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Fires we Should Not Forget!

You wouldn't be in the fire service if you didn't consider fighting fires fun and exciting. Yet nothing takes the fun out of it faster than a line-of-duty death or injury.

Imagine the lifetime of regret for the fire officer who knows that he or she could have prevented the tragic outcome...

- If only he or she had paid closer attention to the weather, fuel, and topography clues that warned of increased fire behavior
- If only he or she had known what the fire was doing just outside of view
- If only he or she had maintained better communication with others
- If only he or she had clearly identified safety zones and escape routes
- If only he or she had established “decision points” at which to evacuate or take other critical actions

And the list goes on.

The tragic fires of yesterday are filled with “if-only” regrets. But the fires of tomorrow don't have to be—not if we can learn from the mistakes of the past (Figure 9.1).

Nobody should have to carry the burden of knowing that tragedy could have been prevented if only...

Learn from others—from their mistakes and their successes.

You should already be familiar with the 10 Standard Firefighting Orders and 18 Situations that Shout “Watch Out!” Now we want to look at fourteen fires that turned tragic because something was missed:

- What warning signs did firefighters fail to notice?
- What clues did they notice but ignore?
- What critical steps did they fail to take that might have changed the outcome?
- What did they do right to prevent greater tragedy?

Listen to the lessons learned from those who faced danger and lived to tell about it.

Listen to those who didn't survive; let their voices be heard too.

A fear of being open and honest about mistakes can cost other people their lives later.

The truth matters. Do not lie!



Eric Kartz

Figure 9.1 The tragic fires of yesterday are filled with “if-only” regrets. But the fires of tomorrow don't have to be. This simple cross, erected by fellow firefighters, marks the spot where one of their friends died while fighting fire. This is sacred ground for all of us!

Understand that this is not about placing blame. It's about learning from others—from their mistakes and their successes. It's about listening to those who faced the danger and lived to tell about it...and giving voice to those who didn't.

After-Action Reports

Many fire reports or after-action reports tell us very little of value. They tell us who responded, how long they were there, how big the fire was, and how much damage was done. They provide a brief overview of what actions were taken. But seldom do they say what went right or wrong and, more importantly, **why** something went right or wrong. That does little to help us learn and to ensure our safety at future incidents.

Granted, liability concerns may keep us from writing reports as thoroughly as we might like. And yet that same fear of being open and honest can cost other people their lives later.

Everyone makes mistakes, and it is not always easy to admit those mistakes. But the consequences of covering up a mistake or lying about it can be far worse, especially when it deprives firefighters of the opportunity to take the **right** corrective measures to prevent similar problems in the future. There can be personal

consequences too, such as losing one's job or being demoted or even prosecuted for lying.

Glossing over problems doesn't help either. A report that has been sanitized by attorneys, for example, is designed to protect the agency from liability for something that has already happened. It may do little to protect firefighters from future dangers.

Attorneys aren't the only ones who sometimes filter information. We all do it, whether consciously or subconsciously, because we all see things through the prism of our own experience, training, and biases. As we investigate incidents and write our reports, we must be as objective as possible to ensure that we don't color the facts to support the conclusion we want. The conclusion should fit the facts, not the other way around.

Finally, it's important that the findings and recommendations made by the accident review team don't get filed away, as if the accident report was nothing more than an exercise done to satisfy a mandate. What corrections need to be made? What equipment needs to be repaired, replaced, or purchased? What SOPs should be written or updated? What training should be done?

Staff Rides

Another learning tool is the "staff ride." It comes from the military. What differentiates a staff ride from other incident reviews is that it includes a site visit, where the team essentially "walks in the shoes" of those involved.

The people who participate in the staff ride may or may not have been on the fire and may or may not have a great deal of background on it. So they first read any documentation available. Then they visit the site and discuss the events on the very ground where the events occurred. It provides a perspective one can never get reading an incident report behind a desk, and is probably the best way for firefighters to learn from the experience of others (Figure 9.2).

Learning from the Past

We can't physically go on a staff ride for the fourteen fires profiled in this chapter, but we can do the next best thing by looking at what transpired at key points during each incident.

