



Mountain Rescue: High-Performance Operations

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About the Author

Timothy LaMacchio, a new member of the mountain rescue community, immediately recognized a group of highly knowledgeable, skilled and committed volunteers and professionals. As his work in mountain rescue continued, he also noticed the reliance on training as the sole solution to achieving and maintaining a team's operational abilities.

Tim's team, corporate, and organizational work as a performance strategies/consultant --- applying the principle of Organizational and Human Performance --- provided additional options for achieving and improving individual and team performance. These performance principles provide an array of easy-to-implement solutions, beyond training, that can establish and improve mountain rescue operational effectiveness.

Tim has done various trainings and lectures applying these performance principles to emergency response and mountain rescue teams including:

- 2004 Colorado Search and Rescue Board Conference--- High Intensity Teamwork
- 2004 NASAR Conference --- High Performing SAR Teams
- Routt County SAR --- Essential Elements of Team Operations
- Routt County SAR --- Leadership Styles
- Colorado Search and Rescue Board (monthly meeting) --- Creating Successful Team Operations
- Summit County Search and Rescue Group Annual Avalanche Rescue Seminar conference advanced track instructor --- High Performing Avalanche Operations

Tim is a Colorado resident and an avid reader of books and autobiographies regarding accomplished leaders, change agents and improved performance. Tim is actively involved in mountaineering as well as mountain biking, trail running, road biking, backpacking, climbing, snowboarding, hiking, and telemark skiing.

Mountain Rescue – High Performance Operations

Objective

The Mountain Rescue Association, a national non-profit membership association dedicated to saving lives through rescue and mountain safety education, has developed this program to be used by any organization that may be required to respond to a backcountry rescue operation.

At the conclusion of this course students should be able to:

1. Understand how mountain rescue teams often approach success and improvement
2. List the eight “critical performance factors” that influence operations
3. Articulate the characteristics of these factors
4. Develop action items that allow their team to improve performance

Introduction

A motor, whether in a lawn mower, economy car or semi-truck, contains certain factors or elements that are necessary if it is to work and operate at its highest possible potential. Some of these necessities include oil, air, gas, routine maintenance, etc. Although the engine might “run” and even complete the jobs such as cutting grass, transporting people or moving cargo to a satisfactory level, when these elements are not properly addressed, operations and performance will be compromised; even if slightly. Unfamiliarity with engines and how they perform, along with doing it the same way over time, may even cause people to become accustomed to compromised performance. We may not even realize improved performance and new higher standards of success are possible. Again, even if these elements are used, but in a manner inconsistent with what is necessary to create the maximum engine performance, it will operate but below its highest potential.

To consistently operate at its highest potential, these elements or factors must be addressed and managed in a specific manner. Oil must be changed at specific times, a specific amount and type of oil must be used, and the oil must be clean. The engine can not use just any fuel but the correct type --- is it diesel or high-octane regular gas? If these elements are not managed in the manner required by the motor, operations will be compromised. If these factors are not managed in the manner that most contributes to engine performance, one can not expect the engine to operate at its highest level of performance. Instead, its operations will fall short of being “finely tuned.”

In a similar fashion when people or teams work toward a common goal --- whether an international Fortune 100 company, start-up dot-com or small mountain rescue team --- specific elements or factors, along with how they are used, influence success. Managing or perhaps leveraging these “critical performance factors” are essential if people and teams are to reach their maximum potential.

Similar to a motor, the presence of these factors does not ensure success; they are always present in every team and mission. But depending upon how they are leveraged or not

leveraged, they will be helping or they maybe hindering team progress. Without leveraging these factors and removing the obstacles to your team's highest performance, performance will be inconsistent, elusive or lacking.

Research with U.S. Army Rangers finds that when performance obstacles remain intact, their motivation, work satisfaction, and resulting performance dramatically suffer. It was further found that those rangers most committed to and competent at their work are the ones most unmotivated and demoralized when performance obstacles prevented them from doing their very best. When people, whether Army Rangers or mountain rescue teams, experience performance obstacles (ambiguous roles, unclear strategies, undefined expectations, and inadequate resources), their best work is prevented. This course will address those factors that influence a mountain rescue team's performance, success, and operations.

Mountain Rescue Teams --- Success and Improvement

It is seldom easy for mountain rescue teams to reach and then constantly improve their operations and ability to successfully carry out their work. However, reaching and improving individual member and team operational effectiveness and ability is essential-- lives depend upon it.

The Mountain Rescue Association (MRA) is a volunteer organization dedicated to saving lives through rescue and mountain safety education (www.mra.org). Having stringent membership requirements, MRA has over 91 units in the US, Canada, and around the world that are comprised of highly-skilled mountain rescue teams.

Becoming a member of MRA requires that teams complete a rigorous accreditation process. MRA's accreditation is focused on evaluating a team's ability to meet specific standards in three different scenarios or test. Further, this process evaluates team dynamics while being used as an opportunity to provide team and individual feedback for the purpose of helping a team achieve the desired and necessary level of operations.

