

Conducting and Managing Search and Rescue Operations

Mitigating Risk for Land Managers with Jurisdictional Responsibilities.

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Abstract

A presentation designed for karst managers with jurisdictional responsibilities for search and rescue and the personnel to conduct some or all of the operation.

The focus is on organizing and training personnel to provide an initial response to these events, initiating and conducting the initial response, and developing a planning and training manual to govern that response. The presentation is based on the experiences of the Cave and Cliff Division of Walker County Fire and Rescue.

Introduction

All land managers have the potential for an emergency incident on their property. Such incidents can include medical emergencies, searches for lost individuals, rescues of ill or injured individuals, and natural disasters such as fires and floods. Occasionally an incident may incorporate portions of all four. In addition to these emergency events, other types of situations may arise, such as plane crashes, that dictate an emergency response.

Not all land managers have the jurisdictional authority to respond to such incidents. Broadly speaking, this means the authority or legal power to manage some, or all, of the incident. Not all land managers have the personnel to respond. However, some land management organizations have the jurisdictional responsibility for an emergency incident, and personnel to handle some, or all, of the response to such an incident. Those land managers with jurisdiction and with personnel to handle some portion of the emergency operation, are usually governmental entities—city, county, state, or federal—although some private entities exist that have enough personnel capable of managing an emergency operation.

These land management organizations frequently have a legal duty to provide an emergency response. And, the public visiting these properties often expects a response or assistance from individuals wearing the uniform of these land management agencies. This expectation includes an immediate initial response, a comprehensive follow-up to the initial response, and the ability of the land manager to command the situation.

Failure to plan for, and meet, these expectations, can put the land management organization, its flora and fauna, and its visitors, at risk. Improper response can result in:

- Further injury to individual,
- Failure to address the needs of the individual
- Unwanted damage to the land, its flora, and fauna
- Injury to the responders

To mitigate these risks requires appropriate resources, both equipment and personnel. Of these two, the most difficult to address is personnel. Equipment is usually designed to meet certain standards and can be measured and compared. However, in the field of search, rescue, and emergency response, there are no

nationally recognized standards for training, personal equipment, or level of experience.

There are, however, some ways to mitigate the risk that this current lack of standards imposes. The keys to mitigation are to:

- Identify risks to individuals or groups that the property presents

- Identify appropriate responses to each of the identified risks
- Identify appropriate resources for response to each type of incident
- Provide training to personnel
- Organize the response, and
- Use an appropriate command structure

Identify Risks

A risk is basically anything that can cause, or contribute to, creating an unplanned-for event. Risks include:

- **Falls from heights.** Are there heights, such as cliff faces, waterfalls, or boulders, that present an opportunity for a view, or are a site for such sports as rappelling or rock climbing?
- **Confusing points on trails.** If there are trails on the property are there any points where an individual can be easily misled? Is signage misleading, confusing, or difficult to read?

- **Poisonous plants or insects.** Are there common or unusual poisonous plants or insects on the property? Do any require unique anti-toxins not normally available to EMS personnel or from the local hospital?
- **Water hazards.** Are there bodies of still or moving water that can become points of danger for the unwary? What is the water depth, or the rate of water movement? Is this seasonal?
- **Other.** Are there features to the property such as old mines, tunnels, wells, buildings, slide areas, that are unique and present some danger? What are they? Are they year round, or seasonal?

Identify Appropriate Responses

Once the existing risks are identified, decide what type of response might be necessary and determine if personnel on-site can handle that emergency without assistance. The land manager may determine there are certain emergencies personnel on site are not adequately trained or equipped to handle.

For example, personnel on site may be trained to handle a medical emergency should

it arise in the parking lot, but may not be trained to manage one that is wilderness based. If a swift water hazard is present, staff may not be trained and certified in swift-water rescue. If there is a cave on the property, staff may have the training in the high angle and patient evacuation techniques necessary, but may not be familiar with their use in the underground environment.

