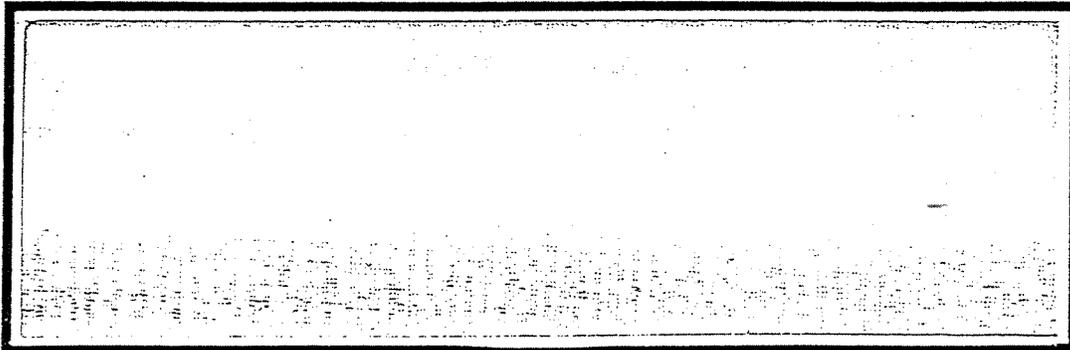




United States  
Department of  
Agriculture

---

## OFFICE OF INSPECTOR GENERAL



# REPORT OF INVESTIGATION

**For Official Use Only**



# REPORT OF INVESTIGATION

FILE NUMBER: [ (b)(2) ]                      DATE: June 9, 2004

TITLE: [ (b)(6) / (7) (C) ]  
 North Fork Ranger District, Salmon-Challis  
 National Forest, FS  
 North Fork, ID

“Title Continues”

CASE TYPE: Forest Service Firefighter Burnover Fatalities

SPECIAL AGENT: [ (b)(6), (7)(C) ]  
Phoenix AZ

APPROVED BY: [ (b)(6) ]  
J.J. CROWLEY  
Special Agent-in-Charge

- Distribution:
- 1-Chief, Forest Service
  - 1-Director, Law Enforcement and Investigations, FS
  - 1-Associate General Counsel, Natural Resources, OGC
  - 1-RIG for Audit, OIG, San Francisco
  - 1-AIG for Investigations, OIG, Washington /
  - 1-Special Agent-in-Charge, San Francisco
  - 1-Special Agent-in-Charge, Temple

This document is FOR OFFICIAL USE ONLY. It and its contents are not to be distributed outside your agency, nor duplicated, without prior clearance from the Office of Inspector General, USDA

TITLE CONTINUED

[ (b)(6), (7)(C) ]  
North Fork Ranger District and Middle Fork Ranger District  
Salmon-Challis National Forest  
North Fork, ID

[ (b)(6), (7)(C) ]  
Salmon-Challis National Forest, FS  
Salmon, ID

[ (b)(6), (7)(C) ]  
Salmon-Challis National Forest, FS  
Salmon, ID

JACK TROYER, Regional Forester  
Region IV, Forest Service  
Ogden, UT

[ (b)(6), (7)(C) ]  
North Fork Ranger District, Salmon-Challis National Forest,  
North Fork, ID

[ (b)(6), (7)(C) ]  
Indianola Helitack Crew, Salmon-Challis National Forest  
Moscow, ID

[ (b)(6), (7)(C) ]  
Salmon-Cobalt Ranger District, Salmon-Challis National Forest  
Salmon, ID

[ (b)(6), (7)(C) ]  
Salmon-Cobalt Ranger District, Salmon-Challis National Forest  
Salmon, ID

## PREDICATION

On July 22, 2003, Forest Service (FS) helitack firefighters, JEFF ALLEN, Salmon, ID, and SHANE HEATH, Melba, ID, died of a burnover while engaged in fighting the Cramer wildland fire on the Salmon-Challis National Forest (SCNF) approximately 25 miles northwest of Salmon, ID. An Office of Inspector General (OIG) investigation was initiated in accordance with Federal statute (Title 7, United States Code, Sections 2270 b and c), which directs that:

“In the case of each fatality of an officer or employee of the FS that occurs due to wildfire entrapment or burnover, the Inspector General of the Department of Agriculture shall conduct an investigation of the fatality.”

## BACKGROUND

The Cramer fire started on July 19, 2003, from a lightning strike. After notification was received about the deaths of FS employees JEFF ALLEN and SHANE HEATH, OIG special agents were dispatched to the scene and arrived in Salmon, ID, on July 23, 2003, to begin the investigation. Federal investigators from the Office of Safety and Health Administration and officials from the FS initiated their investigations the same day. The FS has a standing internal policy, documented in its “Accident Investigation Guide,” which states:

“The causes of most accidents are a result of failures to observe established policies, procedures, and controls...often, accident investigations reveal existing hazards that were not adequately addressed, therefore, the purpose of FS accident investigations is to provide management with information for accident prevention.”

On January 12, 2004, the FS issued its “Accident Investigation Factual Report” and the companion “Management Evaluation Report,” which document the FS findings regarding the Cramer fire fatalities. Copies of all documents and interview transcripts compiled by the FS safety investigation team were provided to OIG. Additionally, copies of documents and interviews from an “Administrative Fact Finding Inquiry” conducted by a private company contracted by the FS were obtained and reviewed.

The OIG investigation documented a similar set of facts relating to the Cramer incident as those presented in the FS reports. Attached are the “Cramer Fire Timeline” (Exhibit 1) and the “Resources on the Fire” (Exhibit 2) as prepared by the FS Accident Investigation Team and appended to their AIFR. Also attached are the Glossary of Wildland Fire Terms (Exhibit 3).

### Forest Service Firefighting Procedures

The FS maintains an inventory of firefighting equipment, which includes large, fixed-wing aircraft called air tankers that are equipped to drop fire retardants or suppressants directly on a fire; “smokejumpers” that are designed to carry personnel that will parachute in to fight the fire; and helicopters that provide reconnaissance, deliver firefighting crews to strategic locations surrounding the fire, and drop fire suppressants where air tankers might be inefficient. The FS uses the term “helitack” to refer to its use of helicopters during the initial stages of a fire. It uses the term “helibase” to refer to the main location within an incident area for parking, fueling,

maintaining, and loading helicopters, and it uses the term "helispot" to designate a temporary helicopter landing spot beneath a fire.

The FS also maintains a staff of managers and field personnel trained to control and extinguish forest fires. Each firefighting crew is composed of personnel with at least the same specific level of training, and each fire is designated according to its severity and the training needed to control it. A Type IV fire, the lowest designation, indicates a fire during its initial stages. If the fire spreads and becomes more complex, it is designated a Type III fire, then a Type II, and finally a Type I, the most severe. Within this system of fire designations, there are five levels or types of crews running from less to more skilled: Type III, Type II, Type II-Initial Attack (IA), Type I, and Type I Interagency Hotshot Crews (IHC).

In addition to an inventory of firefighting equipment and a staff of trained firefighting managers, the FS also has specific guidelines for responding to wildfires. Those responding to a wildfire in 2003 were expected to follow the policies and procedures set forth in the "Interagency Standards for Fire and Fire Aviation Operations 2003." The handbook established a reference for current operational policies, procedures, and guidelines for managing wildland fire and fire aviation operations and also expected all employees who were engaged in fire suppression activities to adhere to those standards and mitigate risks defined in the "Incident Response Pocket Guide." These two handbooks provided the framework and program directives to safely and effectively respond to wildland fire. The handbooks discuss strategies and tactics for initial attack and define the Incident Management System, under which an incident commander (IC) becomes responsible for all incident command level functions and incident activities. For a Type 3 incident, the IC usually has a significant number of resources available. The IC commands the various fire crews, each of which have crew supervisors (bosses), and/or helicopter crews, each headed by a helicopter crew manager. The IC also supervises logistics personnel on the fire.

The Interagency Standards for Fire and Fire Aviation Operations 2003 handbook further provides that firefighter safety comes first. The handbook states in part... "the Ten Standard Firefighting Orders are firm. We don't break them, we don't bend them. All 18 Watch Out Situations must be mitigated before engagement or reengagement of wildland fire suppression activities. Every firefighter has the right to know that his or her assignments are safe. Every fireline supervisor, every fire manager, and every administrator has the responsibility to confirm that safe practices are known and observed." The Ten Standard Firefighting Orders and the 18 Watch Out Situations are attached as Exhibits 4 and 5, respectively.

Finally, the above-listed resources and firefighting standards are utilized on each National Forest according to a Fire Management Plan. For the SCNF, the Fire Management Plan defines the implementation of the fire management program on the Forest and is a detailed program of action to carry out the fire management policies to achieve resource management and fire protection objectives. All wildfires will be subject to an initial response. All ignitions determined to be human caused will be suppressed using an appropriate management response. Natural ignitions will be suppressed unless they are located in an area that has an approved wildland fire use plan. The Frank Church - River of No Return Wilderness is currently the only area with an approved fire use plan.

Law Enforcement Response to Fatalities

[ (b)(6), (7)(C) ] Lemhi County, Idaho, stated that [ ] and a deputy along with FS personnel had removed the bodies of ALLEN and HEATH from a ridge below Long Tom Lookout and above Cache Bar on the Snake River on the morning of July 23, 2003. [ ] provided a copy of the Coroner's Report, which stated, in part, that "ALLEN and HEATH died July 22, 2003, while performing their duties with the United States Forest Service. Cause of death was by fire." An autopsy was conducted on the body of SHANE HEATH by [ (b)(6), (7)(C) ] Ada County, Idaho Coroner's Office and determined that HEATH'S cause of death was thermal injury secondary to a forest fire. Further, toxicology tests showed no presence of controlled substances or intoxicants. No autopsy was conducted on the body of JEFF ALLEN.

On July 25, 2003, Senior Special Agent [ (b)(6), (7)(C) ] OIG, and Special Agents [ (b)(6), (7)(C) ] and [ (b)(6), (7)(C) ] Law Enforcement and Investigations, FS, located the origin of the Cramer wildfire and determined that its cause was a lightning strike (Exhibit 6).

Two broad areas of concern were developed from documentary and testimonial evidence obtained during the OIG investigation that were found to have contributed to the Cramer fatalities: (1) FS employees whose actions/inactions contributed to the fatality incident, and (2) the poor performance of the private sector firefighter contract crews assigned to the Cramer fire.

This report focuses on the FS employees whose actions or inactions contributed to the fatalities. The second area of concern (contract crews) is summarized briefly at the end of this report but is the subject of another OIG investigation [ (b)(2) ] and will be reported in detail in a separate supplemental report under that OIG investigation.

DETAILS

For clarity, this report is sectionalized, as follows: FOREST SERVICE EMPLOYEES; and CONTRACT FIREFIGHTER CREWS. The first section, Forest Service employees, is subdivided by employee whose actions or inactions contributed to the fatalities during the Cramer fire. Exhibit 7 is a diagram that documents the position assignment of each of those employees and the Line of Command/Responsibility during the Cramer fire. The second section of the report summarizes the issues surrounding the FERGUSON contract fire crews assigned to the Cramer fire.

Agent's Note: During the summer of 2003, there were numerous wildland fires on the SCNF. The Bobcat fire started approximately July 11, 2003, and was controlled within a short time. The Crystal and Blackwall fires began a few days before the Cramer fire and were active, but separate, fires when the Cramer began. All of these fires utilized resources from the SCNF. Throughout this report, various witnesses make reference to some of these fires.

FOREST SERVICE EMPLOYEES

[ (b)(6), (7)(C), (D)(2), (K)(2) ]

A review by the Reporting Agent (RA) of FS procedures related to wildland fire suppression, including the National Thirtymile Hazard Abatement Monitoring Plan, shows that the IC on a wildland fire has specific responsibilities for strategies and safety. These responsibilities include:

- Provide for safety and welfare of all personnel and the public.
- Develop and implement viable strategies and tactics.
- Monitor effectiveness of planned strategy and tactics.
- Execute suppression actions when and where they are effective.
- Ensure that all firefighting actions are in full compliance with the Ten Standard Fire Orders and the mitigation of applicable Watch Out Situations have been accomplished.
- Immediately delay, modify, or abandon firefighting on any part of a wildland fire where strategies and tactics cannot be safely implemented.
- Maintain command and control of all firefighting resources.
- Ensure that the IC on Types 1-3 wildland fires have no collateral duties, except for those of unfilled Command and General Staff positions.

[ (b)(6), (7)(C), (D)(2), (K)(2) ] Northfork Ranger District, SCNF, at the direction of [ ] attorney, declined to be interviewed by OIG agents. [ ] was interviewed during the accident investigation by FS personnel and by a private investigation contractor during an administrative fact finding inquiry. This section first establishes the work experience and environmental conditions known to [ ] on the day of the Cramer fire. Finally, the specific issues relating to [ ] are listed, followed by supporting evidence.

