



The Battle of Gettysburg and Wildland Firefighting: Organizational Response to a Dangerous Environment

Through the Lens of High Reliability Organizing

By Daved van Stralen, M.D.

Members of the L-580 program for Incident Management Teams on the May 2010 Gettysburg Staff Ride study this Civil War battle to foster a more strategic approach to incident management and decision making today.

Photo by Mike Ferris USDA Forest Service

Do we have the proper emphasis on leadership education for the various levels of leadership—from rookie to supervisor?

Can leadership or High Reliability Organizing be taught—or can it only be learned?

I would like to evaluate the L-580 Gettysburg Staff Ride using these two central questions as the lens.

A group of wildland fire leaders came together in Gettysburg, Pa. for a staff ride to study leadership lessons from the famous Civil War battle. As an outsider with expertise in high reliability organizing (HRO), I attended to identify common themes that the attendees discussed.

Wildland fire leaders at all levels (from hand line crew supervisors to Incident Management Team commanders) have become accustomed to making decisions with imperfect information. When asked how they do this, some respond with well thought out answers. Others know how to do it, have taught it by example “on the job,” yet they find it difficult to explain their specific approach unless they are actually doing the work or describing it only in terms of their job.

Does HRO bring value to leadership education? What purpose does the study of military leadership or old battles have for wildland firefighting today?

Background on Codifying HRO

Karlene Roberts, Research Psychologist at the University of California, Berkeley, initially codified HRO after observing the crew of the USS Carl Vinson at the request of its Captain, Tom Mercer, Rear Admiral, U.S. Navy (retired)—who also attended the 2010 Gettysburg Staff Ride. Mercer sought Roberts' recommendations to improve his ship's performance. HRO describes his command philosophy of supporting the decisions and actions of crew members whether they are in the kitchen or on the flight deck—regardless of rank. Though he may not be physically present, he had the necessary information to know what was happening on his ship and, as commander, retained only those duties he could not legally delegate. While Roberts described his command structure, authors and professors Karl Weick and Kathleen Sutcliffe described the similarity of how the members of the ship worked together during routine operations—or while simultaneously launching and recovering aircraft.

Despite demonstrated expertise in decision making under uncertainty, we can all benefit from the lessons learned by others, particularly those lessons bought by blood. In this staff ride program, we learned from U.S. Marine Corps veterans—serving as the staff ride's group leaders—with Civil War battlefield leaders filling in as proxies for today's leaders. The battle itself played the proxy for wildland firefighting. Some people advocate HRO as a structure for wildland fire operations. Others advocate the study of military operations as a means for wildland fire leaders to learn better leadership techniques. Yet, repeatedly, the L-580 Gettysburg Staff Ride participants said that they learned this material through real-life experience early in their career and *not* from books or courses. Now, later in their careers, they are learning leadership and HRO principles *after* having served as leaders striving to achieve high reliability individually and in their organizations.

Does HRO bring value to leadership education? What purpose does the study of military leadership or old battles have for wildland firefighting today? Some staff ride participants reported that books and courses help refine what they already know or give names and words to the tacit knowledge that they learned through experience. Many questioned why leadership and HRO are not taught to the rookies at the beginning of their careers. Not discussed to any depth was the timing of leadership education; should it occur at the beginning of a career?



The Gettysburg Staff Ride

In May 2010, approximately 100 Incident Management Team command and general staff personnel participated in the “L-580 Leadership is Action” Gettysburg Staff Ride at Gettysburg National Military Park in Pennsylvania.

Sponsored by the National Wildfire Coordinating Group (NWCG) Leadership Committee and the National Advanced Fire Resource Institute (NAFRI), this special L-580 program provides Incident Management Teams leadership development.

This unique Civil War battlefield onsite staff ride experience is designed to improve the decision-making skills of Incident Commanders and their staffs by studying leadership decisions and actions at this historic Battle of Gettysburg.

The program's intent is to foster a more strategic approach to incident management and decision-making.

David van Stralen, M.D., author of the accompanying article, participated in the May 2010 staff ride.

Leadership lessons and insights from this Gettysburg Staff Ride were presented to the “L-580 Leadership is Action” program participants on this Civil War battlefield again this year—for three days in May 2011.