Open and honest evaluations provide the opportunity to implement appropriate corrective actions and save lives.

Findings and recommendations must not be just filed away.



Bill Miller - Great Northern Crew

Figure 9.2 This group of firefighters is on a "staff ride" at the site of the Mann Gulch Fire. They are "walking in the shoes" of those who were involved.

A "staff ride" includes a site visit, where participants can "walk in the shoes" of those involved.

You have the benefit of hindsight when reviewing past fires.

Consider reviewing any fire report with a printed copy of the Fire Orders and Watchouts at your side.

Understanding why something happened is extremely valuable.

If there are things you could have done better, go practice them to reinforce the good habits.

As you read these stories, look for the clues that warned of the danger still to come. Mentally put yourself in the same position these firefighters were in, and identify what you might have done differently to change the outcome. (You have the benefit of hindsight that they didn't.)

Consider reading these stories with a printed copy of the 10 Standard Firefighting Orders and 18 Situations that Shout "Watch Out!" at your side so that you can spot where firefighters violated a Fire Order or missed a critical warning. Doing so will help reinforce those Firefighting Orders and Watchouts. We remember lessons learned through stories far better than we remember a lengthy list of rules, guidelines, or warning signals.

Look, too, for *why* the personnel at these fires made the choices that they did. Understanding why something happened or didn't happen is often more important than the resulting act, omission, or event.

Remember, this is not about placing blame. This is like putting yourself in the same spot, just as you might do in a fire simulator, and looking at how you might "do it better" than those who came before you.

We will look at fourteen fires in this book. However, you should be looking at other fires and incidents throughout your career. Start with the incidents you and your crew respond to. Critique them with your crew afterward. What went well? What could you have done better? And if there are things you could have done better, *go practice them*. If all you do is *talk* about them, you will be reinforcing bad habits instead of good ones. You need to build the muscle memory of doing things well; an intellectual understanding is not enough.

Study fire reports from your agency and others. Don't be afraid to look between the lines in those reports. Sometimes what is *not* said is more important than what is.

Don't limit yourself to a single source. Study many sources to gain a broader sense of what really happened and how you can keep yourself from making the same mistakes that got other firefighters in trouble. One good source for "lessons learned" material is on the web at <http://www.wildfirelessons.net/>

[Home.aspx](http://www.wildfirelessons.net/) (Figure 9.3).



Figure 9.3 The Lessons Learned web site is very good for tracking the latest on safety issues.

Mann Gulch Fire

Helena National Forest
USDA Forest Service
Montana, USA

On August 5, 1949, thirteen USDA Forest Service firefighters were killed when the Mann Gulch Fire “exploded” and overran their positions as they were trying to escape. (Note: Firefighters didn’t have fire shelters in 1949.)

Background

The fire started when lightning struck a large tree near the top of the ridge between Mann and Meriwether Gulches about ½-mile east of the Gates of the Rocky Mountains and twenty miles north of Helena, Montana. The fire was burning in a dense stand of small Douglas fir and ponderosa pine.

The fire was first reported by the Colorado Mountain lookout at 1225 hours on August 5th (Figure 9.4). At the same time, the district ranger for the area spotted the smoke from the tarmac at the Helena Airport. Thirty minutes later, the district ranger flew over the fire. After scouting the fire from the air, he returned to the airport and ordered 25 smokejumpers and about 50 local firefighters. The number of jumpers ordered was larger than normal because of the steep terrain and heavy fuels in the area. However, there were other fires in the region, so only one jump plane was available.

At 1420 hours, sixteen smokejumpers were airborne en route to the fire. The air was very turbulent, so one of the sixteen jumpers became ill and did not jump. The ground forces were not able to reach the Meriwether campground (the nearest boat landing to the fire) until 1630 hours.

August 5

Weather: It was 97°F in Helena. At 1700 hours, the relative humidity was 22% and the winds were 16 mph at Canyon Ferry Ranger Station. Both weather stations were about 20 miles from the fire.

Thirteen firefighters died when the Mann Gulch Fire “exploded.”