Identify Appropriate Resources

In Walker County, Georgia, the Department of Natural Resources has jurisdiction over several of the state's finest cave and wild land resources. However, they do not have sufficient personnel on site to provide an initial response to a complex incident, nor do they have the depth of personnel state wide to handle a long or difficult search or rescue on their properties in Walker County. Instead, they rely on one of the divisions of the county fire department to provide personnel and technical expertise for these types of operations.

But sometimes these two groups are not sufficient to provide follow-up. In those instances the fire department must call on addi-

tional groups with similar training and expertise to provide assistance.

This situation is not unique. Many land managers with paid personnel may have insufficient trained personnel to handle:

- An incident of long duration
- A incident that is technically complicated
- An incident that involves a large number of subjects, or even
- The initial response.

Nearly all land managers have to rely on both their own staff and additional personnel to manage many emergency operations.

Staffing, for emergency incidents, usually involves personnel that are:

- Paid
- Volunteer, or a
- Combination of paid and volunteer.

These individuals can either be under the direct control of the land manager, or come from other organizations or agencies. In the example of Walker County, Georgia, above, the Department of Natural Resources has paid staff, and the fire department is an all-volunteer organization.

Using the information from the risk assessment, and the types of response necessary to address those risks, determine what type of additional resources might be needed. Look at both the source of those resources and the training those resources have. Based on that information:

- Develop a tentative list of resources for emergency situations,
- Determine the level of training of those resources identified, and
- Meet, or talk, with each resource identified as appropriate to your needs to discuss protocols for emergency operations.

Although these activities appear in this list in serial order, some of them may need to be managed simultaneously.

Identification of appropriate resources is more than compiling a list of possible responders. It is also important to understand what the resource means when they describe a service that they can provide.

The term “rescue” can be interpreted in two ways. In many areas, when a group is identified as a rescue squad, their main functions are automobile crash extrications and back-up medical assistance for an ambulance-based service. Their training and equipment are focused solely on medical support and the use of vehicle extrication tools.

The other meaning of “rescue” involves assistance to and evacuation of the ill or injured in remote or difficult to access wild land areas.

Develop a List of Resources for Emergency Situations

There are four types of resources commonly available. They represent paid, volunteer, or a combination of both:

- Individuals within your own land management organization
- Local agencies

- Mutual aid
- State level resources

Individuals Within Your Own Land Management Organization

The first line of response should be land management staff. There may be individuals within your own land management organization, without a daily, job-related responsibility for emergency response, who have received search, rescue, emergency medicine, or command training. This is usually as a result of a personal interest, or because they are involved with a volunteer fire department or search and rescue group. Their training can encompass anything from:

- Medical—First Responder, EMT, Wilderness First Responder or Wilderness EMT
- Management—managing the lost person incident, the Incident Command System
- Technical—high angle rescue, confined space, hazardous materials, cave rescue, swift water rescue, agricultural or farm rescue

Local Agencies

Next come the local agencies with a duty to respond to emergency situations. These agencies may be paid, volunteer, or a combination of both. These include responses to wildland fires, structural fires, lost persons, medical situations, and injured or trapped individuals. Wildland fire response is often the responsibility of the state forestry commission. The local fire department may be responsible for a variety of responses such as structural fire suppression, some limited wildland activity, automobile extrication, and search and rescue (in either the wilderness or urban environment). Other agencies, such as sheriff’s offices and rescue squads not affiliated with fire departments, may also have responsibility for search and rescue missions.

A quick way to develop a list of potential resources is to determine who dispatches the responders. This is most frequently a 911 call center. However, not all 911 centers dispatch all emergency services within a district. It is possible to have a 911 call center, yet have several major emergency providers, such as the sheriff, choose to operate their own dispatch service. Ask the 911 center for a list of all agencies they dispatch, and the types of calls for which each responder is responsible. If 911 does not dispatch all emergency responders, find out who is not included and add them to the list.