These three tests are conducted on appropriate terrain by at least three current MRA teams working together to evaluate the applicant team. The tests involve:

1. High-angle rescue (rock rescue)
2. Ice and snow
3. Wilderness search.

Upon reaching full MRA status, teams are expected to train and test according to MRA guidelines. These accredited teams also re-test every five years to maintain their accreditation in the MRA.

Efforts to improve a team's and individual member's performance and abilities typically initiates a common but limited path --- training. As a result, mountain rescue teams have extraordinary technical expertise. Their knowledge and skills around technical matters are quite high, but unfortunately they can, at times, neglect the other factors that influence the achievement and improvement of their operations.

Technical expertise is only one factor contributing to a team's operational performance and abilities, and training is only one solution to the need for improvement. A reliance on only training and technical expertise forces teams to face and overcome unnecessary obstacles to success. If mountain rescue teams are to consistently perform at high levels in their adrenaline-filled, crises-oriented, and dangerous terrain; they must leverage all the "critical performance factors" influencing successful operations --- not just training and technical expertise.

This course takes the factors or principles that create high-performing teams, which is referred to as Organizational and Human Performance, and creates high-performing mountain rescue teams and operations. Despite being present in every mountain rescue team and every mission --- the presence of organizational and human performance does not ensure success. These factors must be present and leveraged in a manner that maximizes their successful operations.

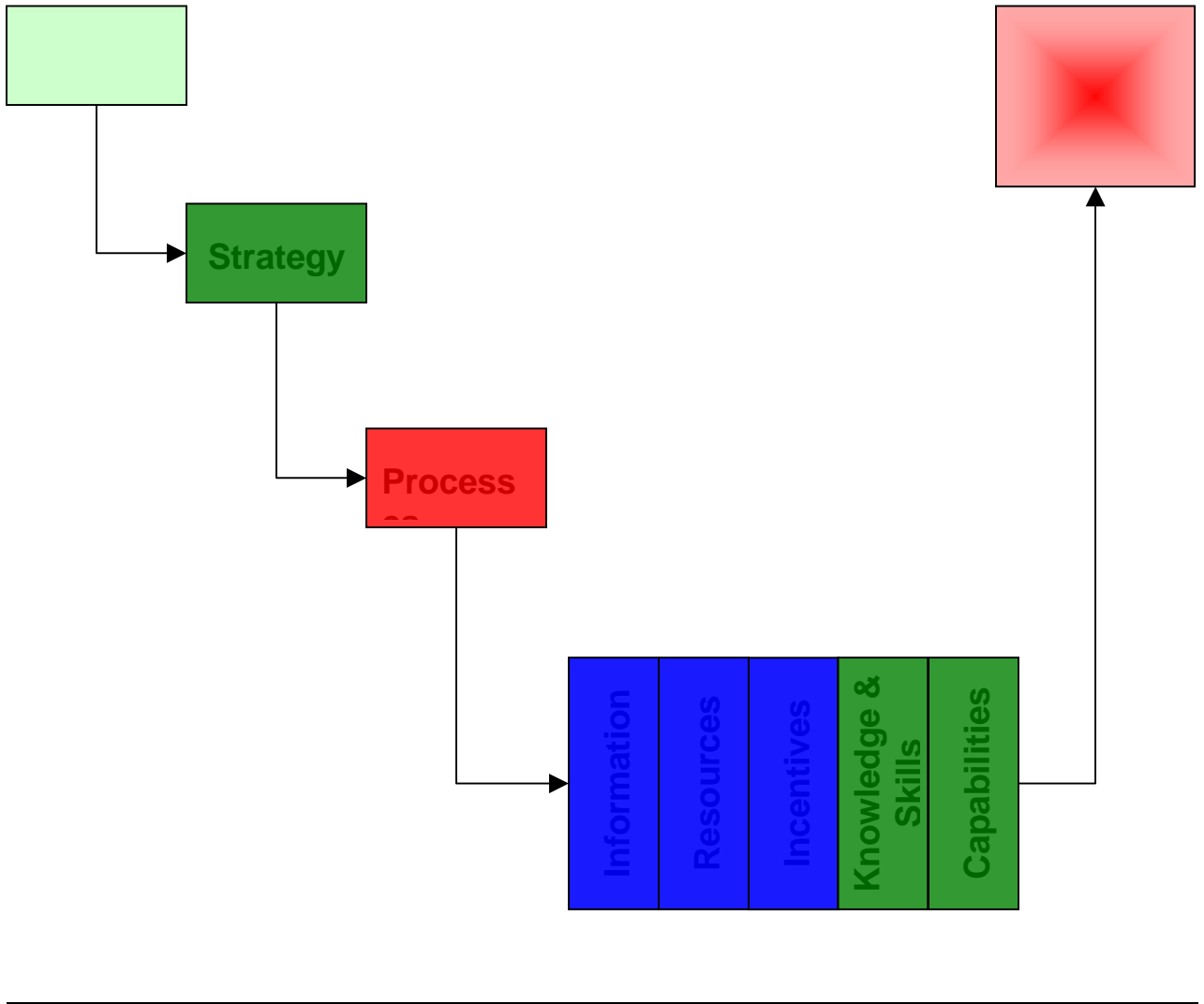
When mountain rescue teams direct the principles of high performance toward creating more successful operations, overwhelming or disruptive efforts that distract from mission focus are not necessary --- quite the contrary:

