
“We’ve made huge improvements in how we address firefighter safety. It has been painfully slow, though. All things are doable over time; it’s just the speed of change that is difficult. We will change over time, but do we want to wait 20 years and sustain the 20 firefighter deaths per year and increasing public deaths?”

—Type 1 Incident Commander, Society Focus Group

A 10-year review of accidents and incidents within the USDA Forest Service wildland fire system.

USDA Forest Service photo by Jace Jacobs.
Abstract
This document seeks to describe the wildland fire system and culture within which U.S. Department of Agriculture, Forest Service employees operate. To do so, this review presents a narrative of the Forest Service's wildland fire system based on the opinions, experiences, and perspectives of those who operate within it.

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Chapter 2. Learning from the Past

“Detect and study patterns within the current system: Conduct a broad-spectrum learning review...There is an existing body of information from accidents, incidents, and normal work stories. This review will combine information and results from multiple studies to better understand work-related conditions that can be improved in the wildland fire system as well as identify what is going well.”


While the motivation for the “Wildland Fire Metareview, 2007–2016” came from the “Twisp River Fire Fatalities and Entrapments Learning Review Safety Action Plan” recommendation quoted above, the agency's ability and desire to conduct such a review has been many years in the making. Read on to find out more about the journey the Forest Service has been on as it has moved to a place where organizational learning is valued.

History

TriData Study

After a series of high-profile tragedies on wildland fires in the early 1990s, the five Federal land management agencies commissioned a study “to identify and change aspects of the underlying organizational culture that negatively impact firefighter safety.” In 1995, the private consulting firm TriData Corporation was hired to conduct this study, known as the “Wildland Firefighter Safety Awareness Study” or TriData Study. The corporation surveyed over 1,000 firefighters to collect their perspectives on factors they felt influenced safety in the wildland fire system and used the results to define then current-day issues and describe a “culture of the future.”

The study culminated in the document “Phase 3: Implementing Cultural Changes for Safety,” which presented over 200 recommendations that had the potential to improve organizational culture and firefighter safety. While many of these recommendations have lain dormant, many others have been implemented since the final phase of the study was released in 1998, including the creation of the Wildland Fire Lessons Learned Center, the establishment of fire program management standards, and the use of Red Card Committees.

Evolution of the Accident Investigation

The first formal attempt at a standardized, interagency approach to accident investigation was the “Interagency Serious Accident Investigation Guide,” published in 2001. This guide was meant to “help agencies understand how and why [an] accident occurred...to prevent further similar accidents.” Though the guide states “information from [serious accident investigations (SAIs)] should...not assign blame or serve as the basis for disciplinary action,” the core process of the SAI is to find root cause, which has often invariably led to assigning blame. In the early 2000s, a series of prominent fire fatalities (Thirtymile, 2001; Cramer, 2003; Esperanza, 2006) highlighted some of the negative impacts the Serious Accident Investigation was having on those involved in accidents. While intended to reduce fatalities, the punitive actions which arose from the SAI’s rules-based approach led to secondary injury
of incident-involved personnel as well as a deep distrust of the agency itself. Around the same time, Public Law 107–203 was enacted, which required that the USDA's Office of the Inspector General (OIG) investigate all firefighter fatalities independent of any Forest Service investigation. Incident-involved individuals became increasingly unwilling to tell their story due to fear of legal liability or being used as a scapegoat for the agency. As a result, an untold number of organizational learning opportunities were lost, and Forest Service leadership became concerned the trend in firefighter fatalities would continue to rise.

Several change leaders within the agency saw the detrimental consequences of this rules-based approach. Building upon Ted Putnam's work in the first Wildland Firefighters Human Factors Workshop in 1995, these change leaders began advocating for the Forest Service to seek learning rather than retribution from accidents. They called for making every accident and incident an opportunity to learn instead of an occasion for finding fault. They proposed replacing the SAI's rules-based approach to accident investigation with a “just culture” model. These efforts would eventually give birth to the learning review and the facilitated learning analysis (FLA), both learning-based approaches to accident investigations founded on guiding principles rather than rules.

“"You can do everything right and still not make it home."”

—Esperanza Staff
Ride Facilitator

Want to learn more about the Forest Service’s processes for learning from unintended outcomes? Check out the video “Facilitated Learning Analysis: An Introduction” for more information about the FLA and learning review processes, their history, the role storytelling has, and where to find existing learning products.