Working with the parent agency and the 911 center identify the units (hall, station, division) that would normally be dispatched first and second to the various types of emergencies at the property.

For example, in case of a fire on the area, it is necessary to know and work (within the chain of command) with the fire stations that are dispatched first, and with the stations that protocol dictates come next.

Mutual Aid

Many local agencies have written mutual aid agreements with responders from other counties and cities. There are also mutual aid responses based on tradition, rather than written agreements. Again, the 911 call center will have some information on mutual aid responders. But, it will be helpful to verify this information with each local emergency response resource.

State Level Resources

This includes responders that can be accessed through state or federal agencies. In some states, search is the responsibility of the state level law enforcement agency. Responders are frequently paid employees of the agency.

State level resources may also include volunteer services, usually incorporated as not-for-profits, that are willing to travel and provide their services state wide. Search dog units frequently operate in this manner

Level of Training

Once resources have been tentatively identified, the next thing to ascertain is their level of training in the areas of expertise necessary to the land management organization. This is much easier said than done, because there are no national standards for search and rescue groups, either at the individual or at the team level.

Provide Training

It should not be assumed that the resources identified, whether individuals or groups, have ever trained or worked together. Nor should it be assumed that, although there may be mission overlap (both the fire department and the sheriff's office believe they have responsibility for search), that all groups have equal, or even the same type, of training for the mission. In addition, land management staff may require training to meet the risks that the property represents.

As a rule of thumb look for participation by some or all of the group members in:

- National or regional training programs operated by not-for-profits
- Certification programs from nationally known private training firms
- Associations or societies whose mission is the same as the group

Good training can be provided at the local level within the group. However, such training may tend to become in-bred and may often fail to keep up with new equipment and techniques.

Another good way to determine level of training is to ask for copies of the textbooks or manuals the group uses as a basis for their training program. The group may also have developed its own training manual.

Also ascertain how often they train in the specialty area in which you are interested. A volunteer fire department may train every Monday evening, but they may only train once a year, for a few hours, in the specialty you need.

Meet with Each Resource

It is obvious that to develop sufficient information on training levels, some conversation with the resource must take place. Follow up on this initiative and either meet with, or hold further conversations with, these potential resources.

Three things should emerge from these meetings:

- Information on equipment that the resource can make available
- Information covering special protocols the land manager needs the resource to follow, and
- Information on any special needs that the resource has in responding to the land management organization's emergency incidents

Most land manager's do not want to become training agencies. They have neither the resources nor the personnel. However, if they want to ensure a positive outcome for emergency events involving a range of resources, it is important to make sure that two issues are addressed:

- Training for land management agencies own staff

- Shared training opportunities with additional responders

Generally speaking, training needs to be provided on three levels. The first is awareness. Resources should be able to identify the nature of the incident, the types of skills required to resolve the situation, be able to determine if they (as responders) have the necessary skills, and be able to determine who to call to resolve the incident if they do not have the skills. The next level is operational. Resources need the skills to actually resolve the situation under supervision. The third level is technician, which means the individual has the expertise to execute the skill and direct others. When looking at training, be sure to provide training only for the level needed.

Training for Land Management Staff

The organization needs to adopt some suitable methods and techniques for addressing their risk response needs. There are three ways to do this:

- Write a land management organization specific training manual
- Adopt one or more techniques and procedures described in standard rescue publications, or
- Create some combination of the above

Once suitable methods and techniques for meeting risk needs are determined, then schedule routine training and stick to the methods chosen.

Shared Training Opportunities

If the land manager wants some control over the outcome of the emergency incident, it is important to consider the training needs of the potential resources. It is important for outside responders to become familiar with the land management staff and with the terrain in which they will be working. Also, the land manager, as a sponsor of training opportunities, can provide a neutral ground for various types of responders to work and train together, sometimes for the first time.

Organizing The Response

Take the initiative in planning for and organizing the response. An emergency incident is not the time to discuss techniques, methods, or organizational needs. Plan ahead.