- Most efforts to apply these principles occur prior to and between mission operations --- not during
- Managing these factors is less costly and time-intensive than training
- The return on your investment in executing these strategies is higher than training

This training program presents eight high-performance principles that fuel operational success when people and teams are working towards a goal --- these are referred to as critical performance factors. Each performance factor will be followed by the specific characteristics, or manner in which the factor should be used that ensures it is driving and not deterring a team's performance, abilities, and operations. For example, it would be inadequate to prescribe "routine oil" for your new vehicle. If oil is to contribute the most performance from your automobile, additional information needs to be provided: when, what kind, how, alternative options, etc.

After providing this high-level overview of these performance principles, examples of the influence of these factors in mountain rescue are provided. These examples will consist of effective uses (helping successful operations) and ineffective uses (hindering effective operations). These illustrations will be followed by questions that allow mountain rescue teams to begin identifying specific and low-cost actions that can be taken to implement performance principles and create high-performance operations.

Model of High-Performance Operations



Critical Performance Factors

Goals

Conducting successful mountain rescue operations requires a team to first ask, answer, and document answers to the question, "What determines our success?" This is simply another way of identifying *goals*. Mountain rescue teams must specify those outcomes that are most important to their success.

First responders or emergency response team seem to agree that one, and perhaps the most critical determinate of success, is responder/rescuer safety. Another may be subject safety, another may be response time, and yet another may be individual member level of participation. But this brief list is far from all inclusive. Perhaps another way to identify goals is to look at those circumstances or actions that raise an eye brow or elicit a reaction. If specific actions or circumstance draw disapproval, or perhaps approval --- they usually involve the accomplishment of a specific and important goal.

Secondly, a team must ask, answer, and document the answer to the question, "What key performance indicators determine this success?" This is simply another way of deciding how these goals are going to be measured. Although measurement might require additional time, determining goals but neglecting to measure them falls short of leveraging this critical performance factor. For example, if rescuer safety is a determinate of success, incidents that compromise rescuer safety and cause injuries must be documented. If member attendance is a determinate of team success, it must be measured and monitored.

Generally speaking, if you want to accomplish something you must --- regardless of the effort required --- first name it and second measure it. Then you must continually monitor progress. This will be discussed later in this training. If it is not named and measured, it is unlikely to be accomplished. Upon hearing and understanding this idea, mountain rescue team members often say, "As soon as we stop measuring rescuer safety --- I no longer want to participate."

But simply having goals may be inadequate. The characteristics of performance-driving goals must be:

- Specific and measurable
- Limited to three or four goals of critical importance
- Continually measured and monitored
- Connected to team processes
- Known by all members

Strategy

Before a mountain rescue team is sent up a high peak, into the wilderness, or over a vertical rock cliff; the landscape of the situation is given a comprehensive and accurate assessment. But an assessment is of little value in and of itself. Its value comes from how the assessment data is used. An assessment provides the data in which a well-considered methodology or systematic approach --- *strategy* --- is developed.

The assessment, often unspoken, contains the questions: what are our intermediate and terminal goal(s)? What friends and foe do we face on the mountain? What team strengths and weaknesses are present? What do we not know about this situation? What resources are available? What are our assumptions? How are efforts interconnected? What actions are necessary?

A strategy can be inadequate --- it must be well considered, sound and accurate. Unless a strategy contains specific components or characteristics, it is limited in its ability to improve a team's ability to achieve desired outcomes. The characteristics of a sound and accurate strategy include:

- Intermediate and terminal goals
- Environmental opportunities and obstacles
- Team strengths and weaknesses
- Available resources
- General actions to be taken
- Assumptions
- Unknown factors
- Explicit thinking
- Adaptable to changing data

Processes

Prior to even hearing the pagers "beep...beep....beep," mountain rescue teams need to establish the specific steps or protocols that produce a desired outcome --- *processes*. A process is a sequence of steps, task, and activities that converts inputs into outputs – resulting in a specific and desired outcome. A process map is the documented sequence of steps, task, and activities. It is these processes that guide team missions, efforts at improvement, and routine training.

First a team identifies its key-desired outcomes (not task) --- whether a vertically evacuated subject, found lost party on a long interagency search, or evacuated subject from a multi-pitch snow slope. Then, using a process map or flow-charts, it develops and documents the sequence of specific steps; task and activities that results in the key-desired outcome. Once developed, teams use these process maps to guide training and improved operations.

Despite the adrenaline-filled, crisis and changing situation, these logical and outcome-focused processes guide a team's work so that it is completed in the best possible manner to achieve the desired goals --- safely saving lives.