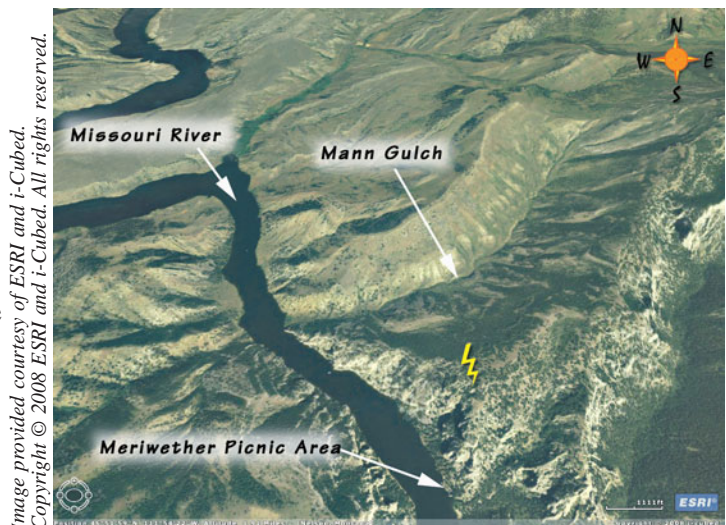


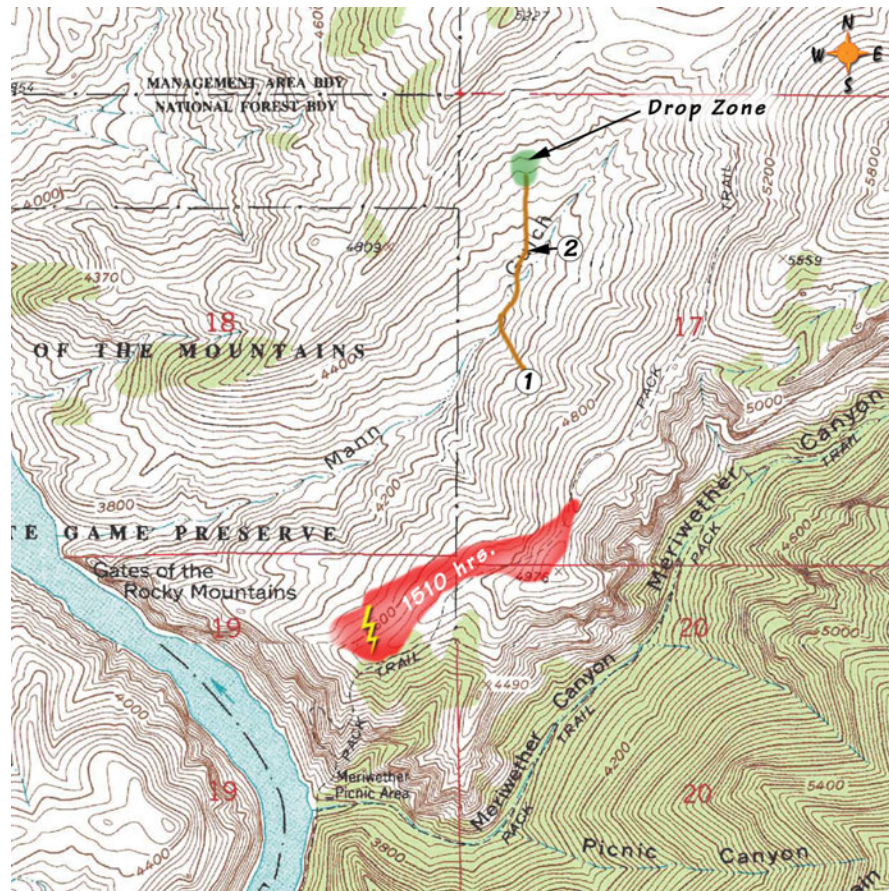
Figure 9.4 A lightning caused fire was spotted and reported at about 1225 hours, August 5, 1949 to the USDA Forest Service dispatch office in Helena, Montana.

It was hot, but nothing special about the weather.

