Facilitated Learning Analysis

Reinforcing High Reliability by Taking a Hard Look at Near Misses Within the Wildland Fire Community

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Contents

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This tool and resulting reports will be hosted by the:
Wildland Fire Lessons Learned Center www.wildfirelessons.net .

Abstract- Facilitated Leaning Analysis

The intent of a Facilitated Learning Analysis (FLA) is to improve performance by capitalizing on the shared experiences of participants. Blaming is replaced by learning, enhancing Recognition Primed Decision Making, and posturing for success on future events. By conducting FLAs, the organization learns from "weak signals" of error, instead of waiting for difficult and complex reactions to serious accident or tragedy. While maintaining high levels of respectful contemplative dialog, we revisit recent performance to improve future performance.

FLA models 'doctrine on the ground' focusing on principles and experience, to gain knowledge and skill.

FLA helps fill the gap between a routine After Action Review (AAR) and a Serious Accident Investigation (SAI).

The wildland fire community has been initiating important systemic change. Initiatives including Doctrine, Leadership, Lessons Learned, and High Reliability Organizing are well served by FLA. One principle common to all of these programs is 'Respectful Communications'. Another is 'Learning'. Mindfulness, situational awareness, mental engagement, avoiding complacency, and nuanced understanding all reinforce the alert firefighter in paying close attention to dynamic situations.

An FLA generally includes one facilitator and adapts to the audience, the event, the organization, and the individual facilitating. Significant events and lesser errors are seen as learning opportunities. Significant events can be positive or negative. They may or may not include injury or property damage. They are willingly conducted at a wide range of organizational levels, with products or results that may or may not be shared. Whenever possible, initiatives and corrective actions are generated from within the group.

Documentation includes a brief 1-2 page report that describes the *process used* for the FLA. These reports will be collected and made available at the Wildland Fire Lessons Learned Center as examples to help others implement a process for their own near miss events or learning opportunities.

This document provides theory, process, questions and answers, and ten examples where this strategy has been used, or activities that helped shape FLA. Reference material is also listed.

Introduction- Learning versus Blame

Consider a recent tragedy fire. Firefighters failed to post lookouts and apparently never ground-proofed an escape route or safety zone. On the previous fire, or even the previous ten fires, did they also perform without these basic mitigations? Are these oversights significant only because the firefighters died? When we automatically and instinctively consider *potential consequence* of error, not waiting for calamity to occur, we are engaged in a major ingredient of a learning organization.

Sharing the error and subsequent learning is the second key ingredient in a learning organization. This is huge; the crux of the matter; it defines our culture. What is the incentive to report or divulge in an atmosphere where people are held accountable for errors, even punished? And where is the learning? Recognizing that each of us are not immune from making errors, the intent is to create a culture where errors are openly identified and discussed; error resistant procedures replace complex entangled procedures.

Wildland fire agencies conduct 10 to 15 Serious Accident Investigations (SAI) each year and maybe 10,000 After Action Reviews (AARs), but little in-between. Dr. Karl E. Weick and Dr. Kathleen M. Suttcliffe, in their book: "Managing the Unexpected: Assuring High Performance in an Age of Complexity" – a detailed study of 'High Reliability Organizations', have us identifying and correcting errors when they are mere 'weak signals', or non-events.

SAIs purport to be for learning, but with the complexity involving bereaved families, lawyers, agency liability, professional embarrassment, and even criminal liability; it is more complicated than that. Is it any wonder firefighters are buying professional liability insurance and referring investigators to their attorney?

Significant cultural change is happening. Focusing on *principles* for guidance, including the "Hallmarks of High Reliability Organizations," we value improved performance over accountability and endless prescriptive checklists. The 2005 Pulaski Conference worked to define Doctrinal principles. The Leadership Curriculum and the Wildland Fire Lessons Learned Center promote ingrained commitment to respectful internal analysis. With 'principle based management,' firefighters are heads-up, their decisions rooted in their understanding of principles expressed through their mindful running of the situation at hand.

Consider a spectrum- on one end we have business as usual: things going well and are apparently safe. At the other end: sheer disaster, with broken lives, broken careers, and tragic consequences.

Our willingness to visit, analyze, learn, and improve is defined by what we do when things seem to be going well. Even when there are no accidents, chances are things were not perfect. In fact, our best opportunity to prevent tragedy is by

creating habits that learn from minor errors and misunderstandings, the 'weak signals'. An After Action Review is a great tool to improve performance. As there are no 'big deals', open discussion and problem solving takes place at the crew or team level, keeping under the radar.