Work Experience and Training in Fire Behavior and Suppression

A review of [ (b)(6), (7)(C), (D)(2), (K)(2) ] personnel and training records obtained from the FS by the RA showed:

[ ] began [ ] career with the FS in [ ] In [ ] [ ] was assigned to a helitack crew. [ ] spent the ensuing years at various assignments, all directly related to fire. In [ ] [ ] became the [ (b)(6), (7)(C), (D)(2), (K)(2) ] for the North Fork/Middle Fork Ranger District, SCNF, ID. Throughout [ ] career with the FS, [ ] completed extensive training courses in various aspects of fire management and suppression, including Behave/burn Subsystem, Intro to Fire Effects, Intro to Wildland Fire Behavior, Incident Commander Extended Attack, IC Type 3, Fire Suppression Tactics, and Advanced Fire Behavior Calculations. [ ] actively participated in numerous wildfire suppression efforts. [ ] Training and Qualifications Master Record shows that, in addition to other positions, [ ] is experienced and/or (Red Card) qualified in a wide range of fire positions, including:

[ ]

[ ] had on-the-job experience and was qualified as ICT3 as early as 1997. [ ] current qualifications as ICT3 became effective [ ]

Knowledge of Extreme Fire Conditions and Cramer Fire Growth

A review of the FS Accident Investigation Factual Report (AIFR p.7) shows a description of the extreme fire danger and severe summer conditions present on July 22, 2003, on the Cramer fire.

[ ] North Fork/Middle Fork Ranger Districts, SCNF, declined to be interviewed by OIG agents. [ ] provided a statement (Exhibit 8) to the AIT in which [ ] said:

On Sunday, July 20, 2003, [ ] learned from [ ] that the Cramer fire was burning on [ ] district. On Monday, July 21, 2003 [ ] whom [ ] supervised, informed [ ] that [ ] had told [ ] to be the [ ] on the Cramer Fire because they could not locate [ ], who was originally designated to be the [ ]. [ ] would instead be the [ ]. [ ] felt that [ ] was qualified for the assignment and was safety conscious.

[ ] provided a statement (Exhibit 9) to the FS Accident Investigation Team (AIT), in which [ ] said:

[ ] learned of the existence of the Cramer Fire on Sunday, July 20, 2003, and was told by [ ] that [ ] was the [ ]. The following morning, [ ] was unable to reach [ ] and [ ] told [ ] to go to the fire and talk to [ ] who was the [ ] at that time on the fire. [ ] arrived at the Cove Creek helibase at approximately 1100 hours, Monday, July 21, 2003, received a briefing from [ ] and flew a reconnaissance of the fire. In the afternoon, the winds picked up, snags were falling, and the fire doubled in size. [ ] ordered everyone off the fire. [ ] then spoke to Engine 422, which had been sent to patrol the river road. Private vehicles were parked along the road, and the fire was burning down toward Cache Bar.

On the morning of July 22, 2003, [ ] of the Oregon Regulars fire crew; and [ ] flew reconnaissance of the fire. [ ] did not request a spot weather forecast that day. At a briefing back at the helibase, [ ] told the crews that the winds had been getting stronger in the afternoon and that Long Tom lookout reported that humidity was 11 percent lower than the day before. The Fire Danger Cards deal with fire history as it relates to the burning index. "The burning index being above the 19 percentile is when you get the large fire growth. They're a tool that's used as a trigger point as to when you're going to get large fire

growth. I believe we were above the 19 percentile... We're going to get the afternoon winds so expect the fire behavior to pick up in the afternoon."

On the afternoon of July 22, 2003, the fire was backing down toward Cache Bar, which is a boat ramp, and it was pretty much directly in line with the fire. The only indication of any fire heading toward H2 was "those guys (rappellers) saying they had smoke..." at the helispot above the Cramer fire.

A review by the RA of the Great Basin Incident Organizer form (Exhibit 10) bearing [ ] name showed the existing organization and available resources, and certain environmental conditions at 6:30 a.m., July 22, 2003. A major portion of the form was not completed. [ ] noted on the checklist that [ ] had completed an Incident Complexity Analysis, Risk Management Process, and Infinite Response Pocket Guide Briefing Checklist. [ ] noted that the relative humidity was under 20 percent, wind speed was 10 to 20 mph, slope was over 30 percent, and it was a south aspect. All of those conditions were in the red (hazardous) column on the form.

[ ] provided a statement (Exhibit 11) to the AIT and provided a statement (Exhibit 12) during an administrative fact finding inquiry (INQUIRY). [ ] said, in substance, that the conditions on the Cramer fire for July 22, 2003, were the same as the day before except a little hotter and drier. This information came over the radio from Long Tom Lookout at about the time of the IC's briefing. Everyone knew what the conditions were. They knew they were in "the extreme of the extreme." The Energy Release Components were very high.

[ ] SCNF, provided a statement (Exhibit 13) to the AIT in which [ ] said the fire conditions on July 22, 2003, were the "worse conditions you can be in." [ ] thought everyone knew the conditions. The relative humidity was at one time at 4 percent, "I mean, that's low," and it was 100 degrees.

Use Due Caution and Circumspection in Strategies and Actions

The following are a series of actions and/or inactions attributable to [ ]

Control of Forces and Give Clear Instructions

Standard Firefighting Orders #8 and #9 (Exhibit 4) state that fire managers must give clear instructions, ensure instructions are understood, and maintain control of their forces at all times.

[ ] Challis RD, furnished a signed-sworn statement (Exhibit 14) in which [ ] stated that on July 11, 2003, [ ] was assigned as the [ ] on the Bobcat fire [ ] made bad calls and was very indecisive. [ ] pointed out to [ ] that some cottonwood trees were falling onto the roadway and someone was needed to block traffic. [ ] volunteered to be "road guard," which was totally inappropriate since [ ] was the [ ] and would not be able to perform [ ] duties while performing that task [ ] was looking for

someone else to take over, even though [ ] was the [ ] When someone advised [ ] that FS trucks were in danger of burning [ ] said, "It's OK, that's why the Government has insurance."

[ ] provided a statement (Exhibit 15) to the AIT in which [ ] said [ ] was the [ ] on the Cramer fire. When [ ] arrived on the fire on the morning of July 22, 2003, the [ ] who was at the helibase and not on the fire, told [ ] to start putting water on the fire. There was "...really nobody on the fire that could give us any kind of direction on what needed to be done. We just kind of worked it out among ourselves, on what needed to be taken care of." In the afternoon, [ ] observed that there were no lookouts for H2. "Somebody that was in charge should have been on the radio, you know, been on the fire [ ] to see what was actually going on." There was no action plan of what to do "if various cases arose." [ ] felt [ ] was to just "freelance."

[ ] provided a statement (Exhibit 16) to the AIT in which [ ] said [ ] had been going through a rough divorce and [ ] mind was not really on things. "It's obvious that [ ] not thinking clearly... and [ ] was just adrift from the beginning in my opinion. [ ] was just kind of floating around and sitting in the helitack truck [ ] just thought [ ] might want to go up on the hill (fire) instead of taking a recon whenever [ ] felt like it [ ] don't think [ ] should have been there."

[ ] provided a statement (Exhibit 17) to the INQUIRY in which [ ] said the [ ] was not on scene at the Cramer fire, and communications from the on-scene person and the [ ] was not adequate enough to understand the urgency of what was happening on the fire.

[ ] stated (Exhibit 12) that [ ] was negligent because no lookouts were posted for H-2 personnel, [ ] did little on the 22<sup>nd</sup> (July 22, 2003) to actually oversee the fire's operation, and [ ] morning briefing was insufficient. The [ ] was unprepared on the 22<sup>nd</sup> and failed to provide safe and effective management.

[ ] in the statement (Exhibit 9) to the AIT and in an additional statement (Exhibit 18) to the INQUIRY, said [ ] was the [ ] on the Cramer fire and acknowledged being disengaged from the fire, managing it on July 22, 2003, from the helibase 13 miles away. Further, [ ] talked about miniscule duties performed during the Cramer fire rather than concentrating on fire suppression and safety. On July 22, 2003, [ ] spent most of the day at the Cove Creek helibase. [ ] took two reconnaissance flights over the fire, one at about 0830 and another at 1330, but did not actually go on the fire itself. [ ] know [ ] should have been on the fire, but [ ] felt like [ ] had a competent individual up there to run the crews and run the operations [ ] was back...doing logistics. [ ] had nobody there to order...meals, water, and ice." Additionally, [ ] had discussions with a lookout tower about a refrigerator.

Acceptable Safety Practices

Watch Out Situations #9 and #11 (Exhibit 5) caution about building fireline downhill with fire below and having unburned fuel between you and the fire.

[ ] in a statement to the AIT (Exhibit 19), [ ] in a statement to OIG (Exhibit 14), and [ ] in a statement to OIG (Exhibit 20) said, in substance, that they are each experienced [ ] It was unsafe and not an accepted practice or strategy to insert rappellers above a fire. [ ] added that fire burns rapidly uphill. "You don't put people above the fires; you just don't do it, especially in the Salmon River breaks. It's just not done. Normally, a mid-slope fire in this fuel type will burn to the top of the ridge before anyone has an opportunity to do anything with it."

[ ] SCNF, who declined to be interviewed by OIG agents at the direction of [ ] attorney, provided a statement (Exhibit 21) to the AIT in which [ ] said, historically, a fire that starts in the canyon will burn to the top of the ridges and will burn downhill to the river at some point. Whether it's that day or 5 days later, it's going to get there, just because of the sheer ruggedness and steepness of the terrain.

[ ] said (Exhibit 18) although [ ] placed rappellers at the top of a hill at H-2, nobody said "no" to [ ] decision.

Acceptable Safety Zones

Standard Firefighting Order #4 (Exhibit 4) states that the firefighters have escapes routes and safety zones and make them known. Watch Out Situation #11 (Exhibit 5) cautions about unburned fuel between you and the fire. According to the Incident Response Pocket Guide, the safest place to work is generally next to an already burned area ("the black"), into which a firefighter can escape.

[ ] provided a statement (Exhibit 22) to the AIT in which [ ] said that [ ] made the decision about the location of H-2 and about the safety zones. The "black" was about 200 yards below H2.

[ ] said (Exhibits 9 and 18) the safety zones were about 250 feet below H2 either in the black (burned) area east of the ridge or in a grassy area west of the ridge. [ ] acknowledged the danger of this situation by saying, "I know - fire below and having a safety zone below the fire..." [ ] did not realize the unburned safety zone would exhibit intense fire behavior.

Posting of Lookout

Standard Firefighting Orders #2 and #5 (Exhibit 4) state that you know what your fire is doing at all times and you post lookouts when there is a possible danger.

[ ] stated (Exhibits 17 and 22) that [ ] was supposed to find a lookout for H-2 across the (Salmon) river but had not done that. On the morning of July 22, 2003, during the reconnaissance flight, [ ] and [ ] discussed looking for a lookout and looked at several locations where a lookout could be posted. The location that was selected would have had a view of H-2 but not of the Cache Bar drainage.

[ ] said (Exhibits 9 and 18) that [ ] assigned [ ] as the lookout near H-1, a helispot on the lower southeast side of the fire where crews were being shuttled in by helicopter. [ ] did not know exactly where that lookout location was. [ ] had planned to get a second lookout flown in, but never did. [ ] did not post a lookout for the west flank of the fire. Although air attack and Lead Plane 41 were over the fire, "they weren't serving as lookouts." [ ] acknowledged that no ground lookout was posted for H-2.

#### Adequate Communication

Standard Firefighting Orders #3, #6, #7, and #10 (Exhibit 4) state that one must base all action on current and expected behavior of the fire; be alert, keep calm, think clearly, act decisively; maintain prompt communications with your forces, your boss, and adjoining forces; and fight fire aggressively having provided for safety first.

The RA reviewed the radio logs and the interview statements taken by the AIT. The review revealed that at no time did [ ] or others on the fire inform the rappellers at H-2 that the fire had spread into the Cache Bar drainage below and west of their location. [ ] did not question the rappellers about the reason for the extensive time delays to complete the H-2 clearing; [ ] did not communicate to them that the fire activity was increasing to the point that H-1 was overrun; [ ] did not attempt to extract the rappellers at the appropriate time; and [ ] did not order the rappellers to their safety zones when [ ] knew the fire had active fronts.

[ ] provided a statement (Exhibit 23) to the AIT in which [ ] said [ ] monitored the conversation between [ ] and [ ] during the afternoon reconnaissance flight of the Cramer fire on July 22, 2003.

[ ] was on the west side of the fire and expressed concerns to [ ] that the fire had "slopped" over and was under H-2. [ ] told [ ] that the fire that [ ] had observed down below had already crossed over the bottom of that little drainage. It had gone over there and was really widespread. It was widening out and climbing up the whole slope. It was starting to go and was creating a lot of smoke.

[ ] provided a statement (Exhibit 13) to the INQUIRY in which [ ] said [ ] told [ ] who was on an afternoon helicopter recon of the Cramer fire that the fire was increasing in activity. Further, [ ] told [ ] [ ] and [ ] crews were pulling off the fireline and disengaging.

[ (Exhibit 17) that the [ ] was not on the scene of the fire. Further, communication from the on-scene operations person and the [ ] was not adequate for the [ ] to understand the urgency of what was happening on the fire.

[ (Exhibits 9 and 18) said that at approximately 1326 hours, [ ] and [ ] started a reconnaissance of the fire. [ ] observed that the crew west of H-1 had moved into the "black." The fire had picked up below H-1 and eventually burned over H-1. [ ] flew over H-2 and spoke with ALLEN, who told [ ] they would have the helispot completed in 15 or 20 minutes. [ ] thought to [ ] that [ ] would not insert a crew into H-2 that day. [ ] could not recall whether [ ] communicated to ALLEN about furnishing a crew. At about the time of the reconnaissance flight, the fire started to heat up and really got active below H-1. Realizing [ ] could not land at H-1 to get out to do anything, [ ] went back to the helibase. At that time [ ] called and said that [ ] was gathering the troops up, going to take a head count, and head down to the road. The fire was backing down toward Cache Bar, which is a boat ramp. The only indication of any fire heading toward H-2 was "those guys (rappellers) saying they had smoke in H-2." Although [ ] acknowledged that [ ] underestimated the amount of work and time to clear H-2, delaying the timely removal of ALLEN and HEATH, [ ] did not consider it a delay in formulating and executing a plan to retrieve them.