Emergency responses do impact property. Before such a situation arises, discuss with the identified responders any special needs and requirements that the land management organization may have in respect to endangered or sensitive flora and fauna. If there are some trails that provide access to the property that present fewer environmental concerns than others, let the responders know which ones those are. If parking is an issue, plan ahead, and determine how that will be addressed. If a site with sensitive plant life presents a high level of risk for a fall, and the only way to extricate the subject is by working in the sensitive area, determine what level of damage the property manager is willing to accept, or try to develop

alternatives. Put as many of these expectations in writing as possible.

If the county in which the property is located has a centralized dispatch system for emergency responders, take advantage of this. If resources outside the normal dispatch area are identified, add them to the call list for the dispatch center. This speeds up response time.

Be consistent in the nature of your expectations. Do not allow access by a route one day, and then deny it on another, without adequate notice and justification. Require that all emergency operations be performed professionally, meeting the requirements of the training the organization has identified. Again, put information in writing.

Brief responders before the incident, and debrief them afterwards. All responses can be improved and the information for that improvement comes from practice, and from the debriefings conducted after every incident.

Use an Appropriate Command Structure

When faced with working with multiple responders—such as fire departments, rescue squads, law enforcement, or emergency management agencies—insist that all responders

use the Incident Command System for on site emergency management.

All organizations and agencies have a management structure under which they operate on a daily basis. Within that management struc-

ture is usually a chain of command which does not vary. However, managing search and rescue or other risk-based incidents frequently requires flexibility not found in the daily management structure of an organization.

There is a different management structure that most public safety agencies across the United States use at the scene of an emergency incident, whether it is a large incident (100 or more responders) or a small one (one or two responders). This on-scene management system is called the Incident Command System.

The Incident Command system:

- Is organized around the management of the five basic tasks of functions that need to be accomplished in managing any incident—command, planning, operations, logistics, and finance
- Allows the incident’s organization to reflect only what is required to meet planned tactical objectives
- Defines a span of control
- Provides common terminology
- Provides for integrated communications
- Provides a systematic plan for resource management
- Defines needed incident facilities, and
- Provides for an action plan—either written or unwritten

The incident command system has many strengths, one of the greatest being the “Unified Command” function. It must always be kept in mind that each governmental agency and each responder—be it law enforcement, fire department, or emergency medical personnel—may only provide operational support within very specific guidelines dictated by their state constitutions, state legislation, state rules and regulations, and local laws, ordinances, and

policies. Neither may governmental jurisdictions and agencies abdicate their legal authority or responsibility to others. The unified command function of the Incident Command System provides a mechanism where no agency yields its authority or jurisdiction, nor may they be made to perform or provide services outside their legal scope of activity.

Briefly, under the unified command function:

- Each agency with jurisdiction chooses and appoints its own commander for the incident. Obviously, there can be many Incident Commanders.
- There is only one command post, and all of the Incident Commanders are co-located at that post
- The commanders develop a set of objectives for the incident that all can agree to support.
- Once all of the commanders agree to the objectives, they then develop a single action plan. This is where the rubber meets the road. All commanders lay on the table what resources—in terms of people, equipment, and money—they can bring to the situation. All commanders also define the limitations under which they must operate.
- All incident commanders agree to the plan
- The incident commanders then select one individual, the operations chief, to implement the plan

Unfortunately, not all agencies are familiar with the unified command function of the Incident Command System. This is true even though the information is available in a number of standard publications that are commonly used by fire departments and rescue squads. This may be one area where joint training will yield benefits for all involved.

In Conclusion

The keys to mitigation all require initiative on the part of the land manager. And even taking the initiative is no reassurance that all events will occur in the manner planned and agreed upon. But by planning ahead, meeting

with responders, making the needs of the land management organization know, and providing training opportunities, it is possible to resolve many incidents to the satisfaction of all involved.