



Today's discussion is from
"This Day in Wildland Fire History"

"Lessons Learned" serve as brief summaries of powerful learning opportunities. You can use these summaries as a foundation and launch point for further dialogue and discussion. Apply these lessons learned to yourself, your crew, and your unit.

Part I - South Canyon Fire, Colorado, 1994 (A Four-Part Series)

Incident Summary: On July 2, 1994, seven miles west of Glenwood Springs, Colo., lightning ignites a Bureau of Land Management fire in pinyon-pine juniper on a ridge at the base of Storm King Mountain. The fire, paralleled by two deep canyons, is initially believed to have "little chance" to spread. The past two days, lightning has started 40 new fires on this BLM District. The entire general area, in a one-year drought, is experiencing low humidities and record-high temperatures. Over the next two days, the South Canyon Fire increases in size. Visible from Interstate 70 and nearby residential areas, the public becomes concerned. Some initial attack resources are assigned. Between July 3-6, the fire grows to approximately 2,000 acres. On July 6, a dry cold front moves into the fire area. As winds and fire activity increases, the fire makes several 100-foot flame-length rapid runs within the existing burn—in dense, highly flammable Gambel oak. Fourteen firefighters perish as they try to outrun the flames. The remaining 35 firefighters survive either by escaping down a deep drainage or by seeking a safety area and deploying their fire shelters.

July 3 – Summary of Activities

The Grand Junction BLM District is in very high to extreme fire danger. Ninety percent of its firefighting resources are committed to more than 40 new fires started in the previous 2 days.

A red flag warning is issued for dry lightning. Strong winds hamper the effective use of fire suppression aircraft.

One load—eight—smokejumpers, an air tanker, and lead plane are requested.

An engine crew arrives on scene. Its foreman's initial size-up informs: fire is inaccessible, two flaming trees visible, low spread potential, steep slopes. Until more resources can be obtained, it is recommended that the fire be observed.

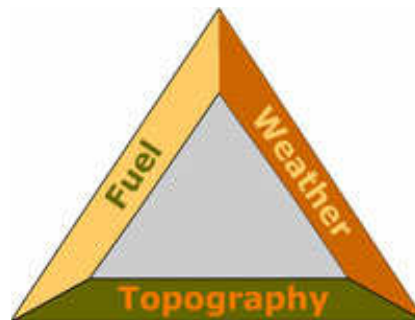
Fire Control Officer requests more South Canyon Fire resources from the Western Slope Fire Coordination Center.

Lessons Learned Discussion Points

Your fire crew is now dispatched to the South Canyon Fire. Given the following circumstances, what would you do to ensure that everyone is safe:

- Extreme fire danger due to condition of the fuels,
- Limited resources,
- Difficult terrain,

Red flag warning for dry lightning and high winds.



References

- *South Canyon Fire Investigation*. 1994. http://wildfirelessons.net/documents/S_Canyon_AIReport_1994.pdf
- *Incident Response Pocket Guide*



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Part II - South Canyon Fire, Colorado, 1994 (A Four-Part Series)

Incident Summary

On July 2, 1994, seven miles west of Glenwood Springs, Colo., lightning ignites a Bureau of Land Management fire in pinyon-pine juniper on a ridge at the base of Storm King Mountain. The fire, paralleled by two deep canyons, is initially believed to have "little chance" to spread. The past two days, lightning has started 40 new fires on this BLM District. The entire general area, in a one-year drought, is experiencing low humidities and record-high temperatures. Over the next two days, the South Canyon Fire increases in size. Visible from Interstate 70 and nearby residential areas, the public becomes concerned. Some initial attack resources are assigned. Between July 3-6, the fire grows to approximately 2,000 acres. On July 6, a dry cold front moves into the fire area. As winds and fire activity increases, the fire makes several 100-foot flame-length rapid runs within the existing burn—in dense, highly flammable Gambel oak. Fourteen firefighters perish as they try to outrun the flames. The remaining 35 firefighters survive either by escaping down a deep drainage or by seeking a safety area and deploying their fire shelters.

July 4 – Summary of Activities

Today this BLM District has five new fire starts. Two exceed 100 acres. In addition, 31 existing fires remain uncontrolled.

Across the district, fire danger continues to be high to extreme. More lightning is forecast for this evening. Red flag warnings have been issued.

For this area's current intense, multiple fire load, radio communication is inadequate. It is recognized that this could pose a problem for the safe and effective use of aircraft.

Due to concerns voiced from Glenwood Springs residents, the South Canyon Fire—burning up on Storm King Mountain—receives a higher priority for receiving firefighting resources.

At 6:30 p.m. an Incident Commander, BLM engine crew, and Forest Service firefighters meet at the bottom of the mountain down beneath the fire.

Due to the approaching darkness and steep terrain, the decision is made to hike up to attack the fire the next morning.

Later that evening, an aerial observer reports: *The fire is in steep and inaccessible terrain. It is actively burning in all directions. The area is too steep for crews. It has few, if any, escape routes. Helicopters with buckets would be very effective.*

From noon to 10 p.m. the fire grows from 3 to 11 acres.

Lessons Learned Discussion Points

If your fire crew was assigned to hike up to the fire on Storm King Mountain, how would you:

- Address the inadequate radio communications for ground and aviation resources.
- Appropriately mitigate an unacceptable level of risk. (Reference page 1 in your IRPG for this discussion.)
- Determine when and how to refuse risk. (Reference pages 20-21 in your IRPG for this discussion.)

What would you be thinking about as a Crew Boss, Squad Boss, or Firefighter?

References

- *South Canyon Fire Investigation*. 1994. http://wildfirelessons.net/documents/S_Canyon_AIReport_1994.pdf
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Part III - South Canyon Fire, Colorado, 1994 (A Four-Part Series)

Incident Summary

On July 2, 1994, seven miles west of Glenwood Springs, Colo., lightning ignites a fire in pinyon-pine juniper on a ridge at the base of Storm King Mountain. The entire general area, in a one-year drought, is experiencing low humidities and record-high temperatures. Over the next two days, the South Canyon Fire increases in size. Initial attack resources are assigned. Four days later, on July 6, a dry cold front moves into the fire area. As winds and fire activity increases, the fire makes several rapid runs. Fourteen firefighters perish as they try to outrun the flames.

July 5 – Summary of Activities

Red flag warnings and *very high to extreme* fire danger are predicted again today.

A crew of seven firefighters hikes up into the South Canyon Fire at the base of Storm King Mountain. They cut Helispot 1 and begin direct fireline construction downhill along the fire's edge below this helispot.

The IC orders another district engine crew, one helicopter, and one 20-person hand crew. A load of eight smokejumpers is then substituted for the hand crew.

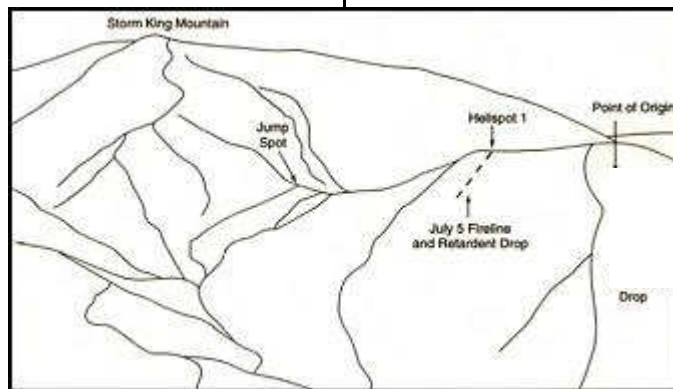
To support fireline construction, an air tanker retardant drop is requested. After the first load is dropped, due to steep terrain and gusty winds, the IC and pilot agree that more drops would be ineffective.

At 5:30 p.m. the IC and engine crew leave the fire to refurbish equipment. Fifteen minutes later, 8 smokejumpers are dropped at the top of the fire. The IC directs them to work on the fireline from

the helispot downhill toward the west drainage.

The Jumper-in-Charge informs the IC that the fire has crossed their fireline and is burning actively. The jumpers begin

building fireline on the east side of the ridge. After sizing-up the current fire, the Jumper-in-Charge orders two Type 1 hand crews. By 10 p.m., the fire has grown 20 acres today. It now covers 50 acres.



Lessons Learned Discussion Points

Downhill fireline construction is hazardous in steep terrain, fast-burning fuels, and rapidly changing weather. Downhill fireline construction should not be attempted unless there is no tactical alternative.

If your fire crew was assigned to construct fireline downhill on Storm King, what would your concerns be? Could you perform this operation safely? (Reference page 1 in your IRPG for this discussion.)

References

- *South Canyon Fire Investigation*. 1994. http://wildfirelessons.net/documents/S_Canyon_AIReport_1994.pdf
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Part IV - South Canyon Fire, Colorado, 1994 (Last of a Four-Part Series)

Incident Summary

On July 2, 1994, seven miles west of Glenwood Springs, Colo., lightning ignites a fire in pinyon-pine juniper on a ridge at the base of Storm King Mountain. The entire general area, in a one-year drought, is experiencing low humidities and record-high temperatures. Over the next two days, the South Canyon Fire increases in size. Initial attack resources are assigned. Four days later, on July 6, a dry cold front moves into the fire area. As winds and fire activity increases, the fire makes several rapid runs. Fourteen firefighters perish as they try to outrun the flames.

July 6 – Summary of Activities

A total of 36 fires are now burning on this BLM District. During the night, due to the hazards of rolling rocks, the smokejumpers abandon their line construction on the South Canyon Fire up on Storm King Mountain. The fire continues to flare-up throughout the night. A cold front pushing 30-35 mph winds is predicted to occur by 3 p.m. today. A red flag warning has been issued for these frontal winds.

4:30 a.m.: The 11 firefighters from yesterday return and begin their almost 4-hour hike up the east drainage to the fire—where they clear Helispot 2.

8:45 a.m.: The day's tactical plan calls for improving the fireline on the ridge between helispots 1 and 2. The jumpers and a newly ordered hotshot crew will construct hand line along the fire's edge on its western flank.

9:30 a.m.: The IC and Jumper-in-Charge take a helicopter recon flight. The Jumper-in-Charge and a jumper on ground discuss lack of safety areas on the fire. It is decided to continue with the original suppression plan. At 10:30 a.m., 8 more smoke jumpers land at the fire. They are assigned to reinforce line building on the west flank. By 11 a.m., the hotshot crew arrives at the helibase to be shuttled up to the fire.

12 p.m.: Winds increase—with gusts up to 30 mph.
12:30 p.m.: The hotshot crew Superintendent and 9 of his crew arrive at Helispot 2. The IC, Jumper-in-Charge, and hotshot Superintendent agree to send these 9 hotshots down the west flank to reinforce the jumpers.

1 p.m.: A flare-up on the west flank forces some of the jumpers to retreat up the fireline toward the top of the ridge. They discuss safety concerns about building this fireline. After a helicopter water drop, they move back down the hill and continue building fireline.

3 p.m.: The remaining 10 hotshots arrive at Helispot 2 to widen hand line and put out spot fires along the ridge.

20 minutes later, the predicted cold front moves into the area. Strong winds immediately increase the fire activity. Within 45 minutes, water drops are no longer effective. The fire makes rapid runs with 100-foot flame lengths. In response, firefighters start walking back up the fireline.

4 p.m.: The fire blows up. It crosses the drainage and runs up the ridge. A spot fire is observed on the east side of the drainage below a retreating crew. 40 mph winds push the blow-up to the ridge in 2 minutes.

Fourteen firefighters who try to outrun the flames perish: *Kathi Beck, Tami Bickett, Scott Blecha, Levi Brinkley, Robert Browning, Doug Dunbar, Terri Hagen, Bonnie Holtby, Rob Johnson, Jon Kelso, Don Mackey, Roger Roth, James Thrash, and Richard Tyler.*

Lessons Learned Discussion Points

A primary objective of every operational fire plan is to keep firefighters out of entrapment situations.

- Discuss with your crew how the basics of LCES can help prevent getting into an entrapment situation. (Reference page 6 in your IRPG for this discussion.)
- Explain why experience alone isn't enough to protect you in an entrapment situation such as the one that took firefighters' lives on the South Canyon Fire.
- What were the telltale signs that the work environment was becoming increasingly hazardous?

References

- *South Canyon Fire Investigation*. 1994. http://wildfirelessons.net/documents/S_Canyon_AIReport_1994.pdf
- *Incident Response Pocket Guide*
- *Wildland Firefighter Foundation*. <http://www.wffoundation.org/index.asp>

"This Day in Wildland Fire History" is a collaborative project between "6 Minutes for Safety" and the Wildland Fire Lessons Learned Center.