But simply having team protocols, although they are helpful, can be inadequate. Unless these protocols are translated into processes maps and contain specific components or characteristics, they are limited in their ability to achieve desired outcomes. The characteristics of effective work processes include:

- In the form of a process maps or flow-charts
- See efforts as a series of interdependent steps --- not as discrete tasks
- Defined beginning and ending point
- Documented in a visual format
- Contains measurable terminal and intermediate goals
- Associated with key performance indications (more on this later in the training)
- Guides mission and training efforts
- Used as visual-aids instead of committed to memory
- Always evaluated for improvements

Information

Not more --- but useful --- information is critical to successful mountain rescue operations. “Useful” means that the information is specific and measurable, given routinely, emphasized as important to success, provides clear expectations and options, and directs improvements and change. It contains two parts:

1. Individuals and teams know clearly what is expected of them. They know what team goals and expectations are important and the focus of efforts. Further, they know how these goals are measured along with how they are to accomplish those goals.
2. Individuals and teams receive measurable and constant feedback regarding how they are progressing, or not progressing, in their achievement of those expectations and goals.

Clear goals and expectations, along with useful feedback regarding these goals and expectations, are major contributors to successful operations in any circumstance where people are involved in work. If expectations are unspoken or vague, success is a moving and cloudy target.

High-performing mountain rescue teams constantly seek to emphasize and clarify goals and expectations while giving meaningful feedback regarding progress. This usable feedback allows team members the information they need to engage every possible learning and potential improvement --- becoming even better at saving lives.

However, simply providing information and feedback can be inadequate and sometimes harmful. Regardless of the circumstance, most people received information and feedback that is vague --- “you did well” or “you need to improve.” The characteristics of clear goals and expectations, along with useful feedback include:

- Connected to team goals
- Connected to processes
- Emphasized during training
- Documented
- Provided as key performance indicators

- Frequent
- Measurable
- Provides options
- Verbal and written data
- Provides opportunity for learning
- Focused on outcomes and consequences
- Not about judgment and evaluation

Resources

Regardless of established key goals...regardless of a sound mission strategy...regardless of effective work processes.... regardless of quality information ---- if the *resources*, which people and teams need are absent, unavailable, unreliable or do not match the job requirements --- performance and operations can fall short.

High-performing mountain rescue teams carry, or have access to, the resources necessary for successful operations. But further, they have them in working order and available at the moment when needed. These teams ask, "What tools, equipment, material and personnel do we need to be successful and when do we need them?"--- Then provide it.

Simply having resources may be inadequate. The right resources need to be provided at the right time. The characteristics of necessary resources are:

- Based upon what those doing the work need
- Based upon processes
- Available when needed
- Reliable
- Match demands of work
- Include preventive maintenance
- Always being re-evaluated

Incentives

High-performing mountain rescue teams agree what behaviors, abilities, and efforts constitute performance in each situation and task --- then provide *incentives*. In other words, successful operations involve knowing specifically how individuals and team contribute to success --- then provide incentives. Knowing specifically what success is, teams provide incentives --- rewards or consequences --- for performance.

But they do not stop there. They also address and provide consequences for non-performance --- lives depend upon it. Without providing consequences for both performance and non-performance (according to the established goals and expectations) mountain rescue teams are hindering their operational success.

Simply providing incentives may be inadequate. The characteristics of incentives that drive successful performance and operations include:

- Closely tied to goals, processes and expectations
- Known consequences
- Immediately implemented

- Consistent across people and situation
- Fair to all
- For performance and non-performance

Knowledge and Skill

High-performing mountain rescue teams see training as one of many methods to improve performance. They know training --- the method of providing people *knowledge and skill*-- is only one factor influencing successful operations.

These teams do not just provide training. Performance is improved by providing systematic training --- people first crawl...then walk...then run. When a team needs the knowledge and skill to run, they are first taught to crawl...then walk...and finally run. Training is systematic and progressive --- not a knowledge dump.

Simply providing training, knowledge and skill may be inadequate or not retained over time. The characteristics of providing systematic knowledge and skill include:

- Systematic approach (crawl...walk...then run)
- Progressive practice
- Experiential in nature
- Uses principle of adult learning
- Uses diverse learning methods --- written, verbal and tactile

Capabilities

The rigorous demands of mountain rescue require unique and unwavering *capabilities*. High-performing mountain rescue teams know the physical, emotional, and mental capabilities necessary for successful operations.