In 2006, Forest Service leaders launched another review, hiring the consulting firm Dialogos International to study the organization’s safety culture. The first report, “Integrating Mission Accomplishment with Safety at the U.S. Forest Service,” published in 2007, provided a diagnosis of the Forest Service’s “DNA,” describing safety outcomes as symptoms of a core organizational dynamic. The analysis revealed four drivers influencing this core dynamic:

1. Core leadership alignment and mission clarity
2. Community and quality of relationships
3. Integrated capability
4. Coordinated execution

Dialogos found that “each of these is interrelated and can work either for or against effectiveness. In addition, each is necessary but none sufficient by themselves to achieve the desired results.” Troubled by Dialogos’ projected increase in firefighter fatalities outlined in the report, Forest Service leadership continued to work with the company to further explore these dynamics in the hopes of transforming the agency’s safety culture.
In response, Forest Service leaders began emphasizing safety as a core value and learning as the basis for safety, and in 2009, the Forest Service formally set itself on a course to become a learning organization. A year later the Forest Service embarked on an agency-wide effort known as the “safety journey,” with the primary goal being zero work-related fatalities. During this time, the agency’s National Leadership Council studied other entities known to have outstanding safety records to learn about their organizational habits and behaviors. They were: ConEdison, Los Alamos National Laboratory, Louisiana Pacific, the Forest Service Region 10 Aviation program, United Parcel Service, URS Corporation, and the U.S. Coast Guard.

In 2013, Chief Tidwell officially endorsed the learning-based approach to accident investigations, proclaiming the learning review as the Forest Service’s replacement for the serious accident investigation process and the FLA as a critical tool for learning from unintended outcomes. The “Coordinated Response Protocol,” introduced in tandem with the learning review, further demonstrated national leadership’s commitment to learning from unintended outcomes while also supporting employees and their families. These processes were highly influenced by the work of academic pioneers in the safety culture and organizational learning movements, such as Peter Senge and Edgar Schein.

Since the adoption of the learning review, FLA, and safety journey processes, the number of fatalities and injuries in the Forest Service has been on a downward trend (see figure 2-1). However, in 2015, a spike in firefighter fatalities caused Forest Service leaders to again question how it approached safety in wildland fire. As a result, this metareview was commissioned as part of the “Twisp River Fire Fatalities and Entrapments Safety Action Plan.”

![Figure 2-1](image-url) —Forest Service Occupational Safety and Health Administration reportable (work-related) fatalities from fiscal year 1999 to 2022.
Continuing the Path To Becoming a Learning Organization

The central focus of a learning organization and culture is to learn from unintended outcomes and everyday work, change what is needed, and normalize and globalize innovations and processes that are working well. The endorsements of the FLA and learning review processes, as well as the safety journey, stand as examples of the Forest Service’s commitment to becoming a learning organization. However, up to this point, the focus has been learning from single events.

This metareview, or review of reviews, observes all the specific events together for learning opportunities which may only become apparent by looking across many events for patterns, themes, and relationships. Ultimately, the intent of this metareview is to highlight conditions that can be leveraged organizationally to improve the system.

This metareview provided an opportunity to revisit Dialogos International’s reports, the TriData Study findings, and other organizational reviews. Building off these reports, the 2007–2016 metareview explores if and how the Forest Service’s approach to safety has changed over time and identifies new challenges. One characteristic of a learning organization is the ability to shift from solely trying to fix what is broken to also encouraging what is working. Therefore, rather than focusing solely on symptoms of dysfunction, this effort also identifies positive symptoms, like local initiatives that promote safety through learning.

While the FLA, learning review, and the safety journey have all become staples of how the Forest Service learns and have served as catalysts for transformational change within the organization, the process has been subtle and has not happened overnight. It is the hope that the metareview process will create a new lens, focused on the systemic whole, through which new and continual organizational learning can be added to the Forest Service’s change process.
In the Wildland Fire Lessons Learned Center’s publication “Learning in the Wildland Fire Service,” the authors state: “We must create personal connections to increase the likelihood of ‘Firefighter X’ learning from an incident or accident. We must capitalize on those with an existing connection to pass on lessons.”

![Diagram](image)

**Figure 2-2.**—A visual depiction of the likelihood of learning from incidents where each ring away from the center shows a decrease in likelihood.

Gather your work group and discuss the following questions:

- Q What is your experience in learning from unintended outcomes? Have you been at the center of the bullseye? Have you participated in conducting a learning review or FLA?
- Q What has been your, or your work group’s, most recent learning moment? What have you done to share it with others?
- Q As “Firefighter X,” which accident review(s) have you learned the most from? What about the review(s) made it/them relevant to you?
- Q How can we learn better from accidents? How can we better implement those lessons?
- Q Are we learning collectively from ours and others’ unintended outcomes? Why or why not?

*Tell us about your experience participating in this challenge at this [team learning link]*
Endnotes


7. **U.S. Department of Agriculture, Forest Service. 2015.** The rising cost of wildfire operations: effects on the Forest Service’s non-fire work. 16 p.