[ ]

[ ] Northfork/Middlefork Ranger District, SCNF, declined to be interviewed by OIG agents at the direction of [ ] attorney. [ ] was interviewed during the accident investigation by FS personnel. This section lists specific issues relating to [ ] followed by supporting evidence. As information, [ ] and [ ]

(b)(6), (7)(C)

[ ]

Workplace Environment

[ ] SCNF, provided a statement (Exhibit 24) to OIG in which [ ] said that the Cramer fatalities might have resulted indirectly from issues related to the SCNF management problems. [ ] essentially ran the fire program not only on [ ] Districts, but also to a large extent, throughout the Forest through [ ] influence over [ ]. In spring 2003, [ ] and [ ] supposedly in an effort to relieve [ ] of additional stress, instituted a closed-door policy for [ ] office with themselves as doorkeepers. [ ] was particularly difficult for [ ] to deal with and had antagonized many fire personnel with [ ] refusal on a couple of occasions in 2002 to use helicopters to extract some firefighters following successful fire suppression. [ ] once questioned the competency of [ ] Middle Fork RD, to [ ] who replied, "That comment borders on gender harassment." [ ] had commented to [ ] in 2003 that [ ] is a hard person to say no to."

On January 27, 2004, [ ] Middle Fork RD, Challis, ID, stated to the RA and former Special Agent-in-Charge (SAC) DAVID DICKSON that [ ] had

concerns about [redacted] management style. Sometime after the AIFR was released in December 2003 [redacted] called a meeting of District employees and said, "They're out to get me. I've been set up." [redacted] is dividing the staff, either pro or con. [redacted] is a very destructive manager.

On January 27, 2004, [redacted] Middle Fork RD, stated to the RA and SAC DICKSON that [redacted] is not on the "[redacted] team." [redacted] described this situation as [redacted] deciding if you are either with [redacted] or against [redacted] In [redacted] first meeting with [redacted] [redacted] decided [redacted] was not to be part of the team, and [redacted] has not given [redacted] ideas and viewpoints any validity since then.

[redacted] Challis RD, stated (Exhibit 14) that many of the fire problems on the Forest could be attributed to [redacted] [redacted] is a "bulldog" and doesn't listen to others. [redacted] is "bull headed." [redacted] feels that if [redacted] had not delayed Initial Attack on the Crystal fire, a two-person rappel team could have handled it. Early suppression would have saved about \$1.8 million in suppression costs and made resources used on the Crystal fire available for the Cramer fire. When [redacted] was in the helicopter with [redacted] above the Cramer fire [redacted] [redacted] felt [redacted] would avoid questioning the [redacted] decision on the location of H-2 since it was [redacted] you would be questioning. [redacted] could be very intimidating, especially if you worked for [redacted] [redacted] and [redacted] controlled the Forest. [redacted] wanted only [redacted] guy (including [redacted] on the fire." [redacted] avoided using anyone from the Supervisor's Office or another District.

[redacted] SCNF provided a statement (Exhibit 25) to the AIT in which [redacted] said that [redacted] is an extremely arrogant person and believes [redacted] is always right. Nobody can really talk to [redacted] about anything. "So, it's [redacted] way and that's it. Right or wrong, [redacted] calling all the shots in those [redacted] Districts in all fire-related matters. It's not a matter of small, big, large fires [redacted] in control of the whole thing." [redacted] does not understand why a person in that position would not consult all the experience that is around to make decisions. [redacted] doesn't want you there...I was not invited." There were mistakes made on those [redacted] districts [redacted] but it was "swept away" and nothing could be done about it. [redacted] attributes the reason for this to the [redacted] and [redacted] relationship of [redacted] and [redacted] and what it contributed to the Fire Staff and [redacted] relationship.

[redacted] Challis RD, stated (Exhibit 20) that [redacted] and [redacted] staff made slow decisions regarding Initial Attack on both the Crystal and Little Soldier fires. When [redacted] raised concerns with [redacted] [redacted] ignored them. [redacted] does not allow fire experts to have input on fires in [redacted] District. [redacted] wants final and exclusive say on things, including fire operations, about which [redacted] has no expertise [redacted] is demanding and always wants control. [redacted] will not back down.

[redacted] stated (Exhibit 19) that it has been real clear to all (in the fire management organization of the SCNF) that the combination of [redacted] and [redacted] had not been good for the Forest. The Forest did not operate on the basis of policy; it operated on the basis of personality. Employees of the Forest did basically whatever [redacted] wanted. In [redacted] fire shop, they felt like "the Forest supervisor and the Forest FMO is [redacted] [redacted] is just sort of mouthing whatever [redacted] wants." [redacted] could not

understand how the FS allowed a [ ] team that had supervisory or complementary responsibilities to be in place.

[ ] Salmon/Cobalt RD, in an interview with the RA on February 12, 2004, stated that, regarding [ ] "you are either in [ ] fold or you're not. It's a love/hate relationship with [ ]" [ ] can be very intimidating. In late spring 2003, [ ] attended a meeting with [ ] [ ] and others regarding wilderness use. Someone asked [ ] [ ] what [ ] thought of mountain bikes in the wilderness, and [ ] answered that [ ] thought they were okay. [ ] and [ ] stared at [ ] with angry looks. Later, [ ] told [ ] would not allow [ ] in the wilderness anymore because of [ ] attitude toward wilderness. "It's [ ] way or [ ] wrath."

Line Officer Duties

A review by the RA of the position description for FS District Ranger shows, in part:

The District Ranger serves as a key member of the Forest Management Team to formulate plans, policies, and objectives for the Forest. Supervises the District staff. Plans and directs the overall work of the unit performed through subordinate supervisors, team leaders, committee chairs, or comparable similar personnel. District Rangers are responsible for leading an organizational unit and implementing Forest Policies and are expected to be proficient in management competencies of External Relations, Communications, Environmental Awareness, Leadership, Interpersonal Relations, and Management Functions, as well as being knowledgeable in Natural Resource Management. Resolves conflict. Knowledge and ability to lead; think creatively; proactively adapt to changing environments; act decisively; and motivate, develop, inspire, affirm, and empower others. Knowledge of management functions to plan, organize, direct, implement, and evaluate processes to lead people and manage resources to achieve desired results.

[ ] stated (Exhibit 21) that the six District Rangers on the SCNF all have delegated authority to manage fires on their District up to and including Type II fires. The Incident Commander on a fire should be having discussions of strategy and tactics with the District Ranger.

[ ] SCNF, Salmon, ID stated (Exhibit 25) that in the afternoon of July 21, 2003 [ ] was listening to the radio traffic from the Cramer fire. It was very unorganized. They were "chasing. That's all they were doing." [ ] went into dispatch in the evening and spoke with [ ] and [ ] [ ] told them that the [ ] on the Cramer fire was "bad" and needed to come off of the fire, and that [ ] didn't hear any of the terms one is supposed to hear, "flank, anchor." [ ] told [ ] "You've got to get those guys off there." The next morning, [ ] went to Challis about 1100 hours and met with [ ] [ ], who asked [ ] "You don't like the [ ] up there (Cramer fire), you don't like [ ] or what?" [ ] told [ ] that [ ] did not hear any fire terminology, more of a chasing scene, not a formulated plan. [ ] told [ ] "I don't think [ ] competent." When [ ] told [ ] the

[ ] should be removed from the fire, [ ] "just kind of shrugged [ ] shoulders, well, whatever, okay." [ ] believed [ ] clearly understood what [ ] said.

[ ] stated (Exhibit 21) that on Monday night, July 21, 2003, [ ] was in the dispatch office. The [ ] approached [ ] and expressed concerns about the K-Max helicopter not being used on the Cramer fire. [ ] verified from the dispatch log that the helicopter was put into use shortly after [ ] took over as the [ ] at about 2:00 p.m. [ ] also told [ ] that things sounded disorganized on the fire. [ ] later told [ ] about [ ] concerns. [ ] told [ ] that [ ] had talked to [ ] and the concerns that [ ] told [ ] were not the same as those that [ ] had related to [ ] on July 21, 2003. According to [ ] [ ] had been listening to the contract crews, not [ ], talking on the radio.

[ ] [ ] Salmon, ID provided a signed, sworn statement (Exhibit 26) to OIG in which [ ] said that sometime in the mid-afternoon or evening of Monday, July 21, 2003, [ ] was present in the Dispatch office with [ ] and [ ] [ ] was very concerned about [ ] management as [ ] of the Cramer fire. [ ] complained that [ ] had no plan and was disorganized. [ ] was planning as [ ] went along [ ] based part of [ ] concerns on the radio communications [ ] heard between [ ] and the helicopters and others on the fire line. [ ] showed [ ] frustration by slapping [ ] hand on the map in the dispatch office. [ ] appeared to be neutral to [ ] comments and seemed to just take in the information and gave no indication [ ] was going to do anything [ ] felt that [ ] as the SCNF [ ] had a responsibility to act on this information. However, [ ] does not know what action [ ] may or may not have taken.

[ ] (Exhibit 14) stated [ ] was at the CRYSTAL helibase on July 22, 2003, sometime before the fatalities on the Cramer fire. [ ] approached [ ] and told [ ] about a conversation [ ] had with [ ] regarding [ ] handling of the Cramer fire. [ ] felt [ ] was unprofessional and incompetent and should not be the [ ] on any fire. [ ] also mentioned a conversation [ ] had with [ ] earlier in the day (July 22, 2003) at the Middle Fork District office. In that conversation, [ ] said [ ] expressed [ ] concerns to [ ] about [ ] competency and the disorganized activity on the Cramer fire.

[ ] [ ] Salmon, ID, provided a statement (Exhibit 27) to the AIT in which [ ] said on July 21, 2003, while working as [ ] [ ] helped coordinate resource needs for the Cramer fire. [ ] also overheard concerns expressed by [ ] about fire organization on the Cramer fire under [ ] during the afternoon of July 21, 2003. [ ] expressed those issues to [ ] in the dispatch office. Finally, [ ] had a conversation from [ ] who was on the Cramer fire. [ ] told [ ] felt the [ ], was not ordering enough resources for the fire, but [ ] was reluctant to approach [ ] on the subject. [ ] [ ] hinted that a conference call from [ ] to [ ] and other fire personnel

might be helpful. Later that evening, [ ] and [ ] had a conference call with [ ] to discuss resource needs and general tactics for July 22, 2003. [ ] did not believe [ ] directly expressed [ ] concerns about the Cramer fire to [ ].

[ ] stated (Exhibit 8) that [ ] had a conversation with the [ ] on July 22, 2003. Prior to walking into a briefing meeting at Middle Fork RD, [ ] had been advised that both [ ] and [ ] Bureau of Land Management, were expressing concerns about the Cramer fire [ ] specifically asked [ ] what those concerns were. [ ] mentioned not utilizing the helicopter's bucket support to the extent that they could and that the crews seemed like they were confused and not good at what they were doing. [ ] asked [ ] if there were concerns about [ ] and [ ] said no. "And so I walked into...the in-briefing" for the Crystal fire. The only knowledge [ ] had of the strategy and tactics for the Cramer fire on July 21 and 22, 2003, were "what I've read in the radio logs...I was never advised" about tactics and strategy, and had no direct knowledge of any changes in strategy, or if there were any changes.

[ (b)(5) ]

[ ] (Exhibit 14) said [ ] had a conversation with [ ] in the early afternoon of July 22, 2003, before the Cramer fatalities. In that conversation, [ ] told [ ] about a conversation [ ] had earlier in the day with [ ] and that [ ] expressed [ ] concerns to [ ] about [ ] competency.

[ ] said in [ ] July 27, 2003, statement (Exhibit 8) to the AIT that [ ] did not have any discussions about the Cramer fire on Tuesday, July 22, 2003. [ ] "left Salmon, ID, very early to get down to [ ] because we were in-briefing at 10:00." In [ ] August 4, 2003 statement (Exhibit 8), which was a required administrative interview by the AIT, [ ] provided two different accounts of when [ ] spoke to [ ] regarding [ ] concerns. On pages 40 thru 42, [ ] stated "I didn't see [ ] at work on Monday... When I got [ ] Monday night, I don't recall if we even talked about the fire at [ ] I think we had a beer... On Tuesday the first time I started talking to [ ] about the Cramer Fire was after I'd been notified of the fatalities." On page 48, [ ] said [ ] found out about [ ] concerns from [ ] "It would have been either that morning or the night before. I don't recall."

Agent's Note:

[ (b)(5) ]

[(b)(6), (7)(c)]

A review by the RA of the position description for Supervisory General Engineer [(b)(6), (7)(c)] on the SCNF shows, in part:

The Supervisory General Engineer provides leadership and direction in the Forest's health and safety program. During field travel and inspections, observes projects and workers for indication of unsafe working conditions and working habits, physical or other safety hazards, taking or recommending immediate corrective action as necessary. Advice concerning appropriate wildfire suppression strategies is especially important. Is a member of the Forest Supervisor's staff. Makes formal inspections and monitors Ranger Districts to determine adherence to regulations, standards, policies, condition and adequacy of equipment, organization and personnel. Professional knowledge of advanced concepts, principals and practices of Fire and Aviation Management; to serve as the technical authority for the full range of fire management activities and programs on the SCNF. Resolve minor conflicts that arise. Provide staff advice and administration for Engineering, Lands, Minerals, Timber, Fire, and Aviation Management.

