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Thirtymile strategy and leadership were murky from the start

by Lee Hicks

In reviewing the investigation report of the Thirtymile Fire, one conclusion appears to connect all of the findings: responsibility for what led to four deaths must be spread among many factors and the people involved.

But the more troubling question may be why the safety and leadership deficiencies evident in previous disasters continue to plague the nation's firefighting program.

There is increasing pressure to overhaul the "system" so that another Thirtymile, which followed an even greater tragedy in Colorado seven years ago, does not happen again.

WHO WAS IN CHARGE?

From the time the Forest Service "regulars" arrived, maybe much before, there was the potential for confusion over who was in charge of the Thirtymile Fire.

"Command roles on the Thirtymile Fire were unclear and confusing to those in command of the incident, to the rest of the crew, and to others associated with the fire," the investigation report says.

The type 2 crew arrived initially for assignment to the South Libby Creek Fire. But "when redirected" local managers assigned Ellreese Daniels as incident commander.

The report says there was no "redelegation" of duties, meaning Daniels remained crew boss and a trainer for Pete Kampen who was working to be an incident commander.

The crew—including squad bosses—were a mix from the Leavenworth, Lake Wenatchee and Naches districts.

With Kampen training under Daniels, the report says Daniels had "collateral duties" as incident commander ("responsible for communication") and crew boss trainer for Kampen.

Kampen viewed himself as both IC (responsible for strategies and tactics) and

crew boss in a trainee assignment.

As a result, leadership lines were "unclear and confusing to those in command of the incident, to the rest of the crew, and to others associated with the fire," the report says.

This would become a significant factor during the day as other personnel, including two engine crews and the hot shot crew, joined the effort.

Moreover, problems with his radio had forced Kampen to communicate through Daniels as a relay to dispatch and air support.

As the fire grew from early to mid-afternoon, the report says, Kampen even suggested to the assistant hot shot commander that his crew take over the fire, but was told "this is nothing we want to mess with either."

District assistant fire manager Barry George arrived about 3 p. m. and discussed assuming command from Daniels. The report says George asked Daniels if he was "comfortable" in retaining incident command and Daniels said he was. About 3:25 p. m., George then met with Daniels and Kampen to discuss their concerns that "the initial attack had not contained the fire."

The report says the "elements of fire complexity dictated a transition from initial to extended attack." But no changes in strategies or tactics were made by the incident command.

At this point, the report is not clear on who should have made the decision, then or perhaps earlier in the day, to dramatically alter the strategy. But the report's "significant management finding" clearly addresses the issue:

"District fire management personnel did not assume incident command when the size and complexity of the fire exceeded the capacity of the NWR#6 (the crew led by Daniels and Kampen).

THE HUMAN FACTOR: FATIGUE

Lack of sleep—especially at deprivation levels—is known to inhibit analytical thinking and judgment in the most simple of situations.

In the risky business of battling fires, the probability of danger is immense.

On the Thirtymile Fire, the physical and mental condition of firefighters—the hot shot crew and type 2 regulars (NWR#6) at the site, as well as the district managers—likely played a role in how the blaze was perceived and underestimation of its deadly potential, a final report of investigators has concluded.

"Records indicated that personnel...had very little sleep prior to their assignments, and mental fatigue affected vigilance and decision-making."

The lack of sleep ranged from the district fire manager to the crews that arrived during the day of July 10.

Methow district fire management officer (DFMO), Pete Soderquist, had only slept 30 minutes in the previous 24 hours before he escorted the incoming crew, assembled from the Naches and Leavenworth districts, to the fire site for a briefing. He was already managing the South Libby Creek Fire that erupted the day before and was threatening homes.

According to the report, Soderquist considered the fire a "mop-up" in the early stages. District ranger John Newcom later told Soderquist, "to get some rest, and he is therefore out of the loop for several key hours as events unravel later in the day," the investigators found.

The Entiat hot shot crew that fought the fire from the early hours of July 10 before the type 2 crew took over had worked another incident near Spokane. They then traveled to the Methow where they arrived after "little or no sleep" for 30 hours.

The Entiat superintendent’s extensive "fire experience and considerable judgment are incapacitated at this critical point by nearly 50 hours with little or no sleep," the report says.

And the ill-fated regulars who took over responsibility "may have gotten one to three hours sleep" while on the way to the incident. Many had been awakened about midnight at their quarters. Some had been on the road for more than 200 miles that day before reaching the fire.

"Once again, the effects on performance involve the key areas of decisiveness and vigilance, possible (sic) shedding some light on the actions of the crew," the report says.

Even before the hot shots arrived, another crew, which the report calls an "initial attack" team of three members arrived at the scene about 11 p. m. July 9, 1 1/2 hours after a Canadian air tanker had reported it. About 11:45

p.m. an engine crew arrived, but the decision was made to wait for the highly trained hot shots.

The engine crew supervisor believed the fire at the time was 20-25 acres. He told Okanogan dispatch that "it will grow, hit the slope and get larger," the report says. He also said the fire "needed to be taken care of tonight because if it hits that slope it is going to the ridge top."

For whatever reasons, perhaps failure in communication, Soderquist "remains unaware of the observation by the initial attack crew the night before that this fire would not be held and would hit the ridge and get large," the report notes in the present tense.

When the overextended Entiat IHC, Marshal Brown, arrived he declined support by the three-person crew already at the scene and also assistance of the engine, the report says. Brown assumed command at 1 a. m. The other crew and engine #704 left about 1:30 a. m.

NOT ENOUGH WATER ON THE FIRE

Within 45 minutes after the initial attack crew and engine 704 had left, communications logs show that Brown told the dispatchers another crew (type 2 regulars), an aircraft, water pumps and hoses would be needed after daylight. At 5:26 a. m., Brown's request was confirmed by dispatchers who said a helicopter and water bucket would be available at the North Cascades Smokejumper Base by 10 a.m.

The report cites concerns by dispatchers, first noted after a noon request by onsite crew leaders, over endangered fish species as an "influencing factor" in the Thirtymile incident. But apart from any role this issue may have played, the report also reveals communications problems between the onsite crew bosses, district fire managers and dispatchers over availability and use of the chopper, which had overnighted at Wenatchee's Pangborn Field.

The report also describes equipment problems, rather than any concern over endangered species, after crews attempted to pump water earlier in the day from the Chewuch River.

"In spite of the ready availability...little water was applied to the fire during the initial attack phase. This was largely due to operational problems with pumps and hoses, as well as delays in availability of a type III helicopter," the report says.

About 9 a. m., Soderquist and Elton Thomas, the Okanogan-Wenatchee forest's top fire management officer, briefed crew boss trainee Pete Kampen and his trainer Ellreese Daniels at the Thirtymile site.

The report notes that a "spot" forecast for the Thirtymile weather was not available, or not provided to Daniels and Kampen, at the briefing. But there was a forecast for 6 p.m. the previous evening for the Libby South Fire.

Although early morning conditions may have been more benign, with the 10 percent humidity forecast for Libby South, the Thirtymile crew faced a situation of "extreme fire behavior probable." Spot fires could occur frequently and spread rapidly according to forecast data matched with Forest Service handbook guidelines.

The onsite bosses were informed a helicopter "would be available," the report says. "The district FMO reminded them again prior to departing for a Libby South Fire planning meeting."

About noon the crew (although neither Daniels nor Kampen are mentioned by

name) "was notified by the Okanogan dispatch" that the helicopter was available. At 12:08 p. m., the report says that Kampen, relaying his request through Daniels, asked for the helicopter.

At 12:30 p. m. dispatch "was contacted" regarding the helicopter's arrival and in response "indicated that the helicopter required permission to dip out of the Chewuch River."

The air attack observer identified a dip site for the chopper by 12:40 p. m., but the dispatchers again said the aircraft could not be used "until they got permission," which was given at 2 p. m.

At 2:38 p. m. the helicopter left for the fire and began dipping water from the river and putting it on spots at the south edge of the blaze until a break to refuel after 4:15 p. m. When it left, the blaze had spread up the east canyon walls and by its return, flames were on the west wall across the river and road.

In its management findings, investigators noted that the helicopter manager "reported mid to late morning" that he contacted district assistant fire management officer Barry George about locations to dip water. The helicopter officer said George told him he "...didn't think we could dip water out of the Chewuch River because of environmental issues with salmon smolts," and that he "would check into it."

The management findings note: "There is no clear or consistent process on the forest for helicopter bucket operations with respect to endangered species issues in relation to fire suppression operations."

The findings conclude that the "district AFMO (George) and ultimately the Okanogan dispatcher were unclear on the appropriate course of action to take, delaying the release of the helicopter."

TRAPPED: WAITING FOR TRAGEDY

The deterioration of the chain of command would become tragic as six of the 14 trapped crew—including the four who died—would apparently ignore Daniels' order to come down from an upslope rock scree field to a safer location on the road near the Chewuch River, the report concludes.

About 3:30 p.m., assistant fire management officer Barry George had met with Kampen and Brown, telling them, in the words of the report, "it would be nice to keep the fire east of the road." As quoted in the report, the district's assistant fire management officer said "there was no pressure, rather this would be a 'nice to do' rather than a 'have to do.'"

But the effort to keep the blaze east of the road resulted in firefighters being in front of the main body of the fire. And, given the narrow, serpentine path of the river and road, and the steep canyon walls, keeping a sight line on the path of the

fire would have been difficult, the report says.

"In effect this was an entrapment by design, but one that might have been avoided if there was a shared understanding of what was being attempted..," the report notes.

An engine supervisor informed another engine crew the objective was to keep the fire on the east side of the river. They also drove ahead of the ground crews without checking in with the onsite commander, the report says.

Barely an hour later, the fire had jumped the road and forced Kampen and some of the hot shot crew to flee south. It was about 4:30 p.m., dispatch logs indicate. Daniels and the others were trapped and had to turn around to find a place to wait out the firestorm.

After surveying several locations, with advice of air support circling above, Daniels picked an area on the road with a rock slope up the west wall. But the report says it was not a "safety zone," in the sense that no safety zone had been selected before the entrapment.

Investigators determined that, with as much as 45 minutes to prepare for a relentless inferno methodically approaching at an estimated 1.6 miles an hour, a sense of urgency did not take hold among much of the crew until the final critical minutes before the tragedy.

The report says Daniels repeatedly urged the six crew members who had gone into rocks above the road, apparently to view the oncoming firestorm, to join the others on the road below. His orders were unheeded, the report says.

"Failure to adequately anticipate the severity and timing of the burnover, and failure to utilize the best location and proper deployment techniques contributed to the fatalities and injuries," the report says.

As their options were suddenly shut down when the blaze roared at them, those in the rocks were forced to move farther upslope to deploy their shelters.

Jason Emhoff—not wearing gloves—had to abandon his shelter up on the rocky slope and fled to the crew van. He remarkably recalled his recent emergency medical training that cold water of the river might induce shock in his already serious condition. The flesh was falling away from his hands by that time.

Thom Taylor, a squad boss, had at first attempted to move down from the rocks but was turned back by the blaze. He deployed his shelter and later sprinted down to the river, immersing himself for protection.

But the four who died remained in the rocks. The report says five of the six shelters, designed to sustain heat of 600 degrees, were severely delaminated. In the rocks, four of the six shelters faced heat of more than 1,200 degrees and two of

those were subject to temperatures estimated at 1,600 degrees Farenheit. But a sixth shelter in the rocks was mostly intact, indicating a temperature of less than 500 degrees.

The flames were fed by convection and natural fuels underneath the shelters. All four of the firefighters died from inhaling superheated gases from the fire, a coroner's investigation determined.

Investigators concluded temperatures were not as severe on the road. Shelters deployed there protected occupants from heat of less than 500 degrees, perhaps as low as 280, up to 800 degrees. The intensity appeared related to whether natural material or gear was nearby to provide more fuel.

Daniels may not have been a "forceful leader" with ability to "command the situation" at the deployment site, the report says. But his effort may also have been hindered by the tendency of those on the rock slope to be with members of their own district, "though they were technically assigned to different squads."

"This is common behavior in the early stages of group assimilation and likely accounts for the failure of some crew members who were fatally injured to respond to the direction of the crew boss to come down out of the rocks," the report says.

One exception was Rebecca Welch.

In an epilogue, the report observes that Welch was inexperienced and could rely only on her training, judgment and the fire shelter.

"But at a critical moment she decided to leave her friends (in the rocks) and went to the road in response to repeated requests and orders from the crew leader."

It was that decision that most likely saved her life and also two campers with whom she shared her shelter.

Thirtymile report finds series of missteps led to tragedy

Problems extended from district managers to fireline crew

by Lee Hicks

From early on in the effort, those battling the Thirtymile Fire did not recognize the blaze's potential and later failed to take proper actions and safety precautions as the day moved toward the tragic blowup that took the lives of four firefighters, the investigation report concludes.

"Potential fire behavior was consistently underestimated throughout the incident," the report says.

The missteps on July 10 extended from managers at the fire site in the rugged

Chewuch River canyon about 25 miles north of Winthrop up the chain to the district level, the report concludes.

Forest Service chief Dale Bosworth announced the findings in Yakima Sept. 16, after a briefing of families of the four firefighters who perished: Devin Weaver, 21, Karen Fitzpatrick, 18, and Jessica Johnson, 19, all of the Yakima area and Tom Craven, 30, of Ellensburg.

In a "summary of causal factors," the investigators found that firefighters were eventually trapped as "the result of a chain of interrelated events throughout the day, including the failure to recognize the deteriorating conditions and escalating fire activity."

The report categorizes the findings by "significant" and "influencing" factors.

Among the significant factors, the report found that managers broke all 10 standard fire orders and 10 of 18 watch situations. These included such measures as identifying safe zones and exit routes and posting watches.

From the early stages and at "critical points throughout the incident, the lack of situation awareness by key incident, district and forest personnel led to inaccurate assessments of fuels, fire behavior and fire potential," the report concludes.

Firefighters at the scene and district managers were also mentally fatigued because work/rest cycles has been ignored. The crew that took over July 10 from a hot shot crew had driven all night to the fire. The local district managers had been busy with the South Libby Creek Fire that was threatening homes.

As 14 of the 21-member crew and two campers were trapped, "little was done" until moments before the fire swept over the area. Instead of deploying their shelters on the road, the four firefighters who died and two others chose a site in a boulder field.

The report says the failure to "move to the most desirable deployment location on the road, and failure to deploy using proper techniques" contributed to the fatalities and injuries. The "rock scree" field would have had higher temperatures as well as burnable fuel around and under the deployment sites, the report says.

Among the "influencing factors" the accident review board also concluded that existing personnel were "over-extended" and additional resources were not available.

There were also problems "both aerial and ground based" in getting water to the blaze. Pumping equipment did not operate properly early in the effort.

And the report addresses delays in "assignment of a helicopter," which "may have reduced the effectiveness of suppression actions.

"The lack of a clear process and determination of responsibilities to deal with the

Endangered Species Act issues contributed in part to this delay, as did dispatch actions and confusion associated with availability."

Among recommendations in the report are the need to assess situational awareness skills for managers and firefighters; strengthen command and control performance; critically review leadership training and to implement tighter safety programs.

The report also recommends to "clarify the relationship" between the Endangered Species Act and firefighting "to establish a coherent process that accounts for ESA requirements with respect to the full range of fire suppression activities."

Environmental groups have bristled over suggestions the ESA may have been a factor, after some congressmen had called for special attention to that as a possible cause. The national office of Trout Unlimited was quick to issue a statement that "contrary to allegations of some members of Congress, the ESA and endangered trout and salmon were not responsible for the firefighters' deaths."

The state's freshman Democrat senator, Maria Cantwell, immediately called the Senate Subcommittee on Forests and Public Land Management to hold hearings on the incident report. Chairman Ron Wyden, D-Oregon said he would attempt to calendar the hearings by the end of October.

Cantwell said she wants "to make sure all of the right questions have been asked and answered, and to ensure appropriate actions are taken to prevent future deaths."

She said many of the causes identified by the Forest Service, "point to potential problems of leadership, management and training problems that should have been corrected following the investigation of the 1994 Storm King Fire that killed 14 firefighters in Colorado."

On another track, the federal Occupational Safety and Hazard Administration has conducted its investigation into the fire causes. It's not clear when that report will be issued.

Publisher's Comment ~ by Lee Hicks

Cantwell makes a good suggestion

The state's freshman senator in D. C. is on the right track in calling for hearings on the Thirtymile Fire.

Last week, as the investigation report of the tragedy was released, Sen. Maria Cantwell immediately called on Oregon Democrat Sen. Ron Wyden's subcommittee Forests and Public Land Management to review the report's findings in an attempt to understand what went so awry in the tragedy.

As Cantwell noted, some lessons of the 1994 Storm Canyon Fire in Colorado, in

which 14 firefighters died, have been overlooked. The Forest Service investigation itself acknowledges this, pointing to the need for changes in the firefighting culture.

Whether directly, or by implication, the report reveals deficiencies in leadership and training and inadequate attention to safety at the field level.

Cantwell has a strong environmental support base. It would be unfortunate if the hearings are used as a platform to argue whether wildland fires are fought at all. The focus should be on correcting existing management and safety problems rather than ignoring them for a broader discussion of the role of fire in the national forests.

That is already the subject of a legitimate and continuing debate best carried out in another venue.

Cantwell might also reconsider an incomplete statement in her announcement. The senator notes that the Thirtymile deaths were "not caused by conflicts between national fire suppression policies and the Endangered Species Act..."

It's true the ESA was only one issue, cited as an "influencing factor" in the fire. But the report also cited a delay in authorizing a helicopter to dip water as indicating "the lack of a clear process and determination of responsibilities to deal with the Endangered Species Act..." Among recommendations, the investigating team said there is a need to "clarify" the relationship of firefighting and the ESA to establish a "coherent process." This is not to say the ESA is the problem, but the way it is understood within the Forest Service may be.

The hearings are important, and all issues that emerged in the investigation should be probed to assure that history does not repeat itself yet again in another canyon some day.

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