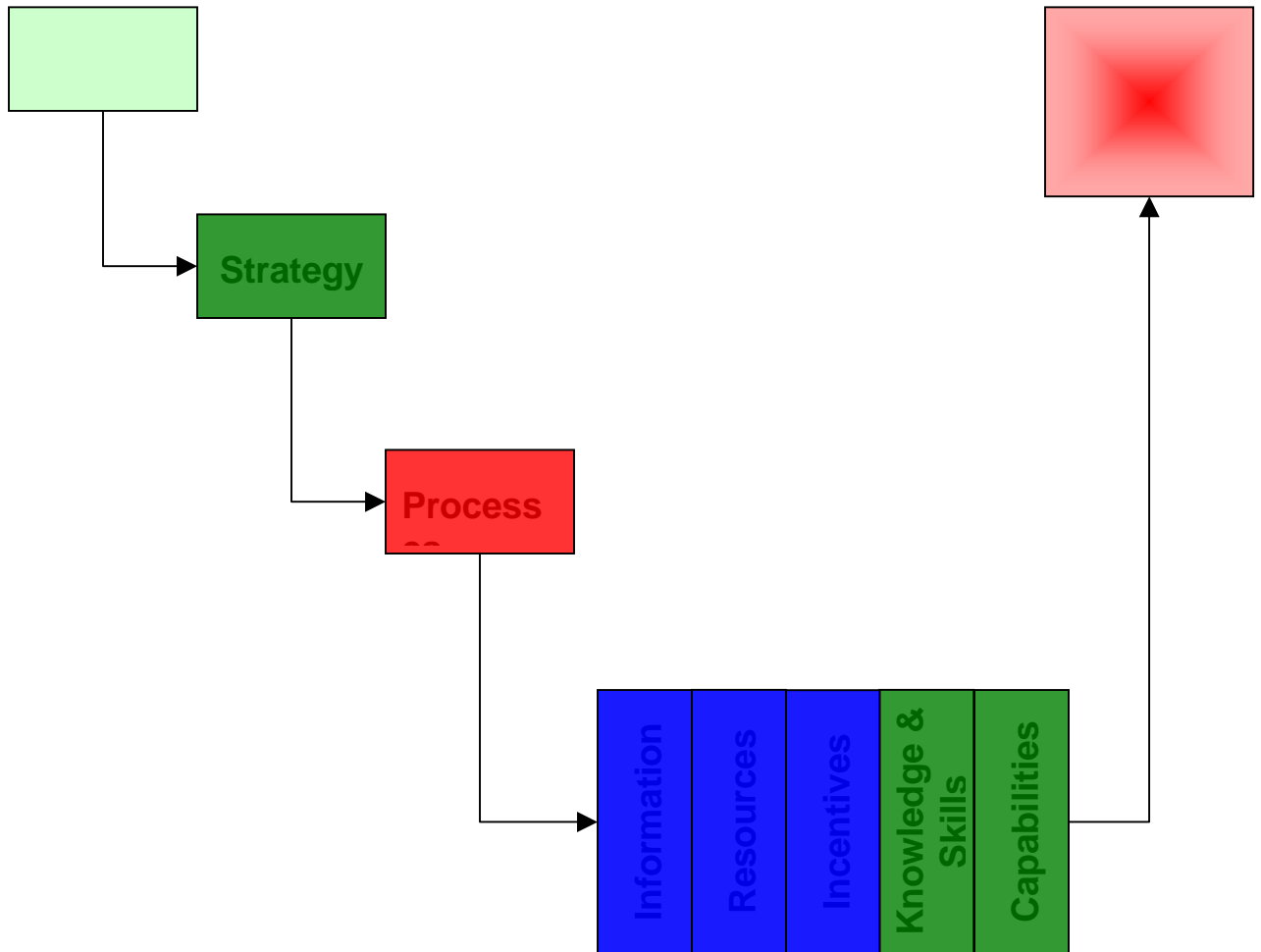
Knowing that people's capabilities are unlikely and expensive to change; they recruit and enlist members with the physical, emotional, and mental capabilities that match the demands of the work and success. Without these capabilities success will rarely come.

The characteristics of providing necessary capacities include:

- Physical, mental, and emotional demands of work are known
- Necessary capabilities corresponding to demands are known

Summary

Continuing to use training as the sole method of achieving and constantly improving mountain rescue operations will limit a team's efforts and potential. Successful mountain rescue operations and high-performance require teams put mechanisms in place that constantly leverage and manage all eight "critical performance factors." Team **goals** must be specified and measured; a sound and accurate **strategy** must be developed; **processes** and work-flows must be documented; useful **information** must be provided; **resources** must be available; **incentives** for performance and non-performance must be implemented; **knowledge and skill** must be trained systematically; and members must possess the **capabilities** to complete the required tasks. This takes mountain rescue teams and moves them from being well-trained --- to consistently conducting high-performing operations.



Examples of Effective and/or Ineffective Use

Avalanche Operations --- Strategy

Dale Atkins, technical expert with Alpine Rescue Team (Evergreen, Colorado) and forecaster/researcher with the Colorado Avalanche Information Center, recommends a three-stage strategy to avalanche rescue operations (2002, *Avalanche Rescue Operations*, Mountain Rescue Association; Dale Atkins and Charley Shimanski). Like any strategy, it is the result of a comprehensive and accurate assessment of avalanche incidents. This assessment recognized critical information that guides efforts and training:

1. Backcountry location of the incident
2. Potential response time to the incident location

3. The critical nature of the first 30 minutes following subject burial

Although detailing this strategy would be beyond the scope of this course, it can be found as a training course through the Mountain Rescue Association called Avalanche Rescue Operations (www.mra.org). Suffice it to say that it encompasses the characteristics of a sound strategy and prepares a mountain rescue team for operational success and performance.

Mountain rescue teams can learn a great deal by generalizing such a well-considered and sound strategy to other situations they face. Regardless of the situation your team may face --- evacuating a subject, finding a lost party on a long interagency search, or a multi-pitch snow evacuation --- strategies should be developed that consider all the necessary characteristics.