The Five Principles of High Reliability Organizing (HRO)

1. A Preoccupation with Failure

HROs are preoccupied with all failures, especially small ones. Small things that go wrong are often early warning signals of deepening trouble and give insight into the health of the whole system. But, we have a tendency to ignore or overlook our failures (which suggest we are not competent) and focus on our successes (which suggest we are competent).

2. A Reluctance to Simplify

HROs restrain their temptation to simplify through diverse checks and balances, adversarial reviews, and the cultivation of multiple perspectives.

3. A Sensitivity to Operations

HROs make strong responses to weak signals (indications that something might be amiss). Everyone values organizing to maintain situational awareness.

4. A Commitment to Resilience

HROs pay close attention to their capability to improvise and act—without knowing in advance what will happen.

5. A Deference to Expertise

HROs shift decisions away from formal authority toward expertise and experience. Decision-making migrates to experts at all levels of the hierarchy during high tempo times.

HRO, military leadership, Crew Resource Management (CRM), and many other programs are all coming into the field of high risk organizing—one after another—without the ability to integrate them with each other, let alone with existing operations. As a result, some field leaders have been told to “Go do HRO” as if it were a procedure to incorporate into your teamwork program. In this way, we lose sight of the purposes of these interventions, including HRO, and whether these programs: augment each other, facilitate productivity, or is there competition or conflict between each approach? Such potential scenarios can also lead to situations in which people may use one program to advance a personal agenda.

One area that appears neglected is identification of the precursors of leadership and how we begin its development in rookies. Does, or should, leadership training change as the person moves from rookie assignments upward to supervisor? The U.S. Marine Corps calls this the “Strategic Corporal.”

A Commonality of Leadership

Making decisions with imperfect information under threat describes a military as well as wildland fire action. However, one major difference is that we cannot intimidate or psychologically trick a fire into changing its behavior. Other than that, there is a commonality of leadership between Marine Corps and Incident Command in communication, friction, and risk during the management of logistics, finance, and operations.

The Marine Corps has thought deeply and broadly regarding the situations that are similar to what our wildland fire Incident Commanders encounter. The Marines have developed a body of teachings/knowledge for their organizations known as “doctrines.” Marine Corps doctrine includes methods to unleash the creativity of leaders with the “liberality of thought.” Everybody has different gifts. Through discussion of the individual leaders and their actions at Gettysburg in small unit action and large unit maneuvers, the Gettysburg Staff Ride demonstrated how the wildland fire leader can unleash the gifts and thoughts of subordinates.

This use of the Battle of Gettysburg for a staff ride allowed participants to discuss the “good” and “bad” of small- and large-scale operations. While the actual translation between the two systems is difficult and has risk, we can look at the structure of operations without placing someone’s image at risk. For example, we can use the Confederate Army’s General Robert E. Lee as a proxy for optimal and effective or ineffective, even detrimental, leadership styles. On the individual level, the leader must describe his or her work clearly and completely. Any voids may contain important information which is usually tacit or hidden knowledge. When staff ride participants used the Gettysburg military model to describe their experience voids, areas of tacit knowledge became apparent and opened further discussion.

One learns from experience—occasionally through successes, but most emphatically through failures. Interaction with experienced colleagues, guided by knowledgeable veterans using neutral examples, takes leadership beyond personal experience or books.

An example of using this battle as a proxy to discuss pros and cons is the change of mission during an operation. While this occurs in Incident Command System (ICS) operations such as the shift in thinking required from a season's fire assignments to setting up a base camp at the New Orleans Airport immediately after Hurricane Katrina, we can discuss this more completely as we hear about the Union Army's General John Buford and the Confederate General Henry "Harry" Heth. We can tease out details and the "what ifs" with Heth looking for shoes and encountering Buford while this Union general is scouting an area and encounters a major force conducting armed reconnaissance. This chance meeting is credited for starting the Gettysburg Battle.

We could now discuss successes and failures from all angles, including bias for action—does it work for you or against you? Does bias for action increase agility, or risk? What occurs before the bias for action? The Buford and Heth experience as well as the unexpected consequences of the IMT Hurricane Katrina response scenario can occur to any operator when there is a change in circumstances from one's initial intelligence.