Moving up the spectrum, consider a near miss. An AAR is still good, but at some point we benefit from outside help. Progressing from "What's said here stays here," enlightened leaders know that transparency, outside perspective, and facilitated discussion will take a group further than continued isolation.

A **Facilitated Learning Analysis** is an AAR on steroids. Guided by doctrinal 'intent,' versus rigid protocol, a variety of actions may be appropriate. Intent thinking vs. rules thinking will spawn many more avenues.

Guided by learning instead of blame, situations are judged by their *opportunity or potential for learning*. There may be a positive situation with positive behaviors, and a positive outcome that is ideal to demonstrate, reinforce, and promote outstanding performance. Instead of once again showing people 'how not to do it', we jump at the chanced to proclaim safe, effective firefighting is not only possible, but here's what it looks like.

One technique is to present an ice-breaker sand table demonstration of a significant event, perhaps a lesson learned by the facilitator. Then go back and recreate the terrain of the event at hand. With the input of those involved, walk through it again, this time figuring out how to avoid 'unmitigated risk'. Although it is impossible to completely avoid risk, particularly in wildland firefighting, the risks must be identified, studied, and mitigated.

A major awareness shift occurs when people realize the past fire does not matter- it's over. Our energy must be focused on decisions to be made in the future. Gary Klein, in "Sources of Power", describes Recognition-Primed Decision Making, demonstrating that most fire-ground decisions are based on experience, or pictures in the firefighter's head. This compels us to magnify the opportunities to create experience pictures.

> "FLA helps move difficult operations from a 'High Risk – Low Frequency (the most dangerous) towards High Risk – High Frequency (where risks are readily recognized and mitigations understood)." Dr. Jennifer Ziegler

Should a written factual 'report' be generated? Look for the intent, and available horsepower. "10 to 15 Serious Accident Investigations" takes a lot of work, time, and money. There are few *new* ways of hurting people. Investing in many lower intensity Facilitated Learning Analyses, say 500 or 1,000, provides a unique and intense close-to-home learning experience that no video or canned presentation

can match. The benefit of a detailed written report is now diminished. The FLA reports to date have only been 1-2 pages, and they focus on the *process* used.

Having said that, envision a component of the Lessons Learned Center where the FLA intent is well presented and then a library of many examples describing how people achieved learning for numerous situations. Anyone can visit the website for ideas and anyone can share their approach. A somewhat standard format for this documentation will help others navigate through the library. If a more detailed report or other product is produced and available, a link is provided.

> "The objective is not the library; the objective is to create a movement using this new practice." Dr. Jennifer Ziegler

Towards the 'complex end' of the spectrum (but not 'sheer disaster'), consider these recent shelter deployments: I-90 / Tarkio, Little Venus, and Nuttall. While hardly 'low fruit' *these are noteworthy examples of well funded hard looks at near misses*. USFS policy dictates a Serious Accident Investigation for a fatality, three or more serious injuries, *or* a fire shelter deployment or entrapment. Because no one was hurt and there is little chance of claims, an interesting opportunity emerges. We are freer to explore human factors and focus on salient learning opportunities. *This is the realm where agencies may shift their response towards the principles and objectives of a FLA.*

These templates can look a lot like a Serious Accident Investigation, but practical experience suggests people respond differently when the process focuses on learning versus blame*. When blamed we tend to rationalize why our actions were right, but when engaged as thinking, learning people we are willing to explore other options and decisions.* The fact that no co-workers were hurt makes this easier. Firefighters are willing to share "What should I / we do differently next time?"

When 'Corrective Actions' come from participants, the lessons become ingrained; they are not resisted as coming from above. We have facilitated a deeper intrinsic learning process. Instead of being coerced in a cloud of blame, firefighters, supervisors, and management come together and contribute to solutions, all with a positive spin.

A Serious Accident Investigation is still required for truly tragic events involving serious injuries, loss of life, significant claims to the agency, and potential for personnel or legal actions. The credibility of FLA will be torpedoed if information gathered in an open FLA is used for punitive purposes.

In summary, by utilizing Facilitated Learning Analysis, supervisors, managers, and program leaders move us towards a 'Learning Culture' and High Reliability

Organizing. Following routine operations, minor misunderstandings, close-calls, or significant near misses, firefighters and managers have an opportunity to apply proven and enlightened leadership to further define the emerging culture. Documentation is intended to help others navigate through the FLA library.