1510 hours –The fire, estimated to be between 50 to 60 acres in size, was backing into Mann Gulch. The wind was from the northeast, pushing the fire along the ridge. There was no spotting or crowning observed. **As the jumpers flew over the site, all thought it would be a routine fire...nothing special or difficult.**

~1600 hours –Fourteen jumpers plus their foreman landed in the drop zone about 1/2- to 3/4-mile northwest of the fire. Already they had problems: the foreman injured his right elbow in a hard landing, and **the radio was destroyed** when the parachute on the equipment pack failed to open. The foreman⁽¹⁾ instructed the crew to eat and prepare to move to the heel of the fire, where they would begin their suppression efforts (Figure 9.5).

No fire is routine; taking any fire for granted is dangerous.



Without functioning radios, firefighters can be in extreme danger.

Figure 9.5 The jumpers landed in their designated drop zone at about 1600 hours. The foreman landed hard and injured his right elbow. And the parachute on the equipment pack failed to open; the radio was damaged and did not work. The foreman left the jumpers at the drop zone and met with a local firefighter nearby (Point 1). The two of them then rejoined the jumpers at Point 2 and headed toward the heel of the fire.

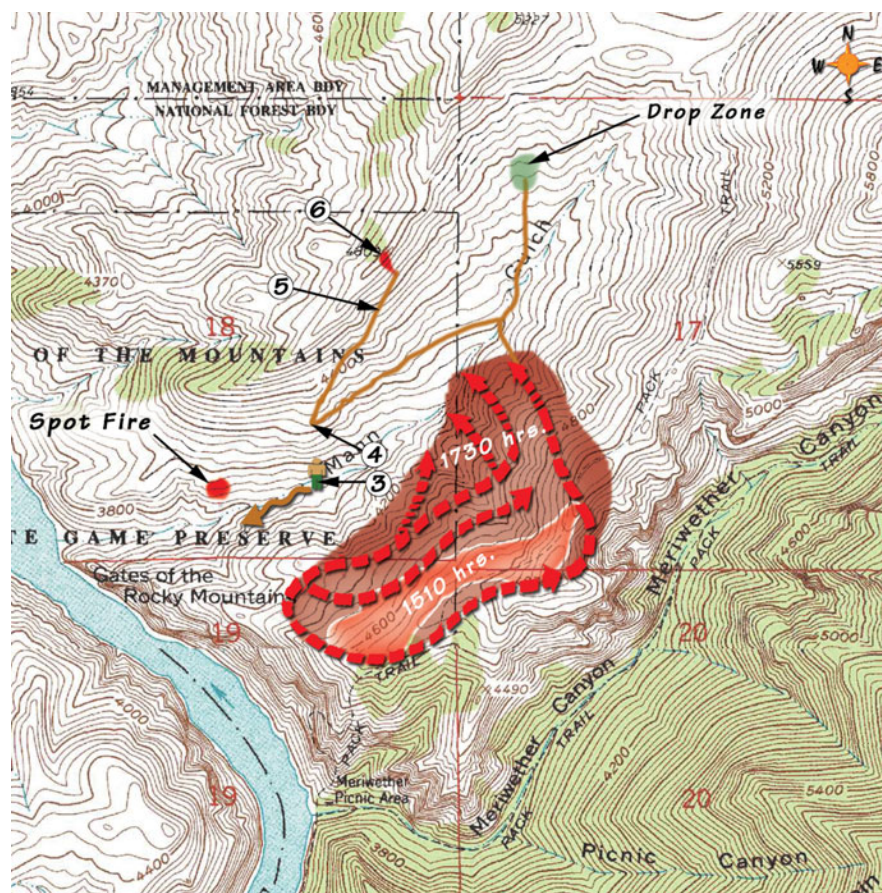
~1625 hours – The foreman was bandaged by two of his crew and headed off to meet with a member of the ground crew (a local firefighter) they heard hollering to them.

~1640 hours – The foreman and the local firefighter joined the rest of the jumpers at Point 2. The assistant foreman was put in charge

⁽¹⁾ The foreman of the smokejumpers was a seasoned veteran of over 40 jumps and nine seasons with the Forest Service, eight of them as a smokejumper.

of the jumpers and was instructed to move the crew down-canyon toward the heel of the fire.

~1725 hours – The district ranger had boated to the bottom of Mann Gulch and was moving up the canyon bottom to find his own crew and the smokejumpers. **He saw spot fires developing and retreated to the river** (Figure 9.6).



The steeper the terrain, the sooner crews must start moving to safety when danger strikes.

Figure 9.6 The district ranger was the first to see the spot fires as he was looking for his own crew and the jumpers. He retreated to the river (Point 3). When the fire spotted across Mann Gulch, it blocked the jumpers' move toward the heel of the fire. It forced the jumpers to reverse course (Point 4) and move away from this new danger. They dropped their gear (Point 5) to lighten their load, but they still couldn't outrun the fire. The foreman lit an "escape fire" to create an area of black to protect the crew (Point 6), but they didn't obey his instructions. They continued to move up the hill instead.

1745 hours – The foreman noticed a spot fire developing below their position. He ordered the jumpers to reverse course (Point 4) and begin moving up and away from this new danger.

1750 hours – The jumpers had moved about 300 yards when the foreman told them to drop their packs and tools to lighten their loads (Point 5). The flames were estimated to be 50 feet in length and moving about 50 yards every ten seconds; the flame front was several hundred feet deep. The crew was exhausted due to the steep terrain, high temperatures, and smoke-filled air.

Clear instructions are always important, but never more so than when faced with immediate danger.

1755 hours – The jumpers had moved another 200 yards when the foreman realized they were not going to be able to outrun the fire. He lit an “escape fire” (Point 6) that ran to the ridgeline in grassy fuels. The foreman ordered the eight of the jumpers who were closest to him to lay down in the “black” he was creating. He did not explain what he was doing and none of them joined him.

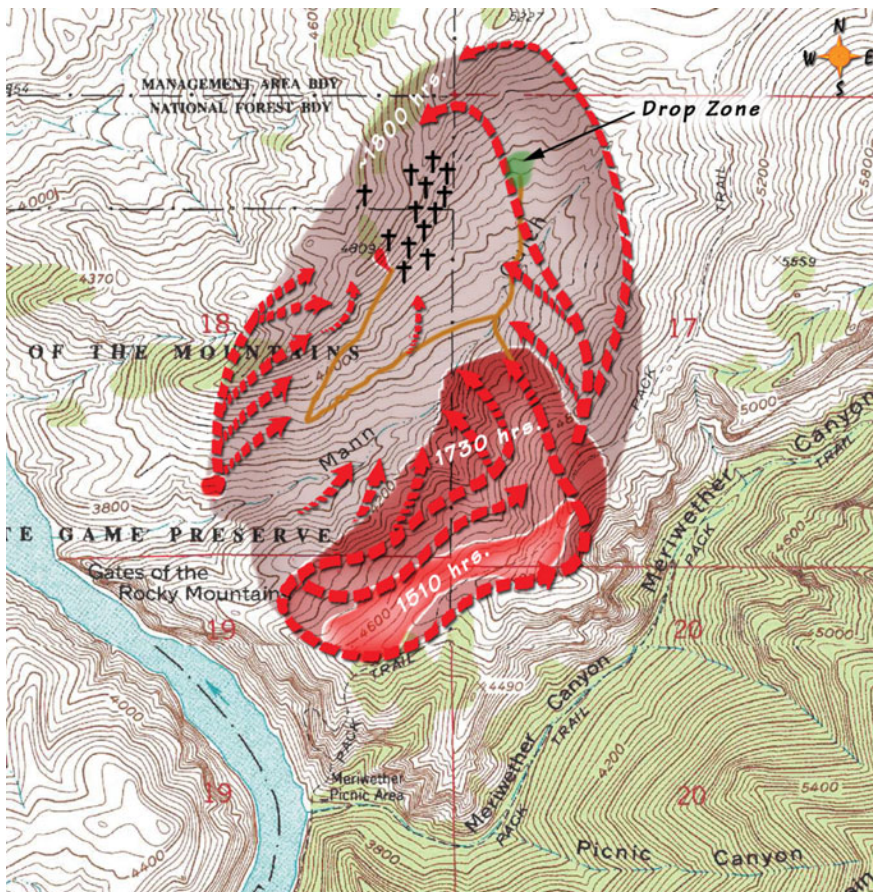
Fire can “explode” in a steep canyon covered with light fuels.