Firefighter Safety

[(b)(6), (7)(c)] stated (Exhibit 21) that when [(b)(6), (7)(c)] reported for duty on the SCNF, [(b)(6), (7)(c)] told [(b)(6), (7)(c)] that [(b)(6), (7)(c)] marching orders were to be very active in fire. [(b)(6), (7)(c)] main job was interaction with the District Rangers. [(b)(6), (7)(c)] was a [(b)(6), (7)(c)] and did not have line authority. [(b)(6), (7)(c)] was responsible for keeping the [(b)(6), (7)(c)] informed of fire decisions. If [(b)(6), (7)(c)] were informed of a problem, [(b)(6), (7)(c)] would try to mitigate it or discuss it with a District Ranger. When [(b)(6), (7)(c)] wanted information about a fire, [(b)(6), (7)(c)] went to dispatch or to the [(b)(6), (7)(c)]. On the evening of July 21, 2003 [(b)(6), (7)(c)] approached [(b)(6), (7)(c)] and expressed concerns about failure to use a helicopter promptly on the Cramer fire and that things sounded disorganized on the fire. [(b)(6), (7)(c)] told [(b)(6), (7)(c)] about [(b)(6), (7)(c)] concern. [(b)(6), (7)(c)] did not go to the Cramer fire and did not know what the strategies and tactics were for the fire. "I did not discuss strategy and tactics with the ranger, or with [(b)(6), (7)(c)] or with the helitack crew that was there that first night."

[(b)(6), (7)(c)] stated (Exhibit 24) that [(b)(6), (7)(c)] direct supervisor was [(b)(6), (7)(c)] [(b)(6), (7)(c)] professional relationship with [(b)(6), (7)(c)] had suffered because [(b)(6), (7)(c)] was [(b)(6), (7)(c)] and [(b)(6), (7)(c)] became increasingly at odds over firefighting strategy on [(b)(6), (7)(c)] District. [(b)(6), (7)(c)] would voice [(b)(6), (7)(c)] concerns to [(b)(6), (7)(c)] but since [(b)(6), (7)(c)] was [(b)(6), (7)(c)] [(b)(6), (7)(c)] made it clear by [(b)(6), (7)(c)] actions that [(b)(6), (7)(c)] would almost always follow [(b)(6), (7)(c)] lead.

[(b)(6), (7)(c)] stated (Exhibit 26) that [(b)(6), (7)(c)] was present on July 21, 2003, in the afternoon or evening hours during a conversation between [(b)(6), (7)(c)] and [(b)(6), (7)(c)]. [(b)(6), (7)(c)] expressed concerns about [(b)(6), (7)(c)] management as [(b)(6), (7)(c)] of the Cramer fire. [(b)(6), (7)(c)] showed [(b)(6), (7)(c)] frustrations by slapping the map in the dispatch office. [(b)(6), (7)(c)] appeared to be neutral to [(b)(6), (7)(c)] comments and gave no indication [(b)(6), (7)(c)] was going to do anything. [(b)(6), (7)(c)] had a responsibility to act on this information. Later in the evening, at

approximately 9:00 p.m., [ ] attended a meeting in [ ] office and spoke via conference call to [ ] No discussions took place at this meeting about the concerns [ ] had expressed earlier in the day with [ ]

[ ] (b)(6), (b)(7)(C) [ ] UT, stated (Exhibit 28) that there had been some internal turmoil within the SCNF, and that was based on some of the strong personalities. [ ] was also aware of issues resulting from the fact that the fire staff [ ] was [ ] to the [ ] on the North Fork Ranger District [ ] [ ] knew that their [ ] and [ ] personal relationship and how they communicated their thought process to the field was an issue among some of the members within the fire organization.

[ ] [ ], SCNF, stated (Exhibit 19) that [ ] [ ] felt the Forest had done a real poor job on fires in the wilderness. [ ] [ ] felt this was a viewpoint of [ ] expressed through [ ] It was being "filtered" through [ ] [ ] would hear it from [ ] and then [ ] would hear almost the identical things from [ ] It seemed to [ ] as if it were almost "parroted." It has been real clear to all in fire that this combination of [ ] and [ ] had not been good for the Forest. The Forest did not operate on the basis of policy; it operated on the basis of personality. Employees of the Forest did basically whatever [ ] wanted. In [ ] fire shop, they felt like "the [ ] and the [ ] is [ ] [ ] is just sort of mouthing whatever [ ] wants." [ ] could not understand how the FS allowed a [ ] team that had supervisory or complementary responsibilities to be in place.

Red Card Decision

According to the "Interagency Standards for Fire and Fire Aviation Operations 2003" handbook, it is agency policy that only qualified personnel will be assigned duties in wildland fire suppression or prescribed fire. All employees assigned dedicated fire program management responsibilities at the local, geographical area, or national level shall meet established interagency and agency competencies (knowledge, skills, and abilities) and associated qualifications. The agency administrator (or delegate) is responsible for annual certification of personnel serving in wildland and prescribed fire positions. Agency certification is issued annually in the form of an Incident Qualification Card (Red Card), which certifies that the individual is qualified to perform a specified position.

[ ] [ ] provided a statement (Exhibit 29) to the AIT in which [ ] said that [ ] is the [ ] When someone completes a task book, [ ] makes sure they have all the qualifications necessary, the prerequisite "quals" and training to have that position. [ ] does not put anything on the red card without a certification from the training officer or the FMO that that person has completed everything. The Forest has a red card committee that meets every spring. The committee discusses every single person on the Forest and his or her qualifications. The decision to grant a red card requires that three committee members agree, either in person or on a conference call. They write up the issue on a form.

[ ] stated (Exhibit 8) that in the past 2 years there has been an extensive amount of review on red card qualifications on the Forest, both in terms of course work and task books. The SCNF had a red card committee that was represented by one person from the district, a line officer representative, and a representative from the dispatch center. They went through everybody's red cards, made all the corrections, found the documentation, completed the course work, and put people back into a trainee status. Some red cards were signed by the district ranger, which included seasonals, qualifications at the firefighter level. [ (b)(6), (7)(C) ] signed the remainder.

A review by the RA of [ ] Evaluation Record for the period February 27, 1999, to October 31, 2001 (Exhibit 30), obtained from the FS, showed an incomplete record.

[ ] was not evaluated on all tasks on the specific assignment, or [ ] was not able to complete certain tasks and additional guidance was required.

A Salmon/Challis Fire Qualifications Worksheet, Record of Review, dated April 29, 2002 (Exhibit 31), obtained from the FS, documented that [ ] had "really weak experience. Suppression experience since 1997 includes 1 shift as Enop, 1 shift as FFT1, 1 shift as ICT5, and 1 fire assignment (21 shifts) as a CRWB(T). Red Flags are being thrown up on this one! Lots of classroom training, but no real life experience to speak of. I would question who [ ] equals. Has no task books in files." One of the reviewers was [ ]

A review of Verification/Certification of Completed Task Book (Exhibit 32) dated July 12, 2002, reveals that the position is left blank. [ ] certified that [ ] had performed all tasks and signatures were complete. [ ] also verified that [ ] had performed as a trainee and should be considered for certification in this position (not specified which position).

[ ] signed as the certifying official, noting at the bottom [ ] "Aware of [ ] qualifications/training when [ ] was a Region 1 employee."

An e-mail dated November 12, 2002 (Exhibit 33), obtained from the FS, notes that [ ] observed from red card files that [ ] was signed-off the previous season as a qualified crew boss. [ ] had not attended the required courses [ ] questioned who approved that red card, and stated "As of right now, [ ] not qualified." S-260 has been in the qualifications arena for a long time and S-234 is fairly new, and [ ] had not completed either. "After 30-mile (fire), it's in our best interest to make sure that folks are truly qualified before the blessing is given." [ ] responded by stating that [ ] had signed it. [ ] made a "presumption" that since [ ] had a task book initiated in 1999 by Region 1, that they had checked [ ] course work. [ ] would try to obtain the training records from [ ]

[ ] stated (Exhibit 25) that [ ] had called [ ] and tried to get [ ] name requested on the Blackwall fire as a strike team leader trainee. That was when [ ] signed [ ] task book as crew boss. Everyone on the Forest disagreed with [ ]

[ ] stated (Exhibit 26) that in the summer of 2002, [ ] submitted a Crew Boss Position task book to the Forest for certification. A review of it indicated that none of the evaluators had signed off that [ ] had successfully completed all tasks. [ ] training records also did not include all required courses for the position of Crew Boss. [ ] was not satisfied and continued to press the issue. At a meeting in [ ] office on July 12, 2002, [ ] [ ] and [ ] discussed [ ] qualifications. They discussed [ ] records and expressed concerns with [ ] experience and lack of fully completed task book. [ ] had previous experience with [ ] and signed [ ] task book as certifying official based upon "awareness of [ ] qualifications/training when [ ] was a Region 1 employee."

[ ] stated (Exhibit 24) that [ ] disagreed with [ ] decision to sign off [ ] qualifications as crew boss. [ ] lacked support from some of the fire people on the south end of the Forest, in particular, [ ] Lost River RD. Because of [ ] concern, [ ] did not support the decision to sign [ ] off. What [ ] agreed to, in addition to the formalized training, was another assignment for [ ] as a crew boss, which [ ] accomplished during the shuttle recovery.

[ ] stated (Exhibit 21) that the Forest has a red card committee that starts at the district level. There was a red card representative from each ranger district, and, in conjunction with the line officer, go through their own red cards. Whoever got new training, whoever completed a task book, or whoever was doing on-the-job training had their records brought to [ ] who reviewed all of the records. They then had a red card committee meeting.

Agent's Note:

[ (b)(5) ]

[ (b)(6), (7)(C) ]

A review by the RA of the position description for Forest Supervisor shows, in part:

The Forest Supervisor is responsible for the management, protection, and development of the Forest resources on the assigned National Forest. Hears and resolves minor complaints from employees. Forest Supervisors are responsible for leading an organizational unit and have considerable influence on FS policy and culture, are expected to be proficient in the management competencies of External Relations, Communications, Environmental Awareness, Leadership, Interpersonal Relations, and Management Functions, as well as being knowledgeable in Natural Resource Management. Builds coalitions to achieve objectives and resolve conflict. Resolves conflict. Knowledge and ability to lead, think creatively; proactively adapt to changing environments; act decisively, and motivate, develop, inspire, and empower others.

JACK TROYER, Regional Forester, Region 3, Ogden, UT, in a sworn statement (Exhibit 34) stated that [ ] was having difficulty bringing the SCNF team together. Starting about 12 months before the Cramer fire, [ ] performance began to "decrease." He (TROYER) had concerns about [ ] effectiveness as a leader following [ ]

return to work in spring 2003 after [redacted] tension on the leadership team, and [redacted] that there was tension in the fire organization. [redacted] also had concerns about the [redacted] relationship and how it impacted the Forest Leadership Team. [redacted] should have taken a leadership role and corrected the problem with [redacted] and [redacted] but [redacted] did not.

(b)(6), (7)(C) [redacted] RO, stated (Exhibit 28) that there had been some internal turmoil with the SCNF based on some of the different personalities, some of the strong personalities. There was also an issue because of the [redacted] between the fire staff [redacted] and the [redacted] of the North Fork Ranger District [redacted] It was an issue among some of the members of the fire organization.

[redacted] stated (Exhibit 20) that [redacted] did not follow through on issues raised regarding problems in the Forest's fire management structure. The fire staff on the SCNF in the Supervisor's Office (SO) was top heavy, while key positions on the Districts were not filled, such as the FMO on the North Fork RD. [redacted] fought an internal battle with [redacted] over fire resources. The issue was a question of staff overhead versus resources for fire. [redacted] was indecisive and did not press the [redacted] for more resources, despite the fact that other forests in the Region were in much better shape from a resource standpoint. Both [redacted] and [redacted] discussed resource concerns with [redacted] but without [redacted] help in pressing the RO, nothing was resolved. [redacted] told [redacted] on several occasions that [redacted] was running the Forest. A general feeling on the Forest was that the SO had become the [redacted] and [redacted] Show" since the [redacted] had influence over the [redacted]

[redacted] stated (Exhibit 24) that [redacted] believed the Cramer fatalities might have resulted indirectly from issues related to the SCNF management problems. [redacted] essentially ran the fire program not only on [redacted] Districts, but also to a large extent, throughout the Forest through [redacted] influence over [redacted]. In spring 2003, [redacted] [redacted] and [redacted] supposedly in an effort to relieve [redacted] of additional stress, instituted a closed-door policy for [redacted] office with themselves as doorkeepers.

[redacted] stated (Exhibit 19) that it was very clear that the combination of [redacted] and [redacted] has not been good for the Forest. The Forest did not operate on the basis of policy, but on the basis of personality. [redacted] could not understand how the FS ever allowed a [redacted] team that had supervisory or complementary responsibilities to be in place.