Intent of a Facilitated Learning Analysis:

The intent of a Facilitated Learning Analysis is to improve performance by generating individual, unit, and organizational learning by willingly conducting any of a growing number of techniques to capitalize on participants shared experiences. The Hallmarks of High Reliability Organizations are illuminated and reinforced.

Assuming competence is paramount because people's performance tends to rise when expectations are high, but sink to meet low expectations. It is also necessary to maintain high levels of respectful, contemplative dialog. *Learning* is valued over blaming, solving, or achieving consensus. Many perspectives achieve a deeper 'nuanced' understanding thereby creating new mental 'slides' for future 'Recognition Primed Decision Making'. Errors and misunderstandings are identified and corrected when they are mere 'weak signals'. Employees learn to value respectful contemplative discussion and automatically and instinctively consider the *potential* consequence of their actions.

More structured than an After Action Review, but less intense than a Serious Accident Investigation, a Facilitated Learning Analysis helps a group maximize learning opportunities presented by a significant event. Significant events can be positive or negative. They may or may not have injury or property damage. FLAs are conducted at a wide range of organizational levels, with products or results that may or may not be shared. Whenever possible, initiatives and corrective actions are generated from within the group.

Conducting a Facilitated Learning Analysis

Background

A Facilitated Learning Analysis generally includes one facilitator helping a group analyze a recent performance to improve future performance. Focusing on principles, this general outline allows flexibility to adapt to the audience, the event, the organization, and the facilitator.

Principles include:

1. Respectful discussion is paramount.
2. Active listening promotes respectful discussion.
3. Learning for future events is more important than assessing blame.
4. Participants are most likely conscientious and well meaning.
5. Humans make errors.
6. Firefighters make decisions based on past experiences and studies of similar situations (Recognition Primed Decision Making).
7. Wildfire situations are often complex, and a learning atmosphere helps reveal a rich and nuanced understanding.
8. The Principles of High Reliability Organizations are integral:
    a. Preoccupation with Failure
    b. Reluctance to Simplify
    c. Sensitivity to Operations
    d. Deference to Expertise
    e. Commitment to Resilience

The situations firefighters encounter are complex and dynamic. Training and experience cannot possibly anticipate every situation. Consequently a FLA can be complex, with finger pointing and defensiveness. The facilitator must have the skills to gently bring the group back to future performance.

How is a firefighter to recognize he or she is over their head, when they have not been in that situation before? "We don't know what we don't know". After South Canyon the national fire director for the BLM said it well: "At that point in my career, I might have done the same thing". This realization compels us to put learning and 'Recognition Primed Decision Making' into high gear. Those most honest realize any of us could have been in these situations.

Industrial safety studies repeatedly show we will 'get away' with an unsafe act over 300 times before a real tragedy occurs. In that period, maybe 30 near misses occur, and ten minor accidents or near misses. We have been *reactive* to the one tragedy. To be *proactive*, use After Action Reviews to work on unsafe acts, and the FLA for near misses and minor accidents.

Who should participate?

- People who were involved with the event
- Peripheral players
- Supervisors
- The facilitator and a facilitator in training

The nature of the FLA changes with assemblage of the group and the dialogue will find its center with topics and issues based on who attends. You can have very successful discussions with only those who were on site; they tend to be hands-on, and tactical. A different but still successful session occurs if peripheral players, support staff, and supervisors participate. The discussion now includes broader organizational and interdepartmental topics. Factors leading to the event are rarely limited to just the people who were on site since the broader organization is deeply involved.

Agenda

A typical session may include gathering at the site or in a meeting room. When not on site, projected pictures and a sand table are useful. Introductions allow everyone attending to share who they are and what their involvement is. Take a few minutes to explain the FLA process, reinforcing the principles of High Reliability Organizing.

Throughout the process the facilitator must be mindful of pace, need for breaks, and opportunities for all to make their point, constantly reinforcing the principles. A rigid time limit may not be necessary.

Upon completion, review the objectives, the process, the principles, and the learning bullets identified. Briefly discuss the FLA process and seek particippant's suggestions for improvement (AAR). Also discuss the nature of the report.

Discussion Questions

These four questions utilized in After Action Reviews offer a structure from which to get started and lend themselves to writing a more detailed report (if necessaery).

What was planned?
What actually happened?
Why did it happen?
What can we / I do differently next time?

Or, Gary Klein offers these questions from his discussion on Cognitive Critiques:

Was the estimate of situation accurate?
Where was uncertainty a problem and how was it handled?
What were the intent and the rationales of the effort?
How adequate were the contingencies (reactions to 'What If' probes)?