The Varying Roles of Friction or Tension

The U.S. Marine Corps uses the term "friction," roughly equivalent to tension, and defines it as a buildup of energy that can be good or bad. Friction can develop from different circumstances. There is friction that develops from the uncertainty inherent in our work, from an incident occurring within an incident, or when strong disagreements or differences turn into anger. Long-standing friction will decrease trust, yet trust may decrease friction—as will more communication. Tighter relationships within the unit cause a greater effect of

friction. The natural or intuitive response to friction is to make the organization tighter. In reality, however, this is the opposite of what actually works. If the commander loosens control, the friction can decrease. We saw this with several examples on the Gettysburg battlefield. In some cases, friction resolved when people shared solutions. In other instances, however, friction did not resolve, causing people to individually seek out solutions. Having a common neutral language (for example, the concept of friction) and well-defined terms allowed the Gettysburg participants to communicate despite the presence of friction.

As part of its development of doctrine, the U.S. Marine Corps describes experiences such as friction in the above paragraph and also defines



Incident Management Team members discussed high reliability at the scene of each battle on the Gettysburg Staff Ride.

terms for a common language. For example, “reconnaissance” provides information and information in context is intelligence. This is parallel to the HRO concept of information in context—mindfulness. Acting on information that does not have any context produces mindless action. By defining our terms, we can see the equivalence between the military term of “intelligence” and the HRO concept of “mindfulness”. Further, information plus a relationship produces communication. Relationships differ from an arrangement to work together; additionally, relationships, to be successful, must be maintained. Optimally, relationships are created and cultivated before you need to trust and rely upon people in a crisis.

Translation of the military equivalent of “intelligence” for the HRO equivalent of “mindfulness” increases the utility of Marine Corps doctrine to wildland firefighting.

Using Marine Corps Doctrine to Improve Wildland Fire Doctrine

The use of the Gettysburg Battle allows us to understand well thought out Marine Corps doctrine to improve wildland fire doctrine.

For instance, while wildland fire operations discuss “commander’s intent,” the Marine Corps takes intent further; intent gives the purpose and describes the criteria for success. The mission statement comes from the intent (purpose) combined with the assigned task. The Marine officer will say “I want you to do (task) in order to (intent or purpose).” If you cannot meet the task then provide alternatives, such as “What can I do to help?” or “I can do it but I need more resources.” Now the group can have a clear and neutral discussion.

A great depth of leadership experience makes discussions at this level possible. Much of this material is nuanced and subtle to an inexperienced leader and is difficult to extract from a book. One learns from experience—occasionally through successes, but most emphatically through failures. Interaction with experienced colleagues, guided by knowledgeable veterans using neutral examples, takes leadership beyond personal experience or books.

During the Battle of Gettysburg:

1. The military dealt with local public and elected officials who possessed local knowledge, had vested interest, and were not going to disappear. How could the officers of the different armies co-opt them?
2. When communicating a task through another officer, the officers were unable to clarify the original message, or an officer might make sense of the information by adding something from the officer’s own context. If the task list was too long, the receiving officer might not have taken all actions. Or, if all actions were accomplished, they were accomplished poorly or from the receiving officer’s personal priorities.
3. Accurate, timely information was necessary for each crisis. The best transitions occurred with constant communication.
4. While some generals delegated responsibility, if they did not provide support, the units could not fulfill their mission: If you delegate you need to support.
5. Officers did not routinely talk to the person individually. Because understanding is dependent on personality, experience and knowledge, this adversely affected the performance of some units.

Because the view of the soldier is different from the perspective of the officer, Situational Awareness (SA) differs. How many different SAs can you see in the Battle of Gettysburg situation?

Imagine discussing these issues from your last fire incident. Now imagine using the neutral language of the Marine Corps to discuss an ancient battle. The issues and solutions have not changed as we continue to deal with human nature.

In organizational culture, human dynamics is a shared or joint venture. Each of the Gettysburg generals that were studied on the staff ride were surrounded by HRO characteristics, but they also had behaviors and beliefs that interfere with functioning as an HRO. It is not enough for one to say “I am doing HRO” or “I have HRO” or “I have some HRO” if one also has contaminating beliefs or behaviors. HRO is a total command philosophy of how one thinks and treats others when facing threat with great responsibility under time pressure.

Elements of HRO are not stand alone, especially as HRO emerges from the support of intertwined structures that support each other. These structures, on the small-unit level, come from individual people. On the broader organizational level, the structures work through teams and units. The leader, to encourage the “liberality of thought,” treats people as unique—they are different individuals with different talents. Each person must be mentored differently. This makes great sense if you believe that each person is an asset to the organization.