Rock Fall --- Processes

A rescue team is evacuating an injured mountaineer from the rib of a snow couloir. It appears the evacuation can be completed in two pitches. The first pitch will use a rock anchor. The second a snow anchor. While approaching the subject from above, the rock fall potential --- along with the fall line --- is made clear.

Placement of the second anchor near the bottom of the couloir will likely be near the rock fall line. As a result, additional precautions are taken to prevent movement high in the couloir and to move quickly across exposed areas low in the couloir.

Once the rock anchor is completed, a 200-foot static rope is tied into the litter head and the lowering begins. Great care is taken to prevent movement high in the couloir so that rock fall possibility is lessened. At the snow anchor, 170 feet below the first anchor, the litter goes briefly off belay. Although precautions have been taken, rock fall potential remains --- so maintaining the highest level of safety requires that teams work quickly. Unfortunately, the 200-foot load line is tied directly to the litter head.

The rope must be untied from the litter and then the second anchor line must be attached to the litter head. Sub-zero temperatures, along with bulky gloves and uneven terrain prevent this from progressing quickly. This time spent off belay, changing ropes, is time spent compromising safety. In these circumstances, working rapidly equates to safety.

If this team had developed, documented, and trained a process --- sequence of steps, task, and activities --- that accounts for such a situation, time in harms way could have been significantly lessened. This process and documented process map, known by the entire team, is used to guide training along with routine evaluation and feedback --- might call for attaching a sling to the litter head then using a locking carabineer and a figure eight on a bite to attach the load line. This would have created a much quicker anchor transition and minimized time in the path of potential danger. Despite the adrenaline-filled crisis, established processes that incorporate the characteristics of an effective process, guide work, training and feedback so that it is consistently completed in a manner that best achieves the desired goals --- safely saving lives.

Hasty Search --- Process

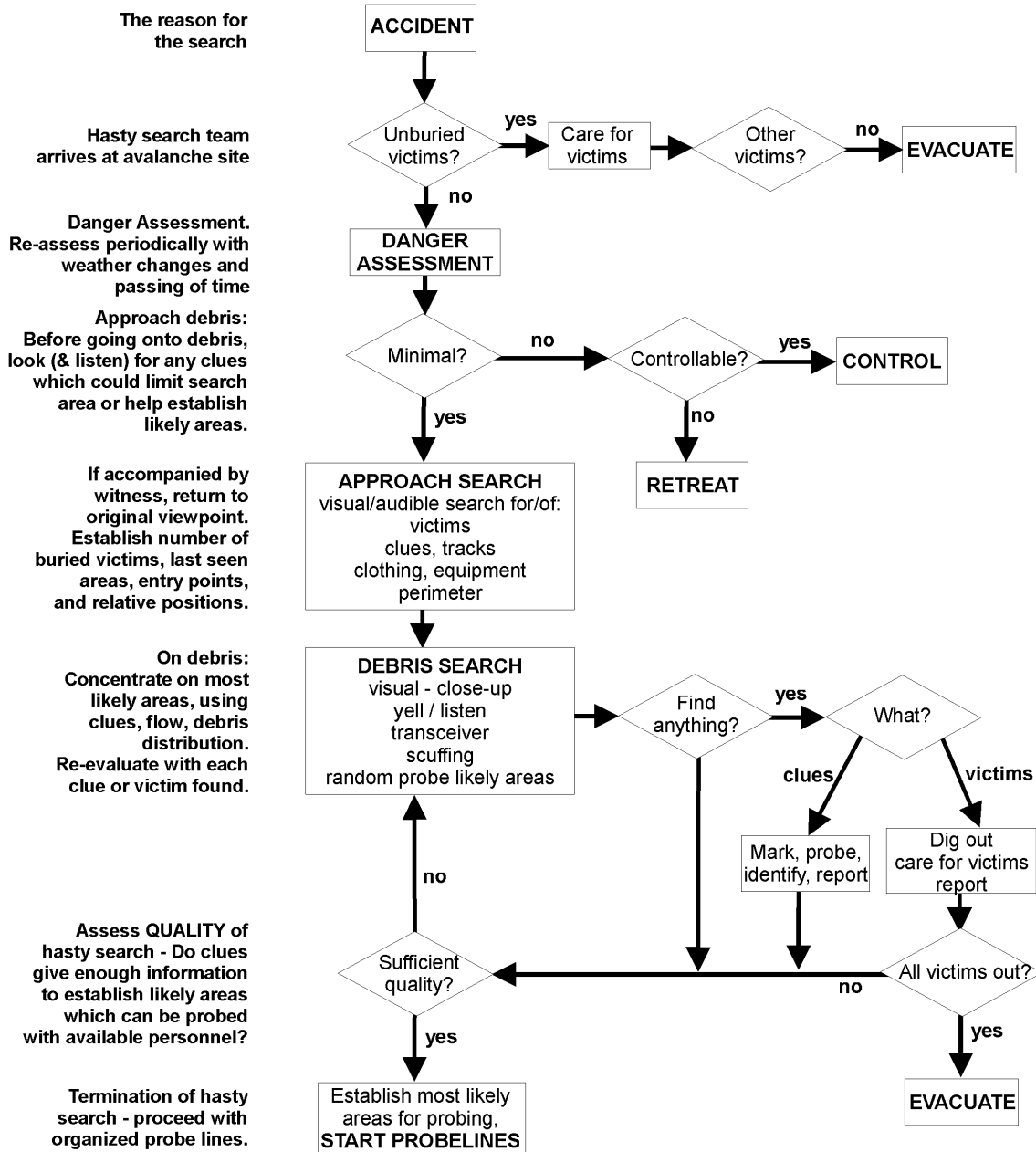
In his previously mentioned article Avalanche Rescue Operation, rescue and avalanche veteran Dale Atkins documents a hasty search process map or flowchart (2002, Avalanche Rescue Operations; Mountain Rescue Operations --- Dale Atkins and Charley Shimanski).