Posting the principles of High Reliability Organizing as a reference can be useful.

Sand Tables

Presenting an engaging previous event on the sand table as an ice-breaker helps set the stage. The presentation should demonstrate good people confronted with difficult situations. It shares what they were thinking, how they performed, and what they might do differently in the future. An informal interactive approach sets the stage for the event at hand. Then facilitate a cooperative discussion with participants arranging the terrain and working together to recreate their situation. With one eye on the four questions and five Hallmarks, ensure everyone's perspectives are shared.

Personalities

Occasionally strong personalities are present. The real issues often include strained dynamics between people. Modeling principles of respectful discussion and attentive listening are never more important. Egos, issues with authority, defensiveness and feeling judged, etc are at play. Participants do not see the 'Big', big picture where we see an individual's development throughout a career. The facilitator, by modeling attentive listening and respectfully repeating back, will do more to elevate both the dynamics of the FLA, as well as a participant's future interactions with others.

When the strong personality is directed at the person carrying the responsibility during the event being discussed, ask each player what they expect of subordinates during difficult times. Introduce the importance of sense-making and how, as things make less and less sense, we become more stressed, more rigid, less able to accurately track the dynamic environment, and therefore, even more stressed. Ask the person in charge if they were feeling stressed and what the most important, positive thing a subordinate could have contributed at that moment. Again, we are not assessing blame, but looking to perform better in the future, when the role of the current IC may be reversed.

Remind participants that they are not the only ones to have felt overwhelmed. They are not the only ones to be holding the bag when a fire blows up. They are not the only one carrying baggage about the fright experienced by their people.

Focusing on the future, choose important learning topics usually expressed as "What we will do differently next time". They must be specific, achievable, and real.

Documentation Guidelines

To help others navigate through the FLA library, documentation guidelines are appropriate.

1. Reports will be organized by type of event. Describe the event in one or two paragraphs which reveal the type of situation involved. This will assist someone dealing with a similar event.

2. Describe the process used for the FLA. Who was the facilitator, and why were they chosen? How was the individual, the situation, and the intent of the FLA introduced? What process was used to work through the event?

3. What salient points were identified *by the participants*? What concerns *do the participants* want elevated and shared? What lessons can others gain from this situation? For this report, these are best limited to bullets with links or reference to any detailed documents or initiatives developed from this event.

These reports have generally been one to two pages long. The participants name, location or agency does not need to be made public.

The report can be written by the facilitator or someone from the unit, but seeking the facilitator's review is wise. The line officer should review the report before it is submitted to the Lessons Learned Center, where it will be reviewed once again before it is posted.

Frequently Asked Questions:

Why have there been three names (Lessons Learned Analysis, Peer Review, Facilitated Learning Analysis)?

As this concept emerges, enthusiastic debate has bounced the name around. *Lessons Learned Analysis* emerged from the I-90 / Tarkio Shelter Deployment Investigation, however, words like investigation and inquiry connote affixing blame and assigning accountability. Analysis is neutral and 'Lessons Learned links us to the Lessons Learned Center. *Peer Review* gained traction after an essay was shared and events such as Little Venus carried that title. "Peer Review' has meaning as a pre-publication process for professional papers, and many people have questioned its use here. More recently *Facilitated Learning Analysis* has been suggested. These three words most accurately describe intent and technique.

What is new about FLA?

FLA is a tool to mine learning opportunities currently being missed and do so with a focus on learning and not blaming. Values and principles reflect and reinforce recent initiatives within the wildland fire community.

What is Recognition Primed Decision Making?

The intent is for improved performance through deeper insights and mental engagement, instead of fear of reprisal. The 1995 Findings from the Wildland Firefighters Human Factors Workshop introduced the concept of 'Recognition Primed Decision Making' to the wildland fire community. It turns out most of us base our fire line decisions on mental 'slides' from previous experiences. A Facilitated Learning Analysis is an intense study of situations close to home. With deeper understanding and many 'slides', firefighters will be able to anticipate future events when they are foretold by 'weak signals'.

Who conducts a Facilitated Learning Analysis?

It depends on the situation. In some instances, a peer from an adjacent unit or agency may be a great candidate, or perhaps a regional expert or someone from across the country. Find the right person for the moment. They should be a facilitator, not an investigator. They should be knowledgeable of the tasks and skills represented in the event. The key factor is trust and credibility with the people involved.

What are the benefits of a Facilitated Learning Analysis?

The process produces individual learning, unit learning, practicing respectful interaction, contemplative dialog, problem solving, and it develops additional facilitators, at all levels and for all disciplines. It

increases experience and insight, reducing serious accidents, resulting in more efficient firefighting. There is also an emotional catharsis, whereby discussing and expressing helps people let go of lingering negative emotion.

Who Benefits?

Participants are the biggest beneficiaries since this is a hard look at an event occurring close to home. Local managers gain 'focus on learning' experience. The facilitator also profits. Intentionally involving future facilitators is wise. Finally, the wildland fire community benefits when the FLAs are shared through the Lessons Learned Center.

How is a Facilitated Learning Analysis different from an After Action Review?

AARs are for a crew, team, or any other unit. To protect the success and integrity of the AAR, individuals must speak openly, without concern that what they say may be recorded or used outside the context of their unit. A Facilitated Learning Analysis is 'an AAR on steroids'; the difference being the FLA includes an outside facilitator and the story may be shared.

How is a Facilitated Learning Analysis different from a Serious Accident Investigation?

A Serious Accident Investigation sorts out responsibility, assigns accountability, and is often used to prepare for various claims against the agency. Formal findings and recommendations are provided by the Serious Accident Investigation Team.

A FLA is to improve performance on future events and the recommendations come from the participants.

Who decides to initiate a Facilitated Learning Analysis?

A crew boss for some events, or maybe a higher level supervisor or line officer for others. One way to answer this question is to ask who will be held accountable. Who will be holding the bag if adverse personnel actions, claims, or liability emerge? Who is authorized to expend public money for the appropriate pursuit of learning opportunities? Who can determine if the actual lessons learned or the process used will be beneficial to others, or that the benefits outweigh the potential risks?

Who identifies corrective actions?

Empowered to find solutions, participants with ownership can be very creative in finding corrective actions.

Who determines if the corrective actions and products are 'real', and appropriate for the learning opportunities presented?

These value judgments are what managers are paid to do. Oversight must exist at the appropriate program level.

When to use a Facilitated Learning Analysis:

Consider some sort of Facilitated Learning Analysis any time an opportunity for learning presents itself and when the decision maker feels outside facilitation will add value.

What happens when Facilitated Learning Analysis is used for more complex situations?

FLA is intended for lesser events and 'weak signals'; however complex and life threatening situations have been successfully analyzed and very useful learning tools and reports have been generated. It appears the principles are sound. Intentionally focusing on lesser events provides an opportunity to learn more about the FLA process, preparing us to take on more and more complex situations with a learning objective.

When not to use a Facilitated Learning Analysis:

If claims against the agency or an individual are likely and bereaved families or lawyers are part of the scenario, then frank and open discussions are less likely - go with a Serious Accident Investigation or some other tool.

What topics will the Facilitated Learning Analysis look into?

There is not enough time to analyze every factor. Because we are not preparing for claims or adverse actions there is more flexibility with a Facilitated Learning Analysis as compared to a Serious Accident Investigation. *The art is in making a lesser event into a gripping introspection*. Explore a limited number of topics very well.

What are some examples of Facilitated Learning Analysis?

The examples section below shares a wide variety of situations and ways to exploit learning opportunities. More examples will be available at the Lessons Learned Center on-line library.

What products and reports are required?

Reports focus on the process used rather than documenting the whole story. Documentation may include a brief synopsis of the event, a description of the FLA corrective actions, and initiatives the participants want to elevate.

Participants may develop a blow-by-blow account in a more detailed narrative or PowerPoint presentation. The unit may have unique skills such as videographers or writers to help communicate the lessons. Keep in mind, however, that many reports do not get read. The real strength of these sessions is the growing perspectives (slides and nuance) within the participants. Available horsepower should be directed towards making this service available to more people and their own situations.

When is the entire story shared?

The participants may agree that their situation may happen to others, and they are *willing, and able* to share their story. They may have unique skills and capabilities such as videographers, accomplished writers, inventors, or they may have brainstormed a novel instructional technique to increase awareness (Sim Limb, for example).

Where will Facilitated Learning Analysis and related information be housed?

The Wildland Fire Lessons Learned Center's main website, www.wildfirelessons.net

How will the collected Facilitated Learning Analysis be used from the Lessons Learned Center?

While individuals may surf for their own edification, the real value is when decision makers are confronted by an event. They will find models and templates suggesting ways to maximize learning. It is also a resource to identify and analyze trends. (See an FLA example below: *Lessons Learned from Escaped Prescribed Fire Reviews and Near Misses*)

How is this initiative related to Doctrine?

Doctrine, or principle based management, presents a system of values and mutually understood structures achieving results as individuals execute the mission guided by those values and structures. A Facilitated Learning Analysis is intended to deepen the individual's understanding of those values and provide insights and interpretations of their experience that will help them apply doctrinal principles in the future.

How many Facilitated Learning Analysis should be produced?

Serious Accident Investigations cost tens of thousands of dollars. Redirect some of this money for perhaps five hundred or a thousand Facilitated Learning Analyses. There are few new ways to error; therefore we should shift our efforts to conducting FLAs at a broad range of stations and situations.

Can negative administrative actions emerge from a Facilitated Learning Analysis?

Credibility and employee trust are in the balance. When common errors committed by well meaning people are punished, error reporting is diminished, along with learning.

FLA Case Examples:

The following are list are examples of events where Facilitated Learning Analysis concepts were used.

Nuttall Entrapment Investigation (July 2004)

Fire shelter deployment, with a SAI Team. This is an early no-injury example of an analysis that looks for the positive lessons.
http://www.wildfirelessons.net/documents/Nuttall_Deployment_Review_Final_2004.pdf

I-90 / Tarkio (LLC, August 2005)

Shelter deployment investigated as a SAI. Many of the values for FLA emerged from I-90 / Tarkio.
http://www.wildfirelessons.net/documents/I-90_Report.pdf

Missouri Ridge (LLC March, 2006)

Minor injury where a much more serious outcome could have happened. A traditional SAI with a FLA coach. The report documents the method and rationale used.
http://www.wildfirelessons.net/documents/Missouri_Ridge_Tree_Felling_Accident_090605_72-hour_Briefing.pdf

R-5 Brake Maintenance (June 2006)

A near miss where vehicle maintenance procedures failed (Called a Peer Review).

Little Venus (LLC, July 2006)

A very critical shelter deployment with a formal investigation utilizing 'Peer Review' principles. Steve Holdsambeck has developed an Accident Prevention Analysis process from experience gained with this event.
http://www.wildfirelessons.net/documents/Little_Venus_Deployment_Peer_Review.pdf

Balls Canyon (LLC, July 2006)

An engine operation close call with rapidly expanding fire behavior and a stuck vehicle (Called Peer Review).
http://www.wildfirelessons.net/documents/Balls_Canyon_Near_Miss_062706_Final_Report.pdf

East Roaring (LLC, August 2006)

Multiple packs and firefighting gear were destroyed by the fire (FLA).
http://www.wildfirelessons.net/documents/East Roaring Fire LLA.doc

Derby Helicopter Evacuation (August 2006)

Emergency helicopter 'rescue' of firefighters from a ridge, the FLA explored a breakdown in communications.

Deep Creek Tree Felled on Pick-up (August 2006)

Felling operation where a pickup truck drove into the falling path of a green tree. This FLA was conducted by the Safety Officers on the Incident Management Team.

Gash Creek Lessons Learned Analysis (LLC September, 2006)

A Lessons Learned Analysis introspection by the Bitterroot National Forest looking at barriers to progressive tactical actions and public understanding of related issues.
http://www.wildfirelessons.net/documents/Gash_Creek_Lessons_Learned Analysis_2006.pdf

Lessons Learned from Escaped Prescribed Fire Reviews and Near Misses (LLC, October 2006))

A total of 30 prescribed fire escape reviews and 'near misses' were analyzed to discover what, if any, recurring lessons were being learned or whether they were indicating emerging knowledge gaps or trends.
http://www.wildfirelessons.net/documents/Rx_Fire_LL_Escapes_Review.pdf

Ahorn Fire Shelter Deployment Facilitated Learning Analysis (LLC August, 2007)

A Division Supervisor, positioned as a lookout on an unmanned division, deployed a fire shelter. This is a more detailed report, intended to guide a sand table discussion.
http://www.wildfirelessons.net/documents/FLA_report_and_pics.pdf

Madison Arm Fire Entrapment Facilitated Learning Analysis (LLC August, 2007)

Resources entrapped and burned over include two engines, a chase rig, and a contractor owned heavy pickup truck, trailer and dozer. This was a serious, life-threatening event that ended without injury. The detailed report has been used extensively as a sand table discussion.
http://www.wildfirelessons.net/documents/MadisonArm_FacilitatedLearning_Analysis_Report.pdf

Reference and Reading

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