JACK TROYER, Regional Forester, R-4, Ogden, UT

Management Issues on the SCNF

(b)(6), (7)(C) [redacted] RO, stated (Exhibit 28) that there had been some internal turmoil with the SCNF based on some of the different personalities, some of the strong personalities. There was also an issue because of the [redacted] between the fire staff [redacted] and the [redacted] of the North Fork Ranger District [redacted] It was an

issue among some of the members of the fire organization. [redacted] communicated regularly with [redacted] (b)(6), (7)(c) [redacted] and with TROYER.

JACK TROYER stated (Exhibit 34) that [redacted] was having difficulty bringing the SCNF team together. Starting about 12 months before the Cramer fire, [redacted] performance began to "decrease." TROYER had concerns about [redacted] leadership effectiveness following [redacted] return to work in spring 2003 after [redacted] He began to hear about tension on the leadership team, and [redacted] (b)(6), (7)(c) [redacted], kept him informed that there was tension in the fire organization. He also had concerns about the

[redacted] [redacted] relationship and how it impacted the Forest Leadership Team. [redacted] should have taken a leadership role and corrected the problem with [redacted] and [redacted] but [redacted] did not.

(b)(6), (7)(c)

Standard Firefighting Orders #3, #6, and #7 (Exhibit 4) state that one must base all action on current and expected behavior of the fire; be alert, keep calm, think clearly, act decisively; and maintain prompt communications with your forces, your boss, and adjoining forces.

[redacted] stated (Exhibit 9) that on the reconnaissance flight on the morning of July 22, 2003, [redacted], [redacted], and [redacted] looked at the north and west side of the fire and discussed rappelling two firefighters in the top, right above the retardant line, to cut in a helispot. [redacted] planned to use the helispot to insert a fire crew into that location. During the recon, [redacted] was asking everyone's opinion. [redacted] felt comfortable with the plan.

[redacted] (Exhibit 19) [redacted] (Exhibit 14), and [redacted] (Exhibit 20); all experienced firefighters, said, in substance, that it was unsafe and not an accepted practice or strategy to insert rappellers above a fire. [redacted] added that fire burns rapidly uphill. "You don't put people above the fires; you just don't do it, especially in the Salmon River breaks. It's just not done. Normally, a mid-slope fire in this fuel type will burn to the top of the ridge before anyone has an opportunity to do anything with it."

[redacted] stated (Exhibits 17 and 22) that at approximately 0920 hours on July 22 2003, [redacted] SHANE HEATH and JEFF ALLEN departed to the fire. [redacted] instructed the rappellers to clean up the helispot. It was already a one-way helispot minus one snag. [redacted] and the pilot of the helicopter felt there were half a dozen trees they needed to clear out, and it would make an adequate helispot. There was not much vegetation on the ground at H2. It was a pretty nice hole there to begin with. Throughout the day, [redacted] checked with the rappellers on at least three occasions about the status of the work, but [redacted] never asked why it was taking so long. The rappellers did not call [redacted] and say there was more work than they thought. They only said they needed a little bit more time, and it was always 30 or 45 minutes. At about 1400 hours (over 4½ hours after insertion), the [redacted] spoke to [redacted] about the possibility of not using H-2 that day. The [redacted] was "wishy-washy on whether [redacted] wanted to use it or not." [redacted] requested from the Moyer crew that Helicopter 166 on their next flight to check out H-2 and see if it was "landable." If the helispot was completed, they were to pull the helitack rappellers from H2. [redacted] did not know if they (H-166) went up there or not. At about 1445 hours, following lunch, [redacted]

(b)(6), (b)(7)(C), (b)(7)(D), (b)(7)(E)

[ (b)(2) ]

asked if ALLEN and HEATH were back and learned they were still on H-2. At 1505, H-2 called for a pickup because it was getting smoky. [ ] felt the two rappellers were doing fire operations and belonged to the fire. [ ] was at the helibase doing the helicopter operations.

[ (b)(6), (b)(7)(C) ]

Standard Firefighting Orders #7 and #8 (Exhibit 4) state that you must maintain prompt communications with your forces, your boss, and adjoining forces; and give clear instructions and be sure they are understood.

A review by the RA of the Cramer Forest Net log (Exhibit 35) prepared by the AIT from Forest Dispatch recording tapes showed that Helibase [ ] received a call from H-2 at 1505 hours requesting to be picked up. Helibase responded, "Alright, We'll send 193 on its way." H-2 answered, "Yeah, send them in a hurry." At 1509 hours H-2 asked, "Uh, [ ] what's the status of 193?" Helibase responded that it was still on the ground and would be spooling up shortly. H-2 said, "We need them right now." Helibase responded, "We copy, we're sending 166 to get you right now." At 1513, following another call from H-2, Helibase informed them that the helicopter needed some fuel, but "it's going to start spooling here right now. Any problems right at the moment?" H-2 responded, "Oh God, We just got fire down below us. So the smoke's coming right at us, so, uh, just make them hurry up." Helibase said, "We're spooling right now."

A review by the RA of the handwritten Helibase log (Exhibit 36) for July 22, 2003, showed that H-2 requested a pickup at 1505 hours. At 1510, helicopter 166 was airborne en route to H-2. At 1520, 166 was unable to land due to smoke and was leaving the area of H-2.

[ ] Helicopter Crew Member, Indianola Helitack Crew, provided a statement (Exhibit 37) to the AIT in which [ ] said that on July 22, 2003, [ ] was handling radio communications from the Helibase and on numerous occasions spoke with JEFF ALLEN at H-2. Sometimes [ ] needed [ ] messages to go through air attack, which was Lead Plane 41, to make radio contact with H-2. [ ] was in communication with Lead plane 41 the whole time. In the afternoon of July 22, 2003, JEFF ALLEN called [ ] on the radio at 1505 hours and said he needed to be picked up at H-2. Helicopter 193 was getting a 30-hour inspection and Helicopter 166 had just landed. ALLEN called again at 1509 and 1513 hours and again requested immediate pickup. [ ] told them to standby [ ] was getting the helicopter up.

[ (b)(6), (b)(7)(C) ]

A review by the RA of the 2003 SCNF Fire Management Plan describes the responsibilities of the District/Zone Duty Officer, in part, as follows:

- Conduct risk assessment and complexity analysis on all District fires to determine incident management requirements.
- Ensure all incidents are managed in a safe and cost-effective manner. Monitor fire suppression operations for safety and management issues.
- Determine when a fire has escaped initial and extended attack suppression efforts.

- Conduct quality transitions in incident management.
- Monitor the daily conditions in relationship to fire severity and daily fire levels.
- Prepare Wildland Fire Situation Analysis on all types 1, 2, and 3 wildland fire incidents.
- Conduct inspections of District fires.
- Represent the District in setting priorities and allocating resources for fire emergencies.
- Monitor fire management operations to ensure the 10 Standard Orders and 18 Situations that shout watch out are followed.

[ ] SCNF, stated (Exhibit 9) that either late Sunday evening, July 20, 2003, or early Monday morning, July 21, 2003, [ ] notified [ ] that [ ] wanted [ ] or [ ] to be the [ ] in the Cramer fire. [ ] recommended to [ ] that [ ] be the [ ] and that [ ] be the [ ] for the north zone. [ ] was not aware if [ ] was notified, but [ ] subsequent actions on Monday and Tuesday indicated [ ] knowledge that [ ] had assumed that responsibility.

[ ] provided a statement (Exhibit 38) to the AIT and a signed-sworn statement (Exhibit 39) to OIG in which [ ] said, in substance, that [ ] was the fire [ ] for the North Zone of the SCNF when the Cramer fire was discovered on Sunday, July 20, 2003. [ ] arrived on the Cramer fire at approximately 2045 hours and verified that [ ] and [ ] were on the scene. The fire was transitioning to an extended attack and had to go to the next level. [ ] told [ ] that the fire needed to be handed over to [ ] and that [ ] was released from the fire. [ ] took over as the [ ] on July 21, 2003. During July 21 and 22, 2003 [ ] assisted [ ] with operational support, but did not get a chance to get back on site until after the fatalities. [ ] was not aware at any time after leaving the fire on July 20, 2003, what [ ] strategies and tactics were for fire suppression. [ ] flew the fire and came up with [ ] own strategies. After the fact, [ ] felt the fundamental error in the Cramer fire tactics was to put the rappellers at H-2 above the fire.

[ (b)(6), (b)(7)(C) ]

Standard Firefighting Order #10 (Exhibit 4) states that you fight fire aggressively having provided for safety first.

[ ] stated (Exhibit 25) that, as the [ ] was aware that the Cramer fire had a K-Max helicopter on site at 0800 hours on July 21, 2003. [ ] became quite concerned when [ ] learned that the [ ] did not use the resource. It was a great opportunity to suppress the fire early. The helicopter did not go into service until after noon.

[ ] stated (Exhibit 27) that, as a [ ] made arrangements to get a type one helicopter for the Cramer fire to use on initial attack. The Forest already had several other fires burning, and they needed to stop this one before it got away from them. On July 21, 2003, the helicopter was set up for 0800 hours. However, it was not used on the Cramer fire until noon. Even if there were no people on the fire line, [ ] did not know why it was not launched. —

[ ] stated (Exhibit 26) that if a competent crew had arrived promptly on the Cramer fire on the evening of Sunday, July 20, 2003, they would have had an impact on the fire. The

FERGUSON contract crew had gotten lost en route to the fire. Additionally, if the heavy helicopter that was available to the Cramer fire had been utilized fully on the morning of July 21, 2003, the helicopter might not have been required in the afternoon. It did not make sense to "save" the pilot flight hours for later in the day. A faster, more effective initial attack either Sunday night or early Monday, both of which were logistically possible for the Cramer fire, would have "caught" the fire or been a very good start toward containment.

[ ] stated (Exhibits 11 and 12) that [ ] was the [ ] on the Cramer fire on July 20 and 21, 2003. [ ] knew that [ ] was coming up to relieve [ ] as [ ] That order was put in on July 20, 2003, when [ ] flew a recon the first time, because [ ] knew the fire was going to be bigger. At about 0800 hours, July 21, 2003, dispatch notified [ ] that a large helicopter would probably be available shortly [ ] was told that [ ] would be arriving on the fire around 0900 or 1000 to transition with [ ] as the [ ] [ ] made the decision to keep the helicopter on the ground until [ ] took a recon over the fire and saw what [ ] had. [ ] did not want to get the helicopter up too early and burn all of its hours of flying time. [ ] wanted to give [ ] as much to work with as [ ] could. The helicopter launched about noon [ ] decision was thought out and based on the best information [ ] had at the time.

CONTRACT FIREFIGHTER CREWS

Performance of Contract Crews

[ ] stated the following (Exhibit 27): "Initially... (on July 20, 2003) we had to get a ... crew out there, and the type two (FERGUSON contract) crew was getting lost. I mean I had to repeat locations of where [ ] was twice to where the crew was supposed to report.... The crew was off frequency, didn't know how to program it on the radio, the type two FERGUSON crew. It was kind of frustrating because, you know, I gave [ ] the specific frequencies, the command frequency and air to ground, before [ ] went.... It didn't seem at all apparent that [ ] knew how to program the radio, which to me as a crew boss that should be a fundamental thing?"

[ ] in an interview on October 29, 2003, with OIG Special Agent [ ] said that [ ] was the [ ] on the Cramer wildland fire. In that capacity [ ] directed the activity of three crews on the Cramer fire – an Oregon regular FS crew and two FERGUSON contract crews (18A and 18B). On July 22, 2003, [ ] observed several problems at H-1 (the helicopter base from which the fire was being fought) that caused [ ] to ultimately decide to pull the FS crew and the two FERGUSON crews at H-1 off the fire. [ ] did not pull the crews off the fire because of fire behavior. From [ ] observations, it was apparent that the FERGUSON crews were not following [ ] instructions. At one point [ ] had a discussion with an individual that [ ] believed might have been a squad boss for the second FERGUSON crew. [ ] told this person where to build line and where to go to tie up in the drainage where the other two crews were working. [ ] then met with the crew boss for the Oregon crew and [ ] saw that the FERGUSON crew was building line in the wrong direction. It was about this time that [ ] decided to abandon the mission.

[ ] in an interview on October 29, 2003, with OIG Special Agent [ ] said [ ] was at the Cramer fire on July 20 through 22, 2003. [ ] realized that the FERGUSON contract crews were not prepared for the firefighting work. [ ] believed that the FERGUSON crews should have been able to "catch" the Cramer fire, but they did not know what to do.

[ ] in an interview with OIG Special Agent [ ] on October 28, 2003, stated that [ ] was concerned about the Ferguson crew on the Cramer fire because of an apparent language barrier. One of the three Ferguson crews had only about three people on the crew that could speak English. The remainder of the crewmembers, totaling about 17 individuals, spoke only Spanish. The crew boss for this crew spoke only Spanish and required an interpreter.

[ ] stated (Exhibit 9) that there was a language barrier with one of the Ferguson crews. Most of the crew spoke Spanish; so when they were chatting (on the fire line), [ ] did not know if they were nervous or what they were saying.