This documented process (see next page) graphically describes the things (object, information, equipment) and activities (performed by people and machines) used to convert inputs into outputs. It presents the flow of interconnected actions and decisions that occur to achieve a specific outcome --- establish the most likely area for probing. A process map such as this is used to ensure continual improvement --- by encouraging data driven decision along with stronger and quicker learning and change. It is determined by the demands and requirement of the situation. This documented process is constantly trained, measured and guides missions.

Mountain rescue teams can identify their common rescue scenarios and develop flow-charts to guide their training, missions and evaluation.

HASTY SEARCH FLOW CHART

by Dale Atkins, Colorado Avalanche Information Center



(2002, Avalanche Rescue Operations --- Dale Atkins)

First Team In --- Information

A mountain rescue team responds to a reported unconscious climber repelling down a vertical cliff. The first team in --- part medical assessment, part technical evaluation, and the initial rescue effort --- responds immediately.

But prior to leaving the command center, the field team leader pulls a laminated card from an easily accessible pocket. This card lists the necessary equipment a first team in should transport to such a scene if they are to be effective. The team leader takes 30 seconds to read the list out loud to this six-member team. Upon hearing the list, the team realized that in the haste and adrenaline of the response they neglected two critical pieces of equipment. The equipment was obtained and the team quickly responded to the unconscious climber. This was 30 seconds well spent.

“Checklist” or aids such as the laminated card used by this team leader prior to entering the field provide teams with the information and feedback they need in a crisis without having to rely on imperfect memory.

Training Debrief --- Information

Suppose that every three months a mountain rescue team simulates real-life needs by conducting mock missions. This training integrates the various knowledge and skills that have been learned and reinforced into a single scenario.

Upon “completing” the training, a few minutes are taken to “debrief.” Teams take a “few minutes” to review what went well and what did not. A debrief is often considered a separate part of the training, of less value than hands on experience, or “something we should do.” The feedback that is provided during the debrief is typically general and vague --- lacking in any specificity, options, or alternatives for improvements. Teams often say things like:

- “We did well”
- “We were slow.”
- “We need to do better.”

For a team to extract all the possible and needed learning and improvement from their training and experiences, debriefs must be seen and conducted differently. More preparation and time need to be given to After-Action Reviews or lessons learned, and feedback needs to look significantly different.

Prior to the training, teams and individual members need a clear and documented understanding of expectations --- what constitutes success in terms of their individual actions? During these trainings, observers play just as key a role as the training participants. Observers are assigned to oversee and provide usable feedback regarding a specific process or task. Observers watch over a specific process or task while “observing for” the necessary, specific, and documented efforts called for in this process or task.

During the “debrief” portion of the training, observers provide the specific and measurable feedback that had been documented well before this training. This ensures the team extracts all learning and value from the experience --- making needed improvements

Where are The Keys? --- Resources and Information

In near white-out conditions, a small field team drives a team vehicle up a forest road in order to gain quicker access to a scene. Ninety minutes after leaving the vehicle and arriving at the scene equipment is needed. This equipment is located in the team vehicle. The field team transmits their request across the radio to the command center. Shortly thereafter, a second field team arrives at the vehicle to obtain the equipment and transport it up the mountain.

Unfortunately the spare key, usually located in a magnetic box under the bumper, is absent and the field team is carrying the only key. An alternative plan to providing the field team the needed equipment must be made and executed, or perhaps this mission needs to reach success without available equipment.

The only strategy to prevent such situations would be a documented "vehicle checklist" that is completed every time the team vehicle is returned to its garage. This checklist would contain all the items that need to be in place prior to the vehicle being mission-ready for the next call. This checklist would contain "spare key in place."

If an item is absent at the time the vehicle checklist is completed when returning to the garage, then actions would have been taken to promptly replace it. This would have allowed the field team access to the equipment they needed at the right time.

The 3:1 system --- Knowledge and Skills

When a mountain rescue team enlists new members training of the novices take place --- they need to adopt specific knowledge and skills. Included in the training topics is building a 3:1 system. The ultimate outcome is each team member having the knowledge and skill to independently build a 3:1 system in the field. The desired end state is not necessarily learning, but actually the ability to do something specific when needed.

