

Highly Reliable Teams in Search and Rescue: Seven Characteristics of Excellence

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Abstract

This paper shows how search and rescue (SAR) teams become highly reliable teams (HRTs). It is based on participant observation and interviews over several years, including the SAR experience of the authors. It is also an adaptation and application of the research of Weick and Sutcliffe (2007). We introduce the concept of highly reliable teams by establishing that SAR teams routinely work complex problems. The characteristics of complex problems then drive seven critical characteristics of highly reliable teams which are both descriptive and prescriptive.

Key Words: Teams, Reliability, Complex Problems, SAR Teams, Problem Solving

Introduction

Complex Problems

Complex problems are unique because they require team formation in order to address. (Hammond et al, 2018). In search and rescue, missions are inherently complex. Each mission has elements of familiarity and uniqueness. Failure to resolve a complex problem can cause catastrophic outcomes for teams, subjects, and other stakeholders. While solving complex problems, SAR teams are exposed to uncontrollable environmental circumstances that require an indeterminate number of resources to resolve. When a problem is addressed, solutions may have limited impact and expiration dates, and always lead to new iterations of the problem. Finally, SAR teams addressing complex problems sometimes face unrealistically expectations and high scrutiny in their communities or media.

To address the ever-changing aspects of complex problems, reliable SAR teams create a learning cycle that begins with anticipation and moves to learning, after action review, mission, after action review and is followed by a revision of the anticipation. This cycle has the effect of creating team characteristics that are essential to a team culture of high reliability. Those characteristics are the subject of this paper.

Highly Reliable Teams

In 2007, Weick and Sutcliffe said highly reliable organizations mindfully “track small failures, resist oversimplification, remain sensitive to operations, maintain capabilities for resilience, and take advantage of shifting local expertise (p. 8).” Those characteristics reframed, plus two others we identified through participant observation, describe with some accuracy how SAR teams reach a state of high reliability. In next seven sections, we detail how these are operationalized.

Mission Focus: HRT’s are highly mission focused, and the mission defines membership. Likeability, availability and “fit” are important, but expertise in the kinds of problems the team encounters is essential. For example, county based search and rescue teams and K9 Support Search Teams operate very differently. The county SAR teams have a public safety mission. Egos, territorialism, and seniority are often ignored in order to create the highest likelihood of success. K-9 support teams are often more like dog clubs, focusing first on being with and training their K-9 companions.

This does not mean SAR HRTs do not have conflict. Fischer and Boynton (2013) say having team members with egos can generate a rich flow of ideas that create unique and viable solutions. These types of teams had direct dialogue without tip toeing around feelings. One SAR team member was heard telling another, “People hear us talking on the mountain and they think we hate each other. But in a mission, we really need to be direct. The truth is we really love each other.” (See KUED “Search and Rescue at <https://www.kued.org/whatson/kued-productions/search-rescue>).

Preoccupied with failure-Because the consequence of failure can be catastrophic, HRT’s spend a great deal of time anticipating what can go wrong. Weick and Sutcliffe¹ identify the preoccupation with failure to include “practices that preclude mistakes (p. 46).” We observed exactly that. HRTs do not try to get the only right answer. They try to not get the wrong answer. Because the problems they address are complex and rarely have a clear positive outcome, they try to hold onto the problem until it can be resolved and transferred without catastrophe.²

One SAR member said, “The stabilization and transport of this avalanche victim at night and my concern for team safety was overwhelming. I think focus on the end goal is essential but preoccupation

¹ We have separated and simplified some of the concepts from Weick and Sutcliffe. We have also reordered them.

² SAR members often carry this attribute into personal, professional, and family life as a means of situational evaluation and although helpful to being highly effective in a complex mission does not always lead to positive outcomes in more long-term relationships. It is why SAR members like military, may struggle may with personal relationships.

with failure allowed SAR members to avoid an additional avalanche triggered during patient stabilization and extraction due to changing weather conditions.”

Reluctant to simplify-SAR commanders are constantly considering problem complexity that includes geographic location, weather, available expertise, available equipment, etc. Each could have a dramatic effect on outcome. The geography includes terrain and boundaries. It may include the number of victims, the nature of any medical issues, jurisdictional issues, etc. While each problem is unique, SAR leadership or membership might be tempted to be driven by history if their last similar mission turned out to be simple. Weick and Sutcliffe say that an essential part of reluctance to simplify is to “carry categories lightly (p. 58).” For SAR HRTs this means that any call can turn into a technical rescue or a medical rescue at any time, even if it was not dispatched as such. Reluctance to simplify may help team members remain ready for a technical rescue involving a victim in swift water or on a cliff; where timeliness and quick reaction can be essential and must be effective. Furthermore, reluctance to simplify can help rescuers remain alert to potential threats from others who may be the original problem for the overdue hiker. Simplification can wrongly ease a rescuer into a false sense of personal security when the reason the overdue hiker is because of the behaviors of others.