Some people already perform this mentoring in their operations without realizing it. However, this has the risk of using the HRO concepts incompletely; not implementing these concepts as effectively as they could be; and not taking advantage of these concepts’ strengths.

It seems that many leaders in the wildland fire community are reading Karl Weick and Kathleen Sutcliffe’s books on “Managing the Unexpected” as part of their professional reading list. They have been introduced to the concepts of HRO through these writings. Thus, some wildland fire leaders are beginning to intentionally use the HRO concepts as interacting supporting structures to increase their skills of anticipation and containment. Based on personal conversations, it seems that leaders in the wildland fire community are using the “recommendations for managers” sections in Weick and Sutcliffe’s books’ last chapters.



Photo by Mike Ferris USDA Forest Service

Incident Management Team members on the Gettysburg Staff Ride said that they learned high reliability organizing through mentoring and modeling.

None of the people I spoke with on the Gettysburg Staff Ride learned their use of the principles of high reliability organizing from books or articles. Rather, books and articles clarified and helped to mindfully organize what they were already doing. They initially learned this philosophy through mentoring and modeling.

These leaders would benefit from additional HRO stories written in terms that are immediately useful to people in the firefighter community, especially the field-level operator. Examples of HRO I heard at the staff ride included: *“If you see it then say it,”* (what one IC tells his rookies); and *“The best sawyer you will ever be is the last day doing that job”* as one leader was told earlier in his career after leaving his saw squad.

While HRO is being taught to some top leaders and some field-level firefighters, many in the wildland fire service are not familiar with HRO concepts as discrete, useful concepts that explain interactions between members and units. HRO is not being taught to new recruits or senior leaders in a systematic and integrated way as we would fire behavior. Instead, HRO seems viewed as material adding to, rather than explaining or supporting individual approaches to leadership. As a result, we lose the neutral and insightful language to discuss circumstances in the field or between field and leadership, or at executive levels. If we teach HRO to new wildland firefighters, they will mature into this conceptual process as they learn field leadership. This will bring them to an advanced state where a staff ride, either formal or informal, could provide modeling of leadership for firefighters at all levels.

The Gettysburg Staff Ride described HRO in operation—not as five pillars of wisdom to be taught and tested, but as functional human interaction to build relationships, share information, give context, and identify a common mission.

HRO Learning Method Evident on Gettysburg Staff Ride

It is difficult to tell someone how to apply HRO to their unit or organization unless they can see how it applies to, or works in, other organizations. To learn the HRO principles, it may be best to learn them well for yourself—from personal experience—and then study this process in others. Though this seems contradictory, we could see this application method in action as the Incident Management Team members discussed high reliability at the scene of each Gettysburg battle.

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While the HRO principles can be taught this way, these people said that they were unsure of themselves as “HRO teachers”. Therefore, they seem to look for a plan, a process, or a program to teach HRO. They do not seem to trust the mentor-modeling model.



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Approximately 100 Incident Management Team command and general staff personnel participated in the “L-580 Leadership is Action” Gettysburg Staff Ride at Gettysburg National Military Park in Pennsylvania.

In a personal sense, the wildland firefighters on this staff ride learned leadership and what we call the “principles of HRO” through mentoring and modeling during their youth. While they are now in the position of mentoring others and modeling the HRO philosophy, they seem to have entered a “trap” in which HRO can only be learned, not taught. They learned HRO themselves through mentors. With better understanding of the terms and principles of HRO, as well as the use of a developed doctrine for wildland firefighting, leaders can “teach” HRO by assisting younger members in learning these principles.

This learning process will require emphasis on leadership education for supervisors such as this Gettysburg Staff Ride and the introduction of HRO terms and principles as precursors of leadership for the experience of rookies. HRO describes the behaviors of a resilient organization. This approach will bring the benefits of HRO for resilience and leadership development to wildland firefighting.

From my discussions with Gettysburg Staff Ride participants, I found that many wildland fire leaders are already working with various elements of HRO—though it is critical to point out that they do not have the full exercise of HRO as Rear Admiral Mercer practiced it (see HRO sidebar on page 2). These people seemed to understand HRO best when they realized that they were routinely making the best decisions possible with imperfect information that produced imperfect answers which they would then need to correct.

As was gleaned on the Gettysburg Staff Ride, HRO could streamline this overall approach to produce a healthy response in a dangerous environment.

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