The system is explained and sketched. After the equipment is introduced, new recruits watch experienced members build the system and then are given an opportunity to build a system with assistance. Then some distinctions are explained: 3:1 as a safety, an in-line 3:1, 3:1 as an up-haul system. Confusion creeps in. Unfortunately, over time, the knowledge and skill is not retained while uncertainty and retraining predominates. The goal of "teaching a 3:1 system" needs to be replaced by "giving the knowledge and skill to independently build a 3:1 system in the field at any time."

Systematic training would approach this goal differently --- crawl, walk, then run. Learning to build the 3:1 system is done in progressive steps. Student learning would also occur using various mediums. Students would have the opportunity to hear about the system, read about the system, see the system (being built, already built, and working) and work the system's equipment.

Although this will take more time in the beginning, over the long run of retraining and over-reliance on senior members it is well invested. This progression might unfold as the following:

1. See the equipment used in a 3:1 system

2. See a photo of a built 3:1 system
3. Watch experienced members (slowly) lay out the system in the classroom
4. Hear an explanation of how this 3:1 components fit together
5. View a video of a system being built in the field
6. Watch experienced members build and use a 3:1 system in the field
7. Help experienced members (slowly) lay out the system in the classroom
8. Learners explain to experienced member how this 3:1 components fit together
9. Assist the team in building a 3:1 system in the field
10. Independently build a systems in the classroom
11. Independently build a system in the field
12. Independently explain how the system works
13. Make the distinctions regarding the various uses of a 3:1

Conclusions

Training, without question, is absolutely essential for conducting successful mountain rescue operations. Yet at the same time training alone is insufficient.

However, leveraging all eight factors that are influencing operational success provide the fuel and momentum necessary and sufficient for successful operations. Successful and high-performing mountain rescue operations call for teams to put mechanisms in place that constantly leverage and manage eight “critical performance factors.”

1. Three or four critical team **goals** must be specified and measured
2. A sound, accurate and adaptable **strategy** must be developed and executed
3. **Processes** and work-flows must be documented in process maps while driving training and feedback
4. Useful **information**, which includes clear expectations and feedback regarding progress, must be explicit.
5. **Resources** must be available and working at the right time.
6. **Incentives** for both performance and non-performance must be known and implemented\
7. The need for **knowledge and skill** must be provided through systematically training.
8. Members must possess the emotional, mental and physical **capabilities** to complete the required tasks.

This moves mountain rescue teams from being well-trained --- to consistently conducting high-performing operations.

Appendix

Application Questions and Worksheets

Goals: Initial Application Questions

1. What determines our success? (What are our goals?)
2. What key performance indicators (KPI) determine this success? (How do we measure?)

Goal 1:

KPI

KPI

KPI

Goal 2:

KPI

KPI

KPI

Goal 3:

KPI

KPI

KPI

Strategy: Initial Application Questions

1. What common incidents does our mountain rescue team face?
2. What are our goals in this situation?
3. What opportunities and obstacles do we face at such incidents?

Incident 1:

Goal

Opportunities/obstacles

Incident 2:

Goal

Opportunities/obstacles

Incident 3:

Goal

Opportunities/obstacles

Processes: Initial Application Questions

1. What are common outcomes or results we face?
2. What inputs do we usually have to create this output (people, resources etc)?
3. What are the key steps in this process?

Outcome 1:

Inputs

Key Steps

Outcome 2:

Inputs

Key Steps

Outcome 3:

Inputs

Key Steps

Information: Initial Application Questions

1. What are specific and measurable expectations of teams and individual members?
2. How can these be communicated to the team?
3. How will the team receive useful feedback regarding progress toward these expectations?

Expectation (specific and measurable) 1:

How do you communicate to team?

How do you provide feedback?

Expectation (specific and measurable) 2:

How do you communicate to team?

How do you provide feedback?

Expectation (specific and measurable) 3:

How do you communicate to team?

How do you provide feedback?

Resources: Initial Application Questions

1. What resources have been lacking, unavailable, or unreliable at past missions?
2. What practices can we implement to ensure they are available when needed?

Resource 1:

Practice

Practice:

Resource 2:

Practice

Practice:

Resource 3:

Practice

Practice:

Incentives: Initial Application Questions

1. What are consequences we implement for performance?
2. What are consequences we implement for non-performance?
3. What prevents us from implementing consequences?

Performance consequences:

- _____

- _____

- _____

Non-performance consequences:

- _____

- _____

- _____

Prevents implementation:

- _____

- _____

- _____

Knowledge and Skills: Initial Application Questions

1. What topic or content do you find yourself retraining over and over again?
2. If you were to train this in three steps, what would they be?

Retrained Topic/Content 1:

Step 1:

Step 2:

Step 3:

Retrained Topic/Content 1:

Step 1:

Step 2:

Step 3:

Capabilities: Initial Application Questions

1. What specific physical capabilities are needed on our team?
2. What specific emotional capabilities are needed on our team?
3. What specific mental capabilities are needed on our team?

Physical capabilities:

- _____
- _____
- _____
- _____
- _____

Emotional capabilities:

- _____
- _____
- _____
- _____
- _____

Mental capabilities:

- _____
- _____
- _____
- _____
- _____