Reluctant to blame- When high reliability is expected but not achieved some teams begin to fracture with blame. But for others, they come closer together. Our research suggests that HRTs collectively own all failures, large and small. During a winter, high angle rescue involving the hoist removal of multiple victims from a winter climbing accident on steep terrain involved multiple agencies and air operations, reluctance to blame directly saved lives. Upon extraction of victim one it quickly and dangerously became obvious that the rotor-wash and proximity of the helicopter destabilized the snowpack and safety. The window for adaptation and stabilization of the situation was small and only minutes available before catastrophe. Those moments, if they had been filled with blame between agencies, would have led to loss of life. However, reluctance to blame and acceptance of shared responsibility lead to cooperation and solutions that assured a safe extraction of the first patient and further solutions for safer continued operations of the other victims and safe return of the SAR members.

Sensitive to operational complexity- Sensitivity to operational complexity means that a complex problem is beyond the full comprehension of any one individual or team and every team member owns some portion of the problem. Every team member brings something of value into the process. Valued contributions may include special training, expertise, experience, naïve questions, observations, and ideas. No one ever says, “mind your own business” or “that’s my problem.” It’s everyone’s business and everyone’s problem.

Because there is operational complexity, surprise is inherent in all operations, but the impact of surprise can be reduced by sharing relevant information. Lack of information creates stress, forcing teams to operate without context. Communication processes are every team member’s responsibility. A County SAR Team Instructor said, “The first thing everyone learns is how to communicate and when to communicate. You will communicate via email, pager, two-way radio, voice and even whistle. We are

constantly communicating.” Long periods of silence are not tolerated when team members are deployed. “Wellness checks” are initiated every 20 minutes when there is no operational reason to communicate to ensure team members are functioning and attuned to the problem.

Give deference to expertise- Deference to expertise is certainly related to operations complexity, though Weick and Sutcliffe put them in different categories. Because complex problems can be bigger than our collective knowledge, sometimes we go outside the team for ideas and solutions. Timely information related to the problem is welcomed while controlling egocentric interference is shunned.

For example, a hazardous material at the rescue site will warrant a phone call to a local university professor who is a chemist. The team remains responsible for the problem, but they welcome advice and information. Information is never attached to the messenger. One rookie member of an EMS team observed, “They did not even know me, but on the first call when I suggested that we consider something else for the patient, they stopped and listened. I was amazed when they took my suggestion.”

Effectively Manage Stress- The Weick and Sutcliffe model says this characteristic is “giving high value to resilience.” We observed that HRTs not only value resilience, but they actively promote it. When a new member faced a particularly stressful incident, there was a formal and an informal response. That might involve Critical Incident Stress Management (CISM) support. (Mitchell, 2003). CISM is a peer support driven system that allows those who have been traumatized by an incident to share feelings and fears with others involved in the incident. The process is generally co-managed by a team member and a trained therapist (Brandon and Silke, 2007).

But it is not just individual psychological resilience that is the concern. Team resilience is also tracked as an element of team culture. In the AAR practice or in the fire debrief sessions, teams reported efforts to learn from fast negative feedback (Wildavsky, 1991) so that similar incidents would not have a negative impact. Still active membership in SAR, EMS and Fire create stress beyond the view of the team, family members or the individual (Bonanno, 2004). One former SAR team member told us, “I came down the mountain behind the litter. I had seen this before so many times. Family members were lined up, crying, distraught. I knew at that moment I was done. This would be my last time on the mountain.”

Conclusion

The seven characteristics of highly reliable SAR teams are descriptive and prescriptive. We are currently developing a prescriptive instrument that SAR teams can use to assess their commitment to these ideals, but we acknowledge that because of the nature of the complex problems unevenly distributed to SAR teams, connecting reliability (mission success) to these ideas will be difficult.

Because SAR teams tend to be mission focus, they may also focus on rescue techniques and search strategy and neglect learning about and reflecting on their own group processes. The best outcome of this research will be to focus SAR team trainings on better human relations and team processes that will lead to higher reliability in solving the complex problems of SAR. Additional research

on how SAR HRTs deal with regulation is provided in another article in this issue by Rhea, Isom and Hammond.

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