\* \* \* \* \*



LIST OF EXHIBITS

<u>Exhibit Number</u>	<u>Description</u>	<u>Page Introduced</u>
18	Statement of [ (b)(6), (7)(c) ] to the INQUIRY	9
19	Statement of [ (b)(6), (7)(c) ] to the AIT	9
20	Sworn Statement of [ (b)(6), (7)(c) ]	9
21	Statement of [ (b)(6), (7)(c) ] to the AIT	9
22	Statement of [ (b)(6), (7)(c) ] to the AIT	9
23	Statement of [ (b)(6), (7)(c) ] Salmon, ID to the AIT	10
24	Sworn Statement of [ (b)(6), (7)(c) ]	11
25	Statement of [ (b)(6), (7)(c) ] to the AIT	12
26	Sworn Statement of [ (b)(6), (7)(c) ]	14
27	Statement of [ (b)(6), (7)(c) ] Salmon, ID, to the AIT	14
28	Statement of [ (b)(6), (7)(c) ] Ogden, JT, to the AIT	17
29	Statement of [ (b)(6), (7)(c) ] Salmon, ID, to the AIT	17
30	Evaluation Record, [ (b)(6), (7)(c) ]	18
31	Salmon-Challis Fire Qualification Worksheet, Record of Review for [ (b)(6), (7)(c) ]	18
32	Final Evaluator's Verification for [ (b)(6), (7)(c) ]	18

(b)(6), (7)(c), (b)(7)(C), (b)(7)(D), (b)(7)(E), (b)(7)(F), (b)(7)(G), (b)(7)(H), (b)(7)(I), (b)(7)(J), (b)(7)(K), (b)(7)(L), (b)(7)(M), (b)(7)(N), (b)(7)(O), (b)(7)(P), (b)(7)(Q), (b)(7)(R), (b)(7)(S), (b)(7)(T), (b)(7)(U), (b)(7)(V), (b)(7)(W), (b)(7)(X), (b)(7)(Y), (b)(7)(Z)

LIST OF EXHIBITS

(b)(6), (7)(c), (7)(d), (7)(e), (7)(f), (7)(g), (7)(h), (7)(i), (7)(j), (7)(k), (7)(l), (7)(m), (7)(n), (7)(o), (7)(p), (7)(q), (7)(r), (7)(s), (7)(t), (7)(u), (7)(v), (7)(w), (7)(x), (7)(y), (7)(z)

<u>Exhibit Number</u>	<u>Description</u>	<u>Page Introduced</u>
33	E-mails between [ (b)(6), (7)(c) ] and [ (b)(6), (7)(c) ] regarding the Training Qualifications of [ (b)(6), (7)(c) ]	18
34	Sworn Statement, JACK TROYER, Regional Forester, Intermountain Region 4, Forest Service, dated February 4, 2004	19
35	Radio Log, Cramer Fire Radio Recordings, for July 22, 2003	22
36	Unit Log, Coye Creek Helibase, July 22, 2003	22
37	Statement of [ (b)(6), (7)(c) ] to the AIT	22
38	Statement of [ (b)(6), (7)(c) ] to the AIT	23
39	Sworn Statement, [ (b)(6), (7)(c) ]	23

## Glossary of Wildland Fire Terms

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

---

### A

**Aerial Fuels:** All live and dead vegetation in the forest canopy or above surface fuels, including tree branches, twigs and cones, snags, moss, and high brush.

**Aerial Ignition:** Ignition of fuels by dropping incendiary devices or materials from aircraft.

**Air Tanker:** A fixed-wing aircraft equipped to drop fire retardants or suppressants.

**Agency:** Any federal, state, or county government organization participating with jurisdictional responsibilities.

**Anchor Point:** An advantageous location, usually a barrier to fire spread, from which to start building a fire line. An anchor point is used to reduce the chance of firefighters being flanked by fire.

**Aramid:** The generic name for a high-strength, flame-resistant synthetic fabric used in the shirts and jeans of firefighters. Nomex, a brand name for aramid fabric, is the term commonly used by firefighters.

**Aspect:** Direction toward which a slope faces.

---

### B

**Backfire:** A fire set along the inner edge of a fireline to consume the fuel in the path of a wildfire and/or change the direction of force of the fire's convection column.

**Backpack Pump:** A portable sprayer with hand-pump, fed from a liquid-filled container fitted with straps, used mainly in fire and pest control. (See also Bladder Bag.)

**Bambi Bucket:** A collapsible bucket slung below a helicopter. Used to dip water from a variety of sources for fire suppression.

**Behave:** A system of interactive computer programs for modeling fuel and fire behavior that consists of two systems: BURN and FUEL.

**Bladder Bag:** A collapsible backpack portable sprayer made of neoprene or high-strength nylon fabric fitted with a pump. (See also Backpack Pump.)

**Blow-up:** A sudden increase in fire intensity or rate of spread strong enough to prevent direct control or to upset control plans. Blow-ups are often accompanied by violent convection and may have other characteristics of a fire storm. (See Flare-up.)

**Brush:** A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low growing trees, usually of a type undesirable for livestock or timber management.

**Brush Fire:** A fire burning in vegetation that is predominantly shrubs, brush and scrub growth.

**Bucket Drops:** The dropping of fire retardants or suppressants from specially designed buckets slung below a helicopter.

**Buffer Zones:** An area of reduced vegetation that separates wildlands from vulnerable residential or business developments. This barrier is similar to a greenbelt in that it is usually used for another purpose such as agriculture, recreation areas, parks, or golf courses.

**Bump-up Method:** A progressive method of building a fire line on a wildfire without changing relative positions in the line. Work is begun with a suitable space between workers. Whenever one worker overtakes another, all workers ahead move one space forward and resume work on the uncompleted part of the line. The last worker does not move ahead until completing his or her space.

**Burn Out:** Setting fire inside a control line to widen it or consume fuel between the edge of the fire and the control line.

**Burning Ban:** A declared ban on open air burning within a specified area, usually due to sustained high fire danger.

**Burning Conditions:** The state of the combined factors of the environment that affect fire behavior in a specified fuel type.

**Burning Index:** An estimate of the potential difficulty of fire containment as it relates to the flame length at the most rapidly spreading portion of a fire's perimeter.

**Burning Period:** That part of each 24-hour period when fires spread most rapidly, typically from 10:00 a.m. to sundown.

---

C

**Campfire:** As used to classify the cause of a wildland fire, a fire that was started for cooking or warming that spreads sufficiently from its source to require action by a fire control agency.

**Candle or Candling:** A single tree or a very small clump of trees which is burning

from the bottom up.

**Chain:** A unit of linear measurement equal to 66 feet.

**Closure:** Legal restriction, but not necessarily elimination of specified activities such as smoking, camping, or entry that might cause fires in a given area.

**Cold Front:** The leading edge of a relatively cold air mass that displaces warmer air. The heavier cold air may cause some of the warm air to be lifted. If the lifted air contains enough moisture, the result may be cloudiness, precipitation, and thunderstorms. If both air masses are dry, no clouds may form. Following the passage of a cold front in the Northern Hemisphere, westerly or northwesterly winds of 15 to 30 or more miles per hour often continue for 12 to 24 hours.

**Cold Trailing:** A method of controlling a partly dead fire edge by carefully inspecting and feeling with the hand for heat to detect any fire, digging out every live spot, and trenching any live edge.

**Command Staff:** The command staff consists of the information officer, safety officer and liaison officer. They report directly to the incident commander and may have assistants.

**Complex:** Two or more individual incidents located in the same general area which are assigned to a single incident commander or unified command.

**Contain a fire:** A fuel break around the fire has been completed. This break may include natural barriers or manually and/or mechanically constructed line.

**Control a fire:** The complete extinguishment of a fire, including spot fires. Fireline has been strengthened so that flare-ups from within the perimeter of the fire will not break through this line.

**Control Line:** All built or natural fire barriers and treated fire edge used to control a fire.

**Cooperating Agency:** An agency supplying assistance other than direct suppression, rescue, support, or service functions to the incident control effort; e.g., Red Cross, law enforcement agency, telephone company, etc.

**Coyote Tactics:** A progressive line construction duty involving self-sufficient crews that build fire line until the end of the operational period, remain at or near the point while off duty, and begin building fire line again the next operational period where they left off.

**Creeping Fire:** Fire burning with a low flame and spreading slowly.

**Crew Boss:** A person in supervisory charge of usually 16 to 21 firefighters and responsible for their performance, safety, and welfare.

**Crown Fire (Crowning):** The movement of fire through the crowns of trees or shrubs more or less independently of the surface fire.

**Curing:** Drying and browning of herbaceous vegetation or slash.

---

## D

**Dead Fuels:** Fuels with no living tissue in which moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature, and solar radiation.

**Debris Burning:** A fire spreading from any fire originally set for the purpose of clearing land or for rubbish, garbage, range, stubble, or meadow burning.

**Defensible Space:** An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, "defensible space" is defined as an area a minimum of 30 feet around a structure that is cleared of flammable brush or vegetation.

**Deployment:** See Fire Shelter Deployment.

**Detection:** The act or system of discovering and locating fires.

**Direct Attack:** Any treatment of burning fuel, such as by wetting, smothering, or chemically quenching the fire or by physically separating burning from unburned fuel.

**Dispatch:** The implementation of a command decision to move a resource or resources from one place to another.

**Dispatcher:** A person employed who receives reports of discovery and status of fires, confirms their locations, takes action promptly to provide people and equipment likely to be needed for control in first attack, and sends them to the proper place.

**Dispatch Center:** A facility from which resources are directly assigned to an incident.

**Division:** Divisions are used to divide an incident into geographical areas of operation. Divisions are established when the number of resources exceeds the span-of-control of the operations chief. A division is located with the Incident Command System organization between the branch and the task force/strike team.

**Dozer:** Any tracked vehicle with a front-mounted blade used for exposing mineral soil.

**Dozer Line:** Fire line constructed by the front blade of a dozer.

**Drip Torch:** Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

**Drop Zone:** Target area for air tankers, helitankers, and cargo dropping.

**Drought Index:** A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

**Dry Lightning Storm:** Thunderstorm in which negligible precipitation reaches the ground. Also called a dry storm.

**Duff:** The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil.

---

## E

**Energy Release Component (ERC):** The computed total heat released per unit area (British thermal units per square foot) within the fire front at the head of a moving fire.

**Engine:** Any ground vehicle providing specified levels of pumping, water and hose capacity.

**Engine Crew:** Firefighters assigned to an engine. The Fireline Handbook defines the minimum crew makeup by engine type.

**Entrapment:** A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include "near misses."

**Environmental Assessment (EA):** EAs were authorized by the National Environmental Policy Act (NEPA) of 1969. They are concise, analytical documents prepared with public participation that determine if an Environmental Impact Statement (EIS) is needed for a particular project or action. If an EA determines an EIS is not needed, the EA becomes the document allowing agency compliance with NEPA requirements.

**Environmental Impact Statement (EIS):** EISs were authorized by the National Environmental Policy Act (NEPA) of 1969. Prepared with public participation, they assist decision makers by providing information, analysis and an array of action alternatives, allowing managers to see the probable effects of decisions on the

environment. Generally, EISs are written for large-scale actions or geographical areas.

**Equilibrium Moisture Content:** Moisture content that a fuel particle will attain if exposed for an infinite period in an environment of specified constant temperature and humidity. When a fuel particle reaches equilibrium moisture content, net exchange of moisture between it and the environment is zero.

**Escape Route:** A preplanned and understood route firefighters take to move to a safety zone or other low-risk area, such as an already burned area, previously constructed safety area, a meadow that won't burn, natural rocky area that is large enough to take refuge without being burned. When escape routes deviate from a defined physical path, they should be clearly marked (flagged).

**Escaped Fire:** A fire which has exceeded or is expected to exceed initial attack capabilities or prescription.

**Extended Attack Incident:** A wildland fire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander.

**Extreme Fire Behavior:** "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.

---

## F

**Faller:** A person who fells trees. Also called a sawyer or cutter.

**Field Observer:** Person responsible to the Situation Unit Leader for collecting and reporting information about an incident obtained from personal observations and interviews.

**Fine (Light) Fuels:** Fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

**Fingers of a Fire:** The long narrow extensions of a fire projecting from the main body.

**Fire Behavior:** The manner in which a fire reacts to the influences of fuel, weather and topography.

**Fire Behavior Forecast:** Prediction of probable fire behavior, usually prepared by a Fire Behavior Officer, in support of fire suppression or prescribed burning operations.

**Fire Behavior Specialist:** A person responsible to the Planning Section Chief for establishing a weather data collection system and for developing fire behavior predictions based on fire history, fuel, weather and topography.

**Fire Break:** A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

**Fire Cache:** A supply of fire tools and equipment assembled in planned quantities or standard units at a strategic point for exclusive use in fire suppression.

**Fire Crew:** An organized group of firefighters under the leadership of a crew leader or other designated official.

**Fire Front:** The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

**Fire Intensity:** A general term relating to the heat energy released by a fire.

**Fire Line:** A linear fire barrier that is scraped or dug to mineral soil.

**Fire Load:** The number and size of fires historically experienced on a specified unit over a specified period (usually one day) at a specified index of fire danger.

**Fire Management Plan (FMP):** A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

**Fire Perimeter:** The entire outer edge or boundary of a fire.

**Fire Season:** 1) Period(s) of the year during which wildland fires are likely to occur, spread, and affect resource values sufficient to warrant organized fire management activities. 2) A legally enacted time during which burning activities are regulated by state or local authority.

**Fire Shelter:** An aluminized tent offering protection by means of reflecting radiant heat and providing a volume of breathable air in a fire entrapment situation. Fire shelters should only be used in life-threatening situations, as a last resort.

**Fire Shelter Deployment:** The removing of a fire shelter from its case and using it as protection against fire.

**Fire Storm:** Violent convection caused by a large continuous area of intense fire. Often characterized by destructively violent surface indrafts, near and beyond the perimeter, and sometimes by tornado-like whirls.