Fire always has the advantage in steep terrain.

~1757 hours – The fire “exploded” and overtook twelve smokejumpers and the local firefighter who had joined them on the ground. None had heeded the foreman’s repeated calls to join him in the black. Instead, they kept moving up canyon in an effort to reach the ridge.

The foreman remained in his escape burn and was uninjured. Two other smokejumpers moved straight up the slope in the burned area created by the escape fire. They found a crack in rocks just below the ridgeline and slid to safety.

The district ranger was watching the fire from near the river and saw it “explode.” He later estimated that the fire burned 3,000 acres in about ten minutes (Figure 9.7).



~1810 hours – After the fire had passed over the area and burned out the whole gulch, the foreman heard someone calling and moved in that direction. He found one of his jumpers badly burned, but alive. He moved the injured jumper to some shelter near a rock, retrieved his canteen, and told the jumper he was going for help.

On his way, the foreman came across the two jumpers who had escaped over the ridge. They were tending another seriously burned jumper. One of the uninjured jumpers went with the foreman for help while the other remained behind with the injured man.

Figure 9.7 The fire “exploded,” burning about 3,000 acres in a matter of minutes. It overran the crew, killing eleven firefighters in their tracks. Two others died in the hospital the next day. The foreman and two jumpers survived.

~2100 hours – The foreman and the uninjured jumper arrived at the Meriwether Campground after a long hike and boat ride with some recreationists. They reported to the district ranger, and the rescue stage of the fire began. The district ranger turned fire suppression over to his assistant and concentrated on the rescue.

~2330 hours – A rescue team left Meriwether Campground for the burnover site. The ten rescuers and two doctors brought two litters and limited medical supplies with them.

August 6

0030 hours – The rescue crew arrived at the site of one burn victim, where the doctors administered morphine and plasma and prepared the jumper to be transported to the hospital.

~0200 hours – Part of the rescue crew located the second burn victim, and the doctors provided similar first aid. The rescue crew prepared this second victim to be moved off the hill, but they elected not to move him until daylight, because the terrain was too steep to attempt a rescue in the dark.




By 0500 hours, both burn victims were in a hospital in Helena, Montana. However, both died later that morning. It took most of the day to locate the eleven other firefighters who perished in this tragic accident. (Figure 9.8). The fire eventually burned 5,000 acres before it was contained on August 10, 1949.



Bill Miller - Great Northern Crew

Figure 9.8 It is very humbling to visit Mann Gulch and see the markers spotted across the hillside. This is the marker identifying the spot where Stanley J. Reba died. The cross is the original wooden marker. The stone marker was put in recently so that the location would not be lost over time. Note how steep this canyon really is. The spot where the foreman lit the “escape fire” is up the hill toward the top of the picture.

Some of the Lessons Learned from this Fire:

- No fire is routine. Taking any fire for granted is dangerous.
- It is essential to have more than one means of communication built into your plan. If you lose communications, you could be in a world of hurt, with no way of getting information about conditions around you or calling for help when you need it. 
- Never is giving clear instructions more important than when faced with immediate danger. 
- Team cohesion is very important. We often have to work with others whom we don't know well (e.g., a new recruit, someone working a shift trade, or mutual aid crews).
- When working with others whom we don't know well, there isn't the same level of trust and dependency that crews normally develop over time. Anything crews can do before a fire to build cohesion lowers the risk of miscommunication and lack of coordination when situations turn dangerous.
- Attempting to outrun a fire by moving uphill is usually a losing proposition. The cards are stacked in favor of the fire winning the race. 

*(Note to the Reader: The information used to develop this report comes from the Staff Ride Briefing Package titled **Re-Visiting Mann Gulch**, May 2 - 6, 2005. The information in this briefing packet was drawn from the official USDA Forest Service Board of Review report, interview statements from several key survivors, the book **Young Men and Fire** by Norman MacLean, and the book **Trimotor and Trail** by Earl Cooley.)*