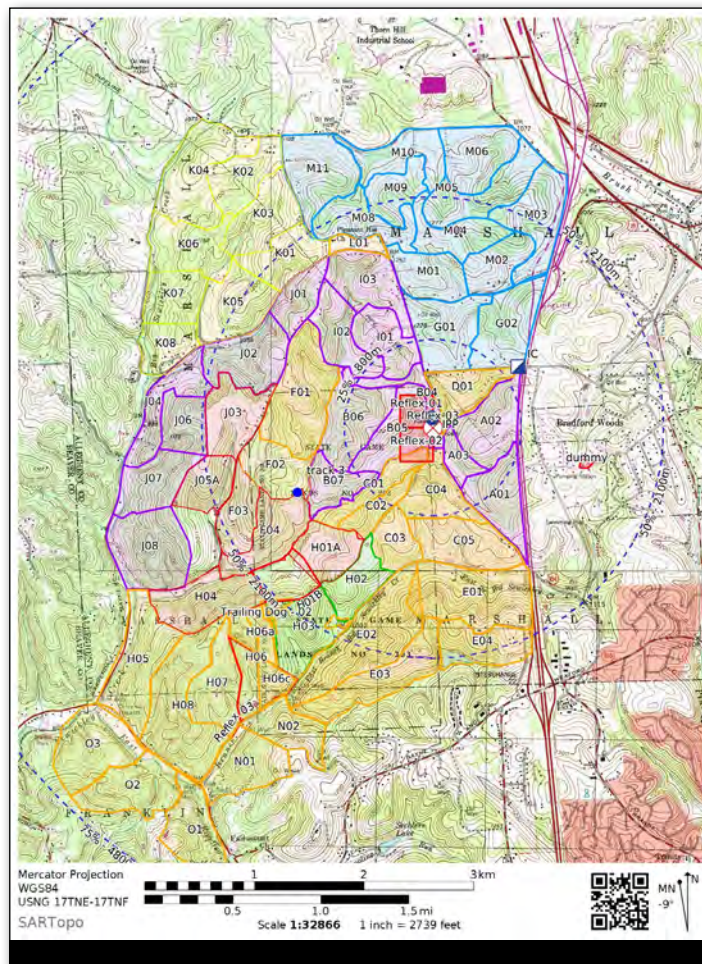
- Once the need for remote support is identified and the AHJ has provided direction to initiate a request, then the Incident Commander (or Search Mission Coordinator) or his designee names a Remote Support On-Scene Liaison (RS-OSL).
- The OSL makes a request for RSC personnel via an email to remotesupportsms@myasrc.org (sends both an SMS text message and email to RSC members). This email is brief like a text message and provide name and call back number.
- If no response is received within 15 minutes, the RS-OSL begins contacting RS-UL-qualified individuals directly by phone or other appropriate methods. A directory of qualified individuals and their contact information can be found in the [Remote Support Status Worksheet](#).
- A Remote Support Unit Leader is then identified and contacts the RS-OSL. They discuss the need of the mission, infrastructure available to support the transfer of RSC products, and additional considerations.
- The RS-UL then requests additional RSC members and makes task assignments.

It is a best practice for Groups to consider the use of the RSC during nearly every mission and getting the RSC engaged as early as possible. The RSC can be a force multiplier for the folks on the ground at a mission. In most cases, the RSC can generate better information and maps for searchers than those at the mission base. Tasking out searchers in the field for initial assignments should not be held up while waiting for products from the RSC.

3. WHAT THE RSC PRODUCES

The RSC can support the development of these types of products:

- Task generation - task assignment forms, task maps, and GPS files with assignments
- Search region and segment creation and prioritization
- Lost person behavior analysis - including providing model results
- Search statistics including probability of detection (POD), probability of area (POA), shifting POA based on debriefing results and region prioritization, probability success rate, and other metrics
- Lost/missing person questionnaire development
- Lost/missing person posters
- Incident action plan development
- Weather forecasting (consolidating information from online sources)
- Search status briefing products
- Other digital products as the need emerges, work with the RS-OSL to convey needs to the RSC



Example of segments and regions produced by the RSC for a search.

V. Operational Guidance for Groups

A. INTRODUCTION

The Conference provides training standards and operational guidelines that each Group subscribes to by maintaining their Conference membership. Groups of the conference are unified by their desire to deliver professional-level services to the AHJ. This section provides operational guidance for Groups by providing a minimum set of policies for Groups to establish as well as numerous best practices. The Conference is available to provide guidance to any Group as they establish these policies and procedures.

B. OPERATIONAL READINESS THROUGH STRATEGIC PLANNING

1. GROUPS ARE CORPORATIONS

Groups are corporations in and of themselves, albeit nonprofit ones. As such, they operate like a business that offers services (i.e., search and rescue) to customers (i.e., AHJs and search subjects) for no compensation.

Each Group has a suite of services it offers based on their members' interests and the environment they choose to operate in. The needs of its clients and the operating environment change over time. Groups also need to make adjustments to continue to offer relevant services. Groups may also operate in geographic areas that are rich with other SAR resources and seek to find a service differentiator to increase their mission volume.

Groups members are not employees. But Groups have many of the same considerations about their members that professional services businesses have about their employees. The chart below makes some direct comparisons.

TOPIC	PROFESSIONAL SERVICES BUSINESS	VOLUNTEER SAR ORGANIZATION
HIRING	Finding new hires that meet the needs of the business at the time (i.e., growth or maintain FTEs). New hires either add to existing services or are strategic to add new service areas. Can be very selective. Prior experience and training desirable. Compensation has to be competitive.	Finding new members to manage natural attrition. Rarely looking for strategic recruits. Sometimes have growth or geographic target for new members. Not very selective. No prior experience or training necessary. New members normally are voted in by current members.

TOPIC	PROFESSIONAL SERVICES BUSINESS	VOLUNTEER SAR ORGANIZATION
ON BOARDING	Can take a long time. Program includes elements related to human resources and business processes. For early career employees issues surrounding work culture, habits, expectations, and interpersonal skills.	Application process includes some form of background check and interview. Members then start to attend trainings and embark on skills checks and sign offs. Can be intensive for a volunteer group without a well developed program.
PAY AND RETENTION	Monetary. Commensurate with experience and/or what the market will bear. Increasing pay helps retain.	None. Member motivations are other than money. Increasing work and life demands threatens retention
TRAINING	Primarily from undergraduate and graduate school. On-the-job and external sources after hiring.	Experience the member brings with them, but none required. Primarily through internally developed training programs. May obtain training through external training courses or instructors.
HUMAN RESOURCES	Manage employee benefits, compensation, leave, performance, and, discipline issue.	Membership issues surrounding disciplinary cases, training maintenance, or participation requirements.

Volunteer SAR groups, like a business, have two main areas of concern to function as an organization: administrative and operational. With the administrative concern supporting the operational side, it becomes appropriate to discuss both in this OGM. It is a best practice for Groups to align their administrative practices to support their operational services. And it is a best practice for Groups to have a strategic plan to align their services with the operating environment.

2. HAVE A STRATEGIC PLAN

A strategic plan is the primary guiding document that an organization develops to set its direction for a period of time. There are many formats for strategic plans and they are renewed at the end of each period. The ASRC Strategic Plan is set for 4 years and has the following items in place:

- Mission statement defines the purpose of the organization. There are many online resources available to help craft a mission statement. Try to keep it one sentence.

- Vision statement is a broader paragraph that defines what the organization is striving to achieve. If your Group had unlimited resources and personnel, what would that look like? Vision Statements are lofty enough to be just out of reach. This is what the Group is constantly working towards.
- Core values are principal beliefs that the Group holds above all else. Core values guide decision making processes and Group actions. They are the organization's code of conduct.
- Strategic goals and action items define the specific actions the Group wants to achieve in the plan period to work maintain its mission and achieve its vision. Action items are the specific things the organization is going to do to achieve each goal. Together these chart the course for the organization over the period of the plan.

The Conference recommends that each Group develop and maintain a strategic plan. A good place to start developing the goals and action items of the strategic plan is to perform a SWOT analysis.

3. SWOT ANALYSIS

SWOT analysis is an exercise performed by the organization to assess its Strengths, Weaknesses, Opportunities, and Threats. This will help define the organization's operational picture. SWOT analysis scales, it can be done at the organizational level down the team assigned on a task.

At the organizational level, perform a SWOT analysis to evaluate the Group's service offerings against the market. The market being a catch-all phrase for AHJs, mission data (including types, frequency, location), alternative SAR resources and services in the Group's geographic area (including volunteer and professional organizations) and geography (terrain types, climate, infrastructure, etc.). The Group looks internally to list its strengths and weaknesses, and externally to list its threats and opportunities. Some businesses do this as a form of risk management to keep current with the market. It is a best practice for Groups to evaluate if their services and trainings are meeting demands of the AHJs and what they can do adjust to changes. An example SWOT analysis chart is provided below.

	FAVORABLE	HARMFUL
INTERNAL	STRENGTHS Good relationships with AHJs Strong search skills base in members Robust member participation rates in training and missions	WEAKNESS No canine program No relationship with canine teams Less members in the western area of operational region.
EXTERNAL	OPPORTUNITIES Support other SAR teams with search mapping and planning Cross-training with AHJs and other SAR teams One member interested in working a canine	THREATS Mission types are trending towards cadaver searches Other canine teams have cadaver dogs that are certified and already responding AHJs have favored teams that they call

The format does not matter as much as the elements. A 2x2 grid is quite common, but so are columns. There are many templates online as well. This website also has a good tutorial on how to perform the analysis.

It is important to honest and forthcoming when doing a SWOT analysis. At the Group level, the SWOT chart will be much larger than the example given above. The ultimate goal is to align the Group's function and performance with the market. If a Group is not adjusting it will have member retention problems that cause it to focus inward on its own issues instead of outward focusing on its mission. Strategic planning helps overcome these problems and keeps the Group organized around a plan working to execute that plan.

C. GROUPS AS SAR CONSULTANCIES

Groups and other SAR organizations are expert practitioners when compared to many AHJs (who typically do not specialize in SAR), and the general public - who know comparatively nothing about SAR. Some AHJs have the luxury of having access to a dedicated SAR staff to manage missing persons incidents. Many AHJs do not. As such, Groups and other SAR organizations act as consultants to AHJs by offering a range of specialty services specific to SAR. Many non-profit organizations, nongovernmental organizations, and volunteer groups possess knowledge and capabilities specific to a subject matter and in that regard are also consultants.

1. STANDARD OF CARE

As consultants, our Groups are professional service firms who provide expert advice, guidance, and services to their clients. Except there is no compensation. Our actions can dramatically alter the course of the outcome for the subject. Therefore, it is a best practice for Groups to conduct their operations and interactions with AHJs with a of standard-of-care when providing guidance and

services.

Standard of care is the level and quality of performance delivered for a service. This is phrase that is commonly associated with medical and law practice, but also applies to other professional services such as engineering. The services provided should be of a minimum quality that a reasonable person can expect.

Black's Law Dictionary defines it this way:

In law of negligence, that degree of care which a reasonably prudent person should exercise in same or similar circumstances. If a person's conduct falls below such standard, he may be liable in damages for injuries or damages resulting from his conduct. See Negligence; Reasonable man doctrine or standard.

In medical, legal, etc., malpractice cases a standard of care is applied to measure the competence of the professional. The traditional standard for doctors is that he exercise the "average degree of skill, care, and diligence exercised by members of the same profession, practicing in the same or a similar locality in light of the present state of medical and surgical science." *Gillette v. Tucker*, 67 Ohio St. 106, 65 N.E. 865. With increased specialization, however, certain courts have disregarded geographical considerations holding that in the practice of a board certified medical or surgical specialty, the standard should be that of a reasonable specialist practicing medicine or surgery in the same special field. *Bruni v. Tatsumi*, 46 Ohio St.2d 127, 129, 346 N.E.2d 673, 676, 75 o.o.2d 184. See also *Malpractice*.

What sets the standard of care? There is little to no case law in SAR to help set a legal precedent. The closest might be case law associated with canine work, but most of that is associated with canine temperament (i.e., your area search dog should not bite the subject) and reliability (i.e., when your human remains detection canine indicates the search area is negative, there really is nothing there). In the absence of legal precedent, then best practices and formal training becomes the standard of care. Formal training could be from:

- published and widely used textbooks;
- those set internally by a Group via standard operating procedures;
- those established by a professional organization or certifying body (e.g., the ASRC or NASAR¹);
- those established by a government-sponsored organization (e.g., PSARC or VSARCO) or a government agency (e.g., VDEM, PEMA, MD NRP); or
- paid instructors the Group brings in to supplement

¹ National Association for Search and Rescue

its own training.

It comes down how you deliver your services and what a reasonable person might expect. Performing up to your training? Using best practices that are consistent with the state of the practice?

Some Groups also practice wilderness medicine as part of their services. In the case of medicine, there are well established standards of care and regulations that those Groups and members follow as part of their training, certification, and practice. The future [AppSAR Legal](#) chapter has an extensive discussion about standard of care.

2. INTERACTING WITH THE CLIENT

A Group should be careful and fair in the language, written and spoken, they use to interact with clients. For the purposes of this section the client is the AHJ. Interaction with the client, the AHJ, should be customer- service orientated and professional. That means the interaction should balance the desire to super please with the need to manage expectations. This is not easy. Good relationships with the client make it easier over the long term as you become more familiar with each other and build trust.

Do not overstate the Group's capabilities. A good rule of thumb is to under promise and over deliver. This is also a balance, because you do not want to under promise too much either (sometimes called sandbagging). This gets back to risk management - both on the part of the Group and on behalf of the client. Do not promise that your Group can do something that it cannot or is outside of your scope of services. Do not put your client into a position where they are overestimating your capabilities and not taking other actions that they might otherwise. You managing liability primarily for your Group and how you deliver your services and secondarily for your client, based on what you say and what you do.

Consultants have red-flag words that guide them in their communications with clients (and other stakeholders). Try to avoid definitives and use words that are more flexible. This might seem cagey and non-committal. Some client education might be in order because AHJs do not operate this way and do not use consultants often. AHJs have political pressure that also guides their communications, which is why we often hear an AHJ publicly promise to never give up looking for the subject. For instance, a best practice is that Groups never "promise to find the missing person." Groups may instead "provide as many resource as they can and do their best to help." The Group is there to find the missing person, but that's not what they are actually doing. The latter promise might not sound as good as

the former, but it is more specific on what the Group is actually doing to respond to the mission. There is a list of red-flag word at the end of this section along with some suggested alternatives

Be specific and precise in your communications with the client. These are not juxtaposed to using more flexible language. For instance a phrase like “we have determined that the missing person is not located in this area.” Despite your best efforts, using the best trained persons and the latest technology and methods, you do not know that for sure. A Group absolutely can never make that statement. Rather, a Group can state something like “Based on our evaluations, there is an 80% chance that the effort expended would have located the subject, were they in the areas we searched.” Now an AHJ may then take that information and communicate that they determined the subject was not in the area searched. And the AHJ can make a determination as a governmental agency with responsibility. Volunteer SAR organizations can not make such definite statements.

In the example above, the Group’s statement is specific and precise. It is fair to the Group, AHJ, missing person, and the missing person’s family to provide that level of detail and not simplify it with definitives. Of course, some AHJs are more sophisticated than others, and that’s another reason to careful with the language a Group uses to interact.

The Conference recommends Groups train their members on practices for interacting with clients and other stakeholders including - subject family members, other SAR organizations, personnel from AHJs who are not decisions makers, members of the media, property owners, and other third parties.

INSTEAD OF	TRY USING
Determine	Evaluate, Assess
Always, Never, Maximum, Minimum	Generally, Often, Usually, Majority, Seldom, Reduce
Any	<i>AVOID THIS WORD</i>
Best, Assure, Complete, Certify, Warrant, Require, Ensure	Evaluate, Indicate, Estimate, Reasonable, Judge
Suitable, Safe, Detailed, Satisfactory, Possible	Recommend, Indicate, Theoretical, Possible

Groups should extend these considerations when producing internal written products and grant applications. Your written products may be discoverable evidence one day, including emails.

D. GROUP OPERATIONS MANUALS

1. PURPOSE

It is a best practice for each Group establish a manual which provides their members written guidance for operations. Such operational manuals establish the minimum operating parameters for their personnel to adhere to during missions and/or training opportunities. A best practice is to review and update Group operation manuals bi-annually to reflect current operating procedures. Operations manuals provide guidance for each service area that the Group provides to the AHJ as well as the policies and procedures described in the sections below.

2. SUGGESTED CONTENTS

The following is a list of recommended, but not required, topics for each Group operations manual.

3. Response to requests for Service
 - a. Dispatch procedures
 - b. Urgency assessment
 - c. Risk management considerations
4. Search management procedures
 - a. Responsibility
 - b. Qualifications for search manager
 - c. Use of remote support
5. Field Tasks
 - a. Field team composition
 - b. Field promotion guidelines
6. Communications
 - a. Radios
 - b. Codes with reference to the ICS communications guidelines
7. Medical Care
 - a. First Aid

- b. State and local requirements
- c. Rendering care to a teammate
- d. Rendering care to the search subject
- e. Documentation
- 8. Subject Evacuation
 - a. Nontechnical evacuations
 - b. Semi- and Technical Rescue
 - c. Safety
- 9. Minimum Equipment
 - a. Group
 - b. Personnel
- 10. Mission Types other than Wilderness Search
- 11. Accidents, Injuries or Illness of a Member

Groups are responsible for creating the documentation for the topics listed above and others as needed. The ASRC can assist the Group upon request.

E. MEDICAL CARE GUIDELINES

1. BACKGROUND

Personnel of Groups learn first aid, CPR, and AED skills primarily to provide medical care to fellow teammates and secondarily to provide medical care to a subject, if required. Groups shall have policies which allow for providing medical care to the extent which law permits and to the level of training, but not beyond.

2. LEVEL OF CARE

To avoid criminal or civil liability, individuals Groups shall provide care to members and patients in accordance with Group policies, applicable state legislative and regulatory law, and common law principles. Generally such care will fit into one or more of the following categories:

- a. First aid level care
- b. Emergency Medical Services (EMS): Basic Life Support (BLS) level care

- c. Emergency Medical Services (EMS): Advanced Life Support (ALS) level care
- d. Wilderness Medical Care outside the state EMS system

Groups may provide care at whatever level they wish, and may change this at any time. It is a best practice for Groups to:

- 3. inform the other Groups of the level of care they provide,
- 4. share their patient care policies and protocols with other Groups, through the Conference Medical Committee (if available), who shall place such information in the ASRC Archive or other record.
- 5. ensure their patient care policies are updated at least bi-annually.

6. COMMITTEES

The ASRC has two committees dealing with medical issues. The Medical Advisory Committee consists solely of Group member-physicians. The Medical Committee has a broader membership, including all members of the Medical Advisory Committee, all Group Medical Officers for Groups that have such an officer, and any other interested members of Groups. Details of these structure and duties of these committees may be found in ASRC Administration Manual.

The committees may put forth:

- a. updates to certification standards, used by Groups;
- b. updates to best practices when those updates are permitted by the certifications used by Groups;
- c. updates when laws, rules, and regulations change within each state covered by the Conference;
- d. recommendations to the Groups for best practices to train and learn the skills and techniques required by the certifications used by the Groups; and
- e. responses to requests made by the COO or BOD.

The committees may produce deliverables in the form of memorandums or white papers for delivery to the BOD for acceptance. Committees may establish peer review policies for any deliverable they produce. Deliverables

shall be marked “Draft - for internal review only” until approved by the BOD, when the markings can be removed. Information and recommendations contained in deliverables are for the benefit of the Groups to use to the extent they desire, but are not enforceable by the conference.

F. MEMBERSHIP

Groups typically have membership policies for the recruitment and maintenance of personnel. It is a best practice for Groups to provide for regular background check for each member and procedures for confidential review of the background checks and acceptance or rejection of a member based on the results of the background check. Groups also typically have an on-boarding process for new members to orient them to SAR operations, certification requirements, and general SAR culture. Groups may consider the need for multiple levels of membership including: (i) provisional, probationary, or candidate member, (ii) operational or active members, (iii) support, associate, or not operational members, (iv) lifetime or founder, and (v) inactive, dismissed, terminated or removed.

Groups must have a process to terminate the membership of personnel for cause and exit procedures for all personnel regardless of reason for leaving. The Conference BOD shall be notified at the time a member has been dismissed, but need not be notified if a member leaves voluntarily.

G. RADIO COMMUNICATIONS

1. USE OF THE LICENSES

Groups may operate under the Federal Communications Commission (FCC) radio licenses granted to the Conference. Groups are expected to govern their personnel appropriately to ensure there are no violations of the radio licenses. Groups will indemnify the Conference against violations of the radio licenses by their personnel. Groups are encouraged to apply for their own licenses to operate under. Violations, and any resulting fees and fines, by an individual will be the responsibility of that individual’s Group.

2. PLAIN LANGUAGE

Consistent with National Incident Management System requirements, it is a best practice for Groups to have policies for the use of plain language on radio systems. Exceptions may be made with respect to names of personnel which may be replaced by assigning a number or some other reference that can be easily understood.

3. SUBJECT STATUS REPORTS

Subject status reports shall not be transmitted over open radio frequencies, unless that is the only viable communications method. The following codes are to be used to describe the status of the subject over the radio:

- 4. Status 1 the subject is responsive and able to evacuate under his or her own energy and without assistance;
- 5. Status 2 the subject requires medical care beyond minor first aid and assistance to be evacuated; and
- 6. Status 3 the subject is deceased.

Status codes are always be used over radios. Once a subject has been located and when possible, it is a best practice for searchers with the subject to switch to mobile phone use to communicate with the incident command post.

H. MEMBER MOTIVATION AND PERFORMANCE MANAGEMENT

This section is about getting the most out of Group members. Discipline issues are handled by Group policies with a few Conference requirements to satisfy. Fatigue management is discussed in Section 3, as it is primarily a safety issue that leads to poor performance.

1. WHY PEOPLE VOLUNTEER FOR SAR

Everyone joins a Group for a different reason. There is an intrinsic value in volunteering for a cause you believe in. That value is typically enough compensation for Group members. The opportunity to support a cause they believe in that also uses their skills and interests is self-satisfying. If that is true, then likely it is missions - when selfless act to doing the best that can be done to find a stranger (alive or deceased) for a family we don’t know and may never meet - that provides the greatest satisfaction and motivation to members.

The in between parts, between missions, the administrative and training times, challenges even the most motivated members to stay engaged. Especially for Groups with lower call-out volumes. Members must find another reason to be motivated during these times themselves. This is different for each member and must come from within.

2. MAINTAINING MOTIVATION

Member motivation tends to be most challenging for Group leaders when call-outs are few and far in between

and administrative duties and training dominate Group activities. Group leaders must be keenly aware of political unrest within the Group and work to avoid its development. Barring avoidance, leaders must step in and provide guidance towards a solution or the solution itself, whichever may be the most appropriate approach. Otherwise deep lasting chasms between members may arise, sometimes resulting in a fracturing of the Group as members themselves move on seeking to avoid such games.

A few strategies to maintain or create motivation may include:

- Developing a reward and recognition system such as years-of-service, extraordinary effort, exemplary performance or leadership in a role
- Creating time for social opportunities such as holiday parties or down time during training events
- Providing opportunities for senior members to take on advanced skills, instruct, or contribute in ways they might suggest
- Creating a good first impression through a well organized, transparent new member onboarding process.
- For Group leaders, the ASRC has found that routine officer conference calls help spread the burden of the work and keep the flow of work being done moving along. It stems, in part, the cyclic fit and start nature that can be experienced by Groups. Frequent recurring (short) meetings can maintain motivation.
- Finding opportunities to thank members routinely when they attend trainings and missions.
- Swift removal or neutralization of toxic members (see Whacker Management section in the [Leadership chapter of Appalachian Search and Rescue](#))

3. LOSING MOTIVATION

Group members who step up into leadership positions within a Group, or during a mission, often have a “hand-raising problem.” These are some of the first folks to take on additional roles and responsibilities. Often they step up both at the Group level and during missions. They end up being super members who at some point get burned out, frustrated, upset, or just leave. A few might become whackers. It is a best practice for Groups to spread administrative duties among their membership as much as possible. Doing so reduces individual burdens and Group reliance on a particular

individual.

The juice must be worth the squeeze for members to stay motivated. Groups should keep in mind that members have varying degrees of how much squeeze is worth how much juice. Leveling the work load among members, communicating appreciation, and having a clear direction and goals are good first steps to keep members motivated.

4. MISSION PERFORMANCE

During early stages of missions, members may make heroic efforts to get a search started with ICS implemented. These efforts are typically not sustainable beyond an operational period. Further the member or Group may not be operating in the best interest of the subject or AHJ. Typically this managed best by managing sleepiness and fatigue.

Members can become overwhelmed during missions (or even trainings) and lose situational awareness. They can become myopic, develop tunnel vision, and experience task saturation. The results of which is intense focus and plan continuation bias. The nature of SAR missions is dynamic with new information potentially changing operational picture. It is a best practice to train members to recognize and prevent these performance issues

Member Groups of the ASRC are unified on training and operational principals. Even so, each Group has a unique operational culture, cadence, risk tolerance, and practice. Senior members of the Groups set the example for junior members to follow during missions. Practicing SAR is an exercise in decision making and professional judgment. Both in the context of standard of care, previously discussed, and in the context of maintaining the reputation of the Group and the ASRC. Professional judgment, or maturity in decision making, is gained through experience. Group officers with responsibility during SAR missions, namely the Operations Officer, should have a pulse on how well a member’s decision making matches that of the Group on whole.

I. RESPONSIBILITY FOR SEARCH MISSION MANAGEMENT

1. POLICY

Each Group shall have a policy that the outcome and management of a mission is always the responsibility of the AHJ. Neither the Conference nor any Group or personnel of a Group will assume responsibility for the direction or outcome of a search mission. Groups may have policies to advise AHJs on search strategy and

assist with the management of a search, but Groups shall always defer to the AHJ for decisions regarding the direction of the search and deployment of personnel.

2. SEARCH MANAGERS

Conference accredited search managers are highly skilled and qualified individuals. They represent a resource for Groups and AHJs to draw upon during a mission. Their accreditation is recognition of their hard work and extensive experience. When engaged in a mission, conference accredited search managers operate as personnel of their Group and shall not register with the mission under the ASRC because the conference is not an operational entity. Groups with personnel who have earned conference accreditation shall have policies in place to accommodate a request for assistance of these individuals by an AHJ.

J. CONFERENCE POSITION / WHITE PAPERS

1. PAPERS ARE GUIDANCE

The Conference will occasionally produce white papers or position papers that provide further guidance and

support to Groups. Papers may be a summary of available technology, best practices for SAR-related skills and services or other topics that might advance the state-of-the-practice of SAR. Papers produced by the Conference and any opinions or suggestions provided therein are not enforceable recommendations by the Conference to Groups.

2. DEVELOPMENT

The Conference supports the development of these papers by identifying authors who have expresses interest and/or competency in the subject. The author or group of authors shall contact the Publications Committee (see the Administrative Manual) for peer review. Conference papers will be submitted to the BOD for review marked “Draft - for internal review only” until approved by the Publications Committee. Once removed, conference white papers and position papers may be made publicly available through the conference website. When appropriate, the BOD should encourage the submittal of papers for publication by academic journals or by other commercial publications. Doing so establishes the Groups and the Conference as leaders and innovators in SAR and related fields.

VI. Change History

Available old versions and working drafts are posted in the ASRC Archive at <http://archive.asrc.net>.

JULY 2020 (OGM VERSION 1.3)

- Two year review completed.
- Added section about relationship between Groups to clarify that membership in the Conference is an MOU in and of itself.
- Removed references to At-large members
- Significant update to Section III, Health and Safety
- Replaced references to appendices with references to the website
- Updated Remote Support section to reflect development of the Corps
- Added additional subsections to Operational Guidance for Groups section
- Minor editorial changes throughout

MAY 2017 (OGM VERSION 1.2)

- Added Canine Policy under III, Safety.
- Added Change History
- Minor editorial changes

MAY 2016 (OGM VERSION 1.1)

- All-new Operational Guidance Manual replaced old Operations Manual at ASRC General Membership Meeting/Board of Directors meeting. No version 1.0 ever published formally.
- Version 1.1 published in new format several months later with editorial changes and formatting only

APRIL 1999 (OPERATIONS MANUAL VERSION 3.1)

FEBRUARY 1998 (VERSION 3.0)

FEBRUARY 1995 (VERSION 2.0)

NOVEMBER 1998 (OPERATIONS MANUAL, VERSION 1.0)

- Renamed from Search and Rescue Operations Plan and Search and Rescue Operations Plan Training Manual to Operations Manual.

DECEMBER 1985 (SEARCH AND RESCUE OPERATIONS PLAN VERSION 3.0)

AUGUST 1984 (VERSION 2.0)

JULY 1978 (SEARCH AND RESCUE OPERATIONS PLAN VERSION 1.0)

OCTOBER 1976 (OPERATIONS MANUAL)