**Fire Triangle:** Instructional aid in which the sides of a triangle are used to represent the three factors (oxygen, heat, fuel) necessary for combustion and flame production; removal of any of the three factors causes flame production to cease.

**Fire Use Module (Prescribed Fire Module):** A team of skilled and mobile personnel dedicated primarily to prescribed fire management. These are national and interagency resources, available throughout the prescribed fire season, that can ignite, hold and monitor prescribed fires.

**Fire Weather:** Weather conditions that influence fire ignition, behavior and suppression.

**Fire Weather Watch:** A term used by fire weather forecasters to notify using agencies, usually 24 to 72 hours ahead of the event, that current and developing meteorological conditions may evolve into dangerous fire weather.

**Fire Whirl:** Spinning vortex column of ascending hot air and gases rising from a fire and carrying aloft smoke, debris, and flame. Fire whirls range in size from less than one foot to more than 500 feet in diameter. Large fire whirls have the intensity of a small tornado.

**Firefighting Resources:** All people and major items of equipment that can or potentially could be assigned to fires.

**Flame Height:** The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope.

**Flame Length:** The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

**Flaming Front:** The zone of a moving fire where the combustion is primarily flaming. Behind this flaming zone combustion is primarily glowing. Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front. Also called fire front.

**Flanks of a Fire:** The parts of a fire's perimeter that are roughly parallel to the main direction of spread.

**Flare-up:** Any sudden acceleration of fire spread or intensification of a fire. Unlike a blow-up, a flare-up lasts a relatively short time and does not radically change control plans.

**Flash Fuels:** Fuels such as grass, leaves, draped pine needles, fern, tree moss and

some kinds of slash, that ignite readily and are consumed rapidly when dry. Also called fine fuels.

**Forb:** A plant with a soft, rather than permanent woody stem, that is not a grass or grass-like plant.

**Fuel:** Combustible material. Includes, vegetation, such as grass, leaves, ground litter, plants, shrubs and trees, that feed a fire. (See Surface Fuels.)

**Fuel Bed:** An array of fuels usually constructed with specific loading, depth and particle size to meet experimental requirements; also, commonly used to describe the fuel composition in natural settings.

**Fuel Loading:** The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area.

**Fuel Model:** Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

**Fuel Moisture (Fuel Moisture Content):** The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

**Fuel Reduction:** Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

**Fuel Type:** An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

**Fusee:** A colored flare designed as a railway warning device and widely used to ignite suppression and prescription fires.

---

G

**General Staff:** The group of incident management personnel reporting to the incident commander. They may each have a deputy, as needed. Staff consists of operations section chief, planning section chief, logistics section chief, and finance/administration section chief.

**Geographic Area:** A political boundary designated by the wildland fire protection agencies, where these agencies work together in the coordination and effective utilization

**Ground Fuel:** All combustible materials below the surface litter, including duff, tree or shrub roots, punchy wood, peat, and sawdust, that normally support a glowing combustion without flame.

---

## H

**Haines Index:** An atmospheric index used to indicate the potential for wildfire growth by measuring the stability and dryness of the air over a fire.

**Hand Line:** A fireline built with hand tools.

**Hazard Reduction:** Any treatment of a hazard that reduces the threat of ignition and fire intensity or rate of spread.

**Head of a Fire:** The side of the fire having the fastest rate of spread.

**Heavy Fuels:** Fuels of large diameter such as snags, logs, large limb wood, that ignite and are consumed more slowly than flash fuels.

**Helibase:** The main location within the general incident area for parking, fueling, maintaining, and loading helicopters. The helibase is usually located at or near the incident base.

**Helispot:** A temporary landing spot for helicopters.

**Helitack:** The use of helicopters to transport crews, equipment, and fire retardants or suppressants to the fire line during the initial stages of a fire.

**Helitack Crew:** A group of firefighters trained in the technical and logistical use of helicopters for fire suppression.

**Holding Actions:** Planned actions required to achieve wildland prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions.

**Holding Resources:** Firefighting personnel and equipment assigned to do all required fire suppression work following fireline construction but generally not including extensive mop-up.

**Hose Lay:** Arrangement of connected lengths of fire hose and accessories on the ground, beginning at the first pumping unit and ending at the point of water delivery.

**Hotshot Crew:** A highly trained fire crew used mainly to build fireline by hand.

**Hotspot:** A particular active part of a fire.

**Hotspotting:** Reducing or stopping the spread of fire at points of particularly rapid rate of spread or special threat, generally the first step in prompt control, with emphasis on first priorities.

---

I

**Incident:** A human-caused or natural occurrence, such as wildland fire, that requires emergency service action to prevent or reduce the loss of life or damage to property or natural resources.

**Incident Action Plan (IAP):** Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including: incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map.

**Incident Command Post (ICP):** Location at which primary command functions are executed. The ICP may be co-located with the incident base or other incident facilities.

**Incident Command System (ICS):** The combination of facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

**Incident Commander:** Individual responsible for the management of all incident operations at the incident site.

**Incident Management Team:** The incident commander and appropriate general or command staff personnel assigned to manage an incident.

**Incident Objectives:** Statements of guidance and direction necessary for selection of appropriate strategy(ies), and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.

**Infrared Detection:** The use of heat sensing equipment, known as Infrared Scanners, for detection of heat sources that are not visually detectable by the normal surveillance methods of either ground or air patrols.

**Initial Attack:** The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

---

J

**Job Hazard Analysis:** This analysis of a project is completed by staff to identify hazards to employees and the public. It identifies hazards, corrective actions and the required safety equipment to ensure public and employee safety.

**Jump Spot:** Selected landing area for smokejumpers.

**Jump Suit:** Approved protection suite worn by smokejumpers.

---

## K

**Keech Byram Drought Index (KBDI):** Commonly-used drought index adapted for fire management applications, with a numerical range from 0 (no moisture deficiency) to 800 (maximum drought).

**Knock Down:** To reduce the flame or heat on the more vigorously burning parts of a fire edge.

---

## L

**Ladder Fuels:** Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

**Large Fire:** 1) For statistical purposes, a fire burning more than a specified area of land e.g., 300 acres. 2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

**Lead Plane:** Aircraft with pilot used to make dry runs over the target area to check wind and smoke conditions and topography and to lead air tankers to targets and supervise their drops.

**Light (Fine) Fuels:** Fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of one hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

**Lightning Activity Level (LAL):** A number, on a scale of 1 to 6, that reflects frequency and character of cloud-to-ground lightning. The scale is exponential, based on powers of 2 (i.e., LAL 3 indicates twice the lightning of LAL 2).

**Line Scout:** A firefighter who determines the location of a fire line.

**Litter:** Top layer of the forest, scrubland, or grassland floor, directly above the fermentation layer, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

**Live Fuels:** Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms,

rather than by external weather influences.

---

## M

**Micro-Remote Environmental Monitoring System (Micro-REMS):** Mobile weather monitoring station. A Micro-REMS usually accompanies an incident meteorologist and ATMU to an incident.

**Mineral Soil:** Soil layers below the predominantly organic horizons; soil with little combustible material.

**Mobilization:** The process and procedures used by all organizations, federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

**Modular Airborne Firefighting System (MAFFS):** A manufactured unit consisting of five interconnecting tanks, a control pallet, and a nozzle pallet, with a capacity of 3,000 gallons, designed to be rapidly mounted inside an unmodified C-130 (Hercules) cargo aircraft for use in dropping retardant on wildland fires.

**Mop-up:** To make a fire safe or reduce residual smoke after the fire has been controlled by extinguishing or removing burning material along or near the control line, felling snags, or moving logs so they won't roll downhill.

**Multi-Agency Coordination (MAC):** A generalized term which describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritizing of incidents, and the sharing and use of critical resources. The MAC organization is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

**Mutual Aid Agreement:** Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

---

## N

**National Environmental Policy Act (NEPA):** NEPA is the basic national law for protection of the environment, passed by Congress in 1969. It sets policy and procedures for environmental protection, and authorizes Environmental Impact Statements and Environmental Assessments to be used as analytical tools to help federal managers make decisions.

**National Fire Danger Rating System (NFDRS):** A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

**National Wildfire Coordinating Group:** A group formed under the direction of the Secretaries of Agriculture and the Interior and comprised of representatives of the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service and Association of State Foresters. The group's purpose is to facilitate coordination and effectiveness of wildland fire activities and provide a forum to discuss, recommend action, or resolve issues and problems of substantive nature. NWCG is the certifying body for all courses in the National Fire Curriculum.

**Nomex ®:** Trade name for a fire resistant synthetic material used in the manufacturing of flight suits and pants and shirts used by firefighters (see Aramid).

**Normal Fire Season:** 1) A season when weather, fire danger, and number and distribution of fires are about average. 2) Period of the year that normally comprises the fire season.

---

O

**Operations Branch Director:** Person under the direction of the operations section chief who is responsible for implementing that portion of the incident action plan appropriate to the branch.

**Operational Period:** The period of time scheduled for execution of a given set of tactical actions as specified in the Incident Action Plan. Operational periods can be of various lengths, although usually not more than 24 hours.

**Overhead:** People assigned to supervisory positions, including incident commanders, command staff, general staff, directors, supervisors, and unit leaders.

---

P

**Pack Test:** Used to determine the aerobic capacity of fire suppression and support personnel and assign physical fitness scores. The test consists of walking a specified distance, with or without a weighted pack, in a predetermined period of time, with altitude corrections.

**Paracargo:** Anything dropped, or intended for dropping, from an aircraft by parachute, by other retarding devices, or by free fall.

**Peak Fire Season:** That period of the fire season during which fires are expected to ignite most readily, to burn with greater than average intensity, and to create damages at an unacceptable level.

**Personnel Protective Equipment (PPE):** All firefighting personnel must be equipped with proper equipment and clothing in order to mitigate the risk of injury from, or exposure to, hazardous conditions encountered while working. PPE

includes, but is not limited to: 8-inch high-laced leather boots with lug soles, fire shelter, hard hat with chin strap, goggles, ear plugs, aramid shirts and trousers, leather gloves and individual first aid kits.

**Preparedness:** Condition or degree of being ready to cope with a potential fire situation

**Prescribed Fire:** Any fire ignited by management actions under certain, predetermined conditions to meet specific objectives related to hazardous fuels or habitat improvement. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

**Prescribed Fire Plan (Burn Plan):** This document provides the prescribed fire burn boss information needed to implement an individual prescribed fire project.

**Prescription:** Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

**Prevention:** Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards.

**Project Fire:** A fire of such size or complexity that a large organization and prolonged activity is required to suppress it.

**Pulaski:** A combination chopping and trenching tool, which combines a single-bitted axe-blade with a narrow adze-like trenching blade fitted to a straight-handle. Useful for grubbing or trenching in duff and matted roots. Well-balanced for chopping.

---

## R

**Radiant Burn:** A burn received from a radiant heat source.

**Radiant Heat Flux:** The amount of heat flowing through a given area in a given time, usually expressed as calories/square centimeter/second.

**Rappelling:** Technique of landing specifically trained firefighters from hovering helicopters; involves sliding down ropes with the aid of friction-producing devices.

**Rate of Spread:** The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains or acres per hour for a specific period in the fire's history.

**Reburn:** The burning of an area that has been previously burned but that contains flammable fuel that ignites when burning conditions are more favorable; an area that has reburned.

**Red Card:** Fire qualification card issued to fire rated persons showing their training needs and their qualifications to fill specified fire suppression and support positions in a large fire suppression or incident organization.

**Red Flag Warning:** Term used by fire weather forecasters to alert forecast users to an ongoing or imminent critical fire weather pattern.

**Rehabilitation:** The activities necessary to repair damage or disturbance caused by wildland fires or the fire suppression activity.

**Relative Humidity (Rh):** The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure.

**Remote Automatic Weather Station (RAWS):** An apparatus that automatically acquires, processes, and stores local weather data for later transmission to the GOES Satellite, from which the data is re-transmitted to an earth-receiving station for use in the National Fire Danger Rating System.

**Resources:** 1) Personnel, equipment, services and supplies available, or potentially available, for assignment to incidents. 2) The natural resources of an area, such as timber, grass, watershed values, recreation values, and wildlife habitat.

**Resource Management Plan (RMP):** A document prepared by field office staff with public participation and approved by field office managers that provides general guidance and direction for land management activities at a field office. The RMP identifies the need for fire in a particular area and for a specific benefit.

**Resource Order:** An order placed for firefighting or support resources.

**Retardant:** A substance or chemical agent which reduced the flammability of combustibles.

**Run (of a fire):** The rapid advance of the head of a fire with a marked change in fire line intensity and rate of spread from that noted before and after the advance.

**Running:** A rapidly spreading surface fire with a well-defined head.

---

S

**Safety Zone:** An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety

zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of a blowup in the vicinity.

**Scratch Line:** An unfinished preliminary fire line hastily established or built as an emergency measure to check the spread of fire.

**Severity Funding:** Funds provided to increase wildland fire suppression response capability necessitated by abnormal weather patterns, extended drought, or other events causing abnormal increase in the fire potential and/or danger.

**Single Resource:** An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.

**Size-up:** To evaluate a fire to determine a course of action for fire suppression.

**Slash:** Debris left after logging, pruning, thinning or brush cutting; includes logs, chips, bark, branches, stumps and broken understory trees or brush.

**Sling Load:** Any cargo carried beneath a helicopter and attached by a lead line and swivel.

**Slop-over:** A fire edge that crosses a control line or natural barrier intended to contain the fire.

**Smokejumper:** A firefighter who travels to fires by aircraft and parachute.

**Smoke Management:** Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

**Smoldering Fire:** A fire burning without flame and barely spreading.

**Snag:** A standing dead tree or part of a dead tree from which at least the smaller branches have fallen.

**Spark Arrester:** A device installed in a chimney, flue, or exhaust pipe to stop the emission of sparks and burning fragments.

**Spot Fire:** A fire ignited outside the perimeter of the main fire by flying sparks or embers.

**Spot Weather Forecast:** A special forecast issued to fit the time, topography, and weather of each specific fire. These forecasts are issued upon request of the user agency and are more detailed, timely, and specific than zone forecasts.

**Spotter:** In smokejumping, the person responsible for selecting drop targets and supervising all aspects of dropping smokejumpers.

**Spotting:** Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

**Staging Area:** Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three-minute available basis. Staging areas are managed by the operations section.

**Strategy:** The science and art of command as applied to the overall planning and conduct of an incident.

**Strike Team:** Specified combinations of the same kind and type of resources, with common communications, and a leader.

**Strike Team Leader:** Person responsible to a division/group supervisor for performing tactical assignments given to the strike team.

**Structure Fire:** Fire originating in and burning any part or all of any building, shelter, or other structure.

**Suppressant:** An agent, such as water or foam, used to extinguish the flaming and glowing phases of combustion when direction applied to burning fuels.

**Suppression:** All the work of extinguishing or containing a fire, beginning with its discovery.

**Surface Fuels:** Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branchwood, downed logs, and stumps interspersed with or partially replacing the litter.

**Swamper:** (1) A worker who assists fallers and/or sawyers by clearing away brush, limbs and small trees. Carries fuel, oil and tools and watches for dangerous situations. (2) A worker on a dozer crew who pulls winch line, helps maintain equipment, etc., to speed suppression work on a fire.

---

T

**Tactics:** Deploying and directing resources on an incident to accomplish the objectives designated by strategy.

**Temporary Flight Restrictions (TFR):** A restriction requested by an agency and put into effect by the Federal Aviation Administration in the vicinity of an incident which restricts the operation of nonessential aircraft in the airspace around that incident.

**Terra Torch ®:** Device for throwing a stream of flaming liquid, used to facilitate rapid

ignition during burn out operations on a wildland fire or during a prescribed fire operation.

**Test Fire:** A small fire ignited within the planned burn unit to determine the characteristic of the prescribed fire, such as fire behavior, detection performance and control measures.

**Timelag:** Time needed under specified conditions for a fuel particle to lose about 63 percent of the difference between its initial moisture content and its equilibrium moisture content. If conditions remain unchanged, a fuel will reach 95 percent of its equilibrium moisture content after four timelag periods.

**Torching:** The ignition and flare-up of a tree or small group of trees, usually from bottom to top.

**Two-way Radio:** Radio equipment with transmitters in mobile units on the same frequency as the base station, permitting conversation in two directions using the same frequency in turn.

**Type:** The capability of a firefighting resource in comparison to another type. Type 1 usually means a greater capability due to power, size, or capacity.

---

## U

**Uncontrolled Fire:** Any fire which threatens to destroy life, property, or natural resources, and

**Underburn:** A fire that consumes surface fuels but not trees or shrubs. (See Surface Fuels.)

---

## V

**Vectors:** Directions of fire spread as related to rate of spread calculations (in degrees from upslope).

**Volunteer Fire Department (VFD):** A fire department of which some or all members are unpaid.

---

## W

**Water Tender:** A ground vehicle capable of transporting specified quantities of water.

**Weather Information and Management System (WIMS):** An interactive computer system designed to accommodate the weather information needs of all federal and state natural resource management agencies. Provides timely access to weather forecasts, current and historical weather data, the National Fire Danger Rating System (NFDRS), and the National Interagency Fire Management Integrated Database (NIFMID).

**Wet Line:** A line of water, or water and chemical retardant, sprayed along the ground, that serves as a temporary control line from which to ignite or stop a low-intensity fire.

**Wildland Fire:** Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

**Wildland Fire Implementation Plan (WFIP):** A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits.

**Wildland Fire Situation Analysis (WFSA):** A decision-making process that evaluates alternative suppression strategies against selected environmental, social, political, and economic criteria. Provides a record of decisions.

**Wildland Fire Use:** The management of naturally ignited wildland fires to accomplish specific prestated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

**Wildland Urban Interface:** The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

**Wind Vectors:** Wind directions used to calculate fire behavior.

Top of Page

Appendix E—Fire Policy, Directives, and Guides

attention given to the required safety measures prescribed in the downhill guides.

Values to be protected in this Fire Management Unit include structures, infrastructure, improvements, T and E species, wildlife habitat, commercial timber, range values, recreation areas, cultural resources and public safety. The objective for fire management within the Unit emphasizes suppression. Wildland fire use is not authorized and will not be used as a fire management strategy. Fires will receive aggressive initial attack, a Wildland Fire Situation Analysis (WFSA) will be prepared if initial action is unsuccessful in suppressing the fire.

Section IV: Wildland Fire Management Program Components

B. Wildland Fire Suppression

3. Initial Attack

Initial attack is an aggressive suppression action consistent with firefighter and public safety and with values to be protected. The Central Idaho Coordination Center uses WildCAD Run Cards to dispatch resources based on the current response level across the forest.

d. Response times

Responses in the suppression non-WUI can be expected in the 20 to 45 minute range depending on the specific location of the fire. These locations are by nature more likely to be in remote locations accessible best by helicopter, or via backcountry road.

4. Extended Attack and Large Fire Suppression

A wildfire is considered to be in extended attack status when:

- Suppression efforts have not suc-

ceeded or are not expected to reach containment within 24 hours.

- The initial attack incident commander (ICT 4 or ICT5) requests additional resources that result in fire complexity attaining Type III status within or following the first 24 hours following the arrival of the first suppression resources.

b. Implementation Plan Requirements—WFSA development

Type III incident management.

A Type III incident commander (IC) will manage incidents that reach a Type III complexity level. This will be a full time dedicated IC with no collateral duties. The forest has assembled a Type III team to manage these incidents through to completion or until transition to a Type I or II incident management team.

7. Other Fire Suppression Considerations

Safety

Safety is the number-one priority for all personnel engaged in or supporting fire management activities on the forest.

Fire management work is one of the most hazardous jobs encountered by Forest Service personnel. The incident commander and all supervisors will always put the safety of his/her personnel first. There is no fire situation so serious that the life of anyone should be risked in order to get to the fire sooner, get the fire out quicker, or to keep the burned areas smaller.

All employees will abide by the Safety First policy. Each employee has a responsibility for his/her personal safety and that of fellow employees. It is also everyone's

responsibility to call attention to any unsafe practice that is observed.

1. All fire personnel will follow the *Ten Standard Firefighting Orders* and the *18 Watch Out Situations* and shall practice the principles of *Lookouts, Communications, Escape Routes, and Safety Zones (LCES)*. These basics of fire fighting survival will be utilized as a checklist for supervisory personnel on the fire, and as a source for other fire line personnel to pose questions to supervisory personnel whenever they have concerns about their personal safety. All firefighters will carry and utilize their *Incident Response Pocket Guide*.

2. All Type III and more complex incidents will be staffed with a qualified safety officer.

**Ten Standard Firefighting Orders**

All *Ten Standard Firefighting Orders* were violated or compromised.

1. Keep informed on fire weather conditions and forecasts.

Spot weather forecasts were not requested for July 22. Few weather observations were taken on the line during the entire fire. Fire personnel relied heavily on weather observations from Long Tom Lookout that did not represent the Cramer Fire site (IC Type III and Cramer Fire personnel).

2. Know what your fire is doing at all times.

Due to the steep terrain and multiple aspects, lookouts were not in vantage points to view the entire fire. The visibility at H-2 was limited due to terrain and vegetation. On July 22, the IC's view of the fire came from two reconnaissance flights. The rest

of the day he was at the Cove Creek helibase, 13 miles from the Cramer Fire (IC Type III and Cramer Fire personnel).

**3. Base all actions on current and expected behavior of the fire.**

Actions were based more on the observed fire behavior in the morning than what was predicted to occur based on the seasonal severity, weather forecast, and previous days' fire behavior (IC Type III and Cramer Fire personnel).

**4. Identify escape routes/safety zones and make them known.**

Three of the four safety zones identified by the IC and two crew bosses were not safety zones on the afternoon of July 22, during conditions of extreme fire behavior. Near H-1, the black was a safety zone, but the unburned sagebrush field was a survival zone. Near H-2, the black on the east side of the ridge during the uphill fire run was a survival zone, but the old burn/ceanothus brush field was neither a safety zone nor a survival zone (IC Type III, Central Oregon Regulars crew boss, Indianola assistant helitack foreman).

**5. Post lookouts when there is possible danger.**

The IC's plan for placement of lookouts was not clearly communicated to personnel assigned to the fire. No lookout with a view of H-2 or the Cache Bar drainage was posted on July 22 to monitor fire in the Cache Bar drainage and to communicate critical weather and fire behavior information to the rappellers. Aviation resources over the fire could not function full time as lookouts for ground crews given their other duties and responsibilities (IC Type III).

**6. Be alert. Keep calm. Think clearly. Act decisively.**

On July 22, when the IC made his decision to retrieve the rappellers from H-2, he did not act decisively by immediately removing the rappellers from H-2. During the critical period prior to, and after

contact was lost with the rappellers, the IC was functioning as the district FMO/AFMO, performing multiple collateral duties on the radio (IC Type III).

**7. Maintain prompt communications with your forces, your supervisor, and adjoining forces.**

On July 22, critical observations of fire activity in the Cache Bar drainage were not communicated to the IC and the rappellers at H-2. The IC did not update the rappellers on H-2 about revised strategy and tactics. More than 30 minutes elapsed after losing contact with the rappellers at H-2 before the IC became engaged in the search and rescue operation (IC Type III, air attack, lead plane 41).

**8. Give clear instructions and ensure they are understood.**

On July 22, the IC's instructions regarding the locations of lookouts were not well understood. The IC dropped off a helicopter crew person east of H-1 without a plan, a briefing, or a designated safety zone (IC Type III).

**9. Maintain control of your forces at all times.**

On July 22, the IC was not in control of his forces on the fireline, deferring operations to his strike team leader. He did not supervise and adequately contact, monitor, or coordinate with the H-2 operation (IC Type III).

**10. Fight fire aggressively, having provided for safety first.**

Initial attack suppression efforts on the Cramer Fire were inadequate on July 20 and 21, causing the fire to grow in size and complexity under extreme burning conditions. Midslope suppression tactics were used on July 21 and 22 during extreme burning conditions. There were significant safety lapses prior to the fatalities. The safety of the rappellers was compromised by focus on fire activity in the Cramer Creek drainage and the eventual

burnover of H-1 (North Fork/Middle Fork district ranger, forest FMO, zone duty officer, IC Type III).

## 18 Watch Out Situations

Nine of the 18 Watch Out Situations were present and not mitigated.

1. Fire not scouted and sized up (NA).

2. In country not seen in daylight (NA).

3. Safety zones and escape routes not identified (NA).

4. Unfamiliar with weather and local factors influencing fire behavior (NA).

5. Uninformed on strategy, tactics, and hazards (NA).

6. Instructions and assignments not clear.

On July 22, the IC's instructions regarding the locations of lookouts were not well understood. The IC dropped off a helicopter crew person east of H-1 without a plan, a briefing, or a designated safety zone (IC Type III).

7. No communication link with crew members/supervisor.

The IC did not supervise and adequately contact, monitor, or coordinate with the H-2 operation (IC Type III).

8. Constructing fireline without safe anchor point.

Anchor points were not established (IC Type III, strike team leader).

9. Building fireline downhill with fire below.

The tactics for the west side of the fire were for a crew to build downhill fireline from H-2 (IC Type III).



10. Attempting frontal assault on fire (NA).

11. Unburned fuel between you and the fire.

The rappellers at H-2 had two drainages of unburned fuel (Cramer Creek and Cache Bar) below them (IC Type III).

12. Cannot see main fire, not in contact with anyone who can.

The visibility at H-2 was limited due to terrain and vegetation. No lookout with a view of H-2 or the Cache Bar drainage was posted on July 22 to monitor fire in the Cache Bar drainage and to communicate critical weather and fire behavior information to the rappellers (IC Type III).

13. On a hillside where rolling material can ignite fuel below.

Rollouts were a common occurrence during all phases of the Cramer Fire. A combination of backing and rolling allowed fire to establish itself in the Cache Bar and Cramer Creek drainages. (IC Type III).

14. Weather is getting hotter and drier.

Fire activity on the SCNF increased dramatically through June and into July from hot, dry weather and multiple lightning starts, indicating the potential for new starts.

Conditions had been getting progressively hotter and drier during the Cramer Fire (IC Type III, Cramer Fire personnel, North Fork/Middle Fork district ranger, forest FMO).

15. Wind increases and/or changes direction.

Wind gusts on the Cramer Fire increased markedly during the afternoon of July 22 and changed direction. Personnel on the fire did not account for the predicted changes in windspeed and direction for the afternoon (IC Type III and Cramer Fire personnel).

16. Getting frequent spot fires across line (NA).

17. Terrain and fuels make escape to safety zones difficult (NA).

18. Taking a nap near